

MINING IN SOUTHWESTERN OREGON: A HISTORIC CONTEXT STATEMENT



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Mining in Southwestern Oregon: A Historic Context Statement

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FOREWORD

1853: *Crouched next to a clear-running creek somewhere in the Siskiyou Mountains, the solitary prospector expectantly pans the sand for any glint of gold. Discouraged with the results here, he heads on upstream through the willows to the mouth of a side gulch and tries his luck again.* 1863: *The six-man crew of hard-rock miners lights carbide lamps, shoulders the sledge hammers and hand-drills, and enters the cold darkness of the Steamboat Mine. They'll keep warm working underground for most of the day, emerging only as the sunlight wanes.* 1873: *Standing in ankle-deep mud and shouting to each other in Cantonese above the roar, the Chinese men point the powerful water-spray of a "giant" nozzle at an exposed hillside along the lower Rogue River. Suddenly, after several hours of careful undercutting by the water, several tons of ancient river deposits tumble down in a heap, and the men re-aim the nozzle's spray so as to begin blasting the gold-bearing muck into a huge waiting sluice box. Nearby, the river literally "runs red" with all the mud and silt of their day's endeavor.*

In the minds of some present-day residents of southwestern Oregon, the early history of their region is filled with such images of an episode we still know as the "Gold Rush." And the three images portrayed above actually possess a high degree of historical accuracy: The early quest for gold indeed often involved repeated personal disappointment, a great deal of hard and dangerous work, and dramatic impacts to the local environment.

This publication--commissioned by the Medford District of the Bureau of Land Management and by the Rogue River National Forest as part of a larger study--provides a historical overview of mining in southwestern Oregon. Author George Kramer provides a narrative that touches upon many aspects of that history: major consequences of the earliest mines and miners for the area's economy; the transformation of local mining--both technological change and the expanding search for valuable minerals other than gold; the relentless (if unrealized) optimism of early twentieth-century "boosters" that untapped mineral wealth would someday enrich the region far beyond the dreams of the pioneer gold rushers.

However, our area's mineral wealth never measured up to those hopes. And, when viewed from the wider perspective of the entire American West, southwestern Oregon's mineral production has actually proved quite modest. These are just two important conclusions of Kramer's research. But another is that mining undeniably was of *critical* importance during our region's pioneer-era development. And, although generally very small in scale, it *still* remains an important activity by some local individuals to this day.

We hope that readers will enjoy and learn from this historical study.



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PREFACE

Mining in Southwestern Oregon: A Historic Context was prepared by Heritage Research Associates (HRA) of Eugene, under BLM Contract 1422H952-P97-2012. Kate Winthrop, Medford BLM Archeologist, served as Contracting Officer's Representative with project review and inspection from Jeff LaLande, Historian for the Rogue River National Forest (RRNF). The Principal Investigator for HRA was George Kramer, M.S., Historic Preservation Consultant, assisted by Jill Hough, Preservation Specialist. Project management, support, and oversight were provided by Kathryn Toepel, Ph.D.

No project such as this would be possible without the gracious assistance from the people most familiar with these resources — the agency personnel responsible for the day-to-day oversight of mining on Federally managed lands and many local individuals who's family past has made them directly familiar with the role of mining in the region. Specific assistance from Gerry Capps, Matt Craddock, Randy Fiske and Jim Badger of the BLM, Bengt Hamner of the Rogue River National Forest, and John Nolan and Janet Joyer of the Siskiyou National Forest, helped provide a clear understanding of modern-day mining issues in the study area. Vern Arnold, whose father and uncle mined in southwestern Oregon from more than half a century, provided a first person view of the mining life. As always, the staff at the Southern Oregon Historical Society, especially Carol Harbison Samuelson, at the Josephine County Historical Society, the Kerbyville Museum, and the Special Collections departments at both Southern Oregon University and the University of Oregon provided sage advice and suggested photos, maps, and documents that proved invaluable in developing this project. The office of the Oregon Department of Geology and Mineral Industries in Merlin opened their files and provided a computerized database that served as the basis for much of the quantification of mining activities we relied upon. To all, and to the many who are not here mentioned, our thanks.

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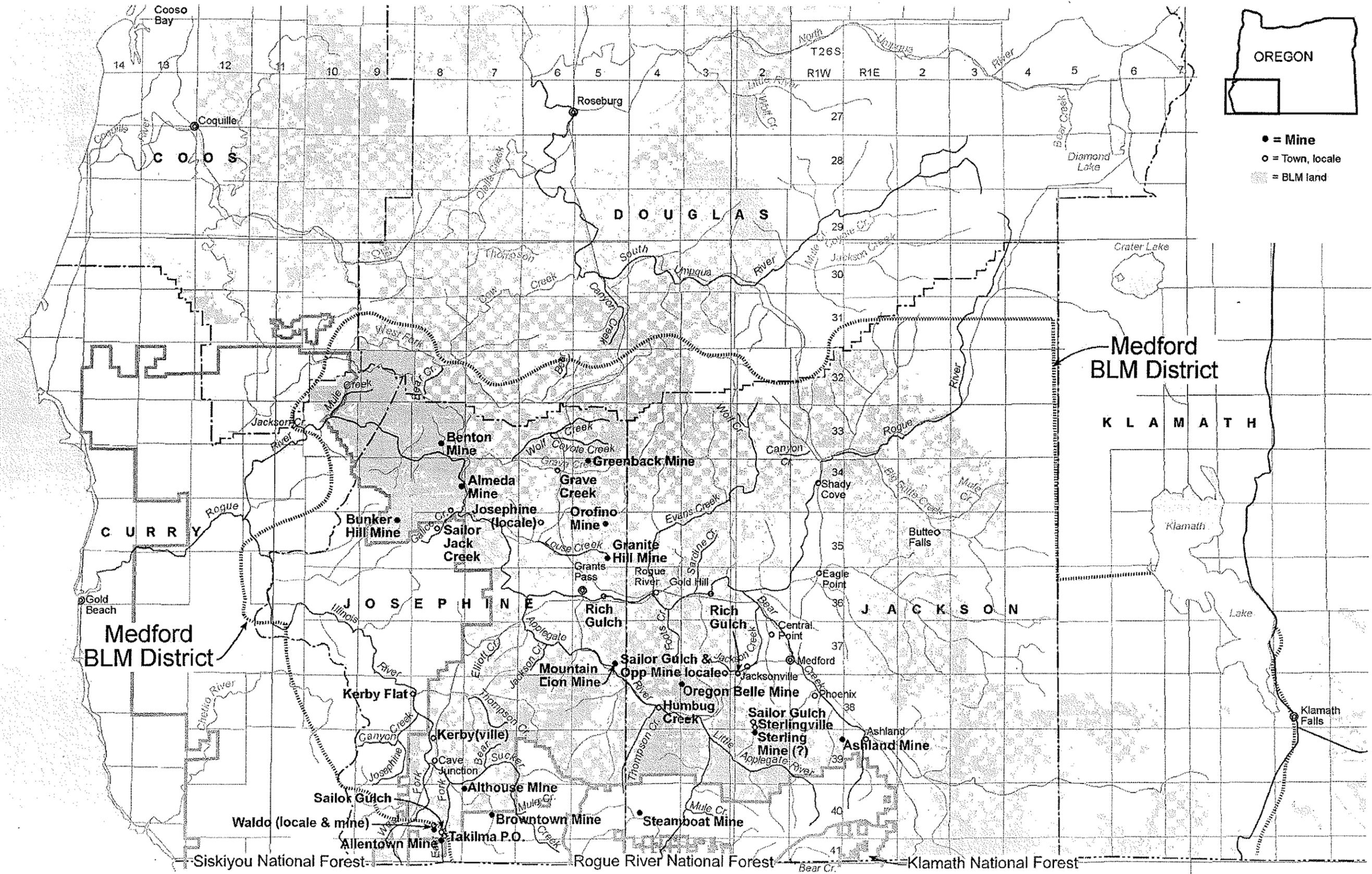


FIGURE 1: MAP OF SOUTHWESTERN OREGON SHOWING THE LOCATION OF TOWNS AND OTHER MINING FEATURES.

I. INTRODUCTION

Gold mining was originally the mainstay of the economy in southern Oregon. It started settlements, built roads and schools, promoted local government, and established law and order. It was about the only source of new wealth and was a common means of earning a livelihood. It is now at best only a token of its past. Not only is gold mining as an industry dead, but its history and the knowledge of its individual mines, which formerly represented a large part of the area's payrolls, are fading into the hazy past (Libbey 1964).

In the earliest days of southwestern Oregon's Euro-American history, gold served as the initial spark that ignited settlement. Without the discovery of gold, and the sudden wealth and need for towns it created, the course of history in this region would have been dramatically different. Certainly its pace would have been slower. Located so near California and its thousands of "Argonauts," southwestern Oregon caught the gold fever of the mid-19th century. The search for wealth brought large numbers of Euro-Americans, miners and settlers both, into the region. Many who came for gold found none, but they discovered other reasons to remain here and settle down. These were the men and women who established the cities, towns, and institutions that formed southwestern Oregon's character in the 19th century and laid the groundwork for its continued development.

For the next seventy years, from the early 1850s to World War I, the rugged hills and gulches of Jackson and Josephine counties were regularly and systematically scoured in the search for gold and other metals. Huge systems of ditches and flumes, often miles long with immense hand-dug tunnels, directed water from where it was to where it was needed. Pipes and conduit created "head," shooting water with such force that entire mountainsides were reduced to slurry, sent into sluices and then, shed of their valuable gold, shunted back into natural waterways. Even today, acres of denuded ground, where rock tailings stretch in every direction on a uniquely inhospitable landscape, remain from the days of hydraulic mining, a testament to the scale of the massive engineering efforts required for a successful 19th century mine.

Miners from all over the globe came to southwestern Oregon. They worked hard in often miserable conditions, hoping to find wealth and glory in each day's clean-up.

Sometimes they did — more often than not they scraped by, making only enough to justify going on. Today, almost 50 years since the last major area-wide period of mining activity, the hills of southwestern Oregon are quiet. The days when the search for gold, and the excitement of a strike, were a constant reminder of the area's birth are long gone.

This context statement, prepared for the Medford District of the Bureau of Land Management (BLM) and the Siskiyou and Rogue River National Forests, documents the history of mining in the southwestern Oregon study area.

The primary research goal of this context statement is to provide documentation and evaluation tools that will assist Bureau of Land Management and Forest Service cultural resource personnel with the identification, assessment, and management of the mining related resources that they administer within the study area. By definition, such a study goal eliminates many of the largest and most significant mining sites in the area, sites that are documented herein as exemplary of the region's mining history. Such successful, large-scale, or long-lived mines were almost universally patented by their operators, becoming privately-held land, and thus removed from direct BLM or Forest Service management. But the history of these larger, and better documented, patented mining operations is included in this statement as it must be, not because such resources bear directly on the BLM or Forest Service, but because the Federally-administered sites cannot be effectively evaluated without the recognition that they co-exist with the region's patented mining sites. Combined, all these sites, both publicly and privately held, form the historic context in which mining in southwestern Oregon developed and must be studied.

II. SOUTHWESTERN OREGON MINING CONTEXT DEFINITION

A. Theme

The following thematic context documents the history and development of the mining industry in the interior valleys of southwestern Oregon. While a wide variety of minerals have been the focus of extraction efforts since the early 1850s, all of which potentially resulted in significant built and archaeological resources, it is the search for gold that was always the primary focus in the area and that has had the most lasting impact on its development. It is, therefore, gold mining that is the primary research focus of this study. Other mining activities, particularly copper and chromite mining, have somewhat separate and developmentally distinct impacts within the project area and are briefly discussed.

B. Place

The geographic focus of the context is, broadly, portions of the southwestern Oregon counties of Jackson, Josephine, Douglas and Coos administered by the Bureau of Land Management, Medford District, the Rogue River National Forest, and the non-coastal lands of the Siskiyou National Forest (Figure 1). The specific focus is the Rogue River valley and its various tributary rivers and creeks within Jackson and Josephine counties, although the temporally and thematically related mining activities in portions of Douglas, Curry, and Coos counties are also covered.



FIGURE 2: "PANNING GOLD IN A JOSEPHINE COUNTY FLUME," c1910 (FROM MEDFORD AS A MINING CENTER)

This study area offers great variation in topography, character, and climate, encompassing broad valleys and steep rugged mountains, pocket canyons, large rivers and small creeks. Geologically, the study area occurs entirely within the Klamath Mountain region, as broadly defined by Ewart M. Baldwin

in his standard work on Oregon's geology, and includes the sub-areas defined as the "Applegate Group" the "Rogue" and the "Galice" formations (Baldwin 1981). Botanists Jerry F. Franklin and C.T. Dyrness (1988) document the study area as occurring within two major areas of vegetation — the forested "Mixed Conifer and Mixed Evergreen Zone" and the "Umpqua and Rogue valleys" zone of interior western Oregon.

In general, the Rogue River valley consists of numerous small creek drainages that lead into three major river systems—the Illinois, in western Josephine County; the Applegate, in western Jackson; and ultimately the Rogue River itself, which transverses the area in a general east-to-west direction as it winds from the Cascades through Jackson and Josephine counties on its path to the Pacific Ocean. Several major creek systems of importance in the history of mining drain into the Rogue River. These include Bear Creek in the Ashland-to-Medford corridor, Jackson Creek in Jacksonville, Sardine and Foothills Creek near Gold Hill, and Evans Creek near Rogue River. Similarly extensive creek systems feed the Applegate River, most notably Elliott Creek and Thompson Creek in southern Jackson County.

Josephine County also has an extensive system of creeks that, in terms of import in the mining history of the region, include most significantly Wolf and Coyote creeks in the northern portion of the county, and Galice Creek, a tributary of the Rogue River. The Illinois River in southern Josephine County, partially fed by creeks in the Waldo and Cave Junction areas, is also a major tributary to the Rogue River and was the site of substantial mining activity. Other important mining waterways in Josephine County include Sucker Creek, Canyon Creek, and Josephine Creek, but there are literally hundreds of small year-round and seasonal creeks throughout the study area, virtually all of which were at one time or another a focus for mining activity.

As noted below, little Euro-American settlement occurred in the study area prior to the first gold-inspired rush in the early 1850s. Most mining camps withered as soon as the gold was exhausted and larger communities developed along major waterways or the primary transportation corridor of the Oregon-California Stage Road, generally following the route of the earlier Applegate Trail (also called the Southern Emigrant Route). This settlement pattern was somewhat modified with the 1883-84 arrival of the railroad. In Josephine County the county seat and economic focus moved from mining-based Kerby to railroad-linked Grants Pass, which had actually been wooed from Jackson County and promised a position as Josephine County seat if the county boundaries could be readjusted. By act of the legislature the boundary was indeed modified and Grants Pass remains the seat of Josephine County. It was the only incorporated community in largely mountainous and rural Josephine County until the incorporation of Cave Junction in 1948.

A similar shift of power in Jackson County, from mining-based Jacksonville to rail- and orchard-based Medford, became official in 1926-27 when that county's seat was moved, although the actuality of Jacksonville's decline had been apparent for almost three decades. Favored with more arable land than Jacksonville, a number of other communities grew in the southern arm of the Rogue River valley during the late 19th century. Ashland, long the largest city in the region, Phoenix, Medford, Central Point, Gold Hill, and Woodville (renamed Rogue River) all developed in the 1850s or were established with the arrival of the railroad in the 1880s. In the Upper Rogue area, the early towns of Eagle Point and Butte Falls were joined by Shady Cove in 1972 which, with Jacksonville, gives Jackson County a total of eleven incorporated communities.

By and large, however, as the following context demonstrates, other than Jacksonville, little mining occurred *within* the region's cities themselves. Mining was an activity of the hinterlands — remote and difficult to access canyons, gulches, mountains and streams. Cities, generally on the main valley floor and surrounded by arable lands, saw only occasional mining once the initial era of placer gold activity ended in the 1860s.

C. Time

The temporal boundaries of the context are limited to the period of historic mining activity, beginning with the initial prospecting efforts in 1849-1850 and continuing through the present-day. The primary focus is the approximately 100-year period beginning with the first major strikes of 1851-52 and ending in the 1950s with the Korean War-inspired chromite operations. Modern-day mining activities, particularly as they potentially impact identified historically significant sites, are discussed in Section III[C].

III. CONTEXT DESCRIPTION

Scarcely hidden in the mountains and streams of the Far West were pockets and lodes of silver and gold in such number and richness as to stagger the imagination of even the most starry-eyed prospector. As they were discovered one after the other, in the years between 1848 and the late 1870s, a series of rushes occurred that brought the first permanent settlement to much of Western America (Billington 1963:viii).

A. Gold Mining in the West

Gold mining in southwestern Oregon from the very beginning has been part of the larger regional mining developments that characterize the American West. Understanding the comparative scale and scope of mining as it historically occurred within the area, and its significance within the broader pattern of Western mining, is an essential component in assessing the import of southwestern Oregon's mining past.

In the 1840s, American interest in the west coast of North America culminated first with the 1846 treaty settlement of the "Oregon Question," formally establishing rights to what would become the Oregon Territory, and then, at the end of the Mexican-American War, the acquisition of California. Even before American claim was legitimized, U. S. citizens had begun settling the area in increasing numbers. This trend was especially true of the Willamette Valley, spurred by what came to be termed "Oregon Fever."

Another American settlement concentrated on California's coastal bays and by 1845 some 6,000 Americans were living in Oregon with another 2,000 in California. But if growth in both areas was steady in the 1840s, California's became explosive in 1849 and Oregon and the entire West were accordingly changed in the process. Few events in the history of the American West can match the impact of John Sutter finding gold in the tail race of his Sacramento-area saw mill in 1848. The California Gold Rush brought thousands of new settlers, sojourners, and investors to the region, establishing a "boom" mentality that would characterize the popular west for decades to come. It was only the first of a series of gold and silver rushes that make mining one of the major historical forces in the region.

[T]he California gold rush further affected the rest of the Far West, first by drawing population on to the overland routes, then by suggesting that there might be other bonanzas in other mountains (Pomeroy 1965:49).

Prior to this series of discoveries in its western territories, gold mining was of relatively little significance in the United States. In the decade between 1841-1850, world production of gold was a total of 6,522,913 fine ounces. In the following ten years, largely as the result of the opening of the new western American gold fields, total worldwide production rose to 17,605,018 fine ounces, an increase of 270 percent (Bureau of the Mint 1919:286). In the three years between 1857 and 1860 alone, American miners produced a total of 9,723,375 fine ounces, or more than half of the world's production for the entire decade (Department of Commerce and Labor 1908:151)! This new infusion of wealth to the West, not to mention the ancillary settlement, industrialization, and other impacts it inspired, largely shaped the development of Western America for the next fifty years.

Oregon's initial "gold rush" fits within this pattern of explosive growth. During the winter of 1851-1852, with the discovery of gold at Josephine Creek, Sailor's Diggings, and then Rich Gulch, southwestern Oregon became one of the first "boom" areas outside California.¹ The miners who were drawn here led to the establishment of the region's first towns at Jacksonville and Waldo, beginning the large-scale settlement of the region. But, partially for reasons of temporal concurrence and partially for reasons of geographic uncertainty, both these early strikes are often treated by mining historians as the northern extent of the California Gold Rush rather than as separate or discrete events on the order of later finds in Eastern Oregon, Idaho, and elsewhere.

The hunt for gold continued during the mid-to-late 19th century, moving from California, to southwestern Oregon, Idaho, eastern Oregon, Colorado, Arizona, Utah, Nevada with its huge Comstock silver lode, and then Montana, where immense copper deposits were later found. In each strike area, mining created wealth and spurred settlement that helped define the Western United States. Judged within this rapid succession of "booms," most of which proved far more valuable and sustained than that of the study area, the significance of gold mining in southwestern Oregon, at least from a national perspective, appears to have been relatively minor.

Accurate, consistent, and undisputed factual data on the amount of gold mined in southwestern Oregon during its earliest period is hard to find. The earliest available annual gold production in Oregon is for 1866, stated at eight million dollars, although some estimate gold for this period as high as twenty million dollars (Crane 1908:628).² Whatever the actual value of the gold located, there is no serious doubt that as a significant development factor, gold mining in southwestern Oregon hit its

peak during the first ten years of area settlement as the region's surface placer deposits were systematically extracted.

While post-pioneer period mining values ebbed and flowed as discussed later, it is perhaps useful to compare regional gold production in the West for 1903, both inside Oregon and state-by-state, so as to place the economic import and relative value of mining in the study area in a larger context. The year 1903 was a peak year of gold production since the beginning of available data in 1880.³

Table 1
Regional Gold Production in the Western United States for 1903

(source: Statistical Abstract of the United States)

STATE-REGION	GOLD PRODUCED in dollars	% OF REGIONAL TOTAL	ORDINAL RANK WEST
Colorado	22,540,100	33.90%	1
California	16,104,500	24.22%	2
Alaska	8,614,700	12.95%	3
Montana	4,411,900	6.63%	4
Arizona	4,357,600	6.55%	5
Utah	3,697,400	5.56%	6
Nevada	3,388,000	5.09%	7
Idaho	1,570,400	2.36%	8
Oregon	1,290,200	1.94%	9
Washington	279,900	0.42%	10
New Mexico	244,600	0.37%	11
TOTAL	66,499,300		

Note: The total value of all gold produced in the United States in 1903 was \$73,591,700 with the western United States as defined above accounting for 90% of the total. Almost all gold produced outside the West was from South Dakota, which in 1903 was ranked fourth nationally with almost \$7 million in gold.

As Tables 1 and 2 make clear, when evaluated within the broad regional scope of western mining production, even during a peak year, post-pioneer period Oregon mining was of comparatively little significance in the West, accounting for less than 2% of the area's total gold production. And while Josephine and Jackson counties rank second and third in Oregon gold in 1903, combined they account for only a bit more than half of the gold produced in Baker County, the state's primary mining center after the pioneer period. Nationally, Oregon's peak 1903 gold production of the study area amounted to *less than one percent* (0.7011%) of the total gold produced in the eleven western states.

Table 2
Gold Production in Oregon by County for 1903

(source: Brooks and Ramp 1968 [after Bureau of Mint data])

COUNTY	GOLD PRODUCED in dollars	% OF OREGON TOTAL	ORDINAL RANK
Baker	702,737	52.77%	1
Josephine	343,264	25.78%	2
Jackson	122,979	9.24%	3
Grant	102,313	7.68%	4
Lane	31,115	2.34%	5
Malheur	29,227	2.19%	6
TOTAL	\$1,331,635		

Note: Brooks and Ramp, the source for the above data, do not provide individual production values for Douglas County, portions of which are within the study area, or any other counties. If any gold was produced outside the five above counties during 1903, as is presumably the case, it was probably of only minor value and so would not change the general outline of Table 2 in any meaningful fashion.

So, while the initial settlement of southwestern Oregon is intrinsically linked to the discovery of gold, the amount of gold actually produced in the study area was uniformly of only modest scale within the larger Western context. Beyond the area, southwestern Oregon's gold boom, and even its continued mining efforts over the next fifty years, were of limited importance.⁴ The role and significance of mining *within* the study area, both in fact as well as in perception and boast, is covered in depth in Section II[C], below.

B. A General Timeline

As noted in II[C], above, the temporal boundaries of this study are predominately limited to the 100-year period of mining activity following the original prospecting in the area in 1849-1850, and soon followed by the strikes and development at Sailors Diggings and Jacksonville. A general timeline of mining processes and other events provides a basic context for understanding the narrative history of mining in southwestern Oregon.

- 1837 U. S. Treasury sets price of gold at \$20.671835 per fine troy ounce.
- 1843 "Oregon Fever" leads to growing Euro-American settlement in the Willamette Valley region.
- 1846 The Southern Emigrant Route or "Applegate Trail" opens, beginning a direct route through the study area and inspiring the first permanent settlements near ferry points of the Rogue River.

- 1848 Gold is discovered at Sutter's Mill in California.
- 1849 The California Gold Rush begins, Northern Oregonians rush to California in search of gold, often passing through the study area. Prospectors moving north from California begin to explore southwestern Oregon for potential gold-bearing formations.
- 1851 Gold is discovered at Josephine and Canyon creeks, then at Sailor's Diggings.
- Late 1851 Althouse Creek [Illinois Valley] discovery by Philip Althouse.
- Winter 1851-52 Mr. Sykes finds gold on Jackson Creek;
Cluggage and Poole find gold in Daisy Creek, soon dubbed "Rich Gulch."
- Jan 1852 Jackson County is formed.
- 1852 *Table Rock City*, a mining camp, becomes Jacksonville.
- 1852 Louis Galice begins mining on creek that bears his name.
- 1854 James Sterling finds gold on Sterling Creek.
- 1856 First Federal [GLO] survey of Jackson and Josephine counties.
Josephine County is formed.
Gold Discovered in Arizona.
- 1858 Fraser River strike, British Columbia.
- 1859 First gold mined on Williams Creek.
- 1860 "Emigrant" Graham discovers Gold Hill Pocket, first "Lode" mining in area; Comstock Silver Lode discovered in Nevada.
Bodie, California discovery.
- 1861 Gold discovered on Oregon's John Day and Powder rivers.
- 1862 Gold discovered in Idaho.
- 1863 Gold discovered at Alder Gulch in Montana; Virginia City founded.
- 1864 Last Chance Gulch [Helena] Montana strike.
- 1871 Frederic and Peter Hanson build first tunnel from the Illinois to Althouse area, returning it to gold production.
- 1876 The "English Company" begins hydraulic mining at Galice Creek.
Cameron and Hayden operate a "profitable" hydraulic mine at Sterling Creek.
- 1876 Gold found in Black Hills, South Dakota.
- 1879 "Cap" Ankeny takes control of the Sterling Mining Company.

- Dec 1884 First railroad arrives at Grants Pass, connecting valley to northern Oregon.
- 1886 Josephine County Seat moved from Kerbyville to Grants Pass; Ashland Mine discovered.
- Dec 1887 "Golden Spike" driven in Ashland, connecting Oregon and California by rail.
- 1889 Gold production in study area totals 4,692 fine ounces, lowest between 1880 and 1913.
- 1897 Greenback lode discovered in northern Josephine County; 40-stamp mill installed.
- 1897 Gold found in Klondike region of Alaska.
- 1903 Placer and lode gold production in study area totals 22,555 fine ounces, peak output between 1880 (beginning of recorded data) and 1940.
- 1904 Briggs "Pocket" discovered, \$32,000 in gold taken out in two weeks.
- 1924 Placer and lode gold production in study area totals 1,661 fine ounces, lowest recorded prior to 1942.
- Oct 1929 Stock market "crashes;" Great Depression begins.
- 1932 "Backyard" and similar Depression-era mining leads to largest gold production in study area since 1909.
- 1933 U. S. Treasury raises value of gold to \$35.00 per fine troy ounce.
- 1937 Waldo area "re-mined," destroying remaining 19th century buildings on site.
- 1942 War Production Board issues order L-208, ending all mining efforts considered "non-essential" to the war effort. Gold mining effectively stopped nationwide.
Strategic Minerals Stockpile program begins; GSA "Chrome Depot" opens in Grants Pass to accept chromite from area mines.
- 1945 L-208 rescinded.
- 1949 Grants Pass chrome depot closed.
- 1950s "Hobby" and weekend mining is primary gold mining in area.
- 1966 Gold mining production shows almost a "complete lack of production" in Oregon.

C. Mining Technology: A Brief Description of Terms

The history of mining is largely one of improved technologies and techniques that enable faster and more efficient separation of gold and other minerals from surrounding materials. While much of this change and the resultant impacts it brought to the development of the mines of southwestern Oregon are covered within the narrative, a brief glossary is in order to clarify terminology.

Placer: Deposit of sand, dirt, clay, typically in a waterway, containing particles of gold or silver, as well as all the various mining processes that have been devised to separate such minerals using water. "Placer" mining techniques in general chronological order of appearance are:

Panning: The simple miner's pan was easily transportable and used to wash small amounts of ore by an individual. Panning was the method of the prospector and the very early, very small-scale, individual miner (Figure 3).

Rocker [Cradle]: The rocker was typically a wooden box with a screened mesh or "riffle" lined bottom, that could be filled with placer deposits then flooded with water. A rocking motion, with small curved rocker legs, helped wash the gold out, separating it from the remaining base material. Rockers allowed an individual or small group of miners to process more ore in a given time.

Long Tom: A long wooden box with a series of riffles or baffles trapped the gold as the water was flushed through the length of the equipment. Long Toms were essentially an expanded rocker that could be operated by a group of miners (Figure 4).



FIGURE 3: WOOD-CUT OF PANNING FROM OREGON MINING JOURNAL (1897:31).



FIGURE 4: WOOD-CUT OF LONG TOM, FROM OREGON MINING JOURNAL (1897:32).

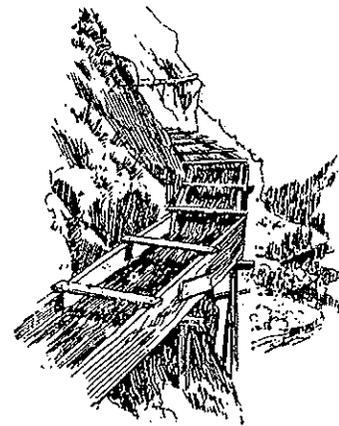


FIGURE 5: WOOD-CUT OF SLUICE BOX, FROM OREGON MINING JOURNAL (1897:35).

Sluice Box: The peak of early placer technology, sluice boxes were basically Long Toms extended in length, running hundreds of feet, and often located directly within a waterway, where constantly flowing water would wash out the ore and trap it at a collection point. Sluice boxes were constructed and operated by large cooperative ventures and mining corporations and are still used today (Figure 5).

Wing Dam: Used to shunt aside river or creek flows, wing dams were built of cobble (rock) or heavy timbers along the side of a channel to divert a river out of its natural path.

Hydraulic Mining: A technological expansion of earlier placer techniques, hydraulic mining required the collection of large amounts of water that could be directed at very high pressure and essentially liquefy soil thought to contain gold so that it could be collected (Figure 6).

Ditch/Flume/Tailrace: Earthen, wood-lined, and occasionally metal-lined, linear channels used to transport water from sources to point of need and then remove it from the area after use.

Headbox: A gate or simple valve element at the head of a ditch or flume that controlled the flow of water.

Giant [Monitor]: Also called a nozzle, the focal point of the hydraulic mining system through which a powerful jet was directed where needed. Giants were typically manufactured elements, made of iron (Figure 7).

Grizzly: A wooden or iron grille over which a watery slurry is deposited and washed, with the intent that small particles, including gold, filters down for collection while larger rocks are washed away.

Elevator: A system of water-pressure driven pipes that raises deposits to a higher level.

Dredge: A floating gold-processing plant that excavates and washes low-grade ore deposits, creating its own small moving "lake" as it moves.

Lode Mining: Also called "Quartz" or "Hard Rock" mining, lode mining refers to the extraction of "lodes" or veins of gold from underground via means of cuts, tunnels and other excavation. Typically more costly in both labor and equipment, lode mining requires more skill and capital than placer and so usually develops later in any gold-bearing area. The various elements of a "lode" operation include:



FIGURE 6: "HYDRAULIC PLACER MINING SCENE," POSTCARD IMAGE, (AUTHOR'S COLLECTION).

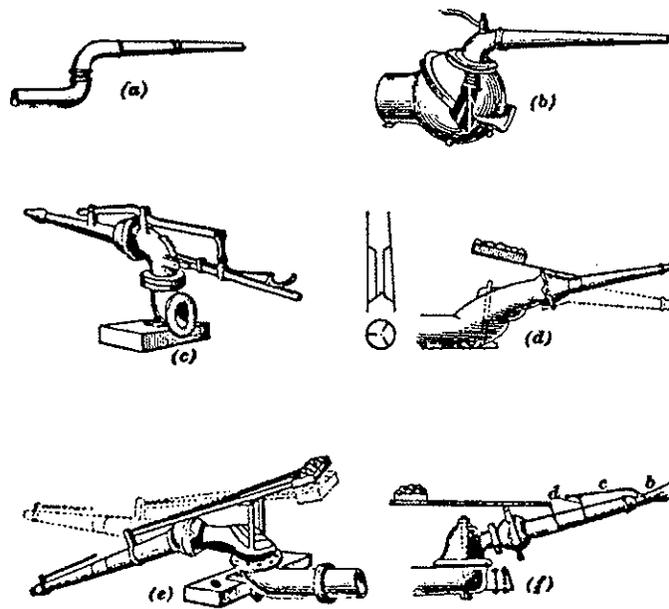


FIG. 20.

