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HISTORICAL EVENTS ASSOCIATED WITH THE UPPER CLARK FORK DRAINAGE

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The following is a summary of historically significant events which have occurred within the Upper Clark Fork drainage, exclusive of the Blackfoot River drainage. The summary is organized around the categories listed below, with an emphasis on those events and developments which may have had an impact on water quality.

A) Indian Use
B) Fur Trade and Trapping
C) Gold Discovery and Early Placer Mining
D) Transportation
E) Hard Rock Mining (Silver and Copper)
F) Timber Harvest and Commerce
G) Milltown and Flint Creek Dams
H) Cattle, Agriculture and Water Rights

Also included in the summary are the observations and quotations of various individuals involved in these activities, as well as general descriptions of related sites and occurrences.

All information is referenced as to sources, and a bibliography is included.

A. INDIAN USE OF THE UPPER CLARK FORK DRAINAGE

Indian tribes who frequented the Clark Fork River above Hellgate included the Flatheads, Nez Perces, Pend d'Oreilles, Spokanes and Kootenais.[1] They followed a variety of routes along the Clark Fork and its tributaries to the "buffalo country" east of the Continental Divide. Perhaps the most heavily used of these routes was that along the Blackfoot River, which the Nez Perce referred to as Cokahlarishkit, "the river of the road to buffalo".[2] These mountain tribes did not linger along the Upper Clark Fork because the area was also used by hostile raiding parties of Snakes, Bannocks and the fierce Blackfeet who regarded the region as their own. The Flatheads and their allies battled the Blackfeet on several occasions, frequently at Beavertail Hill.[3]

The various tribes also favored the Upper Clark Fork area as a source of flint for their arrowheads. At least three sites are known to have been used for this purpose. The first is in the vicinity of the Bonner interchange on I-90. Here the Flathead gathered the stone from which they chipped their blades.[4] A second site is at the head of Henderson Gulch near Drummond, where a sizeable flint deposit is located.[5] A third site is on the Mill Creek divide above Anaconda where the Indians found large deposits of jasper.[6] The presence of these deposits and their use by the Indians is reflected in the early name used by the fur trappers for the Clark Fork, the Arrowstone River, and in the surviving name of a tributary, Flint Creek.[7]

The plentiful fish and game along the river also provided the inspiration for many Indian names within the drainage. Beavertail Hill was named for its resemblance to the animal.[8] The area near the confluence of the Clark Fork and Blackfoot Rivers was called "Aičestém" by the Flathead, a reference to the abundance of trout in that part of the river.[9] A more familiar name was that given to the Deer Lodge Valley. At the south end of the valley, on the present grounds of the Warm Springs State Hospital, stands a hot spring mound some thirty feet high and sixty feet in circumference. The presence of minerals in the waters attracted large numbers of deer. On cool days, steam could be seen issuing from the mound, resembling smoke curling from an Indian lodge. The Snake Indians called the place It soo ke en car ne, "the lodge of the white-tailed deer". The formation was a key landmark for subsequent white travelers and the Indian name endured in both French (la loge du chevreuil) and English (Deer House or

Deer Lodge).[10] The river itself from the mound downriver to the Little Blackfoot was for many years known as the Deer Lodge River. The remaining stream from the Little Blackfoot to Missoula was known as the Hell Gate River, and beyond Missoula, it was the Missoula River. It was not until 1937 that the U.S. Geographical Board ruled that the river's official name was the Clark Fork from its headwaters to its entrance into Pend d'Oreille Lake.[11]

Indian use of the "buffalo road" along the Clark Fork continued into the 1850's and 1860's. Generally, relations between the mountain tribes (the Flatheads and their allies) and white settlers were good, but the Snakes and Bannocks were regarded with suspicion. Horse theft was common among all parties involved, Indian and white. The Blackfeet seem to have made fewer and fewer raids into the area after 1840, when the tribe was decimated by a smallpox epidemic. The Blackfeet described by Granville Stuart did not appear nearly as fierce as those who battled the fur trappers of the 1820's and 1830's. Nevertheless, white settlers remained alert to the possibility of violence.[12]

With the confinement of the tribes to reservations and the extermination of the buffalo, the Clark Fork area saw few Indians after the 1870's. However, in the 1880's, a band of "landless Indians" occasionally visited Butte and the Deer Lodge Valley. These Indians, a mixed group of Chippewas, Crees and Metis (racial mixture of Chippewa, Cree and French), entered Montana from Canada. Some were refugees from Louis Riel's unsuccessful rebellion against the Canadian government in 1885. Once in Montana, they wandered from town to town surviving on handouts and castoffs. In 1916, they received a reservation of their own (Rocky Boy's).[13]

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B. FUR TRADE AND TRAPPING ON THE UPPER CLARK FORK

In the years following Lewis and Clark's successful exploration (1804-1806), competition between the United States and Great Britain for control of the Pacific Northwest (including part of western Montana) took the form of rivalry for the continent's fur resources. This brought the fur men of the British companies (the North West Fur Company and the Hudson's Bay Company) and of the major American firms (the Rocky Mountain Fur Company and the American Fur Company) into the Upper Clark Fork. Although it was not among the most important fur country, the area was traveled by many of the legendary mountain men.

The first of the fur men to visit the area was David Thompson, considered "one of the great geographers of all time." Working for the North West Company, Thompson had established trading posts on the Upper Columbia and Kootenai Rivers in Canada in 1807. In 1808 he entered northwestern Montana, and over the next few years established a prosperous trade with the Salish and Kootenai tribes along the Kootenai, Clark Fork and Flathead Rivers. In the early part of 1812, he surveyed the Clark Fork as far upstream as present-day Missoula. From the top of Mount Jumbo, he mapped much of the surrounding area.[1]

Following several years of violent rivalry, the North West Company was absorbed by the Hudson's Bay Company in 1821. The HBC moved rapidly to gain control of the Columbia Valley. In an attempt to prevent American fur interests from gaining a foothold, the HBC used large "brigades" of trappers to trap out the fringe areas of the Columbia Basin. It was in the 1820's, as part of this rivalry, that the Clark Fork began to be frequented by trappers.

In 1823, Finan McDonald, a 6'4" giant of a man with a "wildly red-whiskered face" probably passed up the Upper Clark Fork and over Deer Lodge Pass on his way to the Big Hole while trapping for the HBC.[2] The following year the first of the major HBC trapping brigades left Salish House near Thompson Falls. Led by Alexander Ross, fifty-five men traveled through the mountains to the source of the Clark Fork, crossing the Continental Divide near Butte in the spring of 1824.[3] Somewhat later, Peter Skene Ogden led another HBC brigade along a similar route.[4]

Fur trade activity in the Upper Clark Fork seems to have reached its peak in 1831 and 1832. During the summer of 1831, several Rocky Mountain

Fur Company men, including Jim Bridger, traveled "on deer lodge River and on to the head of Flat hed River."[5] In late August, an American Fur Company brigade also passed through the upper reaches of the Clark Fork River. This brigade included Warren Ferris, a highly literate fur trapper whose diary contains a description of the region before human activity had much altered it:

> ...crossed a mountain to the Deer House Plains. This is a valley somewhat larger than the Big Hole, and like that is surrounded by mountains, generally however low, barren and naked to the south and east where lofty and snowclad peaks appear. All the streams by which it is intersected are decorated with groves and thickets of aspen birch and willow, and occasional clusters of currant and gooseberry bushes. The bottoms are rich and verdant and are resorted to by great numbers of deer and elk. The several streams unite and form "La Riviere des pierres a fleches" (Arrowstone River) ...This river is one of the sources of Clark's River...[6]

