

HISTORIC MINING DITCHES OF EL DORADO COUNTY, CALIFORNIA

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ABSTRACT

A look at some of the major water conveyance systems within El Dorado County and their role in the economic development of the county. Included in the discussion and slide presentation will be a review of the ditches of Coloma, Georgetown Divide, Placerville Divide, and the Cosumnes River region plus the Natoma Ditch system of today's El Dorado Hills region. The paper will cover the period of time from 1849-1925.

El Dorado County is situated between the North and Middle Forks of the American River on the north side and the South Fork Cosumnes River on the south side. In this paper, I discuss major ditch systems on three ridges: the Georgetown Divide, the Placerville Divide, and the Cosumnes River region, which is not as distinct a divide as the other two. Elevation in the area of discussion ranges from about 4000' to about 500', moving from east to west.

Primary factors which influenced ditch construction and cost of operation included topography, such as steep terrain, ravines, and geology, plus the type of soil in which ditches were constructed. Different soils have different water-holding capacities.

Across the upper elevations of the county, the rivers cut through Paleozoic age rocks forming the Calaveras and Shoo Fly complexes of slates and schists, etc. Other geologic formations range from deeper Mesozoic granitic rock overlain by Tertiary volcanic rhyolitic and andesitic deposits at the higher elevations to the lower elevation Paleozoic and/or Mesozoic marine sedimentary and volcanic rocks of various lithologies (Kohler 1983; Loyd and Kohler 1987).

Resulting soil types include decomposing granite sands along the Cosumnes River region to the Georgetown Divide with its wide variety of fairly shallow soil types underlain by andesitic conglomerates, hard metamorphic rocks, and/or

vertically tilted schists and slates, all with slopes ranging from 3% to 70%.

Two factors which initiated ditch construction in El Dorado County were the weather and the discovery of locations of gold in areas away from rivers and streams. The county's winter weather is always unpredictable. Some winters are dry; some are excessively wet. Mining was dependent on a reliable source of water and the winter of 1850-51 was a dry year. However, there is one obvious abundant source of water. 1850 seems to be the first year that ditches of any size began to be constructed. There were two primary periods of ditch construction in the county: 1850 and 1870.

From one point of view the first ditch was James Marshall's ditch which was to provide the water power for the new sawmill at Coloma. This ditch was to be the mill and tail races and, of course, it was here that he found gold (Wilson et al. 1998).

The 1883 historian, Paolo Sioli, gives several different names for the first ditch constructed purposefully for mining gold and names numerous and varied people as the diggers of the first ditch. Some of these people did not exist.

Sioli names Valentine McDougall, Davis Thompson and others as digging the first ditch (Sioli 1883:104). However, an examination of the deeds shows that, after Marshall's ditch, the first ditch was probably the Union Flume dug in 1850-

51 by William Valentine, John McDougald and others. This 3 mile long ditch carried water from the South Fork American River in Coloma to Union (Lotus). It was also known as McDougald's Ditch. This ditch was purchased in 1856 by William Hollingsworth and may have been known as the Hollingsworth Ditch after that time. By 1873, it was called Merrill's Ditch.

Other Coloma ditches which followed were the 1852 El Dorado Canal Company's ditch which had a number of laterals with at least 6 other names over time and was known by 1855 as the Coloma-Lotus Ranch Ditch. Initially 6 miles long, the ditch was later extended to 11 miles. The canal headwaters are located on the south side of the river and initially were one mile above the Brooks, Clark and Co's sawmill. It was planned to be 2 feet deep, 3 feet wide at the bottom and 4 feet wide at the top. As construction grew closer to Lotus, lumber was provided by a lumber mill in Lotus. This ditch is still owned and operated by ranchers in Coloma.

John T. Little and John A. McDougald's "Little and McDougald's " 6-to 8-mile-long ditch was constructed sometime between 1850-54 on the north side of the river. It was also known as the Coloma Canal or Ditch. Another name for it was the Coloma Water and Mining Company's Ditch. Percentages of this ditch were purchased in 1856 by Joseph Hollingsworth, brother to William, and others when McDougald sold out his interests.