FIGURE 7: "PATENTED GIANTS: SUPPLIERS DEVELOPED A VARIETY OF PATENTED VERSIONS OF THE MONITOR TO SUPPLY TO THE BOOMING MINING INDUSTRY DURING THE LATE 19TH CENTURY. (COLLIERY ENGINEERING, 1907).

Prospect: A test pit or excavation, of varying size, that represents the earliest attempts to ascertain the presence and quality of gold potential at a given site (Figure 8).

Adit: The excavated “entrance” or opening into a mine, an adit may simply be a “hole” in the side of a mountain or hill or can be a more developed entrance with timber frame and a door.



FIGURE 8: WOOD-CUT OF PROSPECTOR, FROM OREGON MINING JOURNAL (1897).

Tunnel/Drift: The excavated horizontal access to the interior of the mine. Tunnels or drifts can be of varying size, with or without any improved structural supports (such as timbers), depending on the character and integrity of the surrounding rock. Vertical access within a lode mine is via an excavated shaft.

Arrastra (or arastra): A circular grinding mechanism used to reduce ore. Arrastras could be human, animal, or water powered, with later versions powered by steam, gas engine, or even electricity (Figure 9).

Stamp Mill: A pile-driver-like vertical milling machine that repeatedly drops heavy steel bars to break ore into smaller pieces for processing. Typically built of wood and metal and driven first by water or steam, later stamp mills were powered by gasoline or electric motors (Figure 10).

Amalgamation: A process that utilizes the chemical attraction between gold and mercury to extract gold from crushed rock and sediment.

Retort: A furnace designed to separate and collect mercury for reuse after amalgamation.

Smelter: A furnace designed to melt the ore and so release the mineral; mostly associated with copper mining in the study area.

Waste: The extraction of gold and other minerals leaves residual debris and landscape alteration, often the sole evidence of the activity. Waste products take two basic forms:

Tailings: Generally, any waste material resulting from mining activities. Tailings are generally rock piles, composed of angular rocks from lode mining and typically rounded river stones from placer activities. Tailings

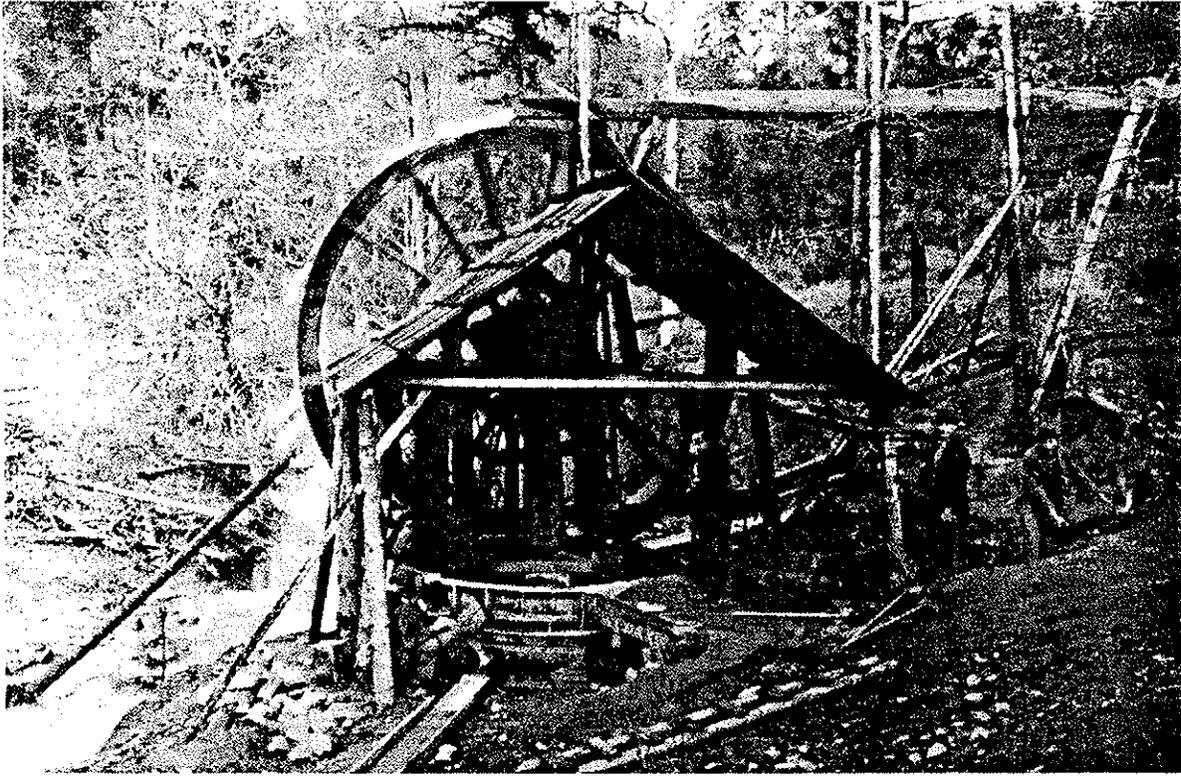


FIGURE 9: THIS UNIDENTIFIED ARRASTRA, PROBABLY IN EASTERN OREGON, GIVES SOME INDICATION OF THE ELABORATE ENGINEERING REQUIRED TO OPERATE A 19TH CENTURY MINING OPERATION OF ANY SCALE.

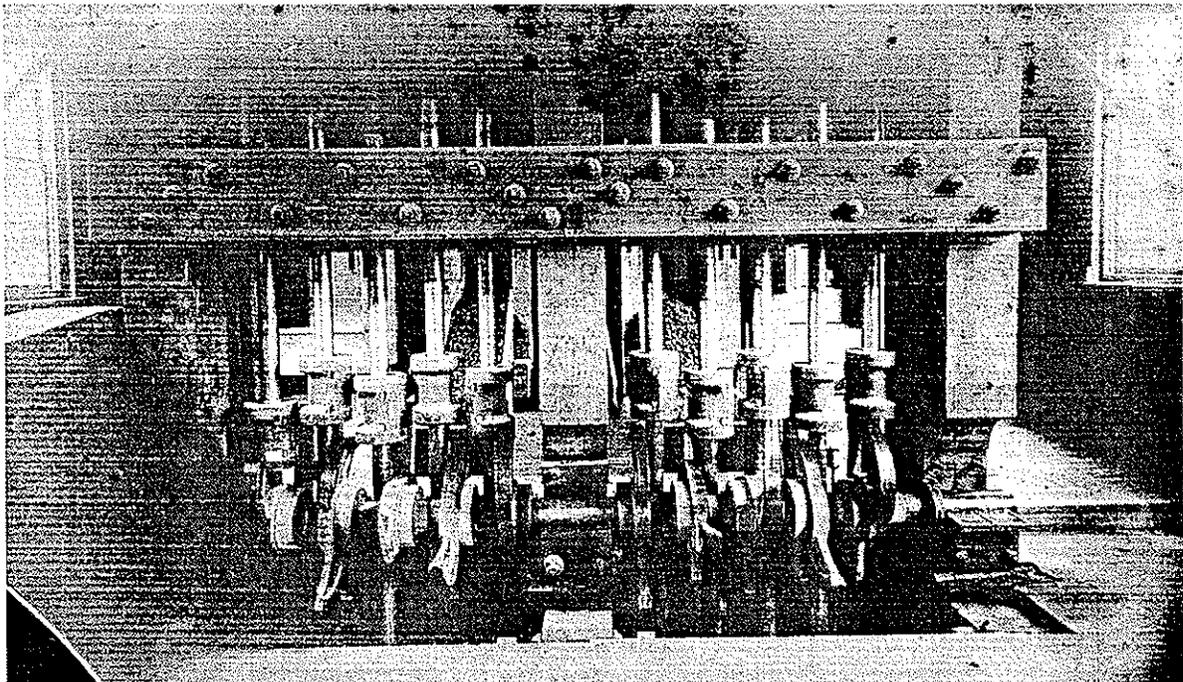


FIGURE 10: THIS 10-STAMP MILL WAS BUILT OF WOOD WITH MACHINED METAL RISERS AND STAMPS. IT WAS USED IN SANGER, OREGON (BAKER COUNTY) BUT IS TYPICAL OF THE LATER STAMP MILLS USED IN SOUTHWESTERN OREGON DURING THE LATE 19TH AND EARLY 20TH CENTURY (AUTHOR'S COLLECTION).

are often found in long, linear mounds, lining a river channel or wide fan-tail-shaped spreads created by dumping. Neatly stacked walls of rock tailings are often referred to as Chinese walls.

Slag: Melted waste metals remaining after the reduction or processing of ore.

D. The Development of Mining in Southwestern Oregon

In passing back and forth to California, the Oregon miners had not failed to observe that the same soil and geologic structure characterized the valleys north of the supposed northern boundary of California that were found in the known mining regions and prospecting was carried on to a considerable extent early in 1850 (Bancroft 1890:184).

1. Setting and Initial Discoveries

Prior to 1850-1851, at least from the standpoint of Euro-American settlement, the area that would become Jackson and Josephine counties offered little more than a primitive thoroughfare between the booming gold fields of northern California and the farms of the Willamette Valley. Unlike its southern neighbor, the Oregon Territory was comparatively settled by 1848 with clusters of population along the Columbia River in the area of modern-day Oregon City and trailing south through the fertile lands of the lush Willamette Valley. Inspired by the "Oregon Fever" that had drawn Americans to the area beginning in the early 1840s, the Willamette Valley was already developing as an agricultural center and "Oregon" was seen as a fairly established destination when word of the 1848 strike at Sutter's Mill spread throughout the world. Given the excitement of the times, and their proximity to California, large numbers of settlers in the Oregon Territory quickly headed south to try their luck in the gold fields. Word of the California strike changed Oregon overnight.

The effect was electrical. Almost every single man, and many who had families and farms, decided to go to the mines so as to reach the ground before the rush from other parts of the United States should come (Lyman 1903:121).

So massive was the exodus from Oregon that the Territorial Legislature, meeting in late 1848, was unable to transact business for lack of a quorum (Bancroft 1890:58). But, as historian Albert G. Walling notes, the effect was only temporary. "Family and business ties held many back and hastened the return of others, many bringing with them heavy sacks of the yellow treasure. What at first had promised to be an overwhelming calamity soon proved a bountiful blessing" (Walling 1884:169).

As these Oregonians returned home to their families and farms they brought an

infusion of capital that enabled Oregon to grow and establish itself further. The huge and growing masses of Californians provided a ready and wealthy market for the state's agricultural production.

Thousands of men poured into California from every quarter of the world, and a brisk demand at once sprung up for the grain, flour, vegetables, and food products of all kinds which Oregon could produce in abundance, but for which no market had previously existed. California gold began to pour in to Oregon in a steady stream ...and this region made great strides on the road to wealth and prosperity (Walling 1884:169).

During 1848 and 1849, as gold-seekers from the Willamette Valley headed south, many traveled through the Rogue River valley, in some cases retracing paths they had first crossed upon their arrival in Oregon. Later, pack trains laden with agricultural and other products headed for California, as well as a growing stream of new settlers traveling over the Southern Emigrant or Applegate Trail, created sufficient demand that ferries were established at various key locations across the Rogue River. By late 1850 and early 1851 the first intrepid white settlers had established homesteads in the study area.

In the spring and summer of that year [1851] three houses or stations became occupied permanently by white men, these being the three ferries on Rogue river, namely Long's, Evans' and Perkins. Other than these three there were no houses or cabins between South Umpqua or Yreka; or in other words, Jackson county was uninhabited by whites...(Walling 1884:336).

When the initial rush to California was over, and the most productive areas soon to be owned by large mining corporations, Oregon's own miners, as well as "49'ers" from throughout the nation, were busily looking for new strikes. Naturally, some trekked north into the Oregon Territory and began exploring its potential for gold-bearing ores. Located just across the Siskiyou Mountains, and comprising a part of the same geologic formations as northern California, it wasn't long before considerable prospecting was underway in the study area. "In June [1850] there were two hundred miners at work in the Umpqua Valley. Little gold was found at this time and the movement was southward, to Rogue River and Klamath" (Bancroft 1890:185).

Although gold had in fact been located earlier, at Canyon Creek for example, by most accounts the first significant gold strike in the Oregon Territory, certainly the first of any lasting impact, occurred in the Illinois Valley of what is today Josephine County.⁵ This first mining area became known as "Sailor's Diggings," ostensibly because it was first located by a group of sea-faring men who had jumped ship in search of gold.⁶

In 1851, several prospectors came north from the Klamath river, and passing over the divide into the valley of the Illinois, found gold to the west of that stream, in the sands of a creek which flows...a few miles below Kerbyville. The news of their discovery was immediately communicated to the numerous and populous mining camps of Northern California, and people began to move toward the new diggings in considerable numbers. This was the first mining locality discovered or worked in Oregon, and therefore [is] a historic spot (Walling 1884:447).

Further exploration was delayed by the outbreak of the first Rogue River Indian War in June 1851, with most of the area's miners leaving their claims to join the conflict. "During the fall of 1851 a number of Willamette valley farmers and others tried their fortunes on [Josephine and Canyon] creeks, but with indifferent success, owing mainly to their lack of skill and almost total lack of mining tools" (Walling 1884:447). The find at Waldo had, however, proved that southwestern Oregon warranted further investigation for gold and, once peace was secured, prospecting continued in earnest with predictable results.

While the discovery of gold at Waldo represents the beginnings of large-scale interest in the potential of southwestern Oregon as a gold mining region, two events beginning in winter 1851-1852 and continuing into the spring signaled the advent of mining as an industry with a lasting importance in the region. While Waldo was the "first" strike in Oregon, major finds at "Rich Gulch" and Althouse, at least for a short time, may have caused Oregonians to believe they'd found a second Sutter's Mill.

A) RICH GULCH AND THE FOUNDING OF JACKSONVILLE

Sometime in 1851, probably in the late summer or fall, Mr. Sykes, a hired man in the employ of area Indian agent Alonzo Skinner, along with Skinner's nephew, James, struck gold in Jackson Creek near the western edge of the modern-day Jacksonville city limits.⁷ By late 1851 or early 1852, with the cessation of warfare in the area, word of the discovery had reached two packers on the way to California, James Cluggage and John Poole. As the oft-repeated tale is told, after spending the night at Agent Skinner's homestead near Table Rock, packers Cluggage and Poole headed off toward California and stopped in the area near Sykes' find for lunch. While watering their animals in what would become "Daisy Creek," Poole, an experienced miner, found "color" in the stream. Continuing on to California, but having staked their claims, Cluggage and Poole rather peculiarly played a dramatic role in spreading the news of this latest find.⁸

They told [me] that there had been some new diggings discovered in Rogue River valley just close to Jacksonville...and advised me to

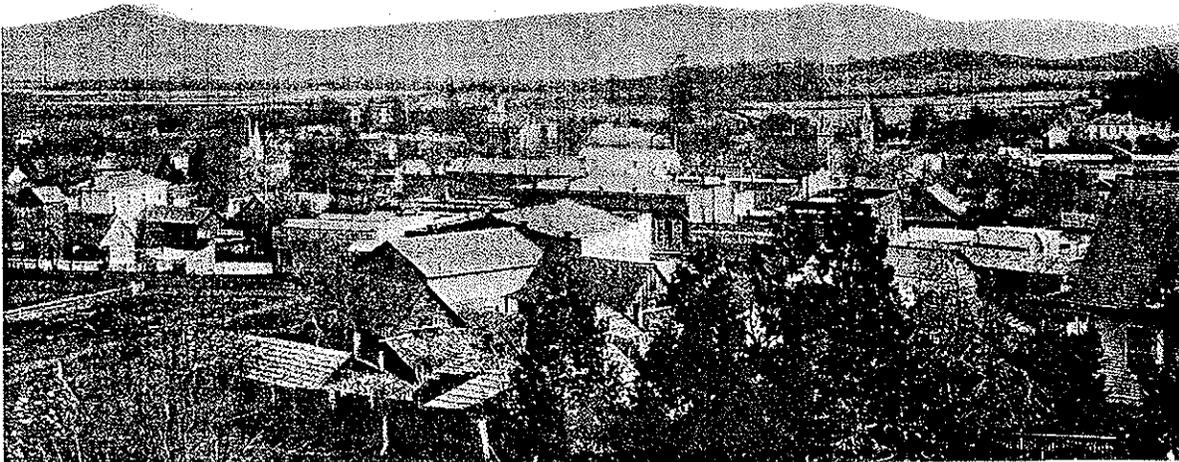


FIGURE 11: JACKSONVILLE AND THE ROGUE RIVER VALLEY, 1890. FROM ITS EARLY MINING DAYS, JACKSONVILLE GREW INTO THE LARGEST CITY IN OREGON DURING THE 1860S AND REMAINED THE ECONOMIC CENTER OF GOVERNMENT IN SOUTHWESTERN OREGON UNTIL THE EARLY 1880S WHEN IT WAS BYPASSED BY THE RAILROAD (AUTHOR'S COLLECTION).

go there as there had been two or three rich creeks struck at Jackson's Hill or Jackson's Creek on both forks (Reinhart 1962:34).

Within weeks the "rush" at Rich Gulch was on and soon the hills and canyons surrounding Jackson Creek were teeming with hunters of gold. The small mining camp at the head of the confluence of Jackson and Daisy creeks, first dubbed "Table Rock City," quickly evolved into the town of Jacksonville (Figure 11). By the middle of 1852 the bustling community was named the county seat of newly formed Jackson County by action of the Oregon Territorial Legislature.

In the early days the whisper of a marvelously rich gold discovery was heard; it passed from mouth to mouth till...soon the silent hills and gulches were touched as if by the wand of an enchanter and whitened with the tents of thousands of eager hunters... (Walling 1884:359).

As with most mining camps, there is no lack of exaggeration in descriptions of both the amount of gold located at Rich Gulch or in the swollen population it attracted to Jackson County.

The diggings of southern Oregon were fabulously rich, but it is not known exactly how much gold came out of these mines as the

government treated the totals as part of California's production (McCormack and Pintarich 1987:44).

While the exact wealth of the Rich Gulch site, in terms of either dollar value or ounces, remains uncertain, there is no doubt of the impact of the strike in the early settlement of southwestern Oregon. While the diggings may have indeed been "fabulously rich," the rush they inspired was fairly short-lived.

b) ALTHOUSE

With the find at Sailor's Diggings (Waldo), followed in less than a year with the strike at Rich Gulch, southwestern Oregon naturally became a focus for prospectors. Their efforts in 1852-1853 did not go without success.

In the spring of 1852, during the rush for Jacksonville, Philip Althouse discovered gold on the creek which bears his name — this is said to have been the richest in the country, hence Josephine county claims to be the first [at Waldo] and the best [in the history of area mining...] (*Oregon Mining Journal* 1897).

While the strike at Althouse would not result in the founding of a city, as at Rich Gulch, the development during the initial boom otherwise followed a similar pattern as hundreds of miners rushed into the area. Unlike Jacksonville, the streams at Althouse remained productive for many years beyond the initial placer period.

Along Althouse creek for more than ten miles and more, the diggings extended and a vast number of miners labored there, perhaps not less than a thousand in the most active times...The aggregate production ...must have been enormous, for a very large number of miners labored there with satisfactory results for more than fifteen years (Walling 1884:448).

c) SOUTHWESTERN OREGON MINING "INDUSTRY," MID-TO-LATE 1850s

While the Waldo, Rich Gulch, and Althouse strikes brought a rapid influx of miners and created flurries of excitement, by the mid-to-late 1850s mining had become a commonplace and regular element of the southwestern Oregon area. Dozens, if not hundreds, of mining operations of varying success and scale were widely scattered about the region. These operations employed many individuals and created wealth that enabled the establishment of most of the area's towns either directly, as in Jacksonville, or indirectly, as in Ashland. Typical of a frontier economy, the hard currency of gold dust and nuggets provided a ready source of exchange and prosperity as the region's first merchant and professional class all relied on mining for the backbone of their trade.

While most of the easy placer diggings around Jacksonville quickly played out, operations in the area continued to move farther into the countryside with general, if less dramatic, success. Gold was found by Louis Galice on the creek which bears his name in 1851-52 and by 1854 "...much mining was also done on Evan's creek and its tributaries, on Foots creek, Galls creek, Humbug, Steamboat, Grave creek and Wolf creek" (*Oregon Mining Journal* 1897:31). Renewed activity at Waldo once again brought that region to the fore by 1855.

In the year 1855 the camp experienced a veritable "boom" and attracted many miners from Althouse...in the first two years of the camp's existence no quicksilver was used in the mining operation but was introduced in 1853 and did much to stimulate mining enterprises. In the year first named (1855) there were 500 miners in the district and the town contained four general merchandise stores, several saloons, a brass band and many gamblers, fast women and dance-houses (*Oregon Mining Journal* 1897:31-32).

2. Placer Mining Technology 1850-1860

In the earliest years of the effort to extract gold and other minerals in southwestern Oregon, the extreme isolation of the area and its limited access to modern equipment, transportation, and other technologies required an almost total dependence on traditional placer mining techniques. Placer mining, which reportedly derives its name from the Spanish *plazo de oro*, meaning place of gold, refers to the extraction of gold from sediment via "washing" it out with water (Figure 12). This essentially simple process takes advantage of the heavy specific gravity of gold in relation to most other minerals.

Panning was the most popular mining method when water was handy. Tools were cheap and simple — pick, shovel, and pan. Miners without gold pans often used baskets or bowls made of twigs, preferably willow, agitating the material in the basket so that the smaller pieces would fall through the cracks. The most popular panning vessel was the washing pan, or Spanish *batea*, requiring only one person (Sloane and Sloane 1970:19).

Although panning for gold was fairly easy and the required tools could be quickly and cheaply assembled before high-tailing it to the newest "strike," the inability to handle large amounts of raw material proved an inconvenient limitation when a site actually "panned out" and proved valuable. Then, pressed by the expediency of isolating as much gold as possible, a more efficient method was needed. Modest elaboration on panning resulted in the "rocker," a wooden cradle-type mechanism first used in



FIGURE 12: SUMMER "HYDRAULICKING" AT THE LAYTON MINE, FERRIS GULCH, APPLAGATE VICINITY, c1890 (JOSEPHINE COUNTY HISTORICAL SOCIETY COLLECTION).

California by 1848. The rocker was simply a wooden box, usually with a screened mesh or "riffled" bottom, that could be filled with hopefully gold-bearing dirt and then flooded with water. A rocking motion, with small curved rocker legs, helped wash the gold out, separating it from the remaining base material. "Though in operation, the rocker or cradle differed little from the pan, it required considerably less effort and washed far more gravel" (Sloane and Sloane 1970:21).

A variation on the rocker was the "Long Tom," also called a "Mexican Trough." A long wooden box, often extending as much as twenty feet, Long Toms worked on the same principal as the rocker with a series of riffles or baffles trapping the gold as the water was flushed through the length of the equipment. In places where water flowed with regularity and the mine operation could occur within the channel itself, a Long Tom could be placed at an incline and the miner would simply dump dirt into its head, allowing the naturally moving water to do the work of separating out and trapping the

gold in the bottom riffles. Finally, with the development of "sluice boxes," which were basically Long Toms extended hundreds of feet in length, early placer mining reached its peak of efficiency.

The [sluice box] line usually led directly across the claim; and the 'bronzed and hardy gold-seekers,' partners in the profits, stood upon either side of the boxes and shoveled the earth into them. This improvement led to the formation of companies of miners, whereby advantages accrued in securing 'water rights' and 'dumping grounds' and sufficient quantities of 'pay dirt' which would have been impossible to solitary workers (Walling 1884:323).

3. The Rise of Towns

With the rapid influx of miners to southwestern Oregon following the Rich Gulch strike, the area soon had its first "town" as the rough mining camp along Jackson and Daisy creeks evolved into "Table Rock City," soon renamed "Jacksonville." Merchants and camp followers erected tents, followed next by frame, and finally brick, commercial houses. Jacksonville developed into the first true community in southwestern Oregon, boasting churches and schools, in addition to hotels and saloons. Helped by its designation as seat of Jackson County, by 1855 this self-styled "Queen City of Oregon" was one of the largest and most prosperous settlements in the state.

The town of Jacksonville, the most flourishing location in Oregon and a most important trade center...supplied all the neighboring camps with the necessities of life. Pack-trains laden with the articles indispensable to miner and settler, were arriving and departing daily (Walling 1884:341).

Estimates of the population of Jacksonville during its mining-inspired heyday range as high as 10,000 people although this is almost certainly an extreme exaggeration. Fletcher Linn, son of area pioneer David Linn, wrote in his memoirs that according to both his father and pioneer banker C. C. Beekman, Jacksonville's population never exceeded 3,500 during the height of the gold boom (Linn 974:141).

Gold clearly provided the driving force behind Jacksonville's rise and by implication played a significant role in the settlement of all of southwestern Oregon. Ashland's mills, both timber and flour, prospered by supplying material to gold-enriched miners, and the same dependence on Jacksonville's mining wealth could be said for virtually every community in the valley. Although speaking of the entire Pacific coast, historian Earl Pomeroy's observation applies with especial appropriateness in the southwestern Oregon region:

The gold rush started so much else that it soon submerged itself; soon those who had seen but left the mines far exceeded those who stayed to dig. Yet few events have so epitomized the history of a region or so greatly influenced it (Pomeroy 1965:54).

4. *The Miners*

The men who, in early days, flocked to Southern Oregon in such numbers and laid so well and deep the foundations of the present social, political and industrial fabric were no common men. They were with hardly an exception, men under 25, well grounded in republican institutions, many of them college graduates, some of them lawyers and doctors...and all of them courageous, resourceful, hardy, and strong! (Mineral Wealth 1897:33).

Whatever the character of the original miners in southwestern Oregon, be they college-educated doctors and lawyers or not, such individuals soon returned to more stable occupations and their families, or they moved on. No accurate census or quantitative data on the gold rush boom period of the early 1850s exists, but analysis of the 1860s census data documents that southwestern Oregon's mines were being worked by an international group of young, mostly single, men. Data for two important mining precincts, "Applegate" in Jackson County and "Browntown/Kerbyville" in Josephine County, show that less than a decade after the area's initial strikes, most of the mining population was foreign born. In these two precincts, by all evidence fairly typical of the region during the period, more than 50% of the individuals who listed "miner" as their occupation in the census were born in China (Table 3).

A) SELECTED INDIVIDUAL MINERS

The original group of individuals drawn to southwestern Oregon were active in gold mining or were aided in their other economic endeavors by the presence of wealth the mines generated. Early merchants, bankers, physicians, and what passed for industrialists in Jackson and Josephine counties in the 1850s and 1860s all profited either directly or indirectly from area mining activity. While many of southwestern Oregon's most prominent settlers ultimately pursued alternate occupations, virtually all either first worked in the mines themselves or eventually invested in operations managed by others. Such individuals include:⁹

C. C. Beekman, Jacksonville: The prominent banker and Wells Fargo agent first arrived in the region to mine at Sawyer's Bar in northern California. He was transferred by Cram, Rodgers and Co., to Jacksonville in 1853

Table 3
Place of Birth &
Average Miners Age, 1860 Census

State/Country	Applegate Precinct Jackson County		Browntown/Kerbyville Josephine County	
	# of Miners	Average Age	# of Miners	Average Age
Azores			5	32.80
Arkansas	3	32.00		
Belgium	2	39.50		
Canada	1	28.00	4	30.00
China ¹	115	28.54	69	28.74
Connecticut	1	28.00	2	38.00
Denmark			1	27.00
England	2	36.50	5	31.00
France	19	35.16	2	35.00
Germany ²	5	36.20	16	30.63
Holland	1	38.00		
Iowa			2	25.00
Illinois	8	35.16	3	27.00
Indiana	11	31.55	9	29.89
Ireland	8	37.63	22	29.32
Italy	2	33.00		
Kentucky	16	35.06	4	31.25
Massachusetts	3	37.33	4	39.75
Maryland	2	31.50	3	33.67
Maine	5	31.00	1	26.00
Michigan	3	27.33	3	26.67
Mississippi			1	31.00
Missouri	5	28.00	4	29.50
North Carolina	1	24.00	1	31.00
New Hampshire	6	25.50	2	45.00
New Jersey	2	33.50	2	34.00
Norway	2	30.00	3	29.00
New York	11	33.27	7	30.43
Ohio	9	28.89	11	29.00
Pennsylvania	11	33.27	10	26.30
Poland			1	39.00
Portugal			1	31.00
Rhode Island	2	53.00		
Russia	1	27.00		
Sandwich Islands	3	31.33		
South Carolina			1	49.00
Scotland	1	37.00	7	35.86
Spain			1	42.00
Sweden			7	29.29
Switzerland	4	29.25	3	38.67
Tennessee	10	32.50	2	29.00
Unknown	7	33.29	2	36.50
Virginia	3	24.33	6	29.00
Vermont	2	42.00	3	40.00
Wales			5	37.00
TOTAL	287		235	

Notes:

- 1 The total for "China" includes individuals with "Canton" as the listed place of birth.
- 2 The total for "Germany" includes individuals born in a related areas such as "Prussia," "Bavaria," "Baden," "Mecklenburg," as well as those who listed "Germany."
- 3 Analysis of Table 3 reveals that 318 (62%) of the miners with identified birthplace were foreign born and that 195 (38%) were born in the United States.

following the gold strike and remained an express agent on his own and with Wells Fargo afterwards. Beekman's bank was the prime processor for gold in southwestern Oregon and his wealth was largely derived from gold, both via the work of others and from his own investments (Walling 1884:524).

James W. Collins, Phoenix: Born in Missouri, Collins arrived in Jackson County in 1852 and mined here after learning the skill on the Feather River. He took a Donation Land Claim and began to raise stock before moving to a farm near Table Rock where he claimed to have planted the first grain and built the first frame house in Jackson County (Walling 1884:521).

Oscar Ovid Ganiard, Jackson County: Ganiard was born in New York and arrived in Jackson County in October 1852 where he "...mined on Jackson creek but during the starvation times of 1852-53 was forced to return to Portland." Returning to Josephine county in 1856 he eventually settled in the Sam's Valley area and remained one of the valley's most respected farmers and merchants for the remainder of his life (Walling 1884:528-9).

Henry Klippel, Jacksonville: Born in Germany, Klippel arrived in southwestern Oregon in 1852 after first mining in Yreka, California. "He mined first at Galice creek, Josephine County, but soon returned to Rich Gulch where he engaged principally in mining until 1857. Klippel returned to mining in 1860 with the pocket strike at Gold Hill and is credited with operating the first stamp mill in Oregon in connection with that strike. He mined in Idaho before returning to Jacksonville where he ran a hardware business, surveyed the Klippel and Poole Addition to the city, and served as sheriff. Moving to Salem after an appointment as "Capitol Commissioner," Klippel returned to Jacksonville in 1874 where he built a quartz mill in partnership with C.C. Beekman. Klippel invested heavily in a mine in the Squaw Creek area in the 1870s-1880s. In 1877 he was operating a hydraulic mine on the Applegate (Walling 1884:580-81).

William Mathes, Phoenix: In 1852 Mathes arrived in southwestern Oregon from Pennsylvania. "Starting from home for the mines, he never stopped until he reached them at Jacksonville in September of that year....[Mathes returned] to Jackson creek [where] he barely escaped striking a fortune...which so disgusted him that he left the mines forever

and settled on the land where he now resides in May 1853." Mathes remained a well-respected rancher and farmer (Walling 1884:533).

Paine Page Prim, Jacksonville: Prim, an attorney, arrived in Jackson County in 1852 "...where he was engaged as a miner." Returning to the practice of law, Prim served on the Oregon Supreme Court and in 1882 was the Democratic nominee for U. S. Senator. Prim was "acknowledged as one of the leading attorneys in the first judicial circuit" (Walling 1884:537).