According to Ferris the river was "clear, deep, rapid and not fordable at high water..."[7] The fact that Ferris's group followed so closely the Rocky Mountain Fur men, and that one hundred lodges of Pend d'Oreilles were camped at the South end of the Deer Lodge Valley, may account for their difficulty in finding game where other sources have described it as plentiful. By September 5, however, the brigade had traveled more than 25 miles downstream, somewhere between Deer Lodge and Gold Creek, and Ferris could report:

> ...our hunters killed three grizzly bears, several goats, deer and two buffaloes; the latter, however, is seldom found in this country; though it abounds in black and white tailed deer, elk, sheep, antelopes and sometimes moose, and White mountain goats have been killed here.[8]

However, the hunting and trapping activities of both Indians and whites were beginning to have an effect on the Upper Clark Fork's resources. In November of 1831, a Hudson's Bay brigade, led by John Work trapped along the Upper Clark Fork and its tributaries. The Company had granted permission for Work's expedition "rather reluctantly because this area had also been heavily trapped."[9] The Company's hesitation was well-founded, as Work's journal revealed the results:

> 11/3/1831 (in the vicinity of Nevada Creek) The people visited the river, but no chance of taking any beaver, it has so recently been hunted by the Americans.
>
> 11/5/1831 (on the Clark Fork near Deer Lodge)...some of the people set a few traps, little signs of beaver. The Americans hunted here in the summer. The people were out hunting but very little success...

11/7/1831 (near the mouth of Dempsey Creek) The people set their traps - one beaver taken. This river was formerly rich, but being frequently hunted both by the whites and the Indians, beaver now are very scarce in it.

11/9/1831 (at Deer Lodge Mound) Marched...up the river to the hot spring. The road good through a fine plain....twenty-one beaver were taken. Notwithstanding, that this quarter has been recently hunted both by the Indians and Americans, there are still some beaver, but having been so lately hunted they are very shy (moreover the dams and small forks are freezing up so that they cannot be taken).[10]

As the competition for beaver intensified, so did the rivalry between the two major American fur companies. In the summer of 1832, an American Fur Company brigade led by Andrew Drips and William Henry Vanderburg trailed Jim Bridger and Tom Fitzpatrick of the Rocky Mountain Fur Company into Montana. The AFC men hoped Bridger and Fitzpatrick would lead them to the RMFC's best beaver streams. Aware of their pursuers, the Rocky Mountain men decided to lead the AFC on a long, costly "wild goose chase" through trapped-out country and into dangerous Blackfeet territory. Their route led northward out of the Big Hole over the mountains near present-day Anaconda and into the Deer Lodge Valley. They followed the Clark Fork nearly to Missoula, turning up the Blackfoot River and crossing the divide onto the plains. The strategy paid off. The AFC men were ambushed by Blackfeet. Vanderburg was killed and Warren Ferris, also in the brigade, was wounded.[11]

By the early 1840's, the combination of changing fashion and trapped-out streams had largely put an end to the fur trade. What fur trapping occurred during this period was carried on, not by large companies, but by small bands of mountain men who could not or would not adjust to other ways of life. Many, in the words of Bernard de Voto, simply "added their tipis to the villages of their wives" and settled down in the wilderness. This was the case on the Upper Clark Fork, where the first white "settlers" were retired trappers living with their Indian wives.[12]

One other notable traveler passed through the Upper Clark Fork country in the early 1840's, the Jesuit missionary Jean-Pierre DeSmet. In response to repeated requests from the Flathead, Father DeSmet and fellow

missionaries Nicholas Point and Gregory Mengharini traveled to Montana for missionary work in 1841. The priests, whose ox-drawn carts were probably the first wagons to travel this region, met their Flathead escorts at Fort Hall on the Oregon Trail. From there they traveled down the Beaverhead River, crossing the mountains into the Deer Lodge Valley and followed the Clark Fork and Bitter Root Rivers to the future site of St. Mary's Mission (Stevensville).[13] In a letter, Father DeSmet described the Upper Clark Fork country, and revealed a traveler's fascination with Deer Lodge Mound:

> ...the country is well-watered, for it abounds with small lakes and rivulets, and is surrounded by mountains, at whose base are found numberless springs. In no part of the world is the water more limpid or pure, for whatever may be the depth of the rivers, the bottom is seen as if there were nothing to intercept the view. The most remarkable spring which we have seen in the mountains is called the Deer's lodge. It is found on the bank of the main fork of the Bitter Root or St. Mary's River; to this Fork I have given the name of St. Ignatius. This spring is situated on the top of a mound thirty feet high in the middle of a marsh. It is accessible on one side only. The water bubbles up and escapes through a number of openings at the base of the mound, the circumference of which appears to be about sixty feet. The waters at the base are of different temperatures: hot, lukewarm, and cold, though but a few steps distant from each other. Some are indeed, so hot that meat may be boiled in them. We actually tried the experiment.[14]

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C. GOLD DISCOVERY AND PLACER MINING ACTIVITIES

The gold placering operations of the Upper Clark Fork drainage were never major producers. Rather, their significance lies in the fact that they included the first discovery of gold in Montana, attracting to the area the prospectors who later made the major finds at Bannack, Virginia City and Helena. Gold placering on the Upper Clark Fork also led to the discovery of the rich silver and copper veins which played such an important part in the state's later history. Although nearly every stream in the drainage was prospected during the 1860's, the most successful diggings were those located at Gold Creek, Butte, the Little Blackfoot River and Bearmouth.

Gold Creek

In 1852, Francois Finlay, a Red River Metis also known as Benetsee, found gold nuggets in a small tributary of the Clark Fork River above Flint Creek. Although his discovery was common knowledge among the former trappers in the area, no attempt was made to pursue the gold in the stream. During the winter of 1857-58, two brothers, James and Granville Stuart, and their friend Reece Anderson, wintered with a cattle drover in the Beaverhead Valley. The three men heard rumors of Benetsee's discovery in the Clark Fork country and decided to investigate before heading home to Iowa. After prospecting the creek (then called American Fork) in the spring of 1858, they found sufficient "color" to convince them that the find was worth pursuing. They left the territory temporarily in search of mining equipment and supplies, returning in September 1860. They located their claims and commenced mining.[1] At first the creek yielded only $3.00 per hundred panfuls, but by autumn 1861, a modest quartz lode had been located. The lode was worked with a waterwheel running some sort of crusher adapted from wagon wheels.[2] Within two years, a considerable number of miners had been attracted to the settlement on American Fork and the site was soon renamed Gold Creek.

Since the mining frontier had moved ahead of federal authority, miners often had to improvise when it came to law and law enforcement. It usually fell to the democratic "miners' courts" to mete out justice in the gold camps. Like most placer camps, Gold Creek attracted its share of criminals. Many of the men who were later hanged at Bannack and Virginia City were briefly among the early prospectors at Gold Creek.