The Mansfield-Hoffman Ditch, described in an 1857 deed, was about 3 miles long. This ditch was on the north side of the river and supplied the mines of Nate Mansfield and a man known only as Hoffman. Mansfield is detailed in Sioli and later had a ranch of 4000 fruit trees and 4000 grape vines in Coloma. The Miner's Ditch, also known as the Miner's Granite Creek Ditch and the Granite Creek Miner's Ditch, is described as early as 1859 in deeds. This ditch ran from Kelsey Canyon to Jacob's Creek, two miles below Lotus.

Mining expanded west along the South Fork American River, and prior to 1852 the Natoma Ditch system began in the Salmon Falls area (now under Folsom Lake). This extensive system supplied mining camps east and south of Folsom as well as the rapidly developing vineyards and

ranches on the north side of Highway 50. The Natoma Ditch was ultimately 16 miles long, 8' wide at the top, 5' wide at the bottom and was 3' deep. This canal had a number of long flumes, originally wooden, and later replaced by Hess-type metal flumes with heavy redwood timbers and concrete footings. The metal parts were replaced during 1929-30 repairs. The Natoma Ditch system cost \$200,000 to construct, according to J. Ross Browne, yet by 1868 it was valued only at \$68,000 (Browne 1868).

Mining quickly spread onto the Placerville Divide. Early ditches here, like the 1851 South Fork and Placerville Canal, received water from Weber Creek and conveyed it to the rich mines of Placerville and the Coon Hollow area, just south of Placerville. The Iowa Canal was constructed between 1852 and 1859; competition with the South Fork Canal caused it to be abandoned, though it was brought back into partial use in the mid-1950s by local farmers (Jones 1999).

The 6-mile-long Farmer's Free Ditch took water from lower down Weber Creek. This ditch has been known as the Weber Creek Ditch, the Missouri Flat Mining and Irrigating Ditch, and the Missouri Flat Farmer's Extension Line. As a result, the ditch is easily confused with the Missouri Flat Ditch. The ditches paralleled each other in some areas and, following the construction of the Missouri Flat Ditch, water could be transferred from the Missouri Flat Ditch to supplement the Farmer's Free Ditch when Weber Creek was low. The Farmer's Free Ditch went through a number of owners and can be traced in deeds back to November 1873 when it was listed as part of the property associated with the Eureka Canal system which took water from the North Fork Cosumnes River. At that time, D.O. Mills, Edgar Mills, and Henry Miller purchased the Eureka Canal system in a Sheriff's sale. It appears to have been constructed sometime between 1870 and 1873 according to El Dorado County land surveyor Jack Sweeney, who found no mention of the ditch in an 1870 survey record, though the surveyor of that record did note another ditch in adjacent sections (Sweeney 1997).

The Missouri Flat Ditch also seems to have been constructed in the later 1870s ditch reconstruction period. This ditch was a part of the

expanded South Fork Canal, taking water at this time from upper Weber Creek on the Placerville Divide. In 1852, the South Fork Canal Company incorporated to make the first expansion of that ditch, ultimately giving the company control over most of the mining region between the South Fork American River and Weber Creek. In time, this ditch system extended 155 miles through some of the richest gold producing areas within the county.

The South Fork Canal extended from its Weber Creek diversion 5 miles below Brockless Bridge on the American River to a reservoir in Placerville. From here, water was distributed in several directions by laterals and other canals or ditches. It ultimately conveyed water close to Shingle Springs. Delays and excessive costs resulted in severe financial problems for the company. Lawsuits resulted in the canal going into receivership after receivership for over 15 years.

On the Georgetown Divide, the earliest ditch to be constructed appears to have been the Mosquito Ditch. This 16-mile-long ditch seems to be the same ditch as the Slab Creek Ditch constructed by 1850 to aid placer mining in Mosquito Canyon. It was later renamed the Summerfield Ditch.