Thomas G. Reames, Jacksonville: Reames first settled near Phoenix in 1852 where he was engaged in farming and mining. In 1864 he moved to Jacksonville after being appointed Deputy Sheriff and then was elected Sheriff. A successful merchant in Jacksonville, Reames served as a Brigadier General in the Oregon militia.

Captain Thomas Smith, Ashland: Born in Kentucky, "...in 1849 he came to California...and arrived in the mines in October of that year....In the Spring of 1851 he came to the Yreka mines where hearing of the Oregon mines down in what is now Josephine county, crossed the Siskiyou on the 7th of June and engaged in mining on Josephine creek....he prospected for and found gold in considerable quantities at Blackwell and Willow Springs." Smith later served in the Territorial legislature in 1855-56 and was elected to the state legislature in 1868 and then again in 1880 (Walling 1884:539-40).

Gustaf Wilson, Josephine County: A native of Uleaborg, Finland, Wilson arrived first in California in 1850. He "went at once to the gold mines and prospected and worked in almost every mining camp from Mud Springs, California to Jackson County, Oregon." With the establishment of Josephine County in 1855 he was appointed county coroner and later served as county clerk. In the late 1860s he moved to Portland (Walling 1884:521).

While the vast majority of the 1850s miners in southwestern Oregon soon entered other businesses, some found sufficient gold to remain in the industry for the next three decades. Walling's less detailed "Biographical Brevities" lists almost two dozen individuals in Jackson and Josephine counties who listed "miner" as their occupation (Table 4).

This admittedly non-scientific analysis shows that of the 287 Jackson and Josephine county residents listed in Walling's brevities only 21, or about 7%, still considered

Table 4.
Individuals Identified as Miners in Jackson and Josephine Counties
 (from Walling 1884)

<u>NAME</u>	<u>RESIDING AT</u>	<u>OCCUPATION</u>	<u>TO OREGON</u>
Anderson, E.K.	near Phoenix	Farmer & Miner	1852
Baughman, Melchi	Kerbyville	Miner	1852
Beach, C.H.	Democrat Gulch	Merchant & Miner	1854
Black, George	Poor Man's Creek	[Pioneer] Miner	1852
Bour, John M.	Illinois River	Miner	1852
Cameron, Theodoric	Uniontown	Mercantile & Mining	1852
Cook, Robert A.	Foots Creek	Miner & Farmer	1853
Forbes, Sommerville	Althouse Creek	Miner	1870
Haskins, Newton	Sterling Creek	Miner	1854
Ingram, J. W.	Willow Springs	Miner	1870
McDaniel, J. P.	Jacksonville	Miner	1852
Mullen, Phillip	Phoenix	Miner & Assayer	1875
Nelson, Lawrence E.	Althouse Creek	Miner	1870
Platter, A. H.	Democrat Gulch	Miner	1852
Russell, H. D.	Forest Creek	Miner	1878
Saltmarsh, Joseph B.	Sterling Creek	Miner	1851
Simmons, George	Waldo	Proprietor of Mine	1855
Swinden, John	Cain's [Kanes] Creek	Miner & Farmer	1851
Turner, James	Sucker Creek	Blacksmith & Miner	1851
Wimer, Jacob	Applegate Creek	Miller & Proprietor of Mine	1863
Yawdes, George	Sterling Creek	Miner & Farmer	1852

mining a significant element of their occupation. While many more still worked the region's mines of the period, it is reasonable to assume that by the 1880s and probably much earlier, mining had faded as the primary occupation of the region's leading citizens and leaders.

B) 19th CENTURY MINING LIFE

The very nature of prospecting, mining, and ultimately the extraction of (hopefully) large amounts of precious metals from the soil does not lend itself to permanent settlement. In the 1850s and 1860s, as residual gold fever continued to characterize much of the West, prospectors spread through the region and when lucky inspired hordes of miners to quickly stake claims along creeks and streams. Easily found gold soon panned out, leaving only those with sufficient capital to continue the quest, and

the hordes accordingly moved on. Mining "camps," crude tent and single-wall wood-frame buildings housing hotels and the ubiquitous "tavern," sprung up and were abandoned virtually overnight, entirely dependent upon the continued presence of gold.

The single men that formed the mining population in the mid-19th century lived a hard and taxing life, working knee-deep in cold water for long stretches at a time, clothed in crude wool garments, soaked to the bone. Days were long, and since much mining happened in the cold winters when water was plentiful, they were continually cold. Lone miners often led an isolated and solitary existence, living miles from the nearest neighbor or service center. One reporter on mining in the Althouse area wrote:

I found a man who had been toiling on the same creek for nineteen years; his dwelling is an eight-by-ten cabin with a sheltering shed for wood...He will not make a trail for fear other people will encroach upon [him]...He is not one of those people that claim misery loves company. He evidently likes his own company best and does not want any other (Rogue River Courier 1886).

With few exceptions, early mining in southwestern Oregon was an independent affair:

A mining camp, after all, was not a settlement; it was a collection of men whose principal purpose was to survive long enough to get rich — and it was in such an atmosphere that legends were born.... Generally speaking, if a camp survived long enough to have a book written about it, or even a magazine article, it was no longer a camp (Watkins 1971:224).

The legends, of course, were many, including the putative democracy and swift justice of the miners, their organizational framework, and "sterling" character. Only a few of the mining regions developed any lasting centralized "camp" worthy of the name. Jacksonville quickly grew into a "city" of some size. But Waldo, Browntown, Allentown and others in the Illinois Valley, of mixed size and more tightly linked to mining than Jacksonville, were more typical of area mining camps. All, as might be expected, were abandoned once the gold played out.

While the vast majority of the mining in southwestern Oregon was undertaken by single operators, a few small mining-based communities did develop. Long-term larger scale mines, especially when located in very remote areas, often resulted in a store, and maybe even a post office or school, as well as the ubiquitous saloon or tavern. This was especially true during the large hydraulic-mining period, as miner corporations were formed and many individuals jointly worked a claim. A few

mining-based communities achieved something of a sense of permanence. Examples of this latter category most notably include the following:

Waldo, Illinois Valley: (including Allentown and Browntown)

Waldo, first seat of Josephine County and the primary community of the entire "Sailors Diggings" area,¹⁰ was an important settlement in the region throughout the 1850s. The town was actually platted on government land, meaning its residents owned their buildings but not the ground beneath. Waldo first developed in 1851-1852, and predates the find at Jacksonville, being the first gold discovery in the Oregon Territory. Soon a service town developed, named "Waldo" after a California gubernatorial candidate from the mistaken belief that the site was within that state and not Oregon.

Waldo had a bowling alley, a cobbler shop, a butcher shop, blacksmith shop, brewery, stores (one of which was a Chinese store), hotels, (one of which was a Chinese boarding house) and several saloons (Street and Street 1973:12).

"By 1855 Waldo had grown to be the largest town in the county, and was advanced to the dignity of county seat when Josephine was set off from Jackson County...the population of Waldo in 1856 is thought to have been 500 persons" (Walling 1884:457). Waldo boasted a "courthouse," a small log cabin, in which itinerant jurist Matthew P. Deady dispensed justice. Early stage routes connected Waldo with the port at Crescent City by 1853 and to Jacksonville by 1858 and the city served as the focal point for all the smaller mining-based communities in Sailors Diggings, such as Allentown (Allen Gulch) and Browntown. Allentown was the site of the first Catholic Church in Josephine County, built in 1864. Browntown, named in honor of "Web-foot Brown" was "at one time supposed to have 300 to 500 inhabitants" (Walling 1884:455).

Waldo lost its status as county seat to more centrally located Kerbyville by the Fall of 1856. The city continued to prosper as the surrounding mines were profitable, but by 1865 nearby Althouse had "nearly winked out" and had an "air of deserted loneliness" (Walling 1884:455). Indeed in 1872 Mrs. Frances Fuller Victor, Oregon's most noted early historian, failed to even mention "Waldo" in a summary of Josephine County communities (Victor 1872:220-21).

After the first World War, so little mining or other business activities were being carried out in the area that the town gradually died...The George Elder Store, the last business in town, and the Waldo Post office...closed in 1928 (Street and Street 1973:18).

The few buildings and the foundations that remained in Waldo were “mined away” in the 1930s, as large-scale hydraulic operations scoured the original townsite. “The water cut to the very base of the old brick and stone building that stood as Waldo’s central structure since 1863” (*Rogue River Courier* 1937).¹¹ Today cemeteries at both Allen Gulch and Waldo are the chief remnant of these former town sites.

Sterlingville, Jacksonville area

Discovered as a gold mining region in the early 1850s, by October 1854 Sterlingville reportedly had a population of 1,500. The town boasted various business establishments; hotels, boarding houses and the ever-present saloons (Haines and Smith 1964:22). Sterlingville declined and by 1860 only 123 residents remained. Despite continued efforts, by 1876 “...the old town had largely disappeared.” In 1877 the mine was purchased by the wealthy Ankeny family of Portland and Sterlingville essentially became a company town, its fate entirely tied to the operation of the Ankeny mining operation. A post office was established in 1879 but lasted only through 1883. Buncom, a related community nearby, gained a post office in 1876 and stayed open through 1917.

With the arrival of the 20th century, most particularly the widespread development of the automobile and the construction of improved roads, the need for isolated mining-related communities like Sterlingville and Buncom declined. Miners, and mine owners, simply drove in from Jacksonville or elsewhere. Even as the Sterling mine continued to operate, the early wood buildings of the community slowly collapsed. Two of Buncom’s buildings, since moved farther down the canyon from their original location, are all that remain.¹²

c) ETHNIC DIVERSITY AND THE ARRIVAL OF THE CHINESE

Although a wide variety of individuals representing numerous ethnic groups participated in the early discovery and extraction of gold in southwestern Oregon, the process was dominated by white American males during its initial phase. That other ethnic groups were present is apparent if only from the various geographic names that commemorate their often short presence in the region. *Kanaka Gulch* and *Kanaka Flat*, both west of Jacksonville, are named after the 19th century Hawaiians who mined and lived in the area (LaLande 1991:35). *Negro Ben Mountain*, southwest of Ruch, was known as *Nigger Ben Mountain* prior to 1964 and was named after an early blacksmith and part-time miner who lived nearby (McArthur 1982:536).

Given its proximity to the international rush to California, men from many different

nations were soon drawn to the mines of southwestern Oregon. Among the more significant European individuals who arrived in this area during the 1850s were Peter Britt, noted photographer and artist born in Switzerland; Henry Klippel, miner and merchant, born in Germany; and Kaspar Kubli, another native of Switzerland. Jewish merchants such as Max Mueller and Gustav Karewski, both from Germany, also played important roles in the establishment of Jacksonville and the county as well. By 1860 about one in five of all the miners in the Applegate and Browntown/Kerbyville precincts were European or non-Chinese Asian born (see Table 3).¹³

As far as concerns mining, however, it was clearly the Chinese who represented the most significant ethnic group outside the majority European and American miners. Though faced with restrictive and racially-biased regulations and taxes, large numbers of “Celestials” worked in the mines of southwestern Oregon and remained a part of the area’s population for much of the last 50 years of the 19th century. By 1858 their numbers were sufficient in the Waldo area that of the town’s four hotels one was exclusively for Chinese (McKinley and Frank 1996:26). In that same year more than 400 Chinese were issued mining licenses in Josephine County alone (Street and Street 1973:11). Chinese miners were not, however, greeted as a new economic force or particularly well-thought of by the earlier settlers, as this typical 19th century commentary accurately illustrates.

These peculiar people came early to Jackson county and mostly began work upon claims previously abandoned by whites — their universal custom — and made no effort to discover new claims, being far from proficient as prospectors...As in California they came at first silently, labored quietly, and hardly was their presence known until the stolid yellow face of “John” peered from every bank and every worn-out placer from Jacksonville to Althouse, from the South Umpqua to Sailor Diggings (Walling 1884:346).

The Chinese first arrived at southwestern Oregon’s mining regions by 1855, with most of them coming from poor farming communities in Kwangtung province. Virtually all of them were “sojourners” rather than immigrants in the traditional sense — they intended to return to China after having made their fortune in America. “The 19th century sojourner population formed an almost exclusively male community which thrived on the fringes of American frontier society” (LaLande 1985:31).

Largely due to politics and racism, Chinese miners tended to gravitate to previously worked areas, re-mining tailings or ground ignored in the initial rush. Period histories grudgingly recognized the Chinese for their strong work ethic and efficiency in working lesser claims. Later historians, notably Rodman Paul, declare that in the 19th century West the Chinese were *harbingers of decline* in a mining area, a people whose

very arrival represented proof positive of the end of the easy strikes. If Paul is correct, the mining boom in the West was very short-lived, particularly in Oregon. "Of the 3,965 'miners' that the census was able to list in the whole of Oregon in 1870, 2,428 were Chinese. The ratio was not greatly altered in 1880" (Paul 1963:149).

With the departure of the white miner came the Chinaman, who took the place vacated by the former, and during the next few years took out from the various districts many tons of gold. With the exception of Gin Linn, who still operated an hydraulic on the Little Applegate, these Orientals never made a permanent improvement in this country and it is now difficult to find a vestige of the thousands who once occupied the streams (Mineral Wealth 1897:33).

Discriminated against while they worked southern mines, and largely ignored or dismissed by later historians as scavengers of earlier Euro-American discoveries, the actual history of Chinese mining in southwestern Oregon is one of diligence amidst harsh conditions, both physically, and all too often, psychologically. Today, while vestiges of the Chinese presence in 19th century southwestern Oregon are far more plentiful than *Mineral Wealth* implied in 1897, only a few of the hundreds of Chinese miners who worked in this area mines left much of an individual legacy. As might be expected these were the men who actually operated claims of long-standing, not the typical mine worker.

Gin Lin:

No individual Chinese miner in the region is as well known as Gin Lin, who operated a fairly large scale hydraulic mine on the Little Applegate for more than two decades. Gin Lin was living in southwestern Oregon as early as 1864 and returned to China in 1894 after many years of successful mining operations. Portions of his Palmer Creek Diggings mining claim are now an established trail system managed by the Rogue River National Forest.¹⁴

Wong Back Fong:

Another long-time miner, Fong's (also spelled "Faun") gold mine was a "...deep hole dug in the level ground between the mouth of Sailor Gulch and the east fork of the Illinois River." The operation was sold in 1899 to the "English-Canadian Company" who hoped to develop an extensive dredging operation on Fong's former claim.¹⁵

Because Wong Back Faun's mine near Waldo was not a hydraulic proposition, it has been passed over by investors and also because it was not a hydraulic proposition, Wong Back was permitted

to be the owner of it, for he is a Chinaman and with his almond-eyed and meek auxiliary heathens, he has 'gophered' in the gravel there for many years. But because it is a dredging proposition of more than ordinary encouraging prospect, the English-Canadian Company of Spokane relieved Mr. Faun of its ownership for a sum which will make a rich Chinaman of him for the rest of his natural life (Rogue River Courier 1894).¹⁶

Although hidden beneath the general racism of the 19th and early 20th century that continually discounted the Chinese miner's work ethic, personal character, and abilities, from a historical perspective it is clear that these Asian sojourners played an important role in the history of the mining industry in southwestern Oregon. The begrudging acknowledgment of the success of a Gin Lin or a Wong Back Fong, who despite a restrictive legal framework and a hostile community, endured, is evidence of the important role the Chinese played in this area's mining industry.

5. *"Bust" - The 1860s and 1870s*

Once the excitement of the initial period of gold discovery waned and, more to the point, the easily accessible placer deposits lining the area's creeks and riverbeds were worked out, the search for gold in southwestern Oregon assumed a more lasting if less dramatic character. Seasonal droughts in 1853-54 had thinned the excitement for southwestern Oregon and many of the transitory miners moved on to other areas in the hopes of more lucrative finds. Merchants and farmers, both attracted by the valley's good lands or drawn by the commotion of the gold strike, turned or returned their attentions back to businesses and the improvement of homesteads. People married, built houses, and the importance of mining as the bell-weather of daily life declined.

The suddenness and dramatic wealth that the discovery of gold in California had meant for those lucky few who reached the gold fields early, with sufficient capital, created an unusual clamor that has been quite appropriately called "gold fever." Not only were the late-comers, those who had "just missed" great wealth in California, eager to try again, those who had found gold in California sought to replicate their heady success. In 1878 historian John A. Hittell, wrote that "Regions containing extensive placer deposits are peculiarly subject to sudden migrations of the miners to districts reported to be richer. The more abundant the gold, the more unsettled the population. They who are doing well, instead of being attached to their claims, are the more ready to move because they have money to spare."¹⁷

The next "strike" after southwestern Oregon of meaningful size was at Fraser River in Canada. News of that find in 1858 reportedly drained more than 50% of California's

gold miners away and reduced that state's real estate values by as much as 80% of their previous worth (Watkins 1971:47). Its impact on Jackson and Josephine counties was surely no less severe.

The reports of rich strikes in the Frazer [sic] River country sounded the alarm, and in a few weeks the once thickly-populated and seething camps of the Southern Oregon country, along the Illinois, Galice Creek, and the Applegate, were deserted. Furniture, camp fixtures, abandoned saloons and dancehalls, which had been the scenes of high revelry night and day were abandoned, left to the rats, to decay, and to the Chinamen (*Mineral Wealth* 1904:1).

While Fraser River proved less than profitable and most miners who had pulled up stakes in 1858 soon returned, its failure did little to dim the excitement when word of the next "strike" reached the area. In 1859 mining interest shifted to Colorado and the famed rush to "Pike's Peak," and the following year the Comstock Lode in Nevada drew thousands of seasoned miners. The 1862 discovery of gold in Idaho again drew substantial interest and population away from Jackson and Josephine counties, once again dampening the impact of mining in the local economy.

This [Fraser River] excitement was followed in 1862 by an almost as great a rush to the Salmon river diggings in Idaho. These two excitements almost depleted Southern Oregon of miners and for ten or more years the industry languished (*Oregon Mining Journal* 1897:32).

Gold in Montana in 1863, in Utah in 1865, and New Mexico in 1867 dimmed the interest in southwestern Oregon. While mining continued in the study area throughout the 1860s and 1870s, investors instead turned to the area's growing cities and towns. The prospectors who had helped start Oregon's pioneer mining boom moved on. The merchants and farmers remained and developed the region's communities.¹⁸

6. 19th Century Hydraulic Mining

While sufficient for the small placer discoveries of the 1850s, southwestern Oregon's irregular water supply proved a major obstacle to the type of large-scale mining operations that were developing in California during the 1860s and 1870s. The Rogue River, of course, was a reliable and major year-round stream, but the area's smaller creeks and even the Illinois and Applegate Rivers were prone to vastly diminished flows in the summer months and mining activity was often restricted to the high water period in winter. Additionally, as the valley continued to develop, mining use of seasonal water was challenged by the increasing water-rights associated with irrigation and the growing agricultural economy.

As the easy surface placer deposits of southwestern Oregon were exhausted, the area's miners turned their sights to the high terraces and dry gulches of the region, areas of prehistoric river channels (Figure 13). Following the pattern of practice firmly established in California, the mining companies formed to operate sluice boxes now sought additional sources of water to pursue a version of large-scale placer mining dubbed "hydraulic." In hydraulic mining, massive amounts of water were channeled through a monitor or "giant" and used to literally wash away potential gold-bearing gravels, sending a hopefully rich gold-bearing slurry of dirt and water through a series of screens for collection.

The mechanics of hydraulicking were impressively simple—and effective. Expansive flume systems were constructed to carry water from the upper reaches of rivers and streams; falling at a tremendous

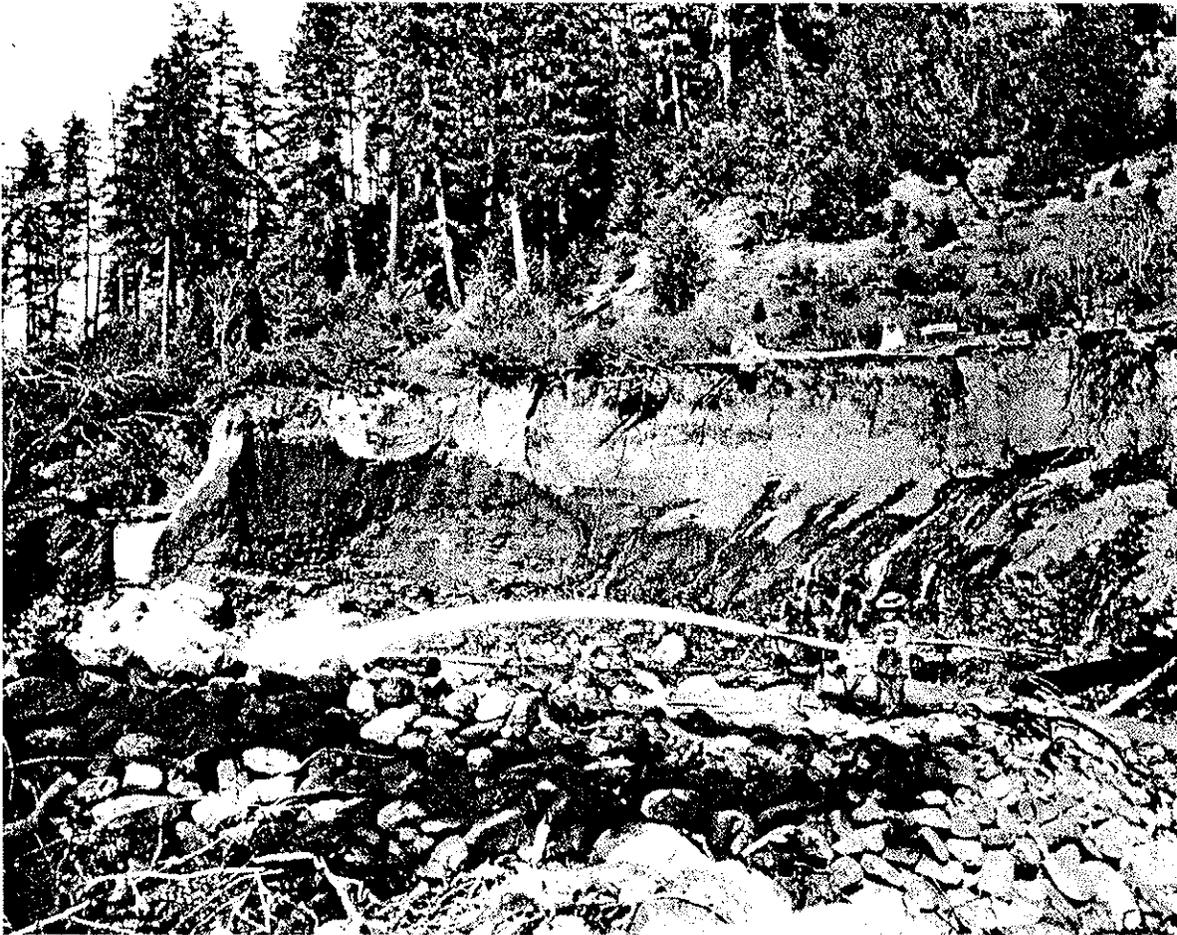


FIGURE 13: LARGE-SCALE HYDRAULIC MINING DRAMATICALLY CHANGED THE LANDSCAPE, CUTTING AWAY THE BANKS OF STREAMS AND SENDING SILT, ROCK AND OTHER DEBRIS DOWNSTREAM. STILL, THE EXCITEMENT OF THE GIANT PROVIDED PRIDE AND ATTRACTION FOR THE FAMILIES OF THE MINERS, BRINGING THIS WELL-DRESSED MOTHER AND HER TWO CHILDREN OUT FOR A VISIT, c1900 (PERCY BOOTH PHOTO, JOSEPHINE COUNTY HISTORICAL SOCIETY COLLECTION).

rate of speed, this water was directed from the flumes into nozzles, called 'monitors,' and the resulting lance of water turned against whole hillsides, simply washing them out of existence (Watkins 1971:186).

As might be imagined, hydraulic mining required a significant water supply, either from a reservoir behind a small dam along a creek, or from a distant source via a system of flumes, trestles and ditches. Gravity was required to build "head" or pressure, measured in "miner's inches," with each such inch being equal to 1½ cubic feet of water per minute. Large operations like the Sterling Mine boasted giants capable of directing 2,500 miners inches, or 3,750 cubic feet of water, against a terrace every minute.

Such a stream moves boulders of immense size, hurls earth and cobbles to a height of many feet, and erodes great hills and mountains sides during a season's work (Walling 1884:323).

For the time, hydraulic mining operations were massive engineering efforts with elaborate systems of flumes, trestles, and ditches stretching for miles through rugged countryside as water sources were re-directed to areas of gold-bearing soil. Dug by hand, built on steep terrain and bridging steep chasms, thousands of dollars were required to capitalize the construction of the flumes. Once complete, hydraulic mines involved tens of workers, including miners, managers, carpenters, mechanics, and support crews. Gone were the days when a lone prospector with a pan could stake a claim and work it himself.

It requires capital, skill, and much labor to properly equip a hydraulic mine, even in southern Oregon. Long flumes to span deep gulches have to be built, many miles of ditches need to be constructed, reservoirs erected, thousands of feet of piping laid, and giants and other machinery set. All this takes money... (*Mineral Wealth* 1904:2).

The late 19th and early 20th century hydraulic operations form the second major period of mining activity in southwestern Oregon, often occurring in the exact same locations of the area's initial 1850s mining efforts. Literally hundreds of hydraulic operations developed in the area, becoming the dominant mining form in the 1880s and remaining prominent into the 20th century.

A) SOUTHWESTERN OREGON HYDRAULIC MINING ENDEAVORS

The Herculean engineering feats required of a successful and long-lasting hydraulic mine are exemplified by the developments on Sterling Creek, south of Jacksonville (Figure 14). Gold was first located here in 1854 by James Sterling, a farmer and part-time miner from Phoenix. The Sterling Mine, mirroring the pattern of much of

southwestern Oregon's mining, experienced an initial boom in the 1850s that tapered off in the 1860s, as easy surface-accessible materials were mined and then re-mined. By the mid-1870s much of the area had been systematically unified under the ownership of Theodore Cameron and U. S. Hayden. Both these men, long-time area pioneers, realized that much gold still remained on Sterling Creek but they lacked the wherewithal to successfully develop it. In 1877 that lack of capital was alleviated when the mine was sold to a Portland-based group led by David P. Thompson, a former governor of the Idaho Territory. Incorporated as the "Sterling Mining Company" the new owners made a major investment in the area.

The company secured the entire water right of Little Applegate river and constructed a twenty-eight mile ditch with a capacity of 2,500 inches and installed the latest and most approved hydraulic machinery. The cost of the mine and plant when ready for operation was about \$100,000 (*Mineral Wealth* 1904:34).

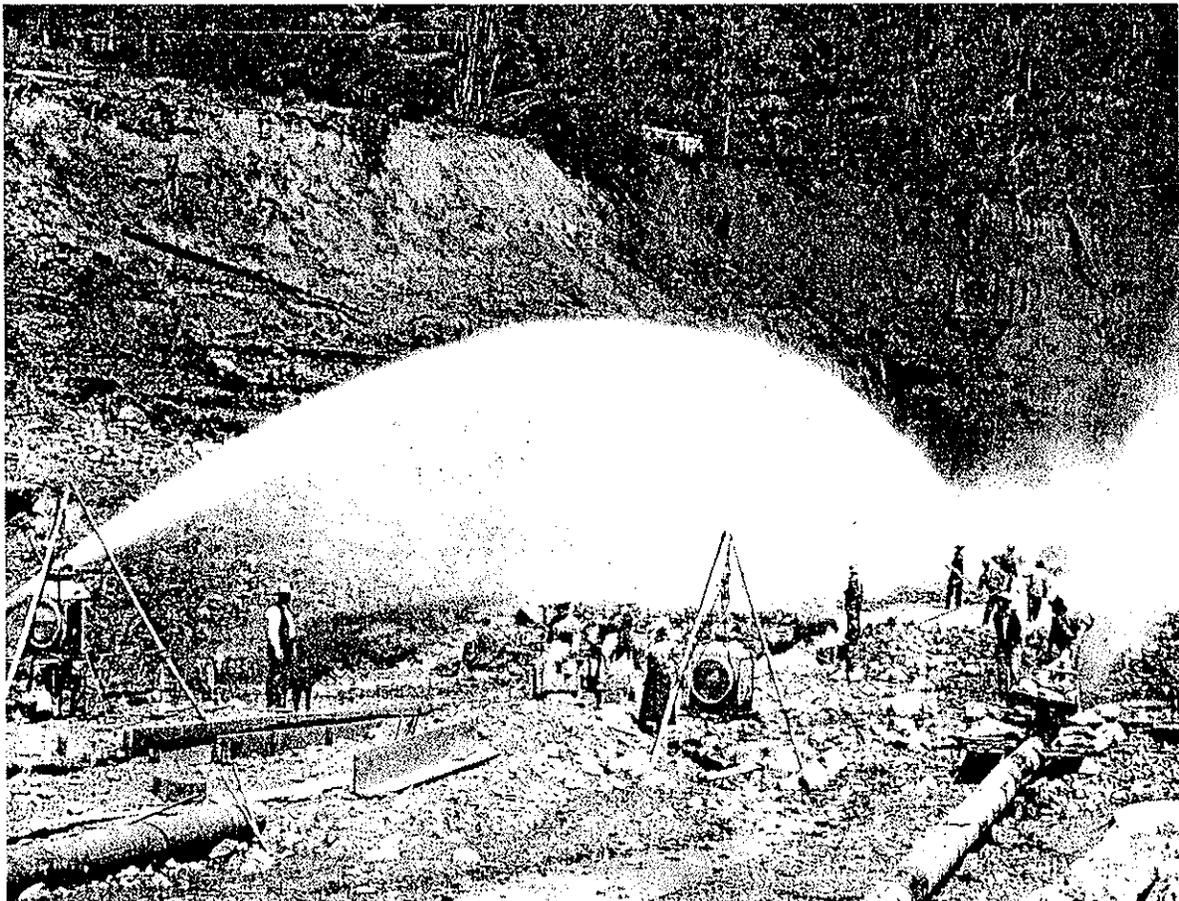


FIGURE 14: THE FAMOUS STERLING PLACER MINE (MEDFORD AS A MINING CENTER).

By mid-January 1878 the Sterling Mining Company was in full operation. In 1879 Thompson tired of the project and traded his interest in the company to Captain A. P. Ankeny for the latter's "New Market Theater" block in Northwest Portland (Haines and Smith 1964:52). The Ankeny family, represented by Cap's sons Levi (who later was a U.S. Senator) and then Henry, would remain the driving force behind the Sterling Mine as it was developed into what is generally regarded as one of the largest, richest, and most widely known hydraulic operations in Oregon over the next 25-plus years (Figure 15).¹⁹ By 1904 Henry Ankeny, along with a partner, Cook, sold the Sterling Mine to Fred J. Blakely. Although mining would continue for another few years and then reopen in 1912 and sporadically thereafter, the Ankeny sale marked the end of the mine's original 19th century hydraulic operation period. "It was the end of an era for Sterling Creek" (Haines 1964:75).

Long-lived and with consistent production, the Sterling Mine was by many accounts the most significant hydraulic mining operation in the study area. There were, of course, several other mines that played a significant role. One, the Ruble Grizzly, in northern Josephine County on Coyote Creek, was only successful after its owners developed a refinement of normal hydraulic design to accommodate the limited water supply at the site.