In fact, Gold Creek was the site of the first miners' court and the first execution in Montana. In July 1862, the miners' court was first convened to try an old Frenchman who had stolen horses and equipment from Gold Creek settlers. Although the Frenchman was clearly guilty, he "expressed repentance so profound that the regulation penalty for horse-stealing was not enforced." The court gave the old man twelve hours to leave the area, but taking into account his old age and poverty, the court subscribes $15 to give him a start, and the miners added a gift of provisions to help him on his way.[3] The court was not nearly so lenient with three other horse-thieves who drifted into the camp a month later. Granville Stuart recorded in his diary that two of the three surrendered without a fight, but that the third, William Arnett, was shot as he sat at a card-game in the saloon. The miners' court met the next morning to decide the fate of his associates. Wrote Stuart, "Proceedings commenced by burying Arnett who had died with the monte cards clenched so tightly in his left hand and his revolved in the right that they could not be wrenched from his grasp, so were buried with him." The remaining two thieves were tried. B.F. Jermagin was acquitted and given six hours to leave the country. (Stuart wrote "...he left a little ahead of time.") The remaining culprit, C.W. Spillman, was sentenced to hang. The sentence was carried out within a half-hour of the court's decision. Spillman was buried next to Arnett in an unmarked grave in the river bottom. The distinction of being the site of Montana's first execution caused Gold Creek to be recorded as "Hangtown" on some of the earlier maps of the territory.[4]

In 1863 the rich strikes at Bannack and Virginia City caused a "stampede" from the mines on Gold Creek to the Beaverhead. By 1864, relatively few men remained to work the Gold Creek diggings. Those who remained continued to prospect the neighboring gulches and new claims were established on upstream tributaries of Gold Creek: Pioneer (1862), Pike's Peak Gulch (1863) and French Gulch (1864). The expansion of placer operations meant an increased demand for water to work the diggings. In this respect, Gold Creek was typical of placer camps throughout the West: the problem of obtaining water and the expense of building ditches and flumes led to the organization of independent water companies and the eventual involvement of wealthy capitalists in the water business.[5] In July 1863, Granville Stuart

recorded in his journal the beginning of a plan to bring additional water to the diggings.

> Reese and I went up to the upper sink of the stream in Pike's Peak Gulch to see if we can bring the stream on down past the sink in a ditch....This water is much needed for the new placer discoveries in Pike's Peak Gulch. We think it practicable to bring the water from just above the sink around in a ditch, but the cost will be great.[6]

By 1865, two small ditches had been completed to Pike's Peak and one to French Gulch. In the spring of 1866, a company made up of Thomas Stuart and companions constructed the Pioneer ditch, and George Carruthers completed another ditch and a small sawmill there. Still another company brought in the Enterprise ditch from Gold Creek, used on the upper end of Pioneer, and the Willow Creek Ditch was built to work diggings between Willow Creek and Pike's Peak Gulch and on Independence Gulch.[7]

Because of the continuing placer activity in the area in 1866, Conrad Kohrs decided to invest in ditch projects. He stated in his autobiography that his interest in the water business began when "several friends convinced me it would pay to bring in a ditch from Rock Creek."[8] In May 1867, Kohrs and five others organized a company and located a water right of 3,000 inches on Rock Creek, only to discover that the Willow Creek ditch owners also held a water right on Rock Creek. "There not being enough water in the low season of the year to supply two ditches, we bought out the company, not only in Rock Creek but also in the Willow Creek ditches and mines," wrote Kohrs. The Rock Creek ditch proved to be a monumental undertaking. The ditch was "five feet in the bottom, three feet deep and seven feet on top." The terrain required considerable fluming. Lacking a sawmill, the Kohrs crew had to saw all the lumber by hand with a whipsaw. Large formations of rock necessitated blasting and hand-chiseling. After spending $100,000 on the project, the investors resorted to issuing scrip in order to complete the project. Scrip was issued at the rate of 25¢ per inch, the scrip having the first right to the sale of water. The combination of a poor water season in 1869 and new discoveries at Yam Hill created a great demand for the Rock Creek water. Water sold four times: the first user paid 25¢ per inch, the second user paid 15¢, the third user, 10¢ and the fourth user usually paid 5¢ an inch. The investors were able to redeem all their scrip and improve the ditch. In the fall of 1869, they began construction of a dam at Rock Creek Lake. 1870 and 1871 were also good years, with profits amounting to nearly $50,000 a year.[9] Thus, even with the high initial cost of the venture, the project proved highly profitable. Kohrs continued

in the water business for many years.

The steady increase in water requirements around Gold Creek might seem contradictory to the waning mining profits of the camp. However, as the Gold Creek placers faded in the 1860's, more and more gold miners turned to hydraulic mining. Called by some "the ultimate form of placering," it involved the use of high pressure hoses to wash away whole stream banks and beds.[10] As mining historian Otis Young observed,

> Hydraulic mining dealt effectively with remarkable quantities of low grade gravels, but had the drawback of putting into circulation vast tonnage of slickens, or sluice tailings. The easiest and cheapest way of disposing of this effluvium was to drain it into the nearest major watercourse.[11]

"The nearest major watercourse" was, in this case, the Clark Fork River and the effects of "hydraulicking" were soon readily apparent. James A. Garfield (later a U.S. president) traveled down the Clark Fork in 1872 and he wrote in his diary that

> The beautiful river has been permanently ruined by the miners; and has been for three years as muddy as the Missouri. Before the discovery of gold, it was as clear and pure as any mountain stream could well be.[12]

An 1883 history of the Norther Pacific Railroad listed among the problems faced by the railroad's engineers

> the management of Gold Creek, the pioneer placer mining stream of Montana, on which considerable hydraulic mining is still done and which carries down to its mouth large quantities of "tailings". The mouth of the stream was narrowed by two dikes, so as to be easily crossed by a short bridge.13

Around the turn of the century, a floating dredge was introduced at Pioneer and it operated profitably into thel930's. Its effects on the stream may be estimated from Otis Young's description of a dredging operations.

> As the dredge advanced, the pond advanced with it, excavated in front with the bucket line and infilled behind with the spoil of the work. Across this filled ground utter desolation prevailed. The silts discharged off the stern from the gold-saving equipment, settled first to the bottom of the pond. The cobbles and oversize were then dropped on top of this silt bank by the stacker. The result was a vast reach of irregular, shingly wasteland which was unfit for any purpose...[14]

Butte/Silver Bow Placers

Following the initial discoveries at Gold Creek, prospectors fanned out along the streams throughout southwestern Montana. In the summer of 1864, G.O. Humphreys and William Allison examined the hillsides above Silver Bow Creek at the headwaters of the Clark Fork. The creek was named for the appearance of the sun on the water as it wound around the base of a hill. The name proved to be prophetic. Humphreys and Allison found enough gold in the area to attract other miners and by the fall of 1864, two mining districts had been organized at Butte and Summit Mountain. A third district, Independence, was established the following year. As in Gold Creek, the lack of water was a major obstacle to mining. During 1865-66, several ditches were built to bring water to the mining claims, including one ditch which brought water over the Continental Divide. A.K. McClure, correspondent for the prestigious Engineering and Mining Journal visited the Deer Lodge-Silver Bow area in 1867 and left this description of the Silver Bow Creek placering:

> For about twenty-five miles the road follows Deer Lodge River, crossing numerous clear mountain streams which enter it from the west, and traversing the most beautiful valley I have ever found in the territory. Its altitude is greater than that of the Gallatin or the Jefferson, and agriculture is not as generally prosecuted, but the largest herds of the finest cattle dot the prairie in every direction. No sign of mining is seen on the route until Silver Bow Creek is reached, when the murky waters tell that it is employed to aid the miners to produce precious metals. The creek winds off from the road through a short canon to the city of Silver Bow...as I passed up the last hill of the range, I found placer mines being worked.... A creek, that rises in a bluff south of the road on the mountain top, has been turned from the eastern seas to wash the placers of the Pacific slope and then find its way to the ocean with the setting sun. It is carried in a ditch for some six miles, where it gurgles through the sluices, and lodges the gold in various traps, as it carries with it the earth shorn of its precious deposits.[16]

By the 1870's, interest in the Butte placers waned, leaving the area's real wealth, silver and copper ore, locked within the rock, awaiting the coming of railroads, heavy equipment and capital investment.