The largest purveyor of water on the Georgetown Divide was the California Water Company, owned by a group from San Francisco who had thoughts of providing Sacramento with water from the region. The California Water Company also owned numerous mines, specifically hydraulic mines. Ultimately the California Water Company owned 300 miles of ditches, flumes and iron pipes to supply water for mining, domestic, agriculture and milling purposes (Bowman 1874).

Other ditch companies on the Georgetown Divide included the Pilot Creek Ditch Company with its Pilot and Rock Creek Canals which carried water 26 miles. This Company was later absorbed by the California Water Company. Another El Dorado Ditch was also constructed on the Georgetown Divide in 1853-54 and carried water 20 miles from Pilot Creek to the Main Ditch. This ditch was 3.5' wide at the top, 2' wide at the bottom and 3' deep.

In 1850, on the south side of the county, a ditch system was constructed that was first known as the Jones & Furman Diamond Ridge Ditch and later as the Eureka Ditch. At the same time, Dr. Leverett Bradley, a civil engineer, had begun surveying a 75-mile-long canal route with a man named Berdan. In 1852, Bradley and Berdan began construction on the first 22 miles of what would be called the Ringgold Ditch. This ditch followed mountain contours and dropped at a steady rate of 18 feet per mile. Meanwhile, in 1852, Jones and Furman dug a second segment of their ditch moving east to Clear Creek, digging the Clear Creek segment. Then they went bankrupt from construction costs. Their ditch system was sold in a Sheriff's sale to William Scott and Enoch N. Strout. The ditch was renamed the Eureka Ditch. In 1857, Scott, Strout and Arthur St. C. Danver sold the Canal to Lewis B. Harris.

Harris also picked up the Bradley and Berdan Canal the same year. He consolidated both ditch systems into one massive system of 247 miles of ditches and laterals which reached every part of the region between the North Fork Cosumnes River and Weber Creek and extended west to the American Reservoir, today's Bass Lake.

On the Middle Fork Cosumnes River, placer mining began as early as 1852; many of these mines were one to three hundred acres in size and a few were worked into the 1950s.

By 1856, the 7-mile-long ditch of the R.T. Jackson Company conveyed water to Henry's Diggins where claims were going for \$1,000 to \$9,000.

The primary ditch owner on the Middle Fork Cosumnes River was Joseph McCum Douglass who owned all the ditches here by 1857. Douglass was a merchant, banker, and politician, who ended up with 20 lawsuits, after which his political career ended. By 1874, Douglass sold his system to Charles E. McLane of San Francisco.

At least by 1854, on the South Fork of the Cosumnes River, the Prairie Water Company constructed their Prairie Ditch, also known as the Cosumnes and Prairie Canal. This ditch ran on the south side of the Cosumnes River in El Dorado County, crossed into Amador County, and

terminated 27 miles later at a reservoir in Sacramento County. To date, four men have been identified as 1856 owners of this company: George W. Tibbits, Nicholas S. Davis, William H. Valentine, and John A. McDougald.

By 1868, J. Ross Browne reported to the U.S. government that the 1850 "experiments in ditching" had been successful when ditch lengths were short, water prices high, and the claims washed were rich. Ditches were not economically successful, however, when they were long, construction costs high and water prices low, and gold difficult to obtain. Many ditches were not engineered well; carpenters did a lot of the work and ditches tended to have a lot of flumes. Flumes were expensive as they had to be rebuilt every few years. Browne estimated that 20 million dollars had been spent on canals valued at not more than 2 million dollars by 1868 (Browne 1868).

But by the 1870s, San Francisco was eyeing Sierra Nevada water and mineral resources as that city and county's population had expanded. The 1873 depression in the U.S. renewed interest in mining. Agriculture was now contending with mining for water, and mining was now predominantly hydraulic mining, requiring large amounts of water.