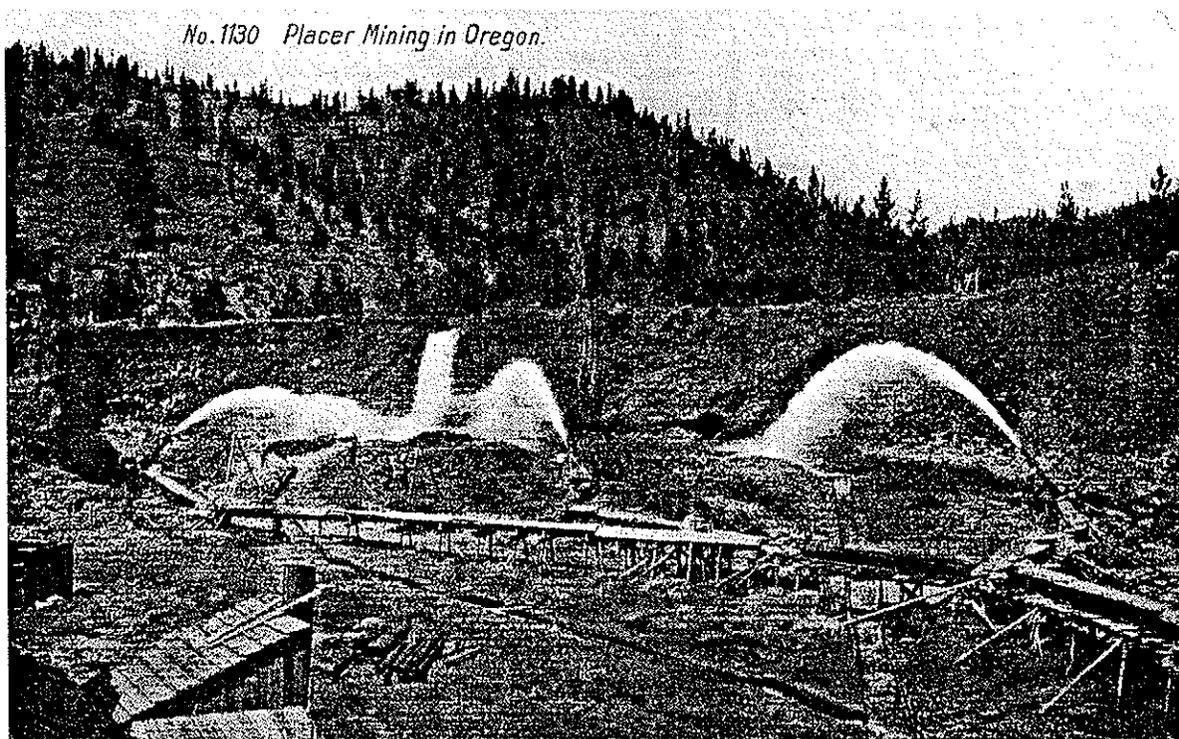


FIGURE 15: THE STERLING MINE, c1890. THIS FAMOUS VIEW, FIRST PUBLISHED AS A STEREOPTICON IMAGE BY THE KEYSTONE COMPANY, WAS PRODUCED FOR ALMOST TWO DECADES, BECOMING A POPULARLY DISTRIBUTED VIEW NATIONWIDE (AUTHORS COLLECTION).

The owners were driven to various experiments to meet the difficulties and since the large boulders rendered hydraulic elevating out of the question, it almost looked as though much good ground would go unworked. After some experimenting, the Rubles finally hit upon a process of elevating all their own... The Ruble elevator is a device who's merit has been fully proven, which is amply attested by the eighteen or twenty grizzlies which are in use in the various districts of Southern Oregon (*Mineral Wealth* 1904:13).²⁰

Hydraulic mining operations occurred throughout the region, on virtually every major waterway, often re-working ground that had initially been mined by placer technologies in the 1850s and 1860s. Typical examples include the "Columbia Mine" near Leland, developed by Portland resident L. A. Lewis and mining engineer William Huntley Hampton.

There are two distinguishing features of the Columbia mine; the first is the thoroughness with which everything has been done —the quarters built for the owners and the workers, the commissary and dining apartments, and the engineering skill displayed in the construction of the ditches, dams, sluice-ways and flumes (*Oregon Mining Journal* 1897:38).

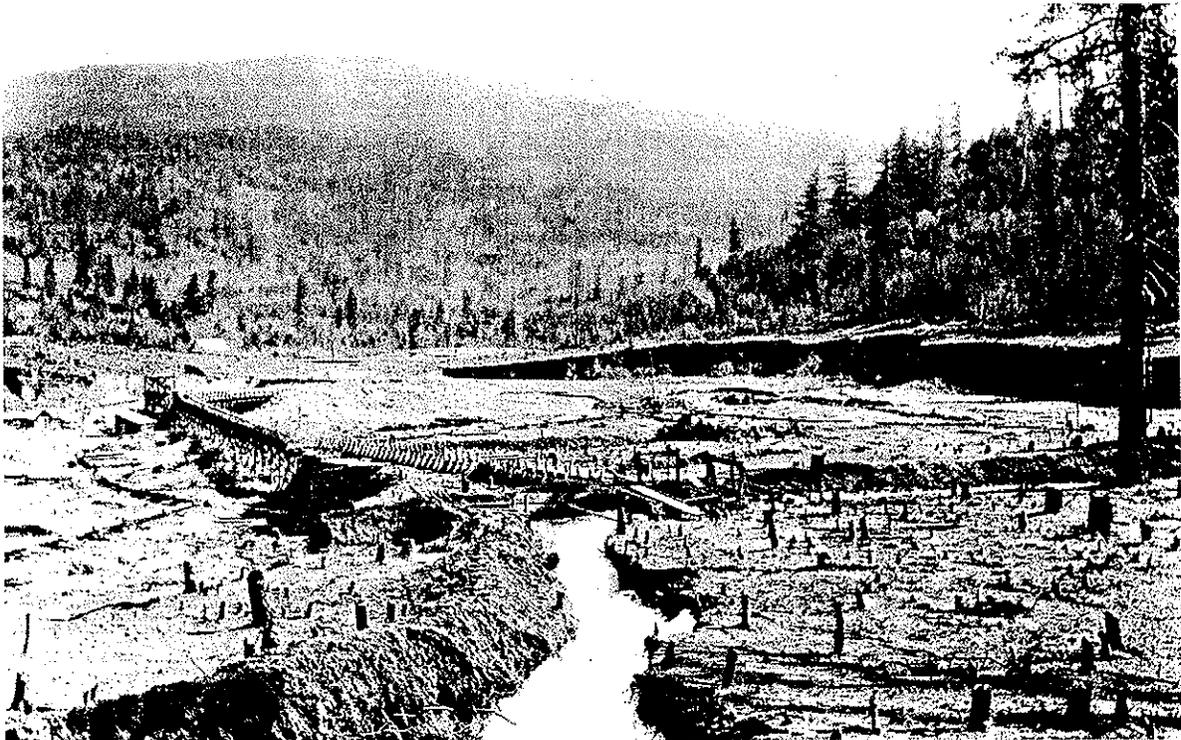


FIGURE 16: FLUME OF THE SEATTLE MINE COMPANY, ON ELLIOTT CREEK. EXTENSIVE FLUME AND DITCH SYSTEMS, SUCH AS AT THIS JOSEPHINE COUNTY MINING OPERATION, WERE REQUIRED TO CHANNEL AND RE-DIRECT THE AREAS OFTEN LIMITED WATER SUPPLIES (PERCY BOOTH PHOTO, JOSEPHINE COUNTY HISTORICAL SOCIETY COLLECTION).

On Louse Creek the "Forest Queen" was operated under the direction of General R.G. O'Brian, of Olympia, Washington. "There are four ditches, with a capacity of 4,000 inches of water, 1,500 feet of hydraulic pipe, two giants, 1,400 feet of 4-foot flume, six houses, one barn, 100 full bearing trees of choice fruit, a garden patch of four acres and a 10-acre pasture (*Oregon Mining Journal* 1897:44). Late 19th century publications indicate dozens of similar operations throughout the area. In 1897 on Footh Creek alone, Cook and Sons, the Black Channel Gold Company, Geo. W. Lance & Sons, Osmer and Robinson, a "Frenchman" and the Lance Gold Company were collectively operating nine separate giants within a six-mile stretch, with plans for three more to be added the following year! (*Oregon Mining Journal* 1897:57).

The Waldo area was also the site of extensive hydraulic mining operations (Figure 17), with the waters of the east fork of the Illinois River quickly channeled inland to re-work the placer sites of the region's first strikes. As early as 1852 an investment company, the Sailors Diggings Water, Mining and Milling Company, was building a

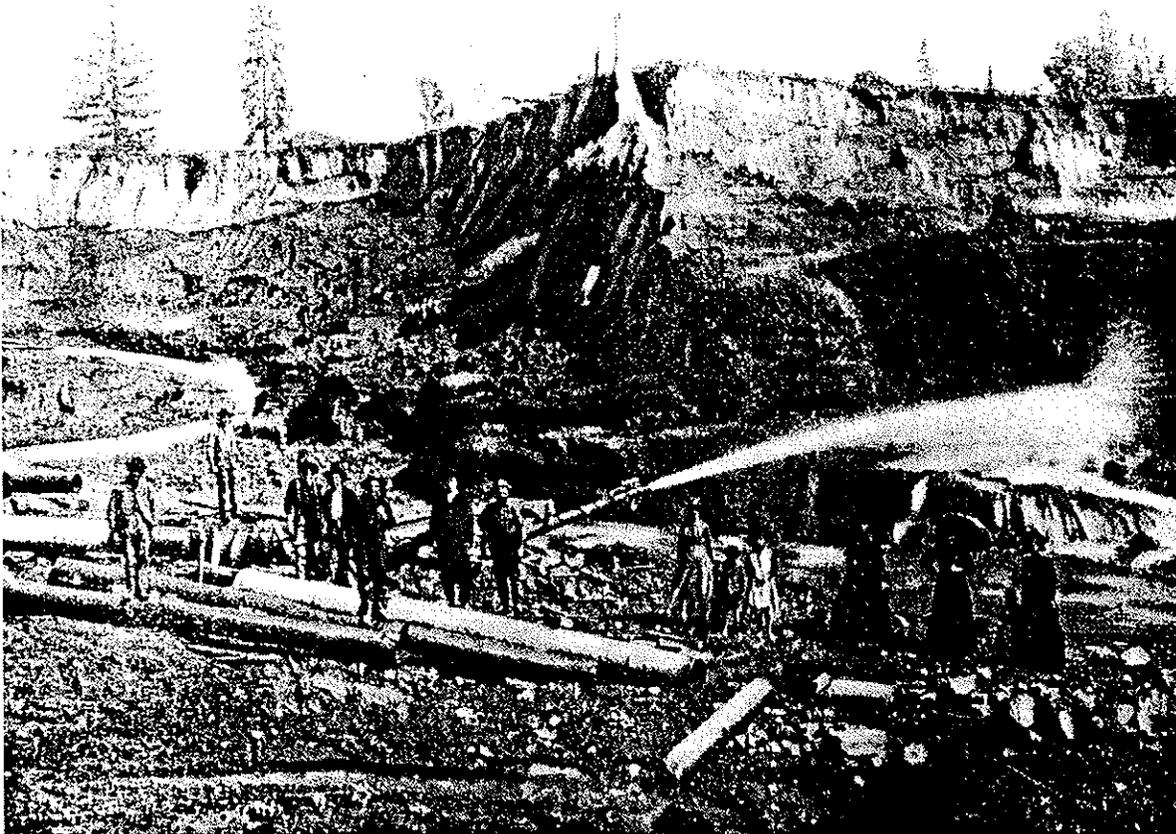


FIGURE 17: WIMER BROS. & CO'S HYDRAULIC MINE AT WALDO (MEDFORD AS A MINING CENTER).

three-mile long ditch to supply the small-scale mines of the area. "The company finished a second ditch, over eleven miles long, in 1854" (Street and Street 1973:3). Next the ditch system was purchased by Ennis, Simmons, and Cameron, early developers of the Llano de Oro mine. "They put in what is said to be the longest placer mine tail race in the world. It is more than three miles long and in some places over seventy feet deep" (Street and Street 1973:33).²¹ Eventually, James T. Logan married Simmons' daughter, and became involved in the operation which was renamed as the "Simmons, Logan and Cameron" mine (*Mineral Wealth* 1904:40). Even later the property was sold to George M. Esterly, and so all of those names are occasionally found associated with the extensive system of ditches and races in the area.²²

A slightly different form of hydraulic technology was employed at sites located on major waterways like the Rogue River itself. Freed of the need to channel water long distances, and able to work virtually year-round, such mines were often operated for decades.

...[O]n the east side of Rogue River and extending back into the hills are the noted Dry Diggings [District] covering 1,000 or more acres, and which have been the seat of mining operations for more than 30 years...(*Mining Journal* 1897:44).

In Dry Diggings, north of Grants Pass, mines like the Josephine were long producers. In 1897 the *Mining Journal* reported that the Josephine Mine was owned by William Bybee and operated by the Josephine Mining Company of Oregon City. "This is a very old mine and has always paid well" (*Mining Journal* 1897:45). By 1911 the mine had been sold to Dr. W.H. Flanagan, a prominent Grants Pass physician. "The mine has a fine water right, good ditches, and rich gravel" (Grants Pass Commercial Club 1911:19). The Flanagan Mine remained in the family ownership until the late 1930s and was apparently still being worked at that time, more than thirty years after the *Mining Journal* had described it as a "very old mine." When this portion of the Rogue River was designated as "Wild and Scenic," the Flanagan Mine site returned to public ownership and is now managed by the Bureau of Land Management (BLM Site 35HS11-185). An anomaly, the Flanagan Mine is one of the few financially successful, once-patented, mines remaining under direct Federal management in the study area.

b) THE IMPACT OF LARGE-SCALE HYDRAULIC MINING

The placer miner's task is relatively simple to describe, although back-breaking to perform...What began as a gentle fondling of earth ended as a violent and disruptive assault on the landscape... (McKinley and Frank 1996:28).

As discussed above, hydraulic mining, while essentially just an intensive elaboration of the basic placer technology, moved more dirt through more water and in theory meant the excavation of more gold in less time. To a greater degree than any other single mining technology, hydraulic mining physically changed the face of southwestern Oregon. The environmental implications of literally denuding entire hillsides and washing them through sluice boxes, leaving behind mountains of tailings and devastation, are obviously significant. Eventually, again following California's lead, operators of Oregon's hydraulic mines would be required to build "settling ponds" to protect against downstream silting and make other concessions and repairs to the damage the technology induced (LaLande 1995:26).

Hydraulic mining, as distinct from the earlier placer techniques, impacted southwestern Oregon economically as well. The massive investments required to develop a hydraulic operation, whether it was successful or not, often required outside capital and the influx of such sums surely played a role in the region's late 19th century development.

7. *Lode Mining*

While the major focus of mining activity in southwestern Oregon was placer mining in all its various forms, lode, "hard rock," or "quartz" mining had an influential and distinct boom.

The history of quartz mining in Jackson county mostly centers about the discovery of the rich leads at Gold Hill and Steamboat, and is mainly embraced in the two years 1860 and 1861...Thus quartz mining will be seen to occupy but a single short period in the county's history...[but gives]...great hope for a future time when...much greater things may be expected (Walling 1884:326).

Brooks and Ramp, in *Gold and Silver in Oregon*, report that the first quartz lead and the first gold lode discovered in Oregon was that of a Mr. Hicks on Jackson Creek (Brooks and Ramp 1968:238).²³ In January 1860 "Emigrant" Graham along with several partners located the "astonishingly rich" Gold Hill Pocket, near Table Rock. "According to available records...the outcropping rock was so full of gold that it could scarcely be broken by sledging (Brooks and Ramp 1968:238).

The Gold Hill strike was of such scope that it had a dramatic and immediate impact on southwestern Oregon, at the time languishing as mining had largely ceased following the easy finds of the placer rush.

Excitement ran high. Jacksonville, previously dull, began to bloom. Men who were notoriously "broke" began to put on airs of wealth. Money circulated with facility and every one partook, in spirit, of the good fortune (Walling 1884:327).

Emigrant Graham's strike at Gold Hill was of the type known as a "pocket." Through some mystery of geology, a small area was virtually filled with gold, while surrounding ground might have little or none of the precious metal. The Graham pocket produced more than \$150,000 worth of ore from an excavation estimated at 22' feet long, 10' deep and less than a yard wide.²⁴ It was just the first of a series of wealthy "pockets" that added to southwestern Oregon's gold mining reputation. About 1860 a large pocket of gold was located within the Steamboat Mine, on Carberry Creek. Known as the "Fowler Pocket" this was the only find to rival the Gold Hill strike in scale, reportedly producing as much as \$350,000 worth of gold (Brooks and Ramp 1968:239). The Gold Hill area was the site of the Revenue Pocket and the "Blackwell Lead," and throughout the remainder of the 19th century other pockets were found and quickly worked out.

In Josephine County the history of quartz mining is similar to that of Jackson. In 1861, as at Gold Hill, a vein was located in the Althouse area and developed as the "Enterprise Mine." Worked intensively for a short time, two tunnels were dug to expose an 18" wide vein and the mine produced up to \$26 per ton for much of the 1860s. By 1875, under the direction of new owners, a major investment was made here, with "...five stamps, amalgamating pan, settlers and other apparatus" (Walling 1884:456). While production ended after only a few months, the Enterprise was apparently the first true "lode" mine in the region.

While pocket finds in the 1860s proved that gold deposits in southwestern Oregon existed outside the creek beds and placer-mining areas, other than a few scattered attempts like the Enterprise Mine, little work was done to develop traditional hard rock mining prior to the late-1870s. Largely, of course, this was the result of the profitability of the placers in the area, where less investment and risk offered reasonable assurance of success. Hard rock mining, like hydraulic mining, required large capital investments and less immediate success. As a result, hard rock mining languished. But not for long. The tempting wealth of the pocket finds convinced many that large gold deposits did in fact remain in southwestern Oregon, waiting only for luck and sufficient capital to be exploited. Speaking of these early finds, a writer for the *Portland Oregonian* noted;

It is not possible that the extensive region could have been entirely exhausted of its mineral wealth in so short a time, and by so unskilled a generation of miners as inhabited [this area]. Quartz mining was then a new and almost untried art, and the resources for this sort of mining were small and precarious.²⁵

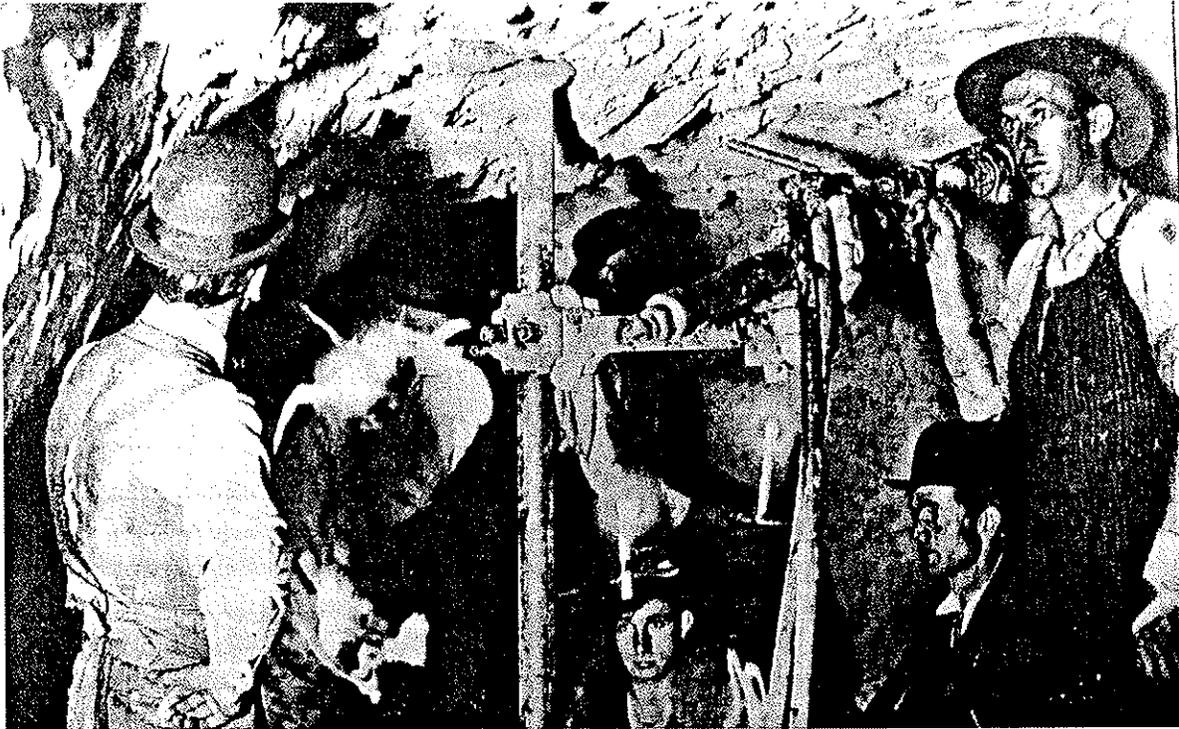


FIGURE 18: DRILLING IN TUNNEL OF STERLING QUARTZ MINE (MEDFORD AS A MINING CENTER).

A) QUARTZ MINING TECHNOLOGY AND TYPICAL EQUIPMENT

While the technology of placer mining was substantially developed and improved in the years following the California gold rush, hard rock mining remained fairly unchanged in the West from its earliest known forms during ancient Roman times. Rodman Paul, historian of the California gold rush, notes that early miners in the West lacked sufficient experience in most of the well-established hard rock mining techniques and that it was only after the arrival of skilled miners from elsewhere in the western hemisphere or Europe that even

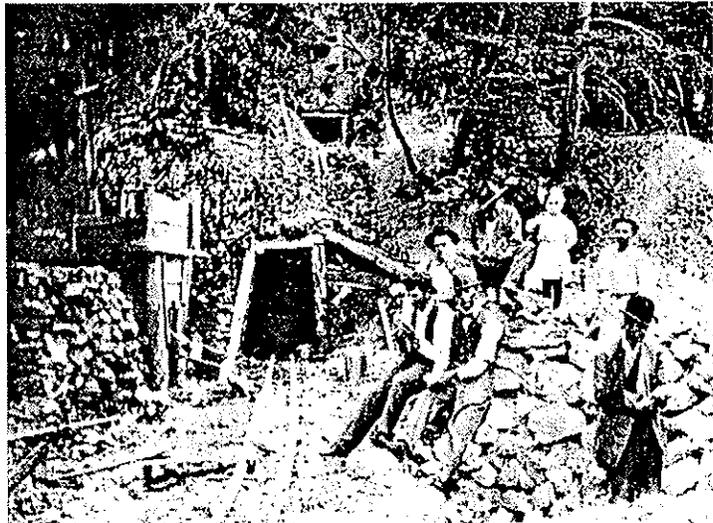


FIGURE 19: TUNNEL ENTRANCES – STERLING QUARTZ MINE. WITH MULTIPLE LEVELS, AND OVER \$1,000,000 OF CAPITALIZATION, THE STERLING QUARTZ MINE WAS NOT TYPICAL OF THE MAJORITY SMALL SCALE LODE OPERATIONS IN SOUTHWESTERN OREGON AT THE END OF THE 19TH CENTURY ALTHOUGH THIS DIDN'T STOP PROMOTERS FROM CLAIMING IT AS SUCH (MEDFORD AS A MINING CENTER).



FIGURE 20: AN EARLY WATER-POWERED ARRASTRA, SERVED BY A SIMPLE WOODEN FLUME (TO THE RIGHT), GROUND ORE, WHICH WAS THEN SLICED THROUGH THE RECTANGULAR BOX IN THE FOREGROUND (JOSEPHINE COUNTY HISTORICAL SOCIETY COLLECTION).

well known mid-19th century quartz mining processes were used in the West.

In learning to operate underground, the Californians benefited greatly from the presence of trained workers from the coal, iron, tin and lead mines of Europe and the Americas. Cornish, English and American veterans were on hand in considerable numbers at some of the most important quartz towns (Paul 1947:133).

Although modified to take advantage of new technologies (particularly in the extraction and stamping process), in general quartz mining involved several essential steps: (1) removing the ore body, (2) transporting it to a mill, (3) crushing the ore, (4) extracting the gold or other minerals via upgrading the ore to increase its value, and (5) dumping the waste (Chappel 1995:37).

Having identified a site as being potentially gold-bearing and then filing an appropriate claim upon it, the prospecting pit would be further developed into a formal adit and

excavation of a tunnel or shaft (Figure 18), following the ore vein, would commence. Such horizontal (tunnel) or vertical (shaft) access corridors could be quite extensive. As early as 1887 Robert E. Miller, writing in *Ashland Tidings*, reported the progress of several area lode mines:

The Jacksonville Milling and Mining Company are running a tunnel to open up the old Billen Ledge: they are already 266 feet into the mountain and expect to strike the ledge 165 feet below the surface...

The Lucky Queen, near Grants Pass, was well prospected — a thousand feet of shafting being done (and) a ten stamp mill put up...(*Ashland Tidings* 1887).

Once access to the vein was developed, and after the gold-bearing quartz was freed from the surrounding ground, usually by pick and shovel although later via blasting, the material had to be removed from the mine shaft. Here the traditional *ore cart*, a small steel-and-wood box with wheels that ran on iron tracks like a railroad car, was typically employed to move the material to the tunnel entrance or, in larger mining operations, to the base of the vertical shaft, where a winch raised the ore to the surface. In small operations ore carts were pushed by the miners, or hoisted by muscle power. Larger mines could employ horse or other animal power, or even water-driven or steam-powered winches. Where vertical rise or winch was required, a *head frame*, along with its associated *shaft house* for power, would be erected above the adit, serving as frame for the elevator or hoisting mechanism.

Auriferous [gold-bearing] quartz removed from underground next required reduction so as to allow for the extraction of the valuable minerals from the base ones. The initial step in this process was termed crushing and could most basically be accomplished by strong arms and sledgehammers, or in some early examples by a “levered sledge,” essentially a large rock bound to a stout bar, balanced on a fixed yoke, and then repeatedly dropped upon the ore like a hammer.²⁶ The first major improvement on such brute force methods was a device credited to the Spanish, an *arrastra*.

An *arrastra* is one of the simplest methods of pulverizing auriferous quartz...[and] consists of a circular bed from eight to twenty feet across, paved with stones, in which quartz that has been broken into small pieces by a sledge hammer is placed and slowly ground to dust by the dragging of a larger “muller” or slab of granite over the quartz covered pavement...In the best form of the *arrastra* the paving is very carefully done with hewn rock, granite, or greenstone; a boundary wall of granite a foot or two in height confines the quartz and a post rises in the centre from a stone or iron socket (Shinn 1896:80-81).

Arrastras were generally powered by water wheels or drawn by horses (Figure 20). They were fairly common in the initial mining of a region due to their relative ease of construction and simple operation.

Their popularity was understandable...they could be built of native materials from the vicinity of the claim without having to import costly machinery from manufacturing centers such as San Francisco...Such qualities made arrastras ideal quartz mills for independent miners in remote areas (Stumpf 1979:55).

Of course, while better than a sledgehammer, the "best form" of arrastra was likely a rare commodity and most of the crude arrastras built in the early years of quartz mining were only mildly efficient. In California the "milling" concept behind an arrastra apparently led to an improved arrastra form that used a circular stone instead of a *muller* but no such occurrence is documented in southwestern Oregon. Here, when a mine proved sufficiently profitable, or the ore of suitable quality to require a more efficient crushing process, miners adopted the *stamp mill*.

Stamp mills were little more than a steel "hammer" that was lifted via an eccentric cam so as to rise and fall repeatedly, mimicking the motion of a powered mortar and pestle. Long known in Spain and Mexico, but perfected during the California gold rush, stamp mills again required that the quartz be reduced in suitable chunks and then fed into the hopper or iron boxes that formed the mouth of the mill (Paul 1947:136-37). Mounted individually or, more commonly, in series, cam-driven steel "stamps," were essentially just heavy steel posts that rode up and down in lubricated guide blocks, pulverizing the quartz into a fine consistency.²⁷

Quality stamp mills were expensive, requiring skilled mechanics to build and erect. Their bone-jarring motion would quickly destroy a poorly built housing and the structure that contained it, so they of necessity required sufficient capital and the potential income to offset construction of stout and therefore expensive mill buildings.²⁸ As a result, many stamp mills were centrally located in a mining district, financed and operated by investors who would then take a percentage of the ore brought in from numerous miners as payment. Larger and more successful mine operations, of course, simply built their own stamp mills. Many would then "rent" time on their mills to other, smaller miners, nearby.

Stamp mills were described and categorized by the number of individual "stampers" or chambers they had, more stamps representing an ability to more quickly process ore and serving as an indication of the size and value of any given mining operation. Stamp mills operating in southwestern Oregon in the 19th century ranged from small single units up to the 20-stamp mills and larger, depending upon the scale of the operation.

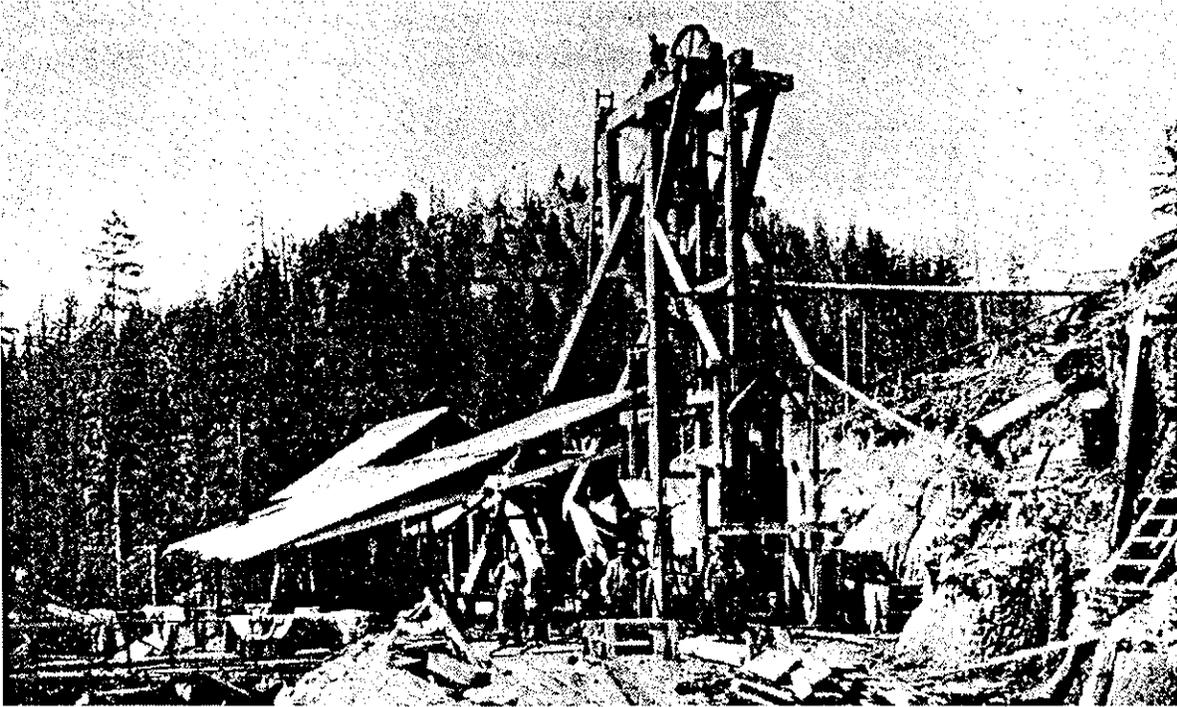


FIGURE 21: HEAD FRAME AND SHAFT HOUSE, GRANITE HILL MINE (OREGON MINING JOURNAL, 1897).