Little Blackfoot and Bearmouth Mines

In January 1865, discovery of rich deposits of gold-bearing gravel touched of a gold rush to the area around Ophir, Carpenter and Snowshoe Gulches above the Little Blackfoot River. Initially the lack of water

for sluicing hindered production, but the construction of two ditches later in 1865 allowed the placer operations to flourish. By 1868, over 1,200 men were working in the area around Blackfoot City.[17] The boom on Carpenter's Bar was relatively short-lived, however, as observed by A.K. McClure in 1867.

> Carpenter's Bar with its hundred acres or more, washed down by hydraulics, and a gulch turned over for miles, with a little town crowded along the narrow passage on one side, gave evidences that the main harvest of gold had been gathered and that but few of the less fortunate operators remained.[18]

Ophir, like Pioneer on Gold Creek, was later worked by a dredge after the 1900s.

In 1865 , rich but narrow gold deposits were discovered at the mouth of Bear Gulch, about twenty miles downstream from Gold Creek. Camps grew at Beartown and Garnet. Although the initial boom passed within a few short years, the diggings at Bear Gulch were worked by hydraulics into the 1880's, with the usual effects on waters downstream. The 1886 Northern Pacific Railroad guidebook described the Clark Fork below Bearmouth this way:

> The stream itself is deep and swift, quite clear also, except where it receives the murky waters of its many tributaries which later in summer are always coffee-colored from the labors of the gold washers in the mountains.[19]

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D. TRANSPORTATION IN THE UPPER CLARK FORK DRAINAGE

As mining began to boom in Montana, transportation routes quickly evolved to connect the gold camps with the "outside world." These routes generally followed trails worn by Indians and trappers, and if they were "improved" at all, it was only through frequent use. The Upper Clark Fork continued to provide an important passage through the mountains, first for the Mullan Road in 1853, and later for the Northern Pacific Railroad (1883) and the Chicago, Milwaukee and St. Paul Railway (1908).

The Mullan Road

Montana's first improved road was largely a result of plans for a transcontinental railroad. In 1853, Isaac I. Stevens led an expedition westward to survey a potential route for a railroad connecting the Midwest with the Pacific Northwest. Among the military personnel on the expedition was Lt. John Mullan. His experiences with the expedition as it explored the intricate drainages of the Northern Rockies convinced him that a good wagon road could be built connecting Ft. Benton, the uppermost navigable point on the Missouri River, with Wall Walla, its counterpart on the Columbia. Stevens supported Mullan's plan and Congress passed the road construction measure in 1857. Construction began in 1859 in eastern Washington under Mullan's direction. By the summer of 1860, Mullan had pushed his road into western Montana, up the Clark Fork and Little Blackfoot Rivers to the Prickly Pear Valley (present-day Helena), reaching Ft. Benton on August 1, 1860. This rapid progress was partially due to the fact that little grading was necessary along the Upper Clark Fork. But in order to avoid grading around the river's bluffs, the road made many crossings of the river's meanders.[1] Mullan was not optimistic about the potential use of the river for transportation. The Clark Fork, he said, "enjoys special advantages for rafting purposes, and though here and there are stretches suited to stream navigation, yet, broken as it is in length by fall and rapids, precludes the possibility of its ever being used for such purposes."[2]

Although the Mullan Road never became a major wagon road because of its rocky, narrow and frequently washed-out mountain crossings, it did provide an important link between the trade center of Ft. Benton and Montana's gold mining communities. Territorial merchants like Frank L. Worden and

C.P. Higgins dealt with the road's rougher aspects by continuing to haul goods by packstring. One enterprising packer actually experimented with camels. According to Granville Stuart, six of the animals were brought from Arizona in 1864 for the purpose of starting a packtrain from Virginia City to Ft. Benton. Recalled Stuart:

> The claim was made that the dromedaries could travel much faster, carry a greater load and that as the Indians were afraid of them, the trains would escape raids from the aborigines....as the strange animals frightened every horse that came in sight of them, causing serious runaways, the owner was ordered to take them out of town.[3]

The Ft. Benton-Helena-Deer Lodge-Missoula stretch of the Mullan Road did become the well-traveled but still rugged stage route connecting those towns, with Deer Lodge being the junction between that route and the roads to the other mining camps to the south. From Deer Lodge to Missoula, the road forded the river seven times and crossed twice on bridges. As one passenger remembered it, fording the Clark Fork by stage was anything but pleasant.

> Though clear as crystal it was deep and swift and when the leaders of our four-horse team reluctantly made the leap down the bank it always sent creepers up my spine. The water grew deeper at every crossing from the many lateral feeders of canyon springs, and my breath stopped and choked just a little higher in the throat as if it helped the horses drag the burden ofer the rocky river bed.[4]

Adding to the discomfort of the journey was the fact that the Deer Lodge to Missoula journey was often made at nighttime. Other hazards presented themselves as well. One stagedriver, exclaiming "that damn thing ahead of us is a bear!" told his passengers to ready their guns as he lashed the team into pursuit of the bruin. (Fortunately for the bear, he beat the stage to the river crossing and escaped.)[5]

The Railroads

As rugged as travel by packtrain, freight-wagon and stagecoach was, it was western Montana's primary means of transportation until the early 1880's, when railroads finally reached the region. In 1881, the Utah and Northern connected Butte with the transcontinental Union Pacific in Utah. Two years later, the Northern Pacific completed its transcontinental line with a gala spike-driving ceremony near Gold Creek. The celebration was attended by five trainloads of celebrities, including former President U.S. Grant. A telegraph key recorded the blows which drove the ceremonial

spike.[6] From Deer Lodge to Missoula, the NPRR followed the course of the Upper Clark Fork . The river's meanders and often narrow drainage posed a challenge to railroad engineers. Between the Little Blackfoot River and Missoula, the Clark Fork was bridged in ten places, requiring spans as long as 440 feet. Originally these bridges were wooden structures, resting on plank cribs filled with stone. Later they were replaced with iron girders.[7] At two points between Garrison and Missoula, new channels were cut to straighten the river bed, while dikes of piles, brush and rocks were thrown across the old channel.[8] The mouth of Gold Creek was narrowed by dikes and bridged.[9]

Completion of the Utah and Northern and Northern Pacific Railroads were crucial to Montana's mining industry. The heavy industrial mining equipment necessary for the development of hard-rock ore deposits were made accessible to Montana's mine operators, with the result that mining enjoyed unprecedented success in the 1880s and 1890s.

In 1908, a second transcontinental railroad was completed near Gold Creek. The Chicago, Milwaukee and St. Paul Railway was seen as a challenger to the powerful Northern Pacific, particularly by farmers who hoped that competition would work to their advantage. Like the Northern Pacific, the Milwaukee followed the course of the Clark Fork through its drainage to Missoula. Once again, tunnels were blasted and channels changed to make room along the river for a railroad. No sooner was the Milwaukee line completed, however, when the Clark Fork's great 1908 flood wiped out nearly 75 miles of newly laid track.[10] The Northern Pacific also lost a considerable part of its new double track and roadbed, and many of its bridges.[11]

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E. HARD ROCK MINING ON THE UPPER CLARK FORK

Completion of the railroad made heavy industrial mining equipment accessible to the mine operators of western Montana. Before railroad service, Montana's mines were mostly placer/hydraulic operations, requiring relatively little heavy equipment. By the 1870's, the easily mined placer deposits had played out. Potentially richer quartz deposits of gold and silver were embedded in rock, requiring stamping mills and smelters to extract it, as well as a means of shipping large quantities of ore.