The California Water Company on the Georgetown Divide hired Amos Bowman to evaluate mines, lands and water ditches for development. Bowman's 1874 report was not very favorable as far as the then-current status of the county. However, Bowman stressed, all was not lost. The ownership of water rights would allow the company to renew mining and to assume ownership of more mines, agricultural and timber lands than anyone else owned. But the California Water Company would have to decide to invest in mining as well as being a water company in order to make this work. In addition, it would have to encourage development of the Divide which was low in population. Bowman foresaw expansion of the ditch system to the city of Sacramento (Bowman 1874). However, development never occurred on this Divide and though mining and agriculture increased for a time, both pretty much died out by the turn of the century.

It can be seen, though, that water and mines

on the Georgetown Divide and in the Cosumnes River region were controlled or owned by San Francisco entrepreneurs by the 1870s. That left just the South Fork of the American River and the Placerville Divide for a group of local miners.

On the Placerville Divide, the South Fork system underwent reconstruction and expansion by the El Dorado Water and Deep Gravel Mining Company. The company's upper elevation El Dorado Canal was 30 miles long with 4 miles of flume; today there are approximately 60 flumes on this ditch. It was (and is) 8' to 12' wide at the top, 4' deep, and 4' wide at the bottom. In some places the inner slopes were 100 to 150 feet high. Granite walls of 30 to 70 feet high were built for ravine crossings. One flume, Flume 46, is 3700 feet long. It was the extensive use of construction of flumes on muddills resting on rock foundation walls that makes this canal unique as an historic resource (Rood 1996).

This was said to be the costliest canal per mile built during this hydraulic mining period. The high costs, \$650,000 in 1876, were due primarily to the topography and geology. The canal delivered 5,000 miners inches of water to a reservoir in Pollock Pines. From there, the Main Ditch carried water to Placerville and points west.

The former Eureka Canal system was purchased by the Park Canal Company in the early 1870s and renamed the Crawford Ditch. By this time it contained 350 miles of ditches and 450 miles of laterals, according to J. Ross Browne, but was only valued at \$30,000.

By 1873, the Crawford Ditch system consisted of the combined Bradley and Berdan ditch system, the Jones and Furman ditches, the North Fork Extension (from Camp Creek to the North Fork/Steeley Fork Cosumnes River confluence), the High Camp Ditch and other smaller ditches such as the Weber Creek Ditch, later known as the Farmer's Free Ditch. The High Camp Ditch carried water from the new diversion at Baltic Mill through Sly Park and down to the Ft. Jim/Newtown area, then on through Diamond Springs, El Dorado, and to the American Reservoir. From this reservoir ditches carried water on to Clarksville and surrounding area mines and ranches.

In El Dorado County, agriculture competed with mining for water from ditches early on; later there was competition with hydroelectric power plants and domestic users. As mining declined, agriculture alone could not afford the costs associated with ditch maintenance. Domestic use was limited as county population decreased and hydroelectric power plants were in the initial stages of development. Many ditches were abandoned and fell into disrepair.

In 1929, the El Dorado Irrigation District (EID) formed out of a coalition of farmers who feared losing water rights to hydroelectric plants. The EID purchased the Crawford Ditch system and the Main Ditch. It is currently purchasing the El Dorado Canal on the Placerville Divide. Beginning in the 1930s, with the aid of the WPA, extensive repairs began on these ditches (Starns 1998). However, the costs of maintenance remain high as in earlier years and loss of water is high due to soil permeability and evaporation.

Many of the early ditches were abandoned in the 1950s and 1980s as ditches were replaced by water mains and pipelines. The remaining ditches in use include the El Dorado Canal and Main Ditch on the Placerville Divide, the Coloma-Lotus Ranch Ditch, the Gold Hill and Farmer's Free Ditches, and portions of the Crawford Ditch from the Cosumnes River diversion to Diamond Springs Reservoir. The primary use of ditch water today is for agriculture.

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