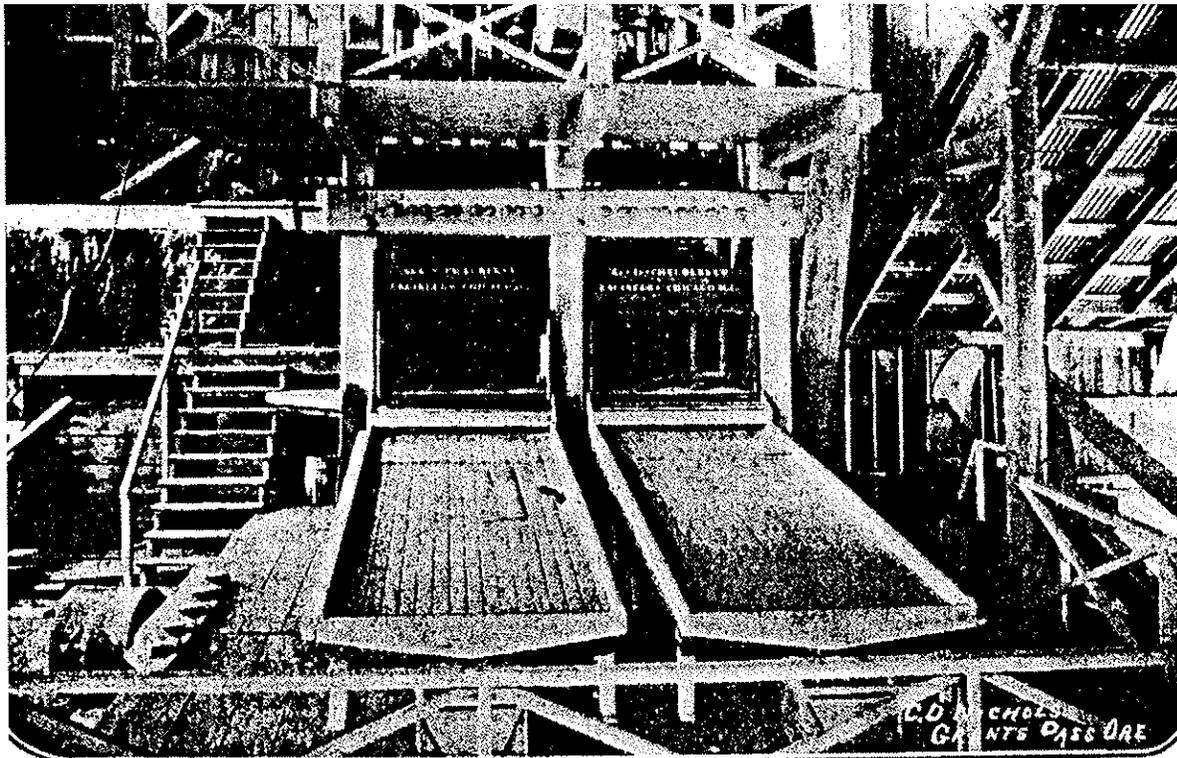


FIGURE 22: INTERIOR OF THE MILL AT GRANITE HILL MINE. THE STEAM-POWERED MILL AT THE GRANITE HILL MINE REPRESENTED A MAJOR INVESTMENT, AN INDICATION OF BOTH THE MINE'S SUCCESS AND THE VALUE OF ITS CLAIM (OREGON MINING JOURNAL, 1897).

Stamp mills in southwestern Oregon, originally water powered, were more commonly driven by steam by the late 19th century, and then replaced by gas or electric motors in later years. Not surprisingly the first stamp mill in southwestern Oregon, reported as the first to operate in the state, was constructed for the famed Gold Hill pocket.

It was in 1860 that the first quartz mill was introduced into this State. The Gold Hill mine had just been discovered...and the proprietors were working in an arrastra quartz that was worth \$1 a pound. The old apparatus, with its cumbersome drags, lazy mules, and primitive appearance generally, was not attractive to the owners, although they were dividing 1,000 ounces of gold per week; so they let a milling contract to Henry Klippel, one of the firm, who took in two partners and proceeding to San Francisco ordered a 12-stamp mill of the pattern in vogue, which had low iron mortars with wooden housings, and six stamps working in each mortar. It was shipped by sea to Scottsburg on the Umpqua, and hauled thence by teams to Jacksonville, the steam engine and boiler accompanying, freighting costing \$2,600 and the total cost of the mill when set up and in running order was \$12,000 (*Board of Agriculture* 1890:67).

Quite valuable, stamp mill units were also fairly transportable. They could be dismantled and then relocated from mine to mine. Early accounts report stamp mills for sale or being re-used at a new location and it appears that the "workings" of area stamp mills were likely hauled from area to area throughout the region's history. As late as the 1960s at least one southwestern Oregon miner was able to "shop around" at several idle mining operations in the region before choosing which stamp mill to purchase and relocate for use at his own mine (Arnold 1998).

Once the ore was pulverized, a variety of techniques were available to separate the gold particles. Water could be added to the crushed ore to create a "paste" which could then be separated using traditional placer techniques. However, as technology improved, many mine operations turned to amalgamation tables. Here the fine slurry of crushed ore that exited the stamp mill was fed over a series of copper plates covered with a thin film of mercury. The gold would bond with the mercury while the other material could be flushed away as debris. Mercury's attraction to gold was so strong that the material could even be introduced into "rockers" and gold separated in that fashion.

Some types of gold-bearing quartz, typically found in deeper veins, contain metallic sulfides, generally termed "sulfphuretes." Their presence interfered with mercury amalgamation chemically and it was only following the discovery of "the chlorination process" which added chlorine into the quartz via heating, that mercury could be used

to amalgamate such materials. This, of course, required equipment to both introduce the chlorine and heat the ore, in addition to the basic amalgamation tables. Finally, the compound gold and mercury had to be separated, a process accomplished in a *retort* where the amalgam was heated to a point where the mercury vaporized and the pure gold remained. After cooling, the mercury was collected for re-use (Stumpf 1979:55-6).

Obviously, with all of its varied processes and chemical components, successful quartz operations required a higher level of sophistication than the earlier placer mining techniques, as well as more capital to underwrite the extensive site developments needed to expose the vein. On the other hand, properly pursued, hard rock mining was far more efficient in capturing the available gold within any given claim and so offered very high returns for those with the wherewithal to go into operation.²⁹

B) SOME 19TH AND EARLY 20TH CENTURY QUARTZ MINES³⁰

Although starting slowly, by the late 1880s and early 1890s a series of profitable, and large scale, lode operations were underway in southwestern Oregon, offering stiff competition to the more numerous placer mines in production numbers. Several of the more notable lode mines in the study area during the late-19th and early 20th centuries include the following:

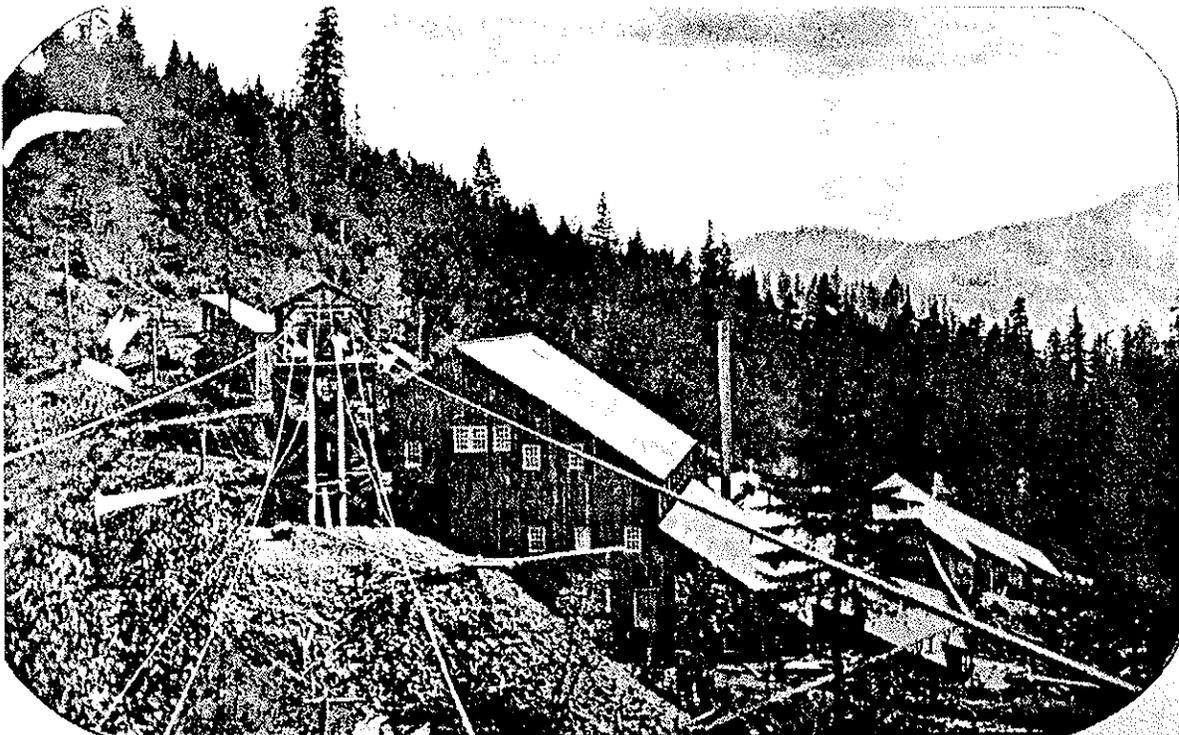


FIGURE 23: GREENBACK MINE NEAR LELAND (OREGON MINING JOURNAL).

Ashland Mine (*Jackson County, T39S-R1E-S6 and 7, T39S-R1W-S12*)

One of the “most persistent” veins in southwestern Oregon, the Ashland Mine is located west of the City of Ashland, in Jackson County, and was first discovered in 1886 (Brooks and Ramp 1968:273). Sporadically active, by 1897 the mine reportedly had produced over \$100K from its several hundred feet of tunnels and drifts but was idle (*Oregon Mining Journal* 1897:60). Seven years later the Ashland Mine was reported as “the second deepest in southern Oregon” with a developed depth of 800 feet. A new 10-stamp mill had replaced the original four stamp, but again the mine was inactive (*Mineral Wealth* 1904:34). Legal problems and frequent changes in ownership plagued the Ashland Mine, but it remained mostly active throughout the 1940s when it was closed by war time restrictions, never to re-open (O’Harra 1981:42). By the end of its operation, the Ashland Mine contained over 11,000 feet of tunnels, shafts, and raises (Brooks and Ramp 1968:273).

Greenback Mine (*Josephine County, T33S-R5W-S32/33*)

Arguably the most profitable single mining operation in southwestern Oregon’s history, the Greenback Mine was discovered near Tom East Creek in northern Josephine County on 16-May-1897 by D.L. Browning and E.F. Hannum (Figure 23). In the first year the owners averaged over \$2,000 monthly from what was apparently assumed to simply be a rich “pocket.” In 1898, after discovery of the main seam, the Greenback was sold to F.T. Sutherland of Los Angeles, who represented investors groups in both New York and Denver. The new owners dramatically expanded the operation: “The year following its purchase a 10-stamp mill was built. Ten more stamps started dropping [in] February 1903 and the June following twenty more [were added], making a total of forty stamps” (*Mineral Wealth* 1904:10).

“The Greenback in the true sense is pioneering the quartz mining industry in Southern Oregon...It stands among that rare class of quartz mines that have paid from the grass roots down, and its output to date — approximately \$750,000 — entitles it to rank with the first class mines in the country” (*Mineral Wealth* 1904:11).

In 1905, the Greenback Mine was one of the first in the region to be electrified, with a special distribution line run by the Condor Power Company from their Gold Ray hydroelectric dam at Tolo to the mine site.³¹ With electricity, production at the Greenback continued with a 100-ton, 40-stamp mill installed in 1905 and the vast majority of the

mine's estimated \$3.5 million production occurred prior to 1912. Sold in 1924 to L.E. Clump, the mine remained in operation until World War II and then operated minimally until 1954. By the end of its production period the Greenback included more than 7,000 lineal feet of underground development on seven levels to a depth of 1,000 feet (Brooks and Ramp 1968:220-22).

Benton Mine (*Josephine County, T33S-R8W-S22-27*)

Discovered in 1893 by Joe Ramsey, the Benton developed to include eight patented and sixteen unpatented claims near Grave Creek in northern Josephine County. By 1905 the mine had about 5,000 feet of development and was closed, re-opening in 1934 with the rise in the price of gold. By 1942 when closed by government action, more than half a million dollars in gold had been produced and tunnels totaled more than 10,000 lineal feet. In 1941 the Benton mine reportedly was the largest single employer in Josephine County (Brooks and Ramp 1968:205-206). Mineral Survey 954, prepared in 1957, documents the extensive development at the mine site, with more than a dozen individual structures including houses, offices and a school in addition to the mill and processing buildings. Some minor exploration work was done on a "...newly discovered outcrop of ore" in the mid-1960s but the Benton Mine does not appear to have reopened after 1942 (*Sourdough Gazette* 1965).

Opp Mine (*Jackson County, T37S-R3W-S36*)

Discovered in the late 1800s near Jacksonville, the Opp was developed after the turn of the century and eventually included 18 individual adits and about 7000 feet of workings and a 20-stamp mill (Figure 24). Total production was approximately \$100,000, most of which occurred in the early years although the mine was also worked in

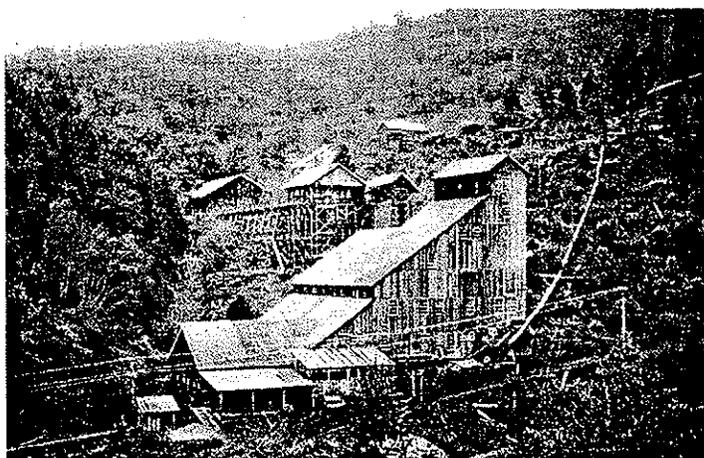


FIGURE 24: OPP QUARTZ MINE NEAR MEDFORD. THERE ARE 52 QUARTZ MINES IN THE DISTRICTS TRIBUTARY TO MEDFORD AND NEARLY THRICE THAT NUMBER OF CLAIMS. THE MINES OF MEDFORD DISTRICT ARE NOW EQUIPPED WITH MILLS DROPPING A TOTAL OF 80 STAMPS (MEDFORD COMMERCIAL CLUB, 1909).

the early 1930s and again between 1939 and 1941.

These four large operations were widely known and reports of their success were a frequent occurrence in the local press. By and large, however, the vast majority of the quartz mines in the study area were of substantially smaller character and production, and less is known regarding their operation and history. These more typical quartz mining operations are exemplified by the following:

Oro Fino (*Josephine County, T35S-R5W-S 3 and 10*)

First located in 1898, this quartz mine was located between Jump-Off Joe and Louse creeks in northern Josephine County. By 1910 it had produced ore worth about \$25,000. But work on the Oro Fino was beset by problems. "A large quantity of ore is on the dump that will pay handsomely whenever a milling plant is installed. Like many other rich mines it has been in litigation..." (Grants Pass Commercial Club 1911:17). By 1968 the Oro Fino (also known as the "Elk Horn" Mine) reported a total of 1400 feet of workings on four levels, with most of the work apparently completed by 1929 (Brooks and Ramp 1968:232).

Mountain Lion (*Jackson County, T37S-R5W-S25, BLM Site 35HS11 306, USBM No. 0410330346*)

Discovered in 1887, in 1897 the Mountain Lion was considered the "most prominent" of the Missouri Flat quartz operations and included "...an arrastra, several shafts and many hundred feet of drifts...[and] a five stamp mill with a Woodbury concentrator run by steam power" (*Oregon Mining Journal* 1897:51). By 1904 the Mountain Lion mine was owned by investors from Minneapolis, Minnesota, Portland and Grants Pass, Oregon and was reported as "...long waiting the development it is now receiving" (*Mineral Wealth* 1904:58). In the early 20th century as many as 25 employees were working at the site. The mine apparently ceased production in 1912 but may have operated to some degree during the 1930s as well.

Oregon Belle (*Jackson County, T38S-R3W-S6, BLM Sites 35S11-265-270, USBM No. 0410290272*):

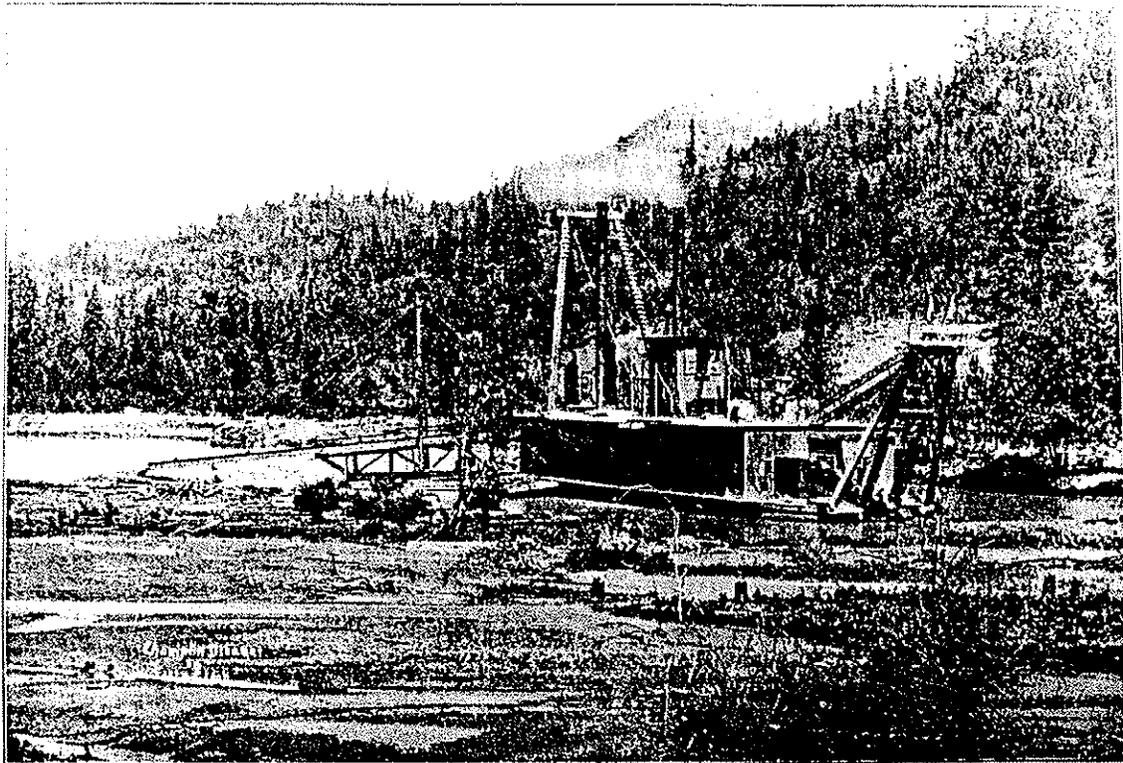
First developed in 1895, the Oregon Belle Mine is a series of nine claims along Forest Creek. First thought to be simply a pocket, development continued to include over 1,700 feet of underground workings, the vast majority of which were reportedly in place by the turn of the century (*Mineral Wealth* 1904:35). Total production is estimated at \$250,000 through 1968 (Brooks and Ramp 1968:260).

8. *Gold Ships: The Dredge*

The simple placer mining technologies of the pan, rocker, and Long Tom used during the first rush in the 1850s evolved into large-scale hydraulic mining by the 1880s to allow profitable mining of the lower-grade ores of the hillsides. Miners continued to devise more economical methods that used the same basic placer mining processes of water, the riffle box and the unique attraction of mercury to gold. The development of the "dredge" permitted very low-grade deposits to be profitably mined for gold.

...the procedure was simple — simpler even than hydraulicking. A shallow man-made lake would be created over potentially productive, and necessarily level, land. The dredge itself was a shallow-draft boat hull with an engine that moved it slowly over the lake surface while a bucket-chain kept a constant stream of gravel falling onto mechanically-agitated riffle beds coated with quicksilver. The debris was simply dumped behind the dredge in windrows as it moved forward. (Watkins 1971:186-87).

By 1904 dredging had seeped into southwestern Oregon's mining consciousness but



CHAMPLIN GOLD DREDGE ON FOOT'S CREEK

FIGURE 25: CHAMPLIN GOLD DREDGE ON FOOT'S CREEK (OREGON MINING JOURNAL).

little work was as yet underway. *Mineral Wealth* commented upon the excellent dredging opportunities available on Galls and Kanes creeks but discounted Sardine Creek. One of the few dredging operation actually in place in 1904 was on Footh Creek (Figure 25), where the Champlain Dredging Company dredge, the "Abbie J. Champlain" was under construction at an estimated cost of \$100,000.

The hull of the boat is 112 1/2 feet long and is of the standard pattern. An eighty foot ladder or digging beam constitutes the frame for the chain of forty-two eight cubic foot buckets and their alternating links...The digging or power engines are supplied with steam from two large boilers...having a capacity of 100 horse power each....Theoretically, this can fill every bucket 350 times a day, or lift a total of 4,500 yards (*Mineral Wealth* 1904:31).

In 1905 the Champlain was converted to more efficient electric power. By 1907 there were a total of seven dredging operations in Oregon, with the Champlain remaining the sole such operation in southwestern Oregon (USGS 1908:415, 426).

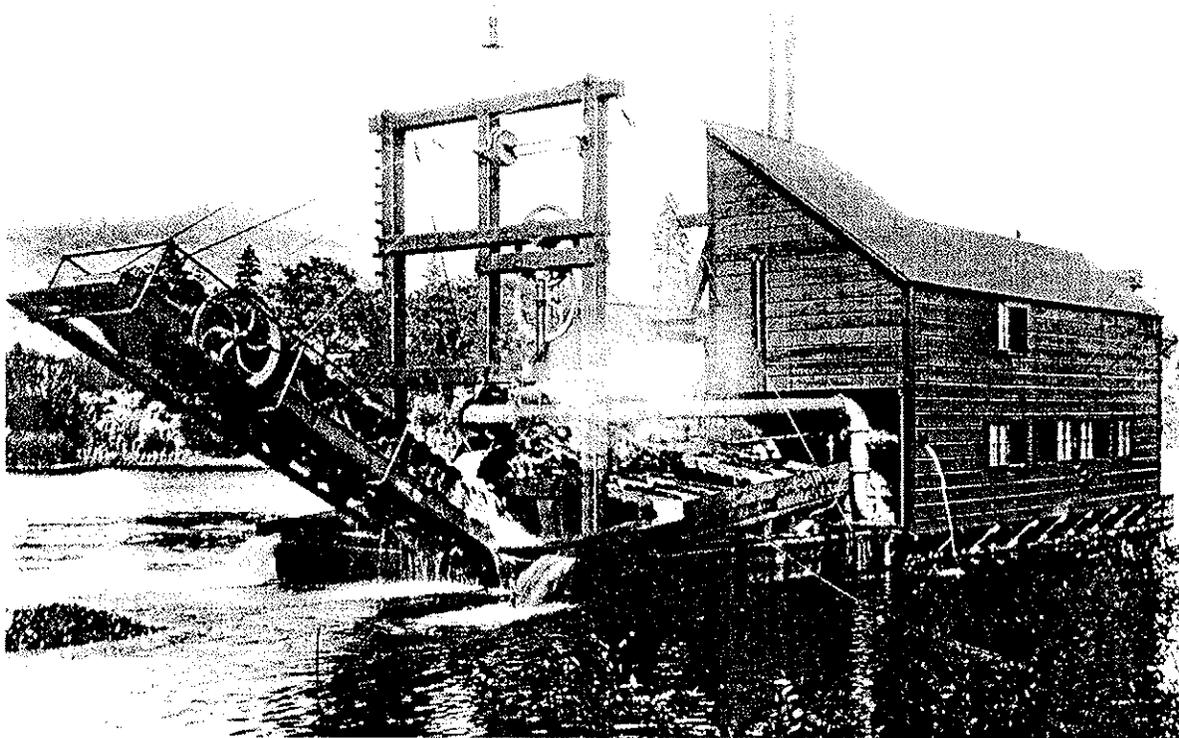


FIGURE 26: "THE HICKER AND BARRREY DREDGE, USED ON EVANS CREEK, WAS BUILT IN SAN FRANCISCO BY THE RISDON IRON WORKS. THE DREDGE HAD A CAPACITY OF 2500 CUBIC YARDS PER DAY, WAS 70' LONG AND 30' WIDE, WITH A DRAFT OF JUST THREE FEET, YET WAS SO SIMPLE TO CONTROL THAT TWO MEN COULD OPERATE IT." (VOORHEIS PHOTO, JOSEPHINE COUNTY HISTORICAL SOCIETY COLLECTION)

Five years later the Champlain still remained in operation and its success brought hopes for a new boom.

The placer beds of this district...furnish the possibilities for a great fleet of 'gold ships' which will send, year after year, millions of dollars to our mints...We have witnessed the passing of the arrastra, the mortar and the blowpipe...so shall we note the exit of the pick and shovel, the longtom and rocker, and we will welcome the advent of the electric shovel, the pumping plant, and the miner's greatest achievement, the 'gold ship" (Reame 1912:51).

In Josephine county the English-Canadian Company began dredging on the "Old China Diggings" claim they had purchased from Wong Back Fong, as described previously.

A large amount of the machinery for the English-Canadian company plant arrived here Tuesday and was unloaded at the depot. The platform is completely covered with pipes, rods, screens, bucked and machinery of all sorts, among which is a big 40 foot revolving screen (*Rogue River Courier* 1899).

Although a massive investment, the dredge was not a financial success and soon was abandoned, eventually capsizing in the river channel. "As late as 1918 it was still intact, with all of its boilers and machinery in place, nearly submerged, with the bottom of the dredge facing the sky" (Pfefferle 1977:29).

By 1931 a 100-foot dredge was in use on Footh Creek by the Rogue River Gold Company which paid \$400,000 for the equipment (*Oregonian* 1931). Ten years later there was still active dredging on Footh creek and a dragline dredge, or "doodlebug," was at work on upper Pleasant Creek as late as 1960 (Brooks and Ramp 1968:37). One review of southwestern Oregon mining claims that dredging occurred on a wide range of waterways throughout the region.

In addition to both forks of Footh Creek, dredging has been done on Forest Creek, Rogue River near Gold Hill and the town of Rogue River, Sardine Creek, Jackson Creek, Applegate River near Ruch, Poorman Creek, Thompson Creek, Oscar Creek, Althouse Creek, Illinois River near Eight Dollar Mountain, Pleasant Creek, Grave Creek and Wolf Creek (Hill 1976:38).

Such activity was likely of very small scale and certainly in most cases of limited duration. Despite a long history and some scattered success, dredging never grew into the "fleet of gold ships" that Mr. Reame had envisioned for southwestern Oregon.

9. Southwestern Oregon as a "Mining Center"

[M]ining, the oldest of the industries, is feeling the quickening touch of new capital and new methods (Woehlke 1911:599).

Long convinced they sat on the uppermost reaches of the "Mother Lode," southwestern Oregon miners and their supporters believed that almost all of the region's small placer and quartz operations, with proper development, could be transformed into valuable properties on the scale of the Sterling or Greenback. By the beginning of the 20th century admiration for the 1850s-era miners had given way to a certain disdain. Those early miners who had brought the region its initial source of wealth and helped establish the area's towns were now seen as lazy and unskilled individuals who skimmed the "cream" but left the far more abundant "milk" through lack of training and patience.

The modest success of lode mines like the Greenback and Benton supported the contention of southwestern Oregon's promising mining future and interest in mining was also occasionally bolstered by sudden and dramatic finds. Perhaps none was as celebrated as the famed "Briggs Pocket," the discovery of which was seen as "proof positive" of the undiscovered gold that yet remained in the region. The Briggs Pocket, discovered in 1904, turned out to be one of the last major pocket finds in the region.

The most wonderful gold discovery ever reported in Oregon was made a week ago Sunday by Ray Briggs by pure accident. The boy, who is but 18 years old was out on the mountain near Thompson Creek hunting grouse when he stumbled onto a ledge of almost pure gold, cropping out on the surface (*Rogue River Courier* 1904b).

Typical of a pocket, the Briggs was flamboyantly rich but quickly exhausted. It served more as a final burst of excitement for hard rock mining in the region than as the dawning of the new era that mining promoters envisioned. In just two weeks, working by hand, the Briggs family recovered more than \$32,000 worth of ore from the shallow hole (Brooks and Ramp 1968:248-249).

A) ECONOMIC DIVERSIFICATION

As Jackson and Josephine counties entered the 20th century, the area was changing dramatically. Nearly two decades of rail service had made their mark, with the new cities of Medford, Talent, Central Point and others vying with the long established hubs of Jacksonville, Ashland and Phoenix for dominance in Jackson County. In 1885, in Josephine County, the county government had literally moved away from the

entice prospectors from afar to this district; there are at present enough here; they are good ones too, but as a rule, the prospector is not a man with a bank account...(*Medford Mail Tribune* 1912a).

And, of course, local boosters could always rely on "expert mining men" from outside the area to tout southwestern Oregon's mineral resources. In 1904 the *Ashland Tidings* reported on the opinion of a Mr. I. E. King of Cripple Creek, Colorado, "one of the foremost mining experts in the country:"

If the mineral which is in sight in Southern Oregon was in Colorado there would be a stampede tomorrow which would equal Cripple Creek at the beginning of the '90s. You people of this town and state are sound asleep as far as your mineral wealth is concerned. You've gone crazy over timber and lumber and are letting the greatest opportunity in the country get away from you (*Ashland Tidings* 1904).

10. Role in local economy and impacts

All of southwestern Oregon's efforts to promote new investment in mining appear to have made little headway. In 1907, according to the United States Geological Survey, Jackson and Josephine counties produced a total of 16,455.14 fine ounces of gold, or approximately 30% of Oregon's total. In overall production Jackson County was second to Baker, in northeastern Oregon, with Josephine County third. In placer gold only, Josephine County was the most productive in the state, with output of 5,866.10 fine ounces, followed by Jackson at 5,180.91 fine ounces. Baker County, where most activity was hard rock mining, was a distant third in placer production at 2,987.35. This later statistic, however, was misleading in predicting the future of Oregon's production.

As to placer gold output, Baker County nearly doubled its figures in 1907 over 1906, but nearly all other counties of the State showed a falling off of gold yield from this source, the decrease being most apparent in Douglas, Grant, Jackson and Josephine (USGS 1908: 419).

Despite the hopes of the Mining Congress and the local commercial clubs, pre-World War II gold production peaked in Jackson and Josephine counties in 1903 and generally continued to decline throughout the 1910s and 1920s (see Table 5). Area mining was so limited during this period that the wildly fluctuating annual production numbers could easily be caused by the closure of a single large and productive operation, weather patterns, or a un-seasonal lack of water. And while there is at least some evidence to support the 1912 Mining Congress' contention that where capital is applied and mines worked, gold could be found, mining never seriously challenged agriculture as the dominant industry in the valley after the first decade of the 20th

century.³³ Even in the “best” years in the late 19th century, when mining enjoyed its greatest public support since the pioneer period, Oregon’s total production, in which the study area played an always diminishing role, never amounted to more than a small fraction of the total gold production in the West (see Table 1).