Silver Mining

Although there had been some crude processing of gold ore in the 1860's, it was not until the early 1870's that miners paid much attention to silver deposits. Silver ore was not only less valuable than gold, it was more difficult to treat, requiring a variety of chemical processes. In addition, skilled hard rock miners and investors willing to back expensive ore reduction plants were difficult to find on the frontier.[1] In spite of these problems, a few silver promoters attempted to develop Montana's silver deposits, but, like Samuel T. Hauser of Helena, they found it difficult and costly. In 1866, Hauser helped organize a company to develop silver properties near Argenta, but that effort failed. He turned his attention to silver deposits on Flint Creek, a tributary of the Clark Fork. Hauser hired the renowned mining expert Philip Deidesheimer, inventor of square-set timbering. Deidesheimer supervised the purchase of claims and the construction of a mill. The town which grew up around the silver properties was named Philipsburg, after Deidesheimer. When the veins failed to pay up to expectations, the operation was shut down in 1868. Philipsburg was nearly abandoned during the 1870's.[2]

Another factor which affected the development of silver deposits in Montana was the Panic of 1873. A nationwide depression, it made outside investment even harder to obtain, and brought railroad construction to a standstill. Only when the depression eased in 1875-76 did Montana's mining industry revive with old operations reopened and new deposits developed. One of the revitalized silver camps was Butte, which began in 1864 as a placer gold camp. It enjoyed only limited success, and its

placers faded rapidly after 1867. In 1874, profitable development of Butte's silver began with William A. Clark's acquisition of the Travona-Dexter mining properties and the purchase of the Alice Mine by Utah bankers, represented by Marcus Daly.

However, it was the long-awaited arrival of rail service in Montana which touched off a silver boom. Mine operators could now ship their ores to smelters and reduction works. Montana's silver became a major factor in the national market, within three years becoming the second largest U.S. silver supplier. Nowhere was the rebirth of Montana's mining industry more apparent than in the mountains around Philipsburg, where dozens of silver camps sprang up in the early 1880s. Over the next twenty years the mines of the Philipsburg district alone yielded nearly $30,000,000, much of it from the Granite Mountain Mine. At its peak, this mine may well have been the world's greatest silver mine.[3] The silver boom peaked in 1890, with silver prices supported by a government silver purchase plan (the Sherman Silver Purchase Act). When the Act was repealed, the silver boom collapsed overnight. So suddenly did the bottom drop out of the silver market, that a mass exodus occurred from many silver camps. As many as 3,000 people left the Granite-Philipsburg area within 24 hours.[4] The steam whistle at Granite was tied down and left to blow itself out--"the sound of a town dying."[5] Throughout the Flint Creek mining districts,mines, buildings and equipment were abandoned to become the fascinating ghost towns of a later day. But lingering on the hills around these ghosttowns and along the streams of the Upper Clark Fork drainage were other remnants of the silver boom: mine tailings and smelter slag, laced with heavy metals and the toxic by-products of chemical processing of ore.[6]

Although some of these silver camps, like Granite, Red Lion and Southern Cross were periodically revived, silver, like gold and other metals after 1893, came to be mostly a by-product of large-scale copper mining at Butte.[7]

Copper Mining

The history of copper development at Butte and its widespread economic and political impacts is well-known. In the 1870's, the silver mines at Butte yielded rich copper deposits. At first this development was of little interest to miners, for copper was not particularly valuable. However,

with the invention of the electric light and the telephone, copper became a source of tremendous wealth for those who, like William A. CLark and Marcus Daly, had been shrewd enough to invest in the copper deposits. Like silver, copper development had been hindered by the lack of rail transportation and outside capital, in spite of a growing world demand for copper. By 1882, these problems had been resolved, and copper mining was flourishing in Butte. By 1883, the copper industry had outgrown its water supply at Butte. Marcus Daly planned a huge ore reduction and smelter plant to process the ore from him mines. Such an installation would require massive quantities of water, unavailable in Butte.[8] Daly selected a site on Warm Springs Creek where water was plentiful. The original Washoe smelter and reduction facility was completed in 1884, with an additional smelter added in 1887 to handle the rapidly increasing ore production of the Butte mines. W.A. Clark had also constructed a reduction works to process his ore on Silver Bow Creek in 1886.[9] For nearly the next century, Silver Bow Creek and Warm Springs Creek carried wastes from these and other sources into the waters of the Clark Fork River. Among the additional sources of contamination that flowed into the river from the 1880's on, were wastes from a timber treatment works, packing plants and raw sewage.[10] The result was that the Clark Fork River of succeeding years bore little resemblance to the river described by Warren Ferris, Granville Stuart and other early settlers and travelers in the Upper Clark Fork drainage. By the 1950's few fish, if any, were caught above Garrison. In the 1950's, 1960's and early 1970's, the river occasionally ran red with metals pollution, sometimes as far downstream as Missoula. Much of the river's headwaters were declared "a biological desert."[11]

Phosphate Mining

Much of the Upper Clark Fork drainage contains a phosphate formation which has been mined in several locations. The phosphate beds were first noticed in 1911 by J.T. Pardee of the U.S. Geological Survey while examining lands granted to the Northern Pacific Railroad. Since that time, phosphate has been mined at Elliston, Garrison and Phosphate.[12]

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F. TIMBER HARVEST AND COMMERCE

The coming of the railroads and the hard-rock mining booms of the 1880's gave birth to large-scale commercial lumbering in Montana. The mines and smelters at Butte and Philipsburg, and the Northern Pacific Railroad nearing completion at Gold Creek created a tremendous demand for the timber of the Upper Clark Fork's forests. Much of the logging was done along the Big Blackfoot River, with the logs floated downstream to the sawmills on the Clark Fork. However, there were other major logging sites in the Upper Clark Fork, most notably the Anaconda Company operations at Elliston on the Little Blackfoot, and at Mill Creek near Anaconda.

The Montana Improvement Company

In August 1881, the Northern Pacific Railroad awarded a lumber contract to a Missoula firm, Eddy, Hammond and Company, to provide "everything but the steel" for 175 miles of railroad construction between the Little Blackfoot River and Thompson Falls. The company immediately began construction of sawmills at Bonita and Clinton on the Clark Fork River. By September 1881, crews were felling 200 trees per day for bridges, ties and pilings, an intensive logging effort that continued for the next two years.[1] In August 1882, Hammond and his associates joined with Marcus Daly to form the Montana Improvement Company.[2] While Eddy, Hammond and Company continued to fill their contract for Northern Pacific construction, the new firm was primarily concerned with providing lumber, timbers and fuel to Montana's mining industry. A major backer of this company was the Northern Pacific Railroad which, as a result of its land grants, was the biggest forest owner in the territory. The Northern Pacific signed a 20-year contract with the Montana Improvement Company to supply all the lumber used by the railroad between Miles City, Montana and Walla Walla. In addition, the railroad granted huge rebates to the MIC for everything it shipped on the Northern Pacific.[3] By June 1883, the Montana Improvement Company had seven sawmills operating along the railroad's route and was planning an eighth near the confluence of the Blackfoot and Clark Fork Rivers. This mill, and a dam which held logs driven down the Blackfoot, were completed in 1886. By 1889 it was the largest mill in the territory, shipping 80,000 feet of lumber per day to the Anaconda mining and smelting operations in Butte.[4]

The massive scale of the logging activities along the Clark Fork in the 1880's depleted the timber stands closest to the mills. Logging operations were extended farther upstream, which occasionally brought competing lumber interests into conflict with the Hammond/Montana Improvement Company interests. One such occasion occurred in 1886 when a Hammond timber reserve at Cramer Gulch (about 3 miles from Bonita) was invaded by a rival Butte lumberman, Bill Thompson. The Hammond crews had prepared the gulch for logging, complete with roads and bridges. Thompson's crew of fifty French-Canadian loggers entered the gulch and proceeded to cut and brand Hammond's timber at will. The resulting clashes between rival logging crews threatened to result in serious bloodshed until a compromise was reached between the Hammond and Thompson overseers. Each outfit was to log whatever timber it could in the gulch, without interference from the other side. The so-called "Cramer Gulch War" became a logging contest, and Arthur Stone observed that "there were few gulches in Montana which were stripped of their timber faster than was Cramer Gulch that winter." [5]

In 1889, the Montana Improvement Company underwent a series of reorganizations, allegedly to avoid government prosecution for massive illegal cutting of timber on public lands. (The court cases dragged on for years, but were finally decided in favor of the lumbermen.) The Improvement Company eventually became the Big Blackfoot Milling Company, and in 1898, the company sold its Bonner mill, dam, land and timber to the Anaconda Copper Mining Company which had entered the lumber business directly to satisfy the vast needs of its mining and smelting operations.[6]

Anaconda Copper Mining's Logging Camps

Most of the ACM's logging was done on the Blackfoot, Clark Fork and Bitterroot drainages. Of the many ACM logging operations on the Upper Clark Fork, two of the largest were the Elliston camp and the camps on Mill Creek above Anaconda.

Between 1890-1895, ACM loggers on Telegraph Creek above Elliston flumed 40,000 to 50,000 cords of wood per year for smelter fuel. The Telegraph Creek flume was 30 feet high and stretched for 8 miles. Timber was deposited on the flat above Elliston, then hauled by rail to the smelter at an average of 25 cars per day. At peak times, there were over 100 cutters working the woods, with another 100 teamsters, loaders, etc. employed.[7]

The ACM Mill Creek operation involved a 15-mile long flume which brought water from the Big Hole drainage over into the Clark Fork drainage. Local

sources claim that loggers occasionally rode the entire length of the flume when in a hurry to reach Anaconda on payday. From Mill Creek, the Butte, Anaconda and Pacific Railroad carried 20 cars of wood per day to the smelter and mines. After the Mill Creek operation closed down sometime prior to 1920, logging activity shifted to Georgetown Lake. On the lake, log booms were towed by a stream tug, the "Miss Anaconda", and the tug's cargo barge occasionally doubled as a dance-floor on Saturday night.[8]

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G. MILLTOWN AND FLINT CREEK DAMS

Milltown Dam

The Milltown Hydroelectric Development, sometimes called the Bonner Development, is located just below the confluence of the Clark Fork and Big Blackfoot Rivers. This development grew out of an earlier power system at the Blackfoot Milling and Manufacturing sawmill, owned by A.B. Hammond. Electric lighting for the mill was provided by water power from a low timber dam on the Blackfoot next to the mill. Around 1890-1895, the mill power plant also provided addtional electricity to the Missoula power system.[1]

In 1904, W.A. Clark, who planned to construct a dam and generating plant on the Clark Fork River, bought the Blackfoot system from A.B. HAmmond. On December 11, 1904 A.H. Wethey, acting for the Clark interests, made an appropriation of the waters of the Blackfoot River to the extent of 12,000 cfs. On September 21, 1905, Wethey also made an appropriation of Clark Fork waters to the extent of 24,000 cfs.[2] Twenty acres of land surrounding the confluence of the two rivers was purchased in January 1905, and construction began in the spring of that year.

The dam itself consisted of three sections. The north section was a rock-filled timber crib bulkhead. The middle section was solid reinforced concrete, forming the upstream wall of the power house. The south section, extending across the river channel, was a rock-filled timber crib, faced with several layers of heavy plank. Designed with removable flash boards on the crest, this served as the spillway during high flows.[3] Capacity of the generating station upon its completion in 1906 was 3,400 megawatts.

A flood of major proportions threatened the dam in June 1908. The river poured so freely over the top of the northern section that the downstream water level flooded the powerhouse to a depth of over six feet, submerging the generators. To protect the dam against the force of the floodwaters, a section of the spillway was dynamited. Flood waters released through this gap destroyed nearly a quarter of the spillway section and washed out ten feet of the dam's downstream toe.[4]

Following flood repairs, the dam continued to operate as before until 1920 when additional modifications were made. A part of the spillway section near the powerhouse was replaced with a reinforced concrete section designed for the installation of four gates, each nine feet wide and fourteen

feet high. The gates were operated by electric hoists, greatly increasing the dam's capacity to release floodwaters.

In 1929 the dam, power plant and water rights were acquired by the Montana Power Company.[5] In 1930, the northern rock-filled timber bulkhead was replaced by a reinforced concrete gravity dam section. Since that time additional improvements have included a reinforced concrete "toe" mat under the spillway apron and a concrete slab on the dam crest together with steel piling driven to bedrock and filled with concrete on the upstream face of the spillway. The dam's generating capacity in 1976 was 3,000 kilowatts.[6]

Flint Creek Dam

Located on Flint Creek eight miles south of Philipsburg, the Flint Creek Hydroelectric Development was originally constructed by the Granite Bi-Metallic Mining Company to provide power for its mining and milling operations. Necessary water rights for the operation were acquired from many individuals who had made appropriations between 1887-1899. The original dam and power plant were constructed in 1901 with a power generating capacity of 1,100 kilowatts. The dam was narrow, wide enough only for a horse and rider to cross it. The dam spillway channeled water into a round wooden flume, five feet in diameter, built of cedar staves encircled by iron banding. The flume, which contains the headwaters of Flint Creek, was built over trestles and through a rock-hewn tunnel, emptying into a 200,000-gallon surge tank above the powerhouse. Part of the original Bi-Metallic structure, the flume is still in existence.[7] The dam and water rights were acquired by Montana Power in 1935. In the same year the present wide dam and roadway were completed. The dam is a solid masonry structure approximately 40 feet high and 250 feet long, forming a storage reservoir (Georgetown Lake) with a capacity of approximately 30,000 acre feet.[8]

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H. CATTLE/AGRICULTURE/WATER RIGHTS

Cattle

Many of the early travelers along the Upper Clark Fork repeatedly mentioned the fine pastures found in the drainage, particularly in the Flint Creek-Deer Lodge Valley area. The grass accounted for the presence of large herds of deer, elk, and antelope and smaller numbers of buffalo in the area. As white men moved into the region, it was only a matter of time before the range was used to support domestic livestock.

A few humdred miles to the south, settlers were moving westward along the Oregon Trail, a massive migration begun in 1843. By the time the emigrants reached southwestern Wyoming and southeastern Idaho, their cattle and oxen were badly trailworn; many animals had to be abandoned on the trail. Former Hudson's Bay Company trader Captain Richard Grant saw an opportunity for profit in these animals. In 1850 Grant and his two sons Johnny and James began rounding up strays and trading for worn-out stock. They then drove the cattle northward into Montana to winter on the grass of the Beaverhead and Deer Lodge Valleys. The following spring they returned the herd to the Oregon Trail where they traded one fresh animal for two trail weary ones. In this way, the Grants soon built up a sizeable herd, and they were joined by other pioneer stockmen in 1856. This group included Robert Dempsey, for whom Dempsey Creek and Lake were named; John M. Jacobs, later a partner of John Bozeman; J.W. Powell, for whom the county and its prominent peak were named; Robert Hereford; and Jacob Meek. These men wintered a herd of 600 cattle and horses in the Beaverhead Valley that year. In late summer 1857, Jacob Meek was returning with another herd from the Oregon Trail when he met three disappointed goldseekers returning from California. James and Granville Stuart and Reece Anderson were going home to Iowa when the Mormon Uprising closed the road through Utah, stranding them. Meek invited them to winter in the Beaverhead, so the Stuarts and Anderson accompanied him into Montana. There they spent the winter with the stockmen, living in elkskin lodges and trading with the Bannock Indians while the cattle "fattened on grasses without shelter other than that afforded by willows, alders and tall rye grass along the streams."[1]

In March 1858, Jacobs took a herd to the Upper Clark Fork drainage. The Stuarts found him camped with his Indian family on Flint Creek in April. After a somewhat lean winter in the Beaverhead, they were impressed with the

abundant game in the Deer Lodge Valley. Said Stuart, "Here we luxuriated on milk and wild game. Jacobs had broken several cows to milk."[2] When the Stuarts and Anderson returned to mine in the area in 1860, they brought sixty head of cattle and a small herd of horses. Captain Grant also moved into the valley that year, settling at the mouth of the Little Blackfoot. Johnny Grant established a ranch near present-day Deer Lodge, and Robert Hereford arrived with 75 head of cattle. By the mid-sixties there were hundreds of cattle in the valleys of the Upper Clark Fork.