11. Depression-era Mining

Gold production in southwestern Oregon, both from placer and hard rock mines, declined dramatically in the second decade of the 20th century, dropping over 90% from a high of 22,555 ounces in 1903 to just 1,661 ounces in 1924.³⁵ While the exact socio-economic factors that combined to create this downswing are complex, the period was one of general economic “bust” in the area following the heady years of the “Orchard Boom.” Jackson County population dropped 20% between 1910 and 1920, as did Josephine’s; however both counties regained significantly by the end of the 1920s.³⁶

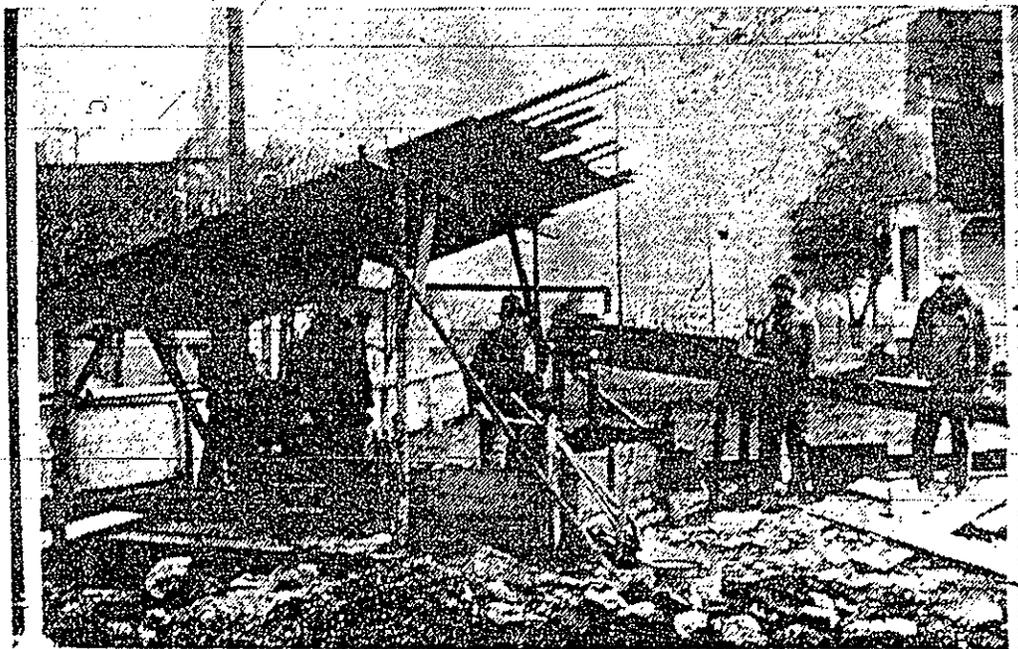
Both Jackson and Josephine counties also suffered an economic blow in 1927 when the Southern Pacific Railroad shifted its main line to the east, through Klamath Falls, reducing passenger travel and access to freight transport in the region. That same year Medford assumed the position of Jackson County seat from Jacksonville, formally ending the mining-inspired reign of southwestern Oregon’s original “Queen City.” In short, the decline in regional gold production most likely resulted from the combination of lost population and a rise of manufacturing jobs in the timber industry and elsewhere, which provided a more stable income for persons who otherwise might have been engaged in mining. That situation changed rapidly after October 1929 and the beginnings of the “Great Depression.”

Under the General Mining Law of 1872, those engaged in mining activity are provided rent-free residency on government land. As a result, mining activity typically rises during times of fiscal crisis, as under-employed individuals, both those with actual mining experience and those without it, flock to the National Forests and other federally-owned lands. Those with a valid mining claim on federal land may build a cabin, even using the timber on the site for its construction, all at no expense. For hunters, living in the woods meant ready access to game. Water from creeks and springs was available and gardens could be planted in fertile forest soils. For many individuals without other options, mining presented an excellent opportunity to have a roof over their heads and food on the table when traditional work was hard to come by. And, of course, there was always the possibility that you might actually strike it rich.

With such advantage, it is no great surprise that mining activity in southwestern Oregon increased dramatically in the early 1930s. Long idle claims were opened, old tailings piles were cleaned — activities further buoyed by the 1933-4 increase in gold

Jacksonville, Oregon, Friday, February 12, 1932

MINING GOLD IN JACKSONVILLE'S YARDS



The "White Owl" mine, one of Jacksonville's most prominent, is here shown being manned, left to right, by S. S. Wheeler, H. D. Hurlburt, Roy Wheeler and A. F. Perry. The boys have the hole down to bedrock and have gouged out about 25 feet of drift in the heart of the city. They have been keeping out of mischief and made fair wages all winter from the revived industry besides setting a stage for one of southern Oregon's most fascinating shows—gold mining as is gold mining. Although but six miles from the Pacific highway, this illustration demonstrates the individuality of Jacksonville, for where else can a home-owner burrow in his yard and produce ham, bacon, beans and other condiments? Not even Houdini could do that.

FIGURE 30: THE WHITE OWL MINE, JACKSONVILLE (JACKSONVILLE MINER, 12-FEBRUARY-1932).

value to \$35.00 per troy ounce, the first increase in almost 100 years.³⁷ In Waldo, site of the area's first major gold discovery, renewed hydraulic mining during the Depression era literally washed away what little of the 1850s townsite still remained. "The water cut to the very base of the old brick and stone building that stood as Waldo's central structure since 1863" (*Rogue River Courier* 1937). Out in the woods, scores of men built cabins and other structures on public land, filed claims, and searched for gold. A few, apparently, found some. Area production rose from 4,383 ounces in 1929 to 10,155 in 1930, the most gold produced in Jackson and Josephine counties since 1909.³⁸

By the early 1930s, county governments had fallen heir to a number of abandoned dwellings through non-payment of property taxes. This was also a period in which each county government assumed responsibility for indigents, widows, and others

without any sort of income. In Jacksonville, where numerous residences were now actually owned by the government, the County Court began to house the area's unemployed in its confiscated dwellings. Coupled with this, and given Jacksonville's long history of mining, the Court decided that indigents could mine their property and surrounding government lands and so reduce the relief funds the County would otherwise be obligated to pay. Schools were to be established with skilled mining instructors providing instruction in placer and lode techniques. Seemingly a laudable idea for a city that once boasted its streets were paved with gold, Jacksonville itself was not enthusiastic.

Although the venture, as given wide publicity over the entire coast, suggests a lofty purpose, practical application is very much in doubt...[I]f enough gold lay under these lots to relieve four or five hundred men, or even a small portion of that number, it is odd that experienced miners, droves of them who are themselves unemployed and already on the spot, have made no effort to recover the treasure (*Miner* 1932).

Nevertheless, the program was in fact established and prospective miners were trained in classes at Mdford High School before being set loose to strike it rich. Once the program began, joined by other more knowledgeable miners, "Backyard Mining" became something of a phenomenon in Jacksonville. Dozens of such operations were soon underway, scattered throughout the city. The problems of mining in a semi-urban environment in Jacksonville (Figure 30), with the noisy clatter of generators and other equipment, not to mention water-filled exploration shafts and the occasional cave-in, created just the sort of unique personality that Jacksonville had long assumed. In speaking of one backyard mining operation only a month after bemoaning the relief effort, the editor of the local newspaper reported:

They have been keeping out mischief and made fair wages all winter.....where else can a home-owner burrow in his backyard and produce ham, bacon, and other condiments? (*Miner* 1932).

In Josephine County, abandoned mining claims also provided a source of relief for the unemployed and the indigent. The County Judge sent Sheriff Ernie Lister to "clean out the prospectors" who were felt to be digging too much on county land;

Unemployed men, desperate for a means of livelihood, planted themselves on the county claims at the old Ament dam and were eking out a living at the rate of 50 or 75 cents a day getting out the gold dust....There I found them, a small city of them, hard at work at their jobs (*Rogue River Courier* 1932, as cited in Hill 1979:54).

Taken before the judge, one of the arrested prospectors testified that "If we can't dig gold you'll have to feed us...The Judge looked them all over, waved his hands and said

"Take them back" (Hill 1979:54). Along with these relief-inspired and typically small-scale backyard mines, larger operations spurred by the rise in the price of gold either resumed or began all over southwestern Oregon. "Southwestern Oregon then realized a sharp increase which reached its peak of production in 1940" (Ramp 1976:39).

The years of the Great Depression mark a watershed for gold mining in the southwestern Oregon study area. The increased value of an ounce of gold, the economic and social upheaval of hard times, and the ready availability of Federally-owned lands in the area drew more miners into the woods than at any time since the 1850s. And while some large-scale operations did return to production in the 1930s, a far greater number of small, one- or two-person mines seem to have been the primary source of the industry's resurgence. Indeed, the steadily rising production beginning in 1932 hit a peak in 1940 when 26,981 ounces of gold were taken from the study area, the largest single year of production since those numbers have been recorded. In both 1940 and 1941 the output actually bettered the 1903 peak. From the standpoint of historic and cultural resources, however, by re-mining and re-exploring the tailings and diggings of the area's earlier mining efforts, the Depression-era miners obliterated much of the region's early mining sites. It is the evidence of their own efforts, of mining in the 1930s, that forms the bulk of the mining-related resources remaining in the study area.

The renewed mining efforts of the late 1930s, all of which were inspired by the juxtaposition of cheap labor, unemployment, and the newly raised price of gold, were soon cut short. In 1942 the War Production Board issued order L-208, mandating that all non-essential mining efforts be halted in order to provide more men and equipment to mine metals essential for the war effort.

12. Gold After World War II

Order L-208 was rescinded in mid-1945 but the death knell of the industry had already rung in the form of inflation. Most of the mines that were productive in pre-war years were not re-opened. The immediate reasons were that materials and labor costs had risen greatly while the price of gold remained fixed (Brooks and Ramp 1968:4).

In the 1930s the rise in gold value to \$35 was sufficient to spur new interest in long-dormant gold operations. But by the time World War II ended, a time of great national prosperity and rising wages, mining for gold had again lost its allure, as the fixed \$35 price again failed to justify increasing development and labor expenses. After WWII the focus of southwestern Oregon's mining industry generally turned from gold to other minerals, predominately chromite. Some gold mining activity

Table 6
Gold Production in Troy Ounces, Jackson & Josephine Counties 1943-1965
 (from Brooks and Ramp 1968)

Year	Jackson County		Josephine County		TOTAL Ounces	% of 1903 Production
	Placer	Lode	Placer	Lode		
1940	15729.00	153.00	5813.00	5286.00	26981.00	119.62
1941	14789.00	909.00	3435.00	4215.00	23348.00	103.52%
1942	8423.00	354.00	1521.00	1859.00	12157.00	53.90%
1943			3435.00	4215.00	7650.00	33.92%
1944	48.00	117.00	1521.00	1859.00	3545.00	15.72%
1945	76.00	59.00	81.00	n/a	216.00	.96%
1946	518.00	76.00	198.00	n/a	792.00	3.51%
1947	1781.00	12.00	119.00	14.00	1926.00	8.54%
1948	290.00	121.00	484.00	38.00	933.00	4.14%
1949	96.00	76.00	369.00	16.00	557.00	2.47%
1950	221.00	21.00	290.00	35.00	567.00	2.51%
1951	76.00	16.00	205.00	36.00	333.00	1.48%
1952	40.00	12.00	556.00	120.00	728.00	3.23%
1953	108.00	n/a	244.00	28.00	380.00	1.68%
1954	104.00	90.00	152.00	15.00	361.00	1.60%
1955	56.00	110.00	74.00	n/a	240.00	1.06%
1956	104.00	17.00	39.00	4.00	164.00	.73%
1957	60.00	473	67.00	2.00	602.00	2.67%
1958	69.00	239.00	96.00	18.00	422.00	1.87%
1959	51.00	150.00	71.00	7.00	279.00	1.24%
1960	63.00					
1961					63.00	.28%
1962						
1963	53	27			80.00	.35%
1964						
1965		34				.15%

continued, but only at a far more limited scale. Table 6, continuing the documentation of Table 5, shows just how precipitously production numbers fell after the heady years of 1941-42.

Gold production in southwestern Oregon has never recovered from the work stoppage imposed by Order L-208. From a post-war high of 1,926 ounces in 1947 (amounting to just 9% of the 1903 production), gold production has never hit 1,000 ounces. In 1959, the last year where complete lode and placer production values for both Jackson and Josephine county are available, total ounces produced was *less than 300 ounces*, stark evidence of the virtually complete demise of gold mining as a viable industry in southwestern Oregon.

While ceasing as a commercial industry in the region, gold mining remained an attractive seasonal pursuit for some and so did continue in the southwestern Oregon region. Beginning in 1963 *The Sourdough Gazette* went into publication in Grants Pass as the official newspaper of the Josephine County Sourdoughs, "...an organization of persons interested in the mineral potential of Southwestern Oregon" (*Sourdough Gazette* 1963). The *Gazette* published reports on the active mining and

prospecting in the area, historical accounts of the region's mining glory days, and articles geared toward the growing number of weekend or "hobby" miners.

Many vacationers who have never panned for gold before are the proud possessors of a gold pan, a prospectors pick and a shovel. They are all hoping to strike it rich but will settle for the flash of a few colors in the pan (*Sourdough Gazette* 1964).

In 1965 renewed activity of one sort or another was going on at the old Greenback, Bunker Hill, and Benton mines in Josephine County, all famed producers in the early years of the century. By and large, however, such activity was of limited scope. In 1966 Oregon's Department of Geology and Mineral Industries reported that the total yearly gold production in the *entire state* was valued at just \$4,000!

The most remarkable feature about gold mining in Oregon during 1966 was the almost complete lack of any production. A total of only 113 ounces was reported. A few small, seasonal placer mines and one or two small hard-rock mines were active. In sharp contrast, however, was the large and growing interest by the general public in recreational gold mining (*The Ore Bin* 1967:2).

After 1965 available reporting sources on gold production offered data statewide only and ceased to breakdown production by county "...to avoid disclosing confidential data," an indication of just how limited active mining must have been in the state.³⁹ Nevertheless, some of the state-wide Oregon production numbers for gold are of interest, documenting the plunging status of gold mining both within the state and nationally (Table 7).

Table 7
Gold Production in Fine Ounces, Western Region, 1966-1980
(from Bureau of the Mint, Annual Reports of the Director)

State	1966	1970	1976	1980
Alaska	27070	34776	22887	3005
Arizona	140000	109853	102062	75566
California	64600	4999	10392	6228
Colorado	30140	37114	50764	38836
Idaho	4170	3128	2755	25373
Montana	29000	22456	24075	20599
Nevada	361100	480144	287962	236572
New Mexico	13600	8719	15198	.
<i>Oregon</i>	<i>170</i>	<i>256</i>	<i>28</i>	<i>(1)</i>
Utah	413900	408029	187318	181155
Washington ⁽¹⁾				(1)

- (1) Production of several states (Pennsylvania, Washington and Wyoming) was combined in 1969 to avoid disclosing confidential individual company data. North Carolina production was added to this group in 1971 and Oregon was added in 1972, and then reported sporadically thereafter.

For 1966, the year *The Ore Bin* lamented Oregon's decline, even the slightly higher production numbers reported by the U. S. Bureau of the Mint show Oregon as a minimal producer, with less than 0.02% of the region's gold. The following year, despite a large increase in production, Oregon's statewide total rose to only 0.023% of the region.⁴⁰

13. Copper, Cinnabar, Coal, Quicksilver, Nickel and Other Mining

The mineral resources of Jackson County include gold, silver, copper, iron, lead, zinc, quicksilver, tungsten, tin, manganese, asbestos, granite, limestone, and clay (Jackson County Court 1913:32).

Since the 1850s minerals other than gold have been found and mined in the southwestern Oregon region. Often this was a by-product of the gold mining process, when "clean-up" of a sluice box might reveal silver, platinum, or other materials. Although rarely the primary focus of mining activity, Jackson and Josephine counties did produce silver in measurable quantity during the latter 19th century. Not all miners were, however, so conscientious about collecting minerals other than gold. Indeed, an oft-repeated tale claims the inexperienced miners of the 19th century actually discarded platinum because they failed to realize what it was. W. J. Wimer, a prominent miner in the Waldo area, reported in 1904 that was not the case, stating that "...as you say, we threw it away [but] we knew what it was..."

Until recent years there was no market for it. "About 18 years ago we sent about nine ounces of it to San Francisco, never receiving a cent for it!" (*Rogue River Courier* 1904a).

While mining claims of virtually all types have been staked in southwestern Oregon, from sulfur to molybdenum, few minerals even approached the economic impact of gold or similarly captured the imagination of the region. At several points in the area's past, however, minerals other than gold offered hope of new excitement and the efforts to mine them achieved a regionally significant scale. Chief among these were the late 19th and early 20th century copper mines.⁴¹

A) COPPER

In 1886 Herbert S. Lang, esq., prepared a report on the mineral resources of southwestern Oregon that was first published in the *Portland Oregonian*. Two years later the Southern Oregon State Board of Agriculture reprinted Lang's work, noting "it is the only effort heretofore made to compile and systematically arrange reliable data concerning the mineral interests of this section" (Board of Agriculture 1890:55). Lang reports that copper mines were only in limited production in southwestern Oregon.

Josephine, a county highly blessed in mineral wealth....contains the largest deposits of workable copper in Oregon and perhaps in the

Northwest. They have never been worked to any extent, with the exception of the Queen of Bronze Mine, near Waldo, from which a small amount has been extracted....Several fine ores, principally copper pyrites...have been...exhibited in Portland...It is not unlikely that the region named may become an important producer of copper (Board of Agriculture 1890:77).

The Queen of Bronze mine, discovered in 1862, was first worked in the late 1860s and 1870s "...but the attempt to make it pay proved disastrous." Acquired by the noted financier Henry Villard, owner of the Oregon and California Navigation Company, little was done with the property. By 1897 the nearby "Kelly and Strong Claims," located about five miles from Waldo, were owned by the Elmer-Brown Copper Company of Maryland, "...who did considerable development work and erected a smelter" (*Mining Journal* 1897:56). Plagued by personnel problems, and ultimately legal action by Kelly and Strong, this mine also failed to live up to expectation. As usual, however, area boosters were certain a new mining "boom" was finally on the horizon.

...All competent men declare the claims to be a magnificent surface prospect and with the high price now prevailing for copper as an inducement, it may well be anticipated that the work of development will be resumed at no distant day (*Mining Journal* 1897:56).

Seven years later, in 1904, copper mining had assumed a new prominence in southwestern Oregon. In Waldo, the first smelting plant of noteworthy proportions to be erected in southwestern Oregon was under construction by the Waldo Mining and Smelting Company. The Queen of

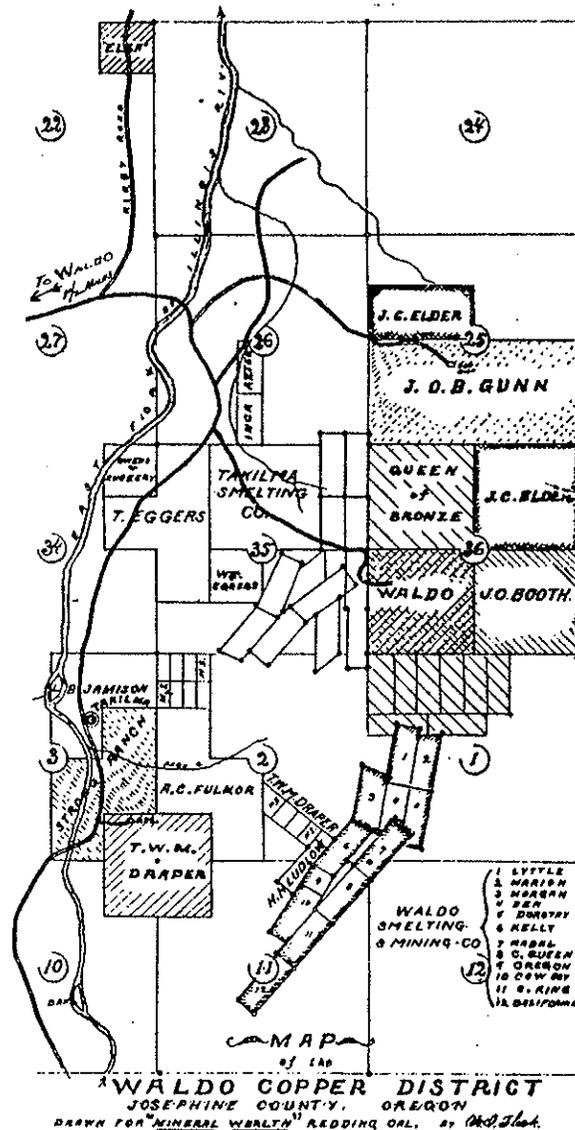


FIGURE 31: "WALDO COPPER DISTRICT" (MINERAL WEALTH)

Bronze expanded and its 100 foot wide vein had been exposed. Nearby, the Takilma Smelting Company also had a smelter under construction and the Waldo-Takilma area had hopes of "...becoming one of the foremost copper producing centers of the Pacific Coast" (*Mineral Wealth* 1904:44).

But if a "Copper Rush" was underway and the locals were excited about the future of the mining industry, it was most likely due to the excitement surrounding the development of the Blue Ledge, on Joe Creek, three miles south of the Oregon-California border but accessible only through Jackson County's Applegate Valley.

The year was 1906. The word was copper.The quantity of ore blocked out in the Blue Ledge district was described as 'beyond calculation, only a prospect of what is in the future' (O' Harra 1985:141).

First located in 1898, small-scale development at Blue Ledge began immediately, rising to a larger scale after June 1904 when the mine was purchased by John R. Allen and Associates of New York.⁴² The Blue Ledge was further developed between 1904 and 1909 and in 1913, after patenting, was transferred to the Mexican Smelting and Refining Company. High productivity during WWI ended in 1920 and the mine was inactive until 1929.

Despite its sporadic work history, the Blue Ledge remains one of the largest mining operations of any type in southwestern Oregon's history, with four adits, three sublevel drifts and 12 mining levels. Total excavation amounted to more than 15,000 lineal feet. Between 1917 and 1930 over 11,000 tons of ore were shipped from the Blue Ledge but the low value of copper per ton, coupled with larger and more accessible deposits elsewhere, made the operation unprofitable.⁴³ The Blue Ledge was last fully operated in 1919-1920, when most of the buildings were dismantled. "Early in 1930 the mine was taken over by Dr. J. F. Reddy of Medford, Oregon and George Hughes of Spokane, Washington. Reddy and Hughes produced and shipped 25,757 tons of good grade ore, which was obtained principally by sorting the [ore] dump..." (Hundhausen 1947:5).

In Josephine County, similar levels of excitement surrounded the development of the Almeda Mine, located on the Rogue River near Galice. Also called the "Big Yank Group," this cluster of mines was reported as "covering several hundred acres" and was developed during the first decade of the 20th century by the Almeda Consolidated Mining Company. "The company has been actively engaged continuously during the last ten years in developing this gigantic mining proposition and it now has either in sight or immediately available thirty million dollars worth of smelting ore" (Grants Pass Commercial Club 1911:12). More than mile of

underground workings were developed in what was boasted as being "...one of the largest mineralized veins of quartz ever discovered in North America." The estimated copper production at Almeda, as distinct from its gold and silver output, was estimated as 259,800 pounds in 1933 (Shenon 1933:3).

Despite the large developments at Almeda, Blue Ledge and Takilma, copper mining, like pioneer gold in the region, started with substantial expectation but was of limited duration. Other than at that actual mining site, little of long-term impact resulted from the copper "boom" period. Low-grade ores, difficult access and transportation costs, coupled with better, easily mined, deposits in Montana and elsewhere all made southwestern Oregon copper unprofitable. While many copper deposits are known to remain in the area, none has proven to be of sufficient ore quality or value to result in any meaningful development over the past sixty years.

B) CINNABAR

Cinnabar is a red mercuric sulfide, a crystalline-bearing ore form of mercury, sometimes referred to as "quicksilver ore." Mercury was considered plentiful in southwestern Oregon. Although DOGAMI lists the Brick Pile Prospect as having been located in 1868, a 1917 newspaper account of quicksilver mining reported that:

The history of quicksilver in Jackson county dates back to the year 1873 when an early settler in the Rogue river valley discovered cinnabar ore in the Meadows District, 13 miles south of Gold Hill. From that time up to 1900...he and others distilled mercury from the cinnabar by roasting it in a crude open furnace (Kellogg 1917a).

Mercury, as an essential component in amalgamation, was linked to the needs of gold mining. Herbert Lang reported no active cinnabar mining in either Jackson or Josephine counties (Board of Agriculture 1890:73). A year later another Portlander writing on the resources of the southern part of the state stated that "[a] cinnabar mine exists some miles south of Jacksonville and will be worked during the coming year" (Croake 1891:15). Sporadic accounts of various other cinnabar mines are found in area newspapers throughout the late 19th century and even, occasionally, in the early 1900s.⁴⁴ As late as the 1930s, active cinnabar mining continued in the study area, notably in the Meadows District along Evans Creek. The War Eagle in T34S, R2W, Sections 8, 16 and 17 and the Roxana Group, located near Beagle in T34S, R2W, Section 5, each produced in commercial quantities from the teens through the late 1930s (Schuette 1938:113-123). Prior to the 1920s, when a "boom" in mercury resulted from European price-fixing, the War Eagle was one of Oregon's more prominent mercury producers.⁴⁵ Despite this regional prominence, however, there is

no indication that cinnabar mining ever played a significant economic or social role in the southwestern Oregon study area.⁴⁶

Just beyond the boundaries of the study area, in southern Douglas County, a series of cinnabar mines, most notably including the "Red Cloud," were located. In the late 1930s and early 1940s, Oregon was the second largest mercury-producing state in the nation, after California, with the largest bulk of that production coming from five mines, all located outside the study area. The single largest producing cinnabar mine in Oregon, the "Bonanza Mine" northeast of Roseburg, produced more than 39,000 flasks of mercury over its long operation. As the price of mercury fell in the 1950s and continued to drop, mercury production throughout Oregon ended. "If and when the economic climate becomes favorable, there is little doubt that Oregon will again produce substantial amounts of quicksilver" (Brooks 1963:18).

c) NICKEL

In southern Douglas County, just beyond the formal boundaries of the study area, lies Nickel Mountain, one of the largest deposits of nickel known to exist in North America. Discovered in 1864, the site was only developed by the Hanna Mining Company as a producing mine in 1954. Until its recent closure, the Hanna operation was the only nickel mine in the United States (Boldt 1967:87).

While the recent large-scale operation at Nickel Mountain certainly dominates nickel mining in the region and represents one of the very few mining operations of potentially national significance in the region, other earlier efforts at mining nickel were recorded. The DOGAMI database lists twenty-nine individual mining sites where nickel was present; at twenty of these it was the primary focus of the site. Nine mining sites record actual nickel production, the most recent occurring in 1942.⁴⁷ No historical or newspaper accounts of nickel mining activity within the study area were located, although obviously such activity did occur.

d) SILVER AND OTHER MINERALS

In the late 19th and early 20th centuries, some silver was produced in commercial quantities in southwestern Oregon. In 1907 Jackson and Josephine reported almost 5,000 fine ounces of silver, virtually all of which was a byproduct of gold mining activity. No producing silver mine, as such, with silver as the primary focus of production, has been documented in the region.⁴⁸ The names of three mines in the area, the Little Silver (T36S-R10W-1), the Silver Occurrence (T38S-R2E-S3), and the Yankee Silver Lode (T34S-R8W-S2) indicate an intent to mine silver but none of these has any recorded production according to the DOGAMI record.

During the industry's heyday prior to World War II, serious mining efforts focused

upon asbestos, molybdenum, and sulfur, among other minerals, occurred in the study area. During the booster-driven excitement of the late 1890s and early 20th century, sudden bursts of excitement developed over coal and iron in the region, with coal actually developing as a serious industry for a very short period of time.⁴⁹

More typical, perhaps, was the short burst of enthusiasm for manganese that occurred in 1917.

Manganese of high grade appears in small seams in the Gold Hill iron deposits,⁵⁰...In the Chisholm mine, in the Meadows District, these seams are observed in a large copper and gold bearing dike, and again they appear below the Josephine County Caves in the Waldo District (Kellogg 1917b).⁵¹

Despite such strikes reported as offering high potential, of the 62 mining claims where manganese was present according to DOGAMI, only four ever actually produced any ore and there is no indication that manganese mining was ever significant in the region.

14. Chromite

Chromite, a mineral that consists of an oxide of iron and chromium, is relatively rare worldwide but occurs rather plentifully in the southwestern Oregon study area. Of commercial value for the production of chrome and stainless steel, only small amounts of chromite are typically in demand and its price is largely related to available stockpiles. As early as 1890 Herbert Lang reported that chrome ore was "strikingly abundant" in southwestern Oregon but noted that "...the trade is in the hands of a very few dealers who to all intents and purposes constitute a kind of a 'trust' for keeping down the price paid to producers" (Board of Agriculture 1890:76-77). Crescent City, California was the major shipping point for all U.S. produced chromite between 1870 and 1894 and Del Norte County reportedly produced some 70,000 long tons, a vast majority of the nation's supply. "When the tariff was removed from chromite in 1894 the domestic price dropped and Del Norte County production ceased" (Bristol 1953).

Although chromite had long been known to exist in southwestern Oregon, it seems only a few attempts to extract commercial amounts occurred before World War I. Then increased demand from the war effort and an uncertain international supply (since 1894 the US imported most of its chromite supply from overseas) caused prices to rise and made Oregon's largely scattered deposits valuable to extract.

Allen Davis and W. A. Patrick of [Ashland] left this week to locate a valuable chrome deposit ten miles west of Ashland and six miles from Talent, which they prospected recently. Both men are experienced miners, Davis having handled chrome ores for 30 years. They believe

this deposit richer than any other in this vicinity and will proceed with development work at once (*Ashland Tidings* 1918a).

During the war, as gold and other non-essential mining declined, chromite, which was considered important to the war effort, became a major focus in southwestern Oregon. Grants Pass was established as a "gateway" or collection point and was expected to process 75,000 tons of chromite ore during 1918. One newspaper account documents twelve separate operations underway, between Grants Pass and Ashland, each averaging approximately 2,000 tons production.

This (chromite production) will bring more than \$2,000,000 into Josephine County in 1918 and in a mineral way is the most valuable asset of this county. (*Ashland Tidings* 1918b).⁵²

"Prices skyrocketed, miles of road were built by hand labor, and the mines [were] just reaching good production when the war ended" (Bristol 1953). With the war's end, demand declined and the extraction of southwestern Oregon's chromite deposits again ceased to be economically profitable.⁵³ They would remain so for the next twenty-plus years.

Oregon chromite occurs in two main types, which may be roughly classified as 'kidney' and disseminated [and] it is readily apparent that the small body of kidney-type ore even if high grade...is at present valueless if cost of building a camp and constructing a road to the property must be borne by relatively few tons of ore (Allen 1938:3).

Repeating the pattern of the first World War, World War II also brought increased demand for chromite. By 1941 both the Rustless Iron and Steel Company of Baltimore and Union Carbide Corporation were making investments in southwestern Oregon chromite deposits to secure a stable supply in case the United States became involved in a European war.⁵⁴ After the United States entered the war, the government began a crash buying program and ore prices soared to more than \$50 per ton. Eventually the General Services Administration [GSA], a Federal agency, constructed a "chrome buying depot" in Grants Pass to serve as a clearinghouse. This facility remained in place into 1949 and developed a large stock of ore to meet on-going demand before closing. With these reserves still in place at the start of the Korean War, unlike previous conflicts, no government buying program was established. Miners in southwestern Oregon, enjoying one of the largest deposits of the ore in the world, hoped renewed government purchases would help turn chromite mining into a major industry in the southwestern Oregon and northern California region. In late 1952 a committee of the Oregon Mining Association began *The Stock Pile*, a newspaper-type monthly published in Rogue River devoted to providing news and comments on the growing chromite industry.

The mining of chromite differs in several ways from gold or other mineral extraction. The ore is of a "sinuous or lenslike nature" that is widely dispersed. It occurs in "irregular kidneys," not in large concentrations as in quartz or vein gold mining.

The remarkable thing about these kidneys is that the best place to look for another one is in the neighborhood of the one you have just finished mining out. It is very rare that a chrome mine has any real tonnage blocked out. Development work is the biggest part of the cost (Bristol 1953).

In tandem with the "lenslike" kidneys are the sinuous deposits that apparently occur as thin lenses and veins. Mining during the World War I period reportedly concentrated on surface deposits — lumps of ore that were easily collected and shipped for smelting. Later World War II and Korean War era chromite mining often returned to these same locations with bulldozers and located additional ore below the surface. The sinuous form of the ore required more traditional extraction techniques.

By 1961 Oregon ranked third nationally in chromite production, behind Montana and California, with more than 50% of the state's production coming from Josephine County. The single largest producer, the Oregon Chrome Mine, in the Illinois Valley, was the only mine in the state to have produced in the years 1938, 1946 and 1948, when no government price incentives were available (Ramp 1961:25).⁵⁵

Examples of typical chromite mines in southwestern Oregon include the following:

Snowy Ridge Mine (*Jackson County, T41S-R2W-S14 and Siskiyou County, T40N-R9W-S16*):

The Snowy Butte was known as the "Sally Ann" when first staked in 1938. Leased to Fay Bristol (of the *Oregon Mining Association*, above) in 1941, the mine was sub-leased and operated through the middle of August 1943. "At that time a small stringer of ore less than a foot thick could still be seen in the face of the upper adit, but this was too thin for profitable mining (Ramp 1961:87-88).