These early stockmen usually located their ranches in sheltered, well-watered drainages, near wild hay meadows for horse pasture, and their animals usually wintered easily. In January of 1862, however, Granville Stuart reported that

> The river is frozen over solid for miles, not a single air-hole anywhere and many of the cattle are walking up and down on the ice seeking water.[3]

When relief from the freeze came, it was too much of a good thing:

> The latter part of March a Chinook struck the country and in less than twenty-four hours the ice was breaking up in the streams, all the creeks and river were out of their banks. There were snow slides on all the steep mountains. It was impossible to travel any distance. The smallest creek became a raging torrent. There were so few settlers in the country that there was not much loss from the floods. There was a big ice gorge on the river above Bold Creek and the water and ice covered all of the river bottom below there. Cakes of ice scattered over the bottoms and laid there until June before they melted.[4]

Stuart's journal also mentions an unusual stockgrowing scheme attempted in 1861 by an ambitious group from Gold Creek:

> Jackson, Dempsey's friend, Oliver LeClaire, Tolman and Oliver left for a hunt up Flint Creek. They took several milk cows intending to catch young moose calves and have them suck the cows until they are old enough to eat grass and willow twigs. I do not believe they will catch moose calves enough to start and big herd.[5]

In 1862-63 several wagon trains with small cattle herds passed through the Deer Lodge-Flint Creek area, bound for the gold strikes at Bannack and Virginia City. William Dibb, an emigrant with one of the trains, recorded what he saw:

> The 'Deer Lodge Valley' is splendid for grazing cattle. One man 'Johnny Grant" has 3 or 4,000 head, besides horses and mules - he does not winter feed, but lets them graze thro' the winter - and we never saw larger, better or fatter cattle anywhere than he had.[6]

Many of the other travelers agreed, and settled down with their herds along the Clark Fork instead of going on the the gold camps.[7]

Granville Stuart, however, felt that there was more money to be made at Bannack, but not by mining. In the winter of 1862, the Stuarts operated a butcher shop in the mining camp, knowing that there were more certain profits in business than in prospecting. Although the Stuarts gave up their shop in Bannack after one winter, another prospector-turned-businessman fared considerably better. Conrad Kohrs started with a single butchershop in Bannack and by 1865 owned a string of meat markets throughout Montana's mining camps. That year Kohrs bought Johnny Grant's ranch and 600 head of cattle. Within a few years he had the largest cattle holdings in the Northwest. Kohrs had first visited the Deer Lodge Valley in the early '60s, and his reaction was entirely favorable.

> It (the Deer Lodge River) was a beautiful stream, the water clear and sparkling and alive with the finest trout, and the same was true of every stream we crossed. The valley was full of antelope and many herds of fat cattle belonging to the mountaineers who lived there.[8]

By the middle '60s, there were many prosperous cattle ranchers in the Deer Lodge Valley. In 1867, A.K. McClure traveled twenty-five miles up the river from the Little Blackfoot and reported the "...the largest herds of the finest cattle dot the prairie in every direction."[9] The cattle business was now important enough that the territorial legislature enacted the first of many livestock laws, an act requiring the branding of cattle.

1870 saw the cattle industry undergo several important changes. Until that time, cattle ranching had been confined to the mountain valleys, where the beef was supplied to relatively local markets - mining camps, emigrant trains, Indian reservations and military outposts. Both the rise of beef production and the decline of the gold boom led to a surplus and lower prices. Ranchers sought other, more distant markets, resulting in long cattle drives to railheads in Wyoming. The mountain valley ranges were also overcrowded and overgrazed by the early 1870's. Cattle ranchers faced

increasing competition from farmers and dairymen. As a result, stockmen like Conrad Kohrs began moving their herds north and east onto the plains around the Sun River and Judith Basin. The first introduction of purebred cattle also occurred in 1870. 450 Durham heifers and 5 bulls were brought into the Deer Lodge Valley by L.E. Graham and J.B. Taylor.[10]

The 1870's and early 1880's were boom years for the cattle industry. The Deer Lodge Valley still supported large herds, but the business now centered on the vast ranges east of the mountains. A few cattle ranchers like Conrad Kohrs maintained their home ranches in the Deer Lodge Valley, while others, including Granville Stuart and Reece Anderson, moved onto the plains.

The boom ended disastrously in 1886-1887, when a combination of weather, overstocked ranges and depressed markets destroyed the open range cattle industry. Conrad Kohrs suffered losses possibly as high as 90%, but managed to recover. As the cattle business rebuilt, ranchers returned to smaller scale, more diversified operations similar to those of the 1860s.

Within the Upper Clark Fork drainage another disaster awaited stockmen in the late 1880's and early 1890's. Livestock of all types began dying. The symptoms - bleeding from the nose and mouth, staggering, followed by death - indicated arsenic poisoning. Airborne emissions from the Anaconda smelter had contaminated pastureland as far north as Garrison. Some of the biggest ranchers in the state lost stock, including Kohrs, N.J. Bielenberg, and Conley & McTeague. The Company denied any responsibility for the stock losses, saying that no connection between the smelter and livestock deaths could be proved. The court battle dragged on for years, with most of the ranchers settling out of court, forced to grant the Company smoke easements on their land as a condition of settlement. Construction of a new smelter and reduction works in the 1900's largely alleviated the problem.[11]

The early years of the 20th century were fairly prosperous for the cattle ranchers of the Upper Clark Fork, although they were affected by severe droughts in the 1920's and again in the 1930's. Overgrazing during the latter dry spell permanently damaged winter range in the Upper Clark Fork Drainage, resulting in a rapid decline of wildlife well into the 1940's.[12]

Agriculture

Agriculture in the Upper Clark Fork Drainage originated in connection with the gold-mining activities in the early 1860's. Early settlers depended upon wild game, cattle and fish for much of their diet. Additional foodstuffs had to be brought at great expense by packtrain or wagon from Salt Lake City, some 500 miles away. The completion of the Mullan Road made Fort Benton an important supply point for the gold camps, but the costs involved remained high.