Red Mountain Mines (*This refers to a group of claims in the Red Mountain area, southwest of Ashland, T40S-R1W-S29 and 32*):

Owned by a Rogue River resident, they were leased to two miners from Grants Pass in 1954 and some 18 tons of lump chromite was excavated via open cuts in the slope before work was halted.

New Hope Claim (*T40S-R1W-S20*):

Also located west of Ashland, the New Hope Claim was operated by the Ashland Mining Company as late as 1957, yielding 70 tons of chromite

ore that was shipped to the company's mill in Ashland for concentration. Workings included a 200-foot-long open cut, 150 feet wide with a maximum depth of at least 20 feet.

As one of the relatively few areas in the United States in which chromite occurs in commercial quantities, and given the area's significant history in supplying the nation during periods of conflict, chromite mining sites in the study area, unlike gold, have potential for national or regional significance if integrity and associative values can be sufficiently documented. The database lists 290 chromite deposits in the study area. Of these, 121 actually claim some level of chromite production. Only four chromite mining sites have been documented to date in Medford BLM/RRNF cultural resource inventories.

15. Mining Since the 1960s

With very few exceptions, mining activity in southwestern Oregon since the 1960s has been of the small operations of the type categorized by most observers as "weekend" or "Mom 'n Pop" mines. In the late 1960s and throughout the 1970s, periods of our history in which "living on the land" and getting "back to nature" coincided with troubled political events and economic inflation, numerous area mining claims again saw some interest. Often involving "squatters" and members of what was deemed a "counter-culture," mining claims were often the site of activities little related to mining. As a result, many Federal management agencies undertook fairly extensive programs to reduce the attractiveness of abandoned claims by burning early cabins, shacks, and other structures that could easily provide shelter. Unfortunately, many potentially significant historic and cultural resources were lost as a result of these efforts.

Some commercial-level mining activity continues on the area's patented mining claims. On public lands, "Mom 'n Pop" and similar recreational mining still constitutes the majority of activity and it is the rare proposal that seeks to mine gold in southwestern Oregon on any level even approaching the activity of the 19th and early 20th centuries. Still, many believe there is money to be made by mining in southwestern Oregon, even if only a few are currently attempting to do so.

Old timers still get a far away look in their eyes and talk about the gold that is lying 'out there' just to be taken. They will tell you, with the fervor of missionaries that 'there's more gold in them hills than was ever took out. If the government would just raise the price of gold to the world market, say \$75 an ounce, all our problems would be solved.' They tell you that this would bring full employment, prosperity and sound money (Haines and Smith 1964:104).

Today, more than thirty years after historian Francis Haines penned this continuation of southwestern Oregon's traditional miner's lament, the price of gold is deregulated and follows the world market, just as the "old-timers" hoped. And, freed of the government's limits, the price of gold rose to more than \$850 per ounce in 1980. Today it hovers around \$300 per fine troy ounce, an eight-fold increase over its value in 1964. But as the twentieth century ends, even this incentive has proven insufficient to return mining to a significant role in the southwestern Oregon economy.

Increased environmental concerns and regulations, the requirement of ever-higher capital outlays for initial development, the availability of other, less-risky, forms of investment, and a growing job market and correspondingly high labor costs, all combine to make mining an occupation of limited attraction. Other than the occasional grandly conceived project, none of which has come to fruition, southwestern Oregon's mining industry is virtually non-existent, largely perceived as a hobby or a vestige of another era by the general public. If, in fact, the old-timers were right and "more gold is in them there hills than was ever took out," there is little reason to believe it won't stay firmly put for the predictable future.

E. Historic Resources Likely to be Found

The following represent general types of cultural resources associated with mining activities in the study area. Resource types are sub-categorized into broad groupings, by general function, relating the major areas of activity and effects of the mining process:⁵⁶

1. Water Management and Placer-Related
2. Lode Excavation and Production-Related
3. Habitations and Support Structures
4. Mining Landscapes

Although examples of virtually all the various cultural resources commonly associated with mining activity were once found in southwestern Oregon, it is highly unlikely that representative samples of each type and period still survive. The nature of the region's mining history, where mid-19th century grounds were re-worked with hydraulics first in the 1870s-1890s and then, quite frequently, again in the 1930s, has resulted in the destruction of much of the area's earliest mining sites.

While no comprehensive resource-by-resource inventory of southwestern Oregon mining resources has been undertaken, the three entities charged with primary management of federal lands in the region have documented cultural resources on a regular basis since the adoption of the National Historic Preservation Act in 1966.

Collectively, the Medford District of the Bureau of Land Management, the Rogue River National Forest, and the Siskiyou National Forest, oversee several million acres of this region, including many areas connected to early mining. Much of the information regarding the various type of resources likely to be found is accordingly based on *Cultural Resource Site Reports* documenting mining resources identified by either the U.S. Forest Service or Bureau of Land Management. Cited cultural resources may or may not be of typical quality or character but serve as examples within the study area known to exist. The examples cited in the following narrative are identified by official agency site number – the BLM prefix identifies those sites recorded on Medford BLM District lands while Rogue River National Forest sites are identified by an RRNF prefix.

1. *Water Management Resources*

A) DITCHES

Hand-excavated, earthen embankment, ditches were developed to channel water from a stable source to the mining site. Even in the early 1850s cooperative ventures undertook large scale “Ditch Companies” with investor-, not miner-, backed financing that provided water to mining operators. “Ditch” is a general term that may range from 20’ foot deep chasms of the Logan\Cameron operation near Waldo to the more common 3-4’ side ditches that virtually web throughout any major area of hydraulic mining (Figure 32). Ditches form one of the most lasting built elements of mining operations, often stretching for miles as a visible landscape feature. Typical examples include BLM Site 35HS11-314 on Ferris Gulch and the five mile long “Rich Gulch Hydraulic Mine” ditch in the Steamboat area (RRNF Site 594).

B) TUNNELS⁵⁷

In channeling water from source to point of use, the most direct route often ran through a mountain or hill. In this situation a tunnel would be bored, typically by hand, to direct the flow with as little loss of “head” as possible. Few tunnels in southwestern Oregon were much more than simple bored holes without any interior bracing or other inserted structural support. While many tunnels were likely small in diameter (less than 6’) at least some were apparently quite large. As early as 1854 a 300-foot tunnel of fairly large diameter connected Allen Gulch to the Waldo area (Recorded as BLM Site 35HS11-396). “Though the tunnel is caved in, both ends can still be seen from the Jeep road that goes over the divide from the Sanger Lake Road to Allen Gulch” (Street and Street 1973:3).

C) HEADBOXES

Once the water was conveyed from source to mining site, a “headbox” served as the gate or valve that regulated its use in the hydraulic process. Typically constructed of heavy timber and wide planks, headboxes were of varying size (RRNF Site RR-433a).

D) FLUMES/TRESTLES

Flumes, basically, are elevated ditches, an open wood or metal trough that served the same function of moving water from source to point of need (Figure 33). "Flumes are to be avoided if possible, being liable to decay and continual source of expense" (Colliery Engineer Co. 1897:83). Flumes were typically made of wood and joints were battened with narrow strips of wood to impede leakage.⁵⁸ Another form of flume, actually more of a lined ditch, could be made of stone within an excavated trench. The best sort of wooden flume construction was cross-braced to maintain the trough with seams lined with tar or pitch. Later flumes could be lined, or fully manufactured, from sheet metal. Where a system encountered a steep change in topography that was insurmountable without severe loss of head or pressure, flumes could be elevated on wooden cross-braced trestles. "The life of a flume will not exceed 20 years at most, and generally ten years" (Colliery Engineer Co.1897:85).

E) DAMS AND RESERVOIRS

Required to impound or change the direction of flowing water, "dams" related to mining activities in southwestern Oregon included everything from the large dam of the Golden Drift Mining Company, that was later converted to irrigation use, to the



FIGURE 32: THIS DITCH, PART OF THE LOGAN/CAMERON MINE IN THE WALDO VICINITY, IS TYPICAL OF THE HAND-DUG WATER CONVEYANCE SYSTEMS ASSOCIATED WITH HYDRAULIC MINING OPERATIONS.

more typical wood-and-stone or earthen dams across small creeks and streams. Typical of the latter are RRNF Site #113, a wooden “splash dam” and the earthen dam at BLM Site 35HS11-275. Literature on 19th century mining technology covers the use of “wing dams,” a variant described as a dam that redirected large waterways, such as rivers, for mining purposes. Occasional early newspaper accounts imply that some modest wing dams may have been used by southwestern Oregon miners. But, subject to both normal weathering and the ravages of periodic floods, no extant site containing a wing dam was identified.

F) STEEL PIPE

From the headbox, pipe was used to direct water to the mining face. Wood-stave pipe could also be used, although riveted metal appears to have been far more prevalent in southwestern Oregon. Of varying diameters, rolled steel or wrought iron sheets were formed into sections and riveted along a lateral seam. Individual pipe sections (apparently 3-4' long in most situations) were then riveted together to form a pipe of the required length. “Arc welding was not known then and so it was necessary for one man to crawl inside to buck the rivets as the sections were put together. Many men lost their hearing because of this work” (Pfefferle 1977:26). Pipe was

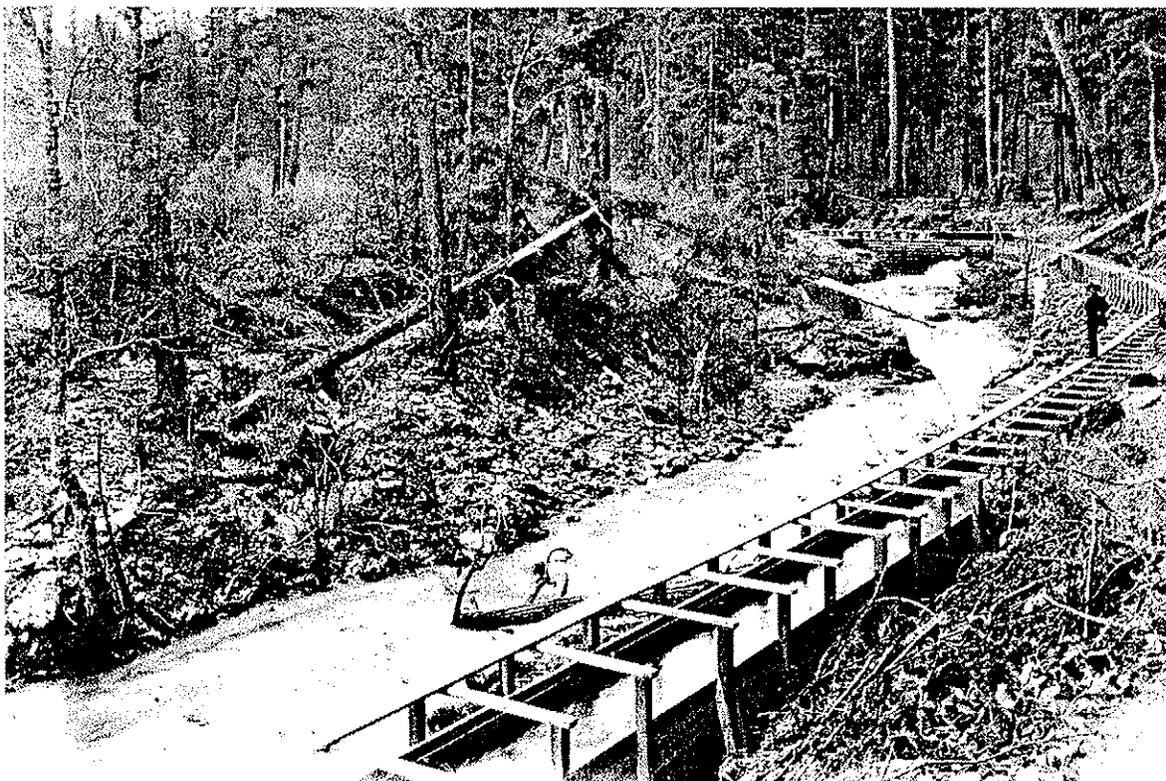


FIGURE 33: ALTHOUGH EXTENSIVE WOOD FLUMES WERE BUILT IN THE AREA, OFTEN ON TRESTLES SUCH AS IN THIS VIEW OF A 19TH CENTURY JOSEPHINE COUNTY MINE, MOST WERE EITHER SCAVENGED FOR LUMBER OR FUEL OR HAVE SIMPLY COLLAPSED AND DECOMPOSED (BOOTH PHOTO, JOSEPHINE COUNTY HISTORICAL SOCIETY COLLECTION).

often tapered to increase pressure as it approached the end of the run. "Pipe once put together soon becomes water-tight from the foreign matter in the water. This may be hastened by throwing in a few bags of sawdust. Pipes thus prepared will remain tight when subjected to a pressure of over 200 pounds per inch" (Colliery Engineer Co. 1897:87-88). Built of a long-lasting material, rusted sections of steel pipe are among the most ubiquitous mining-related resources, with isolated finds, often washed downstream during high-water, scattered throughout the study area.

G) GIANTS

"Giants" or "monitors" represent the final element in the water-conveyance system for hydraulicking. Usually a manufactured item, giant design evolved from simple gooseneck designs, "...formed by two elbows, one above the other, with a coupling joint between them.." through a variety of intermediary steps before the emergence of a "Little Giant," invented by a Mr. Hoskins, that offered an in-line knuckle joint that proved both reliable and versatile. "The Giants have rifles and nozzles from 4 to 9 inches in diameter, 5- to 7-inch nozzles being commonly used" (Colliery Engineer Co. 1897:95). Manufactured giants were constructed of cast iron. In smaller or poorer mining operations a giant may have simply been a final length of riveted pipe, used gooseneck fashion, to direct the stream. All giants were typically mounted on a skid or lower pad, which was stacked with stones or other heavy materials to counter the tremendous kickback and permit the operator to effectively direct the flow. As valuable pieces of machinery, giants were both sold and re-used during the mining period. A prime target for looters and souvenir hunters, few if any remain on the federally inventoried mining sites in southwestern Oregon.

H) SLUICES

Simply put, a sluice is that part of a placer mine where all the effort points. Slurry washed away by the giant is channeled into the riffles and screens of the sluicing system, where the heavier gold drops out, settling at the bottom. "Clean-up" is the

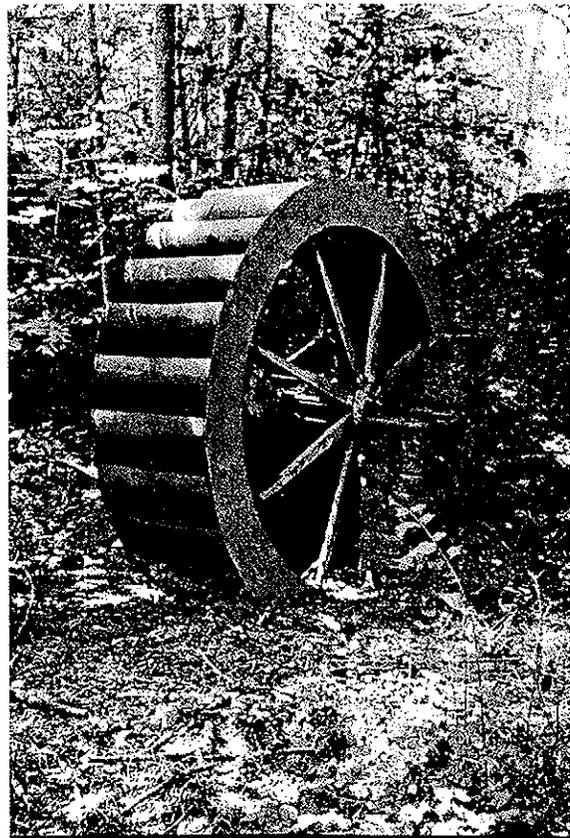


FIGURE 34: CRUDE WATERWHEELS, LIKE THIS ONE AT THE FITTINGLY-NAMED "WATERWHEEL HOMESTEAD" SITE ON FOREST CREEK, REMAINED A PRACTICAL SOURCE WELL INTO THE 20TH CENTURY (BLM SITE 35HS11-275).

final step of gold production, the time at which the success of all the proceeding effort is measured. Sluice boxes were typically built of wood with plank walls and a series of wood or wire collection devices to trap the gold. They were often raised on trestles to continue the gravity-fed pressure of the system that keeps the massive amounts of water moving. Few if any sluice boxes remain in the study area and no surveyed example was identified in the course of preparing this context.

i) ELEVATORS

An “elevator” was a contrivance used to move gravel from one point to another with the force of water pressure. In action, the elevator was made of a heavy gauge pipe into which the “monitor” could be securely inserted. As the full force of the water shot through the elevator, gravel could be deposited through a large opening at the base and forced upwards by the pressure. The elevator in use at the Columbia Mine in 1897 was described as consisting of “...a 40-foot pipe, 2- feet in diameter, supported at an angle of about 45 degrees. At the base of this pipe a giant implanted in the ground forces the gravel as it comes through the flume to a point several hundred feet

below...The force of the giant operating this elevator can hardly be appreciated by one who has not seen its operation....it will toss an 800 pound boulder up the pipe like a marble” (*Mining Journal* 1897:38).



FIGURE 35: ADIT WITH LOG SHORING, STEAMBOAT MOUNTAIN (RRNF 604).

j) RACES (TAIL RACES)

Visually, a “race” is little different than a ditch; however in the water system developed for typical hydraulic mining activity its function was not to convey water to a mine, but to shunt used water and debris away once the giant had done its work in removing gold-bearing dirt. Races would occur at the discharge of the sluice box or whatever system was developed to capture gold. Since the actual working arrangement of many 19th century hydraulic mining sites is difficult to decipher, not to mention the cyclical re-mining and possible re-use of many features, it is possible that some resources identified or considered to be “ditches” were in fact “races” or both, over the course of their use.

K) WATERWHEELS

Waterwheels provided motive power for arrastras, stamp mills, and various other mechanical needs at a mining site. Typically made of wood, with metal-lined buckets, waterwheels likely took many idiosyncratic forms and remained in use throughout the 19th and pre-World War II 20th century as an inexpensive alternative to steam or electric power in remote mining locations (see The Babbit Arrastra, RRNF Site RR-436 and BLM Site No. 35HS11-275; Figure 34).

2. Lode Excavation and Production-Related Resources

A) ADITS⁵⁹

Adits, being the horizontal “tunnel” entering into a lode mine, are often simply excavated holes in the side of a mountain, sometimes including wood logs or timbers for shoring, that extend to whatever length was required to access and expose the “vein.” In large mines, adits would logically be quite large, protected by buildings or other structures. More commonly, in small operations, an adit was open to the weather. The Steamboat Mountain Adit (RR Site RR-604), of undetermined date, is a large, 8’ opening that retains wood shoring of split fir and pine logs (Figure 35). A more typical adit is that at the so-called “Waterwheel Homestead,” a small quartz mine on the east side of Forest Creek (BLM Site 35HS11-275).

B) SHAFTS

The vertical access component of a mine, descending from the top of a landform straight down into the earth, would logically be associated with only larger and more developed quartz mining operations such as the Greenback, Benton, or Granite Hill mines. Depending upon size and depth, shafts might be shored against collapses with wood or even metal.

C) HEAD FRAMES AND CRANES

When a mine utilized a shaft to access the vein a head frame or crane was required to raise and lower miners, equipment, and ore into and out of the mine. Head frames were typically built of stout wood, with a drum or winch arrangement supported on a wooden decking and holding either rope or braided wire cable. Exposed wooden features, few if any head-frames likely survive from the historic period in the region and no examples were identified during this study.

D) ARRASTRA (ALSO SPELLED “ARASTA”)

As described above, an arrastra is a simple circular grinding machine that is used to reduce quartz bearing ore. Arrastras were generally made of rock, or later concrete. They were used throughout the mining period in small, remote, mine operations that did not justify

the expense of a stamp mill (see Bobbitt Arrastra, RRNF Site RR-436; Figure 36).

E) STAMP MILLS

As described above, stamp mills are machines, typically made of wood and metal, that are used to reduce gold bearing ore into more manageable pieces, allowing the capture of the released gold via mercury amalgamation or sluicing. Easily transportable and expensive, stamp mills were often removed from an unprofitable mine and sold. The Mountain Lion Mine (BLM Site 35HS11-306; Figure 37) reportedly had a five stamp mill in place as late as 1904. Today, the site holds a wood and machine-made metal four-stamp mill, possibly indicating either an error in the early report or the installation of another, smaller, stamp mill during a later period of activity at the mine.

F) PROCESSING BUILDING

Generally stamp mills were housed within wooden shelters to protect their valuable metal components and, perhaps, the steam engine that provided motive power. The Steamboat Mountain 2-Stamp Mill (RR Site RR-603) was constructed in 1912 and measures 22' x 95', stepping down the side of a slope. The building is made of rough



FIGURE 36: ARRASTRA AT THE BOBBITT SITE (RRNF-436).

cut boards and peeled poles. The stamp mill itself (now missing) was secured to a heavy timber base by large threaded steel bolts.

g) ORE CARTS AND TRANSPORTATION SYSTEMS

Used to transport ore from within the mine tunnel or adit to a processing point, small railroad-car like ore carts that ran on parallel steel rails were a common element in many mining operations. Carts were generally made of steel although wood was also used as in the Bula Mine, located on the RRNF Ashland Ranger District. Remnants of narrow gauge track, approximately 24" wide, remain just outside the entrance to the Layton Mine (BLM Site 35HS11-313). Trails, roadbeds (both wagon and, later, auto or truck) were required to access mining sites and in some cases to ship partially processed ore to another facility. Road quality is expected to be entirely limited to dirt or gravel with little engineering work or substantial improvement.

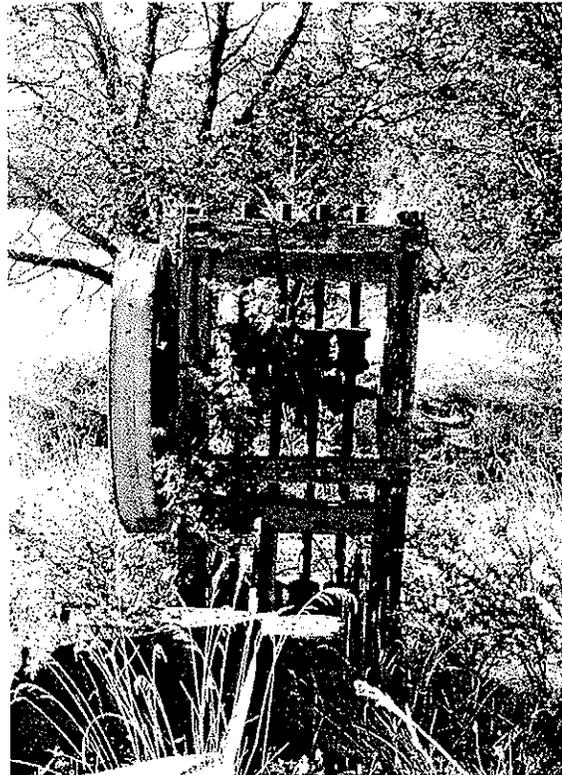


FIGURE 37: A FOUR-STAMP MILL AT THE MOUNTAIN LION MINE, BLM SITE (35HS11-306).

h) AMALGAMATION TABLES

Amalgamation tables, the location in a quartz or hard rock mine where gold particles were "amalgamated" with mercury for collection, were often simply an element within the large "mill" structure, once the crushed ore left the stamp mill. Several amalgamation tables remain in the study area, including one adjacent to the Steamboat Mountain 2-Stamp Mill, which was described as constituting level 4 of that structure. "The only features of note on this level is the amalgamation table" (RRNF Site #603; Figures 38 and 39).

i) SMELTERS

Part of the refinement process, smelters raise the temperature of impure ore to separate and reduce ore into its component parts by taking advantage of the differential melting point of the elements. Smelters often represent a higher degree of sophistication and development in the mining process. Simple smelters were likely present at several area copper mines. A small smelter at the Alameda Mine near Galice is one of the few specifically identified by this study (Brooks and Ramp 1968:207).

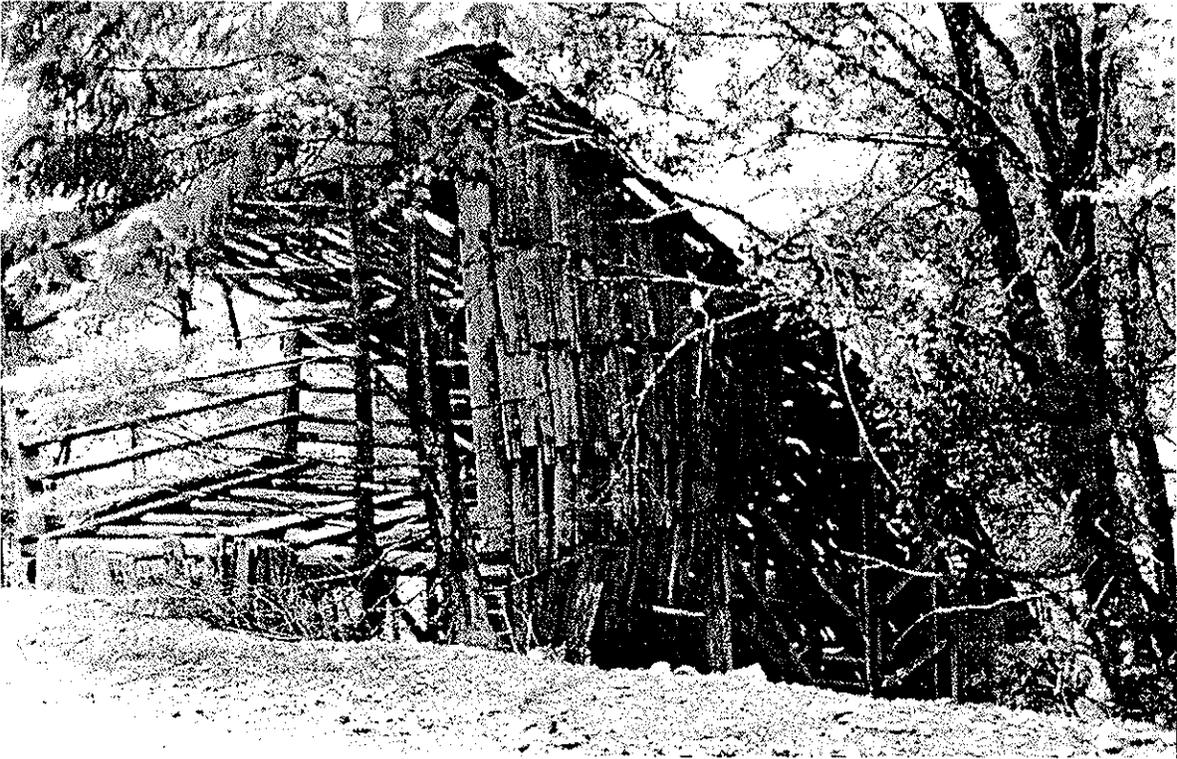


FIGURE 38: VIEW FROM UPPER ELEVATION OF THE STEAMBOAT STAMP MILL (RRNF SITE 603).

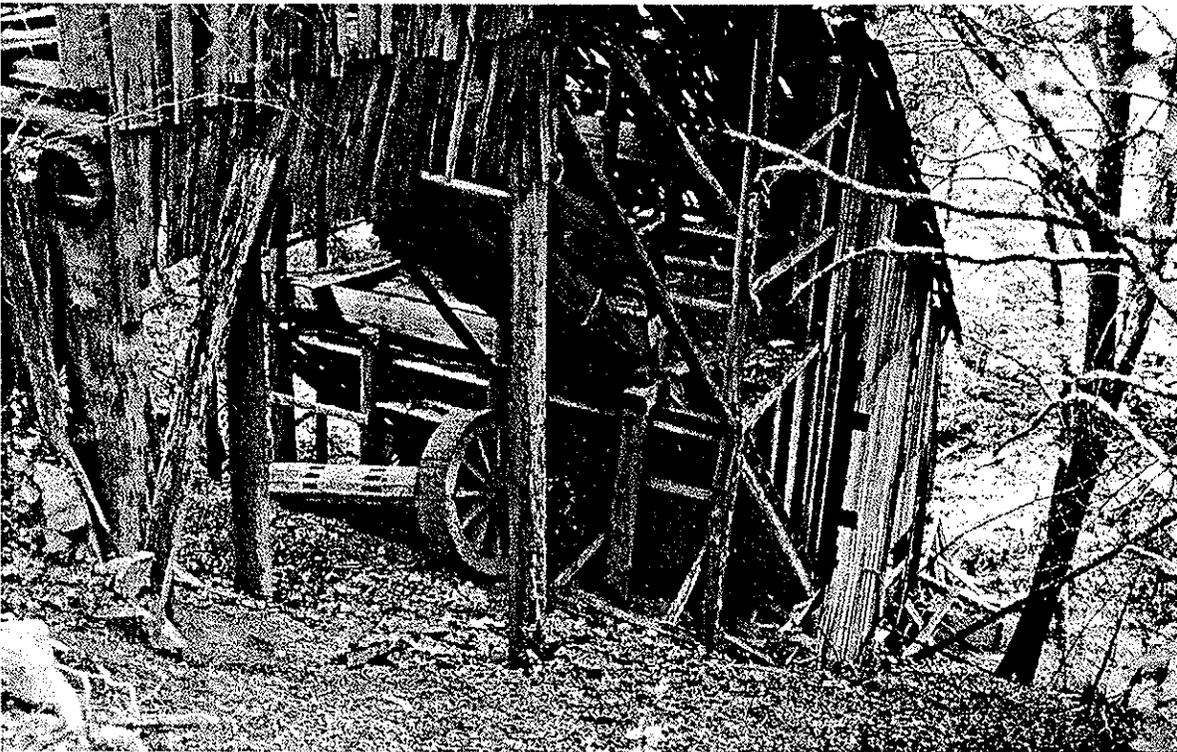


FIGURE 39: LOWER ELEVATION VIEW OF THE STEAMBOAT MOUNTAIN STAMP MILL (RRNF SITE 603), ONE OF THE FEW SUCH STRUCTURES REMAINING IN THE STUDY AREA.

Several larger copper smelters were built in the study area. “[T]he first smelting plant of noteworthy proportion to be erected in Southern Oregon...” was built by the Takilma Smelting Company in Takilma during 1904 according to period reports, and a 50-ton Vulcan smelter was built between 1902-1903 at the Mountain View Mine near Holland (*Mineral Wealth* 1904:44). While at least some evidence of early smelters, notably the foundation of the Takilma operation, remain on private land, none were located on Federal property in the study area.

j) RETORTS

Retorts were used to reclaim used mercury [quicksilver], a required element in the amalgamation process. “The simplest and most efficient method of recovery is to roast the ore in order to volatilize the quicksilver, then collect the metal in a condensing system through which the volatiles are conducted. Roasting temperatures are ordinarily maintained in excess of the boiling point of quicksilver, 1,076° F.” (Brooks 1963:5). Small-scale, simply designed retorts were typically made of brick, an easy-to-transport fireproof material, and metal, such as in RRNF Site 112 (Figure 40). Several retorts remain at the Chisholm Mine on East Evans Creek Road in northeastern Jackson County. “The retorts are still standing, though subject to decay and vandalism” (BLM Site 35HS11-92).

k) PROSPECT/GLORY HOLES

Prospect holes are typically vertical excavations of varying diameter, dug in exploration. Often dug by hand as one of the first efforts at locating a paying lode mine, during the Depression such prospects were termed “glory holes.” While the “glory hole” term appears to have been applied solely to vertical, well-like, excavations, prospect holes also include longitudinal cuts or whatever other form of excavation the terrain and prospector required. Given their general nature, prospect holes occur during all periods of mining activity and there is no special differentiation attributable to the particular mineral being sought. Colloquially, “glory holes” are in almost all cases related to gold mining alone (Figure 41). While not visited, RRNF Site #1399, “Complex of Prospect Pits,” located in the Applegate, is probably a typical example of a prospect, consisting of a series of “8 shallow pits 2 to 3 feet wide by about 1 to 1.5 feet deep.”

l) DREDGES

Dredges were large floating ore processing plants, essentially boats with a conveyor-like bucket scoop on a boom at the front which gathered placer deposits from the channel, processed it through screens to remove gold, and shunted the waste out behind. One early dredge was reportedly abandoned on the Illinois River and as late as 1918 was still visible, partially embedded in the shore. The huge dredge that operated on Footh Creek, and then was later floated to Evans Creek, remained intact



FIGURE 40: SIMPLE RETORTS WERE BUILT OF FIRE BRICK AND IRON PIPES AND WERE LOCATED ON THE SLOPE OF THE TERRAIN, USING GRAVITY TO AIDE IN THE COLLECTION OF THE CONDENSED QUICKSILVER AT THE BOTTOM (RRNF SITE 112).