Because of the time and expense involved in bringing provisions to the camps, many miners tried their hand at gardening. Granville and James Stuart recorded their efforts at horticulture in their journal. Upon hearing that Major John Owens had been forced to abandon a plow in the mountains during a Blackfeet attack on his packstring, the Stuarts paid Owens for the plow and went to great lengths to retrieve it. Said Granville, "We were mighty anxious to get at that garden so early in April... John Seeber and I took a pack horse and went for the plow. We packed it with the greatest difficulty."[13] With the help of the plow, the brothers prepared a small piece of bottom land, planting peas, onions, cabbage, radishes, potatoes, beets, muskmelons, pumpkins, squash and corn. The results were discouraging:

> After putting it in condition, we planted our seeds expecting great things from this garden, but alas! Our hopes in this direction were blasted. Frost visited this low land every month in the year and no sooner did a vegetable poke its nose out of the ground than it was immediately frozen.[14]

After these initial failures, the settlers of Gold Creek learned how to deal with the repeated frosts and short growing season. By 1862, Gold Creek was one of the few places on the emigrant trail where fresh vegetables could be obtained. However, the settlement still depended upon outside sources for its other staples such as flour, sugar, coffee, molasses, etc. When these sources failed, it worked a tremendous hardship on everyone. In the summer of 1861 James Stuart had gone to Fort Benton to meet a supply boat with provisions for the gold camps. He wrote of the results of that trip with a great deal of bitterness:

> The American Fur Company's steamboat burned and blew up at the mouth of the Milk River. Cargo total loss, no lives lost... The fire was caused by a deckhand who went down into the hold to steal some alcohol, of which there were several barrels. There were also several of whiskey. The d----- fool had a lighted candle and when he bored a large gimlet hole in a

> barrel to fill his jug the fumes of the alcohol took fire and spread instantly and here is a failure of the retributive justice, for the cause of this great misfortune escaped with some slight burns. As it was known that there were twenty-five kegs of gunpowder on board... everybody ran ashore and out into the woods some distance and almost immediately the steamer blew up with a terrific report and sank....There were no supplies of food at the fort, all having been eaten up and everybody awaiting the arrival of that steamboat to procure more. Now it is destroyed and those people, as well as ourselves, will have to get food supplies from Salt Lake City...[15]

The great distance to Salt Lake was not the only drawback of that trip, for the road led through the area terrorized by road agents in the early 1860's. Many who left for Salt Lake with money for supplies never returned.

By 1870, grain crops and hay were well-established in the Flint Creek and Deer Lodge Valleys. While potatoes and some vegetables grew well there, wagonloads of melons, tomatoes, cucumbers, corn and apples were brought from the Bitter Root to meet the growing demand. Most farms during the 1870's and 1880's were geared toward the local markets, and were small in size. An increasing number of farms could be found along the river above Bonner, as logging operations cleared the forests.

Commercial agriculture appeared in the Deer Lodge Valley in the 1880's and the by 1890's the area was known for its progressive practices, boasting many "firsts" in farming techniques. Among those most prominent in this respect was Frank Conley, warden of the state penitentiary. Using convict labor, Conley had developed a large and diversified agricultural operation that included hay, grains, potatoes, vegetables, hogs, beef and dairy cattle. He introduced many new crop varieties and consulted leading experts throughout the country. Like Conrad Kohrs, the Bielenbergs, the Larrabies and Peter Valiton, Conley was also an avid horsebreeder, particularly of draft animals. He imported the first Shire stallion to Montana. It is said that when the huge horse arrived in town, an important trial was adjourned so everyone could "go outside and see Frank's new horse." Kohrs and Bielenberg were famous for their Belgians and Percherons were also bred in the valley until mechanization replaced the workhorse in the 1930's. Conley's partner, Col. McTeague bred racehorses, as did the Larrabies and Bielenbergs. Marcus Daly frequently purchased Thoroughbreds from these men for his Bitter Root Stock Farm.[16]

Sheep-raising was also a major part of the agriculture in the Upper Clark Fork drainage. From the earliest days of settlement, there were several small bands providing mutton to the mining camps. In 1867, Conrad Kohrs ran a sizeable band with his cattle herds in the valley. W.A. Clark and C.X. Larabie brought a herd of 1800 Oregon sheep to the Upper Clark Fork from Walla Walla. By 1875, there were more than 5,000 sheep in Deer Lodge County, most owned by Peter Valiton.[17] The early bands, mostly Merino/Cotswold crossbreds, were maintained for the local market, but the completion of the railroad in 1883 encouraged sheepmen to seek the national markets. Sheep operations expanded in the 1890's, and one, the Williams and Paully (later Williams and Tavenner) ranch, became a world-famous breeder of Rambouillet sheep. By the 1950's, Deer Lodge was the Rambouillet sheep capital of the world. Inroads made by Australian wool producers after 1950 brought an end to the era of large-scale sheep production in the valley after the mid-'50s.

Irrigation played an increasingly important part in agriculture on the Upper Clark Fork throughout the late 19th century and into the 20th. In spite of the abundant streams in the drainage, seasonal shortages were and are a problem. Conrad Kohrs recalled the dry years of 1889-1890:

> Little snow had fallen in the mountains (in the winter of 1888-89) and the rainfall in the spring had been light. Mountain streams were lower than I had ever seen them. Rock Creek Lake never filled. We worked with but one head of water....The next winter was mild with little snow and was followed by another dry season in 1890. Rock Creek again did not fill and where we ordinarily wasted thousands and thousands of inches of water, this year we had not sufficient...[18]

The drought of the 1917-1920 period proved particularly disastrous to farmers, because it was coupled with the collapse of farm prices following the end of WWI. But perhaps the worst water conditions on the Upper Clark Fork occurred during the drought of the 1930's, which saw several streams and Georgetown + Silver Lakes nearly dry, and, on one occasion forced the shutdown of the Anaconda smelter operations due to lack of water.[19]

Water Rights

In the early 1860's, water diversion was almost entirely related to placer mining activities. Water used was governed by the regulations of individual mining districts. Without exception, the districts adhered to the doctrine of prior appropriation, "first in time, first in right."

This concept was incorporated into Montana's territorial law in the Bannack Statutes of 1865 and the Act of Congress of July 26, 1866. The growing importance of agriculture and the need for irrigation was taken into account, In 1865 the territorial legislature authorized the use of water for irrigating farm lands. Anyone who had a right to the land in the neighborhood of a stream was entitled to use the water to irrigate crops and had the right to conduct water through ditches over the lands of others. The Act of Congress of July 26, 1866 reaffirmed the law of prior appropriation and made it apply to all useful purposes. The Montana Constitutional Convention of 1884 declared water for irrigation purposes "a public use" which could not be obstructed by private land owners.

Between 1871-1889, there was considerable water rights litigation in the territorial court. It was decided that a water right must, like real estate, be conveyed by deed, and that a defective conveyance of a water right was equivalent to abandonment. This created difficulties in the Deer Lodge-Flint Creek area because in the early days of settlement land was transferred with only a bill of sale or by simply giving possession. There was no law requiring a record of water appropriation. Many water rights cases ended up in court because proof of the water's appropriation date and its continuous use depended upon the memories of the appropriator and his neighbors.[20]

Another factor leading to a great deal of water rights litigation in the Upper Clark Fork area resulted from the fact that a survey of the area was not begun until 1868, even though the Stevens treaty opened the area to settlement in 1855 and the area was one of the most populous in Montana.

Among the earliest water rights recorded were those of the ditch companies in the Gold Creek area. Most of these water rights were eventually purchased by Conrad Kohr's Rock Creek Ditch Company in the 1860's and 1870's. Kohrs was a major controller of water on the west side of the Deer Lodge Valley for many years. In 1887, another group of Deer Lodge Valley farmers incorporated the West Side Ditch Company under the name of West Deer Lodge Water Company. Other major irrigation companies on the Upper Clark Fork include the Mill Creek Irrigation Company, near Anaconda, formed in 1914; the Allendale Irrigation Company on Flint Creek, organized in 1918, and the Flint Creek Water Users Association, formed in 1935. The Kohrs-Manning Ditch Company is a privately-owned mutual system which diverts water from the Clark Fork near Deer Lodge.[21]

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