FIGURE 41: PALMER CREEK GOLD MINE (c1910). THIS "MINE" APPEARS TO HAVE BEEN EXPANDED FROM AN EARLIER PROSPECT HOLE WHEN GOLD WAS FOUND BUT ESSENTIALLY RETAINS THE BASIC "HOLE IN THE GROUND" CHARACTERISTICS OF A TYPICAL "PROSPECT" (MEDFORD AS A MINING CENTER).



FIGURE 42: SIMPLE WOOD BUILDINGS, MOST AT LEAST PARTIALLY COLLAPSED, DOCUMENT THE SPARTAN LIVING ARRANGEMENTS AT EVEN A MODERATELY SUCCESSFUL MINING OPERATION (RRNF SITE 702-D).

if non-operational into the early 1970s at which point it was sold, disassembled, and shipped to Alaska where it is still used (Fiske 1998).⁶⁰ At this time no surviving dredges or significant identifiable remnants are known to remain in the study area.

3. *Habitation and Support Structures*

A) CABINS

Housing related to mining use during the historic period is almost universally of wood construction, generally light frame with split shingle or horizontal board siding. Numerous log cabins were constructed during both the 19th and 20th century periods, due to the free use of standing timber on the claim and the difficulty in securing milled material at remote camp sites. In all but the most elaborate and established operations, such as at Sterling, miners' housing was likely of small, single-story designs, consisting of one or two rooms. Fieldwork indicates that building elements such as windows may have been scavenged either from other mining camps or from towns and then re-used. Examples of this latter trend include the Art Davies Cabin (RRNF Site 702-d; Figure 42), built c1930 of board construction with a pole-framed roof (possibly a later

alteration), and BLM Site #35HS11-340, the much later "Keeler Creek Cabin," built c1950. While both are collapsed and retain little structural integrity, compared to other documented mining cabins in the study area, each retains sufficient integrity to relate its original construction.

Numerous *cabin sites* are also found in the study area, representing places of mining habitation now lacking sufficient material or structural integrity to document the details of the structure. Remnants often include foundations (of stone or concrete), fireplaces, and miscellaneous building materials not deteriorated or carried off for firewood or other use. Examples of such sites include BLM Site 35HS11-268, "Oregon Belle 4," a small foundation with associated wooden elements, and RRNF Site #599, the "Dunkel Cabin Site," located in the Steamboat vicinity. While this site was not visited for this context, cultural resource documentation states that the Dunkel Cabin Site is largely defined by the landscape features and remaining debris (bed springs, stove parts) from the original cabin use.

b) BUNKHOUSES

"Bunkhouses" and similar multi-tenant workers housing types were also present at the larger camps, given their remote locations and largely single-male worker populations. Other than one bunkhouse at the Chisholm Mine, no identified bunkhouses are known to survive in the study area. Newspaper accounts report that as late as 1936 one stood on Forest Creek, part of the "Sturgis Mine," a large hydraulic operation, that dated from the late 1880s. "...the weather-beaten hut stands as a silent monument to the husky miners who built and to other who sought their living from the gold strewn call of the creek 50 years ago" (*Oregon Journal* 1936).

c) HOUSES

Period reports document that mine managers or owners often lived on-site, at the mining claim, and it may be assumed that those individuals resided in more "finished" homes than the typical miner shack described under "cabins," above. In general, any habitation with more than one room, particularly where there is any pretense toward "style" rather than pure function, might be considered a "house" as opposed to a cabin within the context of Rogue River valley mining activity. The Oscar Creek House, a rather unusual single story building of native stone and milled lumber, was constructed c1920s on Oscar Creek in the Applegate River drainage (BLM Site #35HS11-308).

d) SMALLER SUPPORT BUILDINGS

Any number of small, special-use buildings may remain that were connected with early mining activity. All generally would be constructed of materials similar to cabins; i.e., light framed wood or, less commonly, logs. Support building types include

but are by no means limited to:

- Kitchens, cafeterias, or mess halls
- Meeting halls or social facilities
- Sheds and storage buildings
- Privies and outhouses
- Garages
- Workshops
- Assay offices, mine offices
- Repair sheds
- Pump and well houses

E) ANIMAL-RELATED FACILITIES

Livestock played an important role in early mining activity, as a source of motive power to drive arrastras or haul materials, as a transportation source where wagons were used to move product into a central processing facility, or, well into the 20th century, for food. Fencing, corrals, holding pens, and similar features for sheep, cattle, pigs, goats and horses were all logically built in connection with mining activity

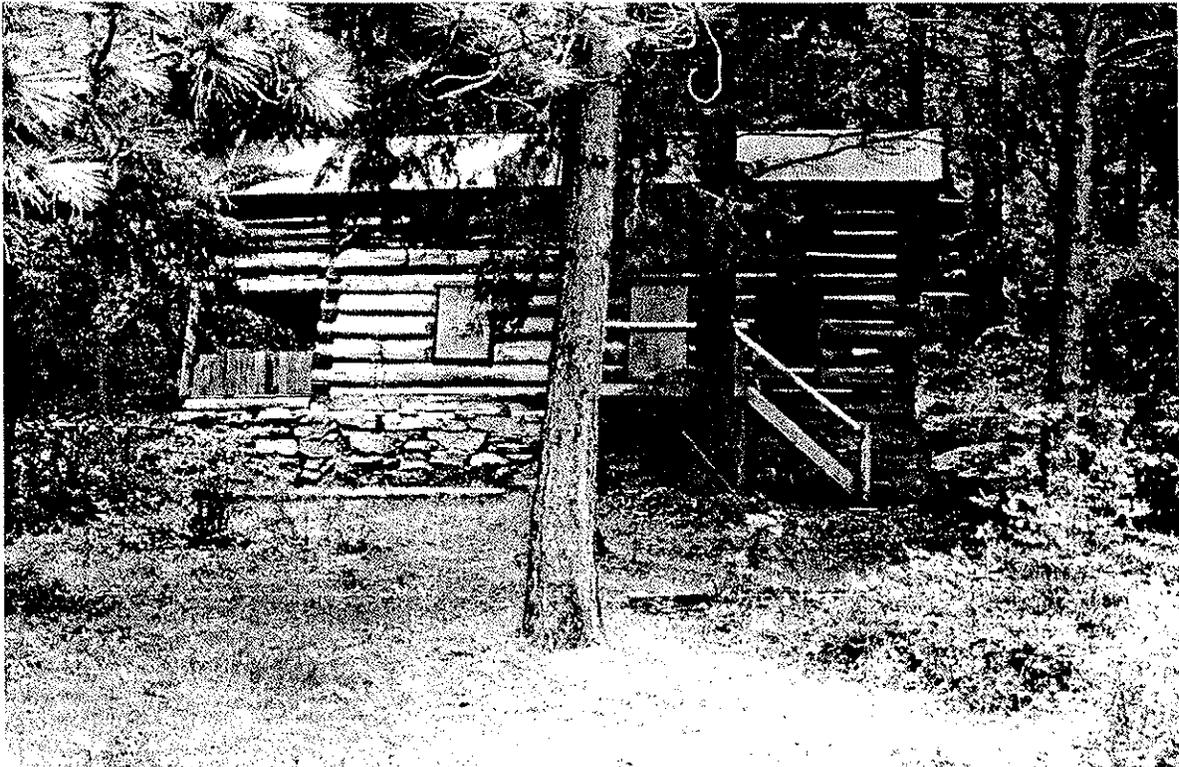


FIGURE 43: FEW REMAINING MINER'S CABINS ARE AS ELABORATE AS THE HARLOW CABIN, BUILT ON ELLIOTT CREEK IN THE 1930S AND NOW LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES.



FIGURE 44: BUILDINGS AT PALMER CREEK GOLD MINE (c1910). LARGER MINES PROVIDED HOUSING AND SERVICES FOR THE CREW BUT FEW SUCH COMPLEXES SURVIVE (MEDFORD AS A MINING CENTER).

and may be expected to remain to some degree at mining sites of any size. Typical construction would likely include both peeled and split logs as well as milled lumber, barbed wire, and similar wood-metal construction.

F) TRASH PITS AND DUMPS

By nature, habitation areas generated debris and the very remoteness of mining claims precluded its removal.

Trash dumps, pits, scatters, and other evidence of miner occupations provide a potentially valuable resource for understanding a broad spectrum of mining life during the historic period. Identified trash pits and scatters include both isolated resources, which may be all that remains from the period of occupancy, as well as those found in connection with more intact habitation or mining technology-related resources. For example, two dump scatters have been identified in connection with the Rich Gulch Cabin Complex (RRNF Site #596), estimated to date from the 1930s era, and at BLM Site 35HS11-268 (Oregon Belle 4), a large and comparatively intact late-19th century can dump is associated with the remnant cabin site.

G) LANDSCAPE FEATURES

As distinct from mining features (ditches, etc. as detailed under both Excavation and Water Management resources, above) and mining impacts (as detailed below), residential landscape features potentially related to mining activity include garden areas and orchards, domesticated plant varieties, domestic fencing (picket, board, woven wire) walkways, paths, cisterns, and similar features that would have been constructed as a part of the domestic aspect of mining life. While few small-scale mining operations ever developed to the level that a “community” character was present at the site, some historic accounts indicate that a few families lived at mining claims, and where they developed vegetable gardens and similar domestic improvements those resources may be of note.

H) CEMETERIES

Several cemeteries in the study area, notably at Waldo, Steamboat, and Allen Gulch, are significant and well-preserved remnants of former mining-related communities. Virtually all multiple-grave cemeteries have already been identified and recorded,

although others, especially smaller one- or two-grave homestead-type plots, may yet remain undocumented within the study area.

4. Mining Impacts

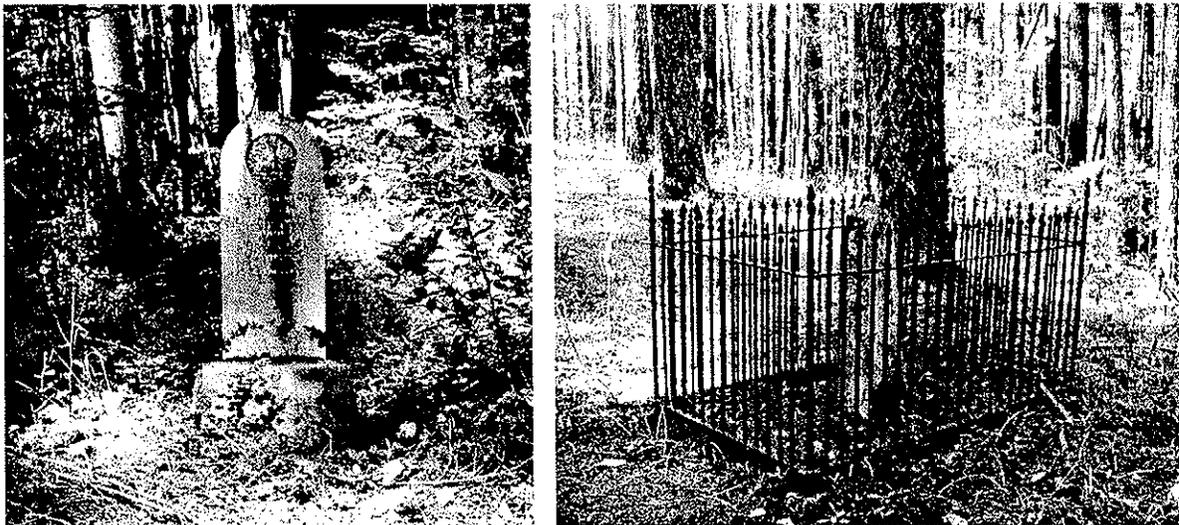
A) TAILINGS

The term “tailings” is applied indiscriminately to the waste rock remaining from placer, hydraulic, and lode mining activity. In hydraulic mining the rounded river stones left after the gold-bearing soil has been sluiced away typically create a broad, treeless landscape of upheaval and disturbance that provides clear evidence of mining activity, often lining both sides of a waterway. Perhaps one of the best examples of this character is at the former Waldo townsite, where cyclical hydraulic mining over an almost 100-year period has left a broad area of tailings (Figure 47).

In lode or hard rock mining, “tailings” are often dumped downslope from the adit, taking advantage of the mountainous terrain of the typical claim area, with the result forming a v-shaped scatter or a level-topped mound or “terrace” atop the sloped surroundings. Higher elevation tailings, subject to more moisture, or those near waterways often become encrusted with moss and small vegetative matter that grows in the soil trapped within the rock piles (Figure 48).

B) ROCK WALLS

In some situations, tailings were “stacked” or shunted into long linear features to allow continued excavation. These tailings “walls” can form dramatic landscape elements. Neatly stacked vertical oriented walls, often more than 6’ high, are



FIGURES 45 & 46: THE WALDO CEMETERY, 1998. IN MANY CASES, THE MOST VISIBLE BUILT REMAINS OF A MINING COMMUNITY IS THE CEMETERY.

colloquially known as “Chinese Walls.” While such activity was certainly a feature of Chinese miners, individuals of all nationalities benefited from orderly positioning of waste to maximize access to their mining claim and accordingly stacked tailings neatly in a vertical fashion to leave as much ground as possible exposed. Many sites documented as “Chinese Walls” likely have little or no connection to members of that ethnic group (Nolan 1998).

c) MINING “CUTS” OR MINE FACES

As it implies, a mine face or cut is the point at which active mining activity occurred and the term today applies to the remnants of that process. Hydraulic cuts, sometimes called “washing pits,” are characterized as vertical slopes, typically entirely without vegetation, that are undercut below the top of the embankment. Classic examples are at the Bybee-Flanagan Mine (BLM Site #35HS11-185, and the Sturgis Mine, along Forest Creek (BLM Site #35HS11-277; Figure 49). Hard rock mining also can result in a “mine face,” typically in connection with a test pit or an adit. Another specialized form is at the High Gravel Mine (BLM Site #35HS11-402; Figure 50), near Waldo, where both sides of an outcropping were hydraulically mined, forming a “v-shaped” outcropping exposing the aggregate of a prehistoric river bed.

d) SETTLING PONDS

In later mining eras, due to concern over sediment re-entering waterways, the output of tail races and sluicing often was directed to basins where heavy sediment would settle before comparatively clear water was returned to the river or creek channel. Pond- or lake-like features were also a byproduct of the dredging process,



FIGURE 47: WALDO, 1998: RE-MINED REPEATEDLY SINCE ITS DISCOVERY IN THE PIONEER PERIOD, THE WALDO TOWNSITE TODAY IS LARGELY A SERIES OF CUTS AND TAILINGS PILES, LARGELY DEVOID OF SOIL OR VEGETATION.



FIGURE 48: HIGHER ELEVATION TAILINGS, SUCH AS THESE MASSIVE EXAMPLES IN THE CARBERRY CREEK AREA, FORM BEAUTIFUL MOSS-COVERED LANDSCAPES THAT BELIE THE TURMOIL THAT CREATED THEM.

where the dredge would literally excavate a constantly moving "lake" for its own use along the mining path. River dredging remnants are likely similar in appearance to typical tailings (as in 1, above). Settling ponds, most notably the so-called "Esterly Lakes" on private lands near Waldo, often survive for many years after the cessation of mining activity.

E) OTHER ALTERED LANDSCAPES

The placer mining process, described by McKinley and Frank (1996:28) as a violent and disruptive assault on the landscape, left many areas of varied impact that are still visible long after the end of the mining period. In addition to the impacts described above, and the production related and water management features described earlier in this section, there are likely other landscape alterations that are the result of early mining activities that remain visible in the study area today. Examples include changes in vegetation relating to periods of occupation and production, altered stands

of trees, and similar natural responses to dramatically unnatural landforms.

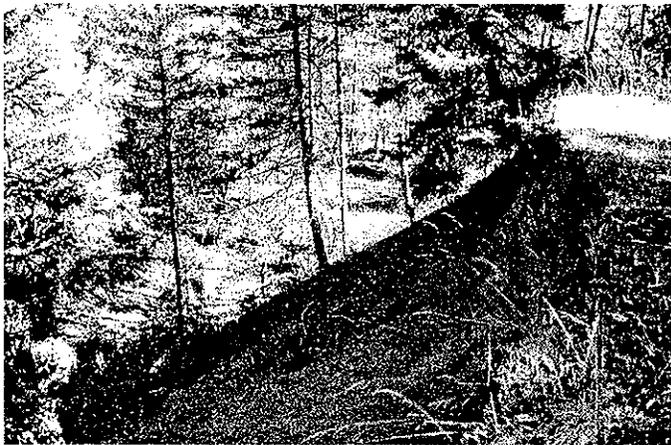
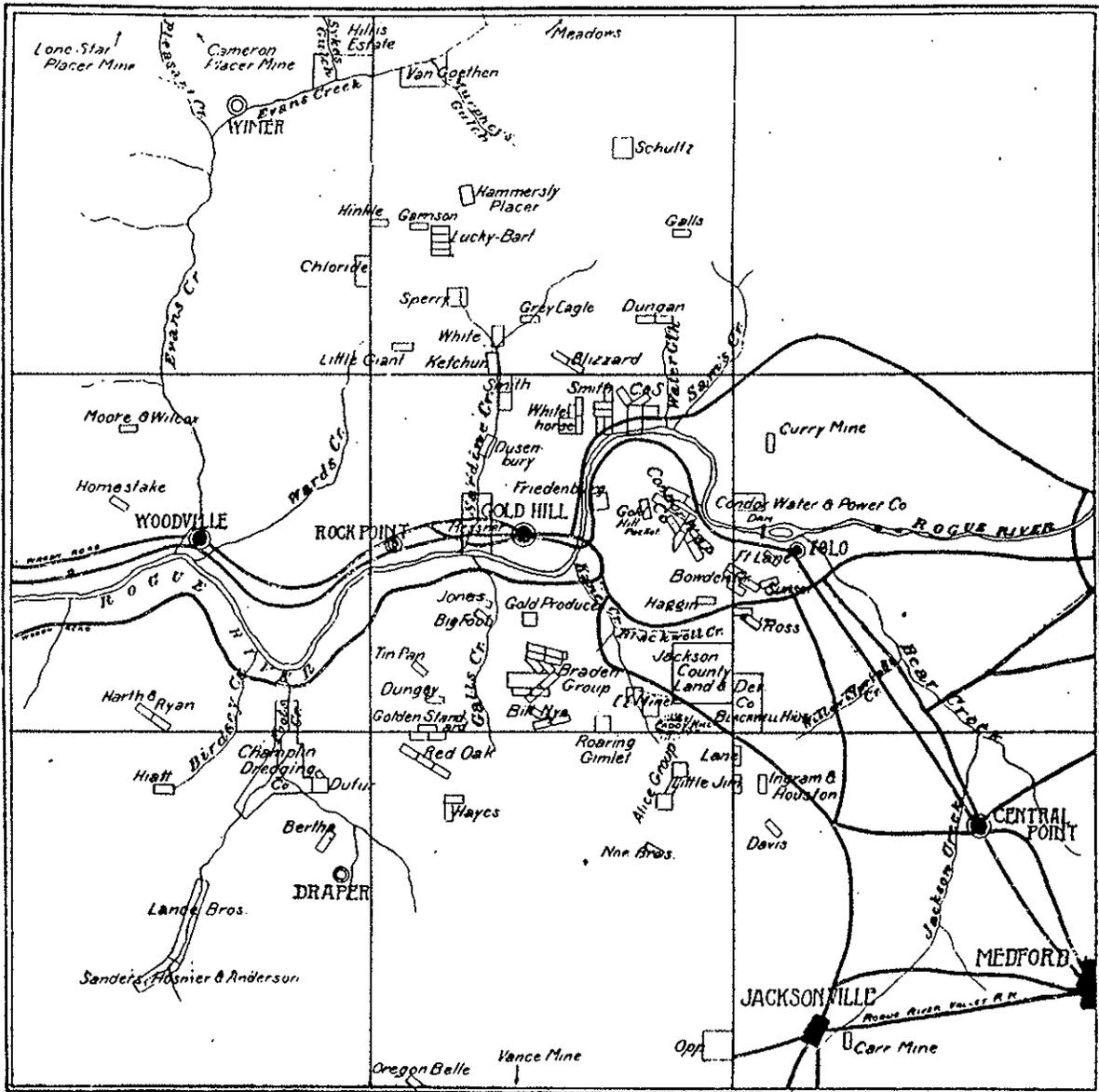


FIGURE 49: A TYPICAL HYDRAULIC "CUT" ON FOREST CREEK.



FIGURE 50: THE ISOLATED HIGH GRAVEL MINE DEMONSTRATES THE ABILITY OF THE MINERS TO RE-DIRECT WATER OVER SUBSTANTIAL DISTANCES.



MAP OF GOLD HILL DISTRICT.

FIGURE 51: MAP OF THE GOLD HILL DISTRICT, 1897 (OREGON MINING JOURNAL)

IV. SUMMARY

The discovery of gold in southwestern Oregon occurred within the broader gold rush-inspired settlement pattern of much of the western United States and brought to the study area its first large influx of permanent non-Native residents. Bringing wealth and a ready market for agricultural products, services, and other trappings of civilization, the 1850s and 1860s serve as the height of mining profitability and economic impact in the study area, an impact that steadily declined as the rich placer deposits disappeared and other economies became dominant.



FIGURE 52: GRANITE HILL MINE, JOSEPHINE COUNTY OREGON, c1908 (JOSEPHINE COUNTY HISTORICAL SOCIETY COLLECTION)

While mining continued on a small basis throughout the latter 19th century, it was only with the development of large-scale hydraulic mines in the 1880s-1890s and the beginnings of lode or hard rock mining toward the end of that period that the industry approached its significance during the settlement era. Several large, typically patented, operations caused brief hope that mining might once again represent a major economic force in the region but even with continual promotion and occasional success, gold production peaked in 1903 and dramatically declined thereafter. Despite significantly larger and more profitable gold operations in Baker County, Oregon was never more than a token component of national gold production after the mid-19th century.

The onset of the Great Depression in 1929-1930 brought new interest to gold mining in southwestern Oregon, as scores of out-of-work individuals sought to eke out a living on public land. "Backyard" mining and similar small-scale or subsistence activity was joined by the re-opening of larger, long-closed, commercial operations in response to increased gold prices and the growing demand created by international conflicts of the late 1930s. As a result, the years 1940 and 1941 represent the greatest *recorded* gold production in the region since the 1860s.

The Depression- and World War II-era resurgence in gold mining ended sharply with the adoption of War Production Board Order L-208, which prohibited all non-essential mining activities. Southwestern Oregon's then resurgent gold operations were shut down overnight. Although some post-war operations developed, the vast majority of gold mining in the past fifty years can most appropriately be characterized as hobby or recreational activity of little long-term social or economic significance.

To a varying degree, and on a generally less meteoric scale, the mining of other minerals has occurred in the study area over the past 150 years. While a large number of minerals are found in the region, only copper and chromite have ever been mined in anything approaching significant commercial quantities, although generally for brief or sporadic periods.



FIGURE 53: UNIDENTIFIED FLUME (JOSEPHINE COUNTY HISTORICAL SOCIETY COLLECTION).



Endnotes

- ¹ Some historians cite "The Lost Diggings of Malheur County" in 1845, before the California rush, as Oregon's first gold discovery, however "...the gold was not recognized and subsequent efforts to locate the spot were futile" (Scott 1917:149).
- ² See Table 3 for 1880-1942 data on Jackson and Josephine-County gold production.
- ³ Mining production in 1903 represented the peak recorded production to that time and so serves as a "watershed" event in tracking the industry's history. Gold produced in the area in 1940 and 1941 actually surpassed the total and 1940, at 119% of the 1903 production, represents the epitome in the area. For the purposes of this study, however, the 1903 figures serve as a more appropriate indicator of the relative significance of mining activity as an element of the regional economy and the role played by the mining industry in the area's self-image.
- ⁴ The mining of other minerals in the southwestern Oregon study area, especially chromite and nickel, may have a more regional or even national significance. In the case of both minerals, as discussed in Section D(13)c and D(14), the general study contains some of the largest known deposits in the United States.
- ⁵ Also in 1851 Mr. Rollins had discovered gold on Josephine Creek, named for his daughter, below the confluence of Canyon Creek (see Walling [1884:447] and Bancroft [1890:415]).
- ⁶ See Walling (1884:446) and Street and Street (1973). While many authorities claim Sailors' Diggings and "Waldo" refer to the same location, the Streets persuasively state that "[t]he area that included Sailor, Allen, Scott (later Scotch), Frye, Waldo, Taylor, Shelly, Butcher, and Caro Gulches (*sic*), French Flat, and later Takilma and O'Brien, soon become known as Sailors' Diggings." Early maps document more than 20 square miles under this term (Street and Street 1973:2).
- ⁷ Sykes & Skinners' discovery, by all accounts, appears to have occurred along Jackson Creek in the general area that today is occupied by the "Britt" parking lot, west of the U. S. Post Office at Oregon and "C" streets.
- ⁸ The actual sequence of events leading to the Rich Gulch strike is the source of considerable academic debate and variation, dating back all the way to the conflicting diaries and reminiscences of the pioneer participants. For one detailed analysis of these varying claims made on behalf of Sykes, Skinner, Cluggage and Poole (among others) see Kramer (1993a).
- ⁹ This list is by no mean exhaustive, merely representing the mining activities of those individuals whose biographies were included within Walling's 1884 history. They serve, however, as a reasonable cross-section of notable citizens in Jackson and Josephine counties thirty years after the first rush of gold mining activity in the area, and document the extent to which individuals who arrived as miners stayed on and remained active in the development of the area's communities.
- ¹⁰ See Footnote #1, above.

- ¹¹ It is illustrative to compare and contrast Waldo's history with that of Jacksonville. Both early county seats, each located away from agricultural lands, Jacksonville's survival and Waldo's demise is perhaps more the result of the latter *keeping* its County seat status than anything else. As mining camps, neither followed the rules of townsite development in the 19th century, which ultimately demanded access to the most modern form of transport — the railroad. Instead, Jacksonville and Waldo were sited near the gold. Only Waldo suffered the logical consequences of that fact. Jacksonville's quixotic survival, against the odds, is largely what resulted in its retaining the integrity to merit designation as a National Historic Landmark in 1966.
- ¹² The Buncom General Store and Post Office are located on private land at the intersection of Sterling and Little Applegate Road. See *Jackson County Cultural and Historic Resources Inventory*, Site #383.
- ¹³ Ninety-four of the 517 individual miners in Jackson and Josephine counties listed Europe or northern Asia as their birth place, including 31 Irish who were the largest non-American group other than the Chinese (Germans, with 21 miners, were the next largest contingent). Of the *non-Chinese* mining population in the Applegate and Browntown/Kerbyville precincts in 1860 almost one miner in three (94 out of 330) was born in Europe or northern Asia.
- ¹⁴ See Atwood (1976:20).
- ¹⁵ *Mineral Wealth* (1904:40) reports this sale as concerning "...the Old China Diggings, which had been owned and operated by a capable Chinaman for years and were reputed to be great producers."
- ¹⁶ As quoted in Street and Street (1973:31).
- ¹⁷ Hittell, from *History of San Francisco*, as quoted in Watkins (1971).
- ¹⁸ James Cluggage and John Pool, nominally the "Sutter" figures in southwestern Oregon's initial gold rush, had only limited long-term impact on the area despite founding Jacksonville. Cluggage, who was never a miner, made money selling Jacksonville lots and later ran a stage route to Crescent City. He apparently suffered a mental breakdown and died in Ohio in 1886. Pool, an illiterate and itinerant miner, apparently continued to travel and hunt for gold. He died in Santa Clara, California, figuring only minimally in Jacksonville's development.
- ¹⁹ Much of the Sterling Mining Company's fame rested on its strong connections with the prominent Ankeny family, their political positions, and regular reports in the *Portland Oregonian*. A "Keystone" company stereo view of the mine's impressive hydraulic operation was apparently widely disseminated nationwide given its still ready availability among collectors.
- ²⁰ "Normal" hydraulic elevating, or moving rock and soil to higher ground, was simply a matter of the application of constant water pressure in a defined flume or channel. It naturally required both high water volume and steady pressure, neither of which could be generated at the Ruble site. Their invention, the *grizzly*, is defined by the *Oxford English Dictionary* (1989:437) as a "...grating of parallel iron bars with interstices between to allow finer material to fall into sluices below while the large stones are screened off."

- ²¹ Street and Street (1973) define a "tail race" as "...a ditch to carry away the waste or tailings."
- ²² Medford BLM maps and site forms identify various features within this area as the "Logan Cut," and the "Esterly Lakes." The exact nature of the still extensive water conveyance system in this area and its sequence of development may never be completely understood.
- ²³ Brooks and Ramp cite Walling (1887:328) as their source; however, neither document indicates a specific date for the Hicks find.
- ²⁴ See Brooks and Ramp (1968:238) and Walling (1884:329). Two period sources use the \$150,000 figure for the Gold Hill pocket while Brooks and Ramp cite production of \$700,000. According to one 19th century source this latter figure may appropriately relate the total quartz mining production of the region during the period rather than just that of the Gold Hill pocket (see *Ashland Tidings* 1885).
- ²⁵ See *Ashland Tidings*, 29-May-1885, quoting at length from the 21-May-1885 *Oregonian*.
- ²⁶ This technique saw only limited use in California before the '49ers found better methods. It is not clear if it ever made it across the border into Oregon.
- ²⁷ Rodman Paul (1947:137) points out that the improvements made to stamp mills by California miners in the early 1850s, including the use of round (not square) iron bars (as opposed to wooden posts with an iron-clad tip), were so dramatic that "...its use soon became universal [and] it has been known ever since as 'the California Stamp'."
- ²⁸ "Mill" refers to both the actual stamp mill machine as well as the larger, usually barn-like, wooden building that often, though not necessarily, housed and protected the machinery.
- ²⁹ Some estimates of the inefficiency of early gold mining, particularly when undertaken by unskilled "Argonauts" calculate that only 20% of the gold in a placer claim's deposits was actually recovered. The rest simply passed out of the pan or rocker and continued down channel (see Paul 1947:139).
- ³⁰ As noted in the preface, most of the better documented mines in the study area, including all those listed in this section, were financially successful and so, usually, patented. These sites today remain private land, outside the direct management of either the BLM or Forest Service.
- ³¹ Brooks and Ramp (1968:222) state incorrectly that Greenback was powered by Savage Rapids Dam, which is an irrigation dam.
- ³² Much of the orchard development was the work of the so-called "Chicago Colony," an unorganized migration of well-to-do members of Chicago society who grew interested in the valley's fruit industry after the pioneering effort of Potter Palmer (see, for example, *Blossoms & Branches* [Atwood 1980], or Kramer 1993b).

- ³³ Close review of the production figures in Table 4 reveals some interesting patterns that do, in fact, tend to support the optimism of the whiny boosters of the 1912 Mining Congress. The spread in Jackson County lode production between 1917-1918, while partially the result of World War I, clearly indicates that if mines were operated, gold remained to be extracted in the area. In Josephine County similar variance occurred in lode mining between 1920 and 1921.
- ³⁴ 1880 was the first individual year that Jackson and Josephine county gold production was reported; prior amounts were given for the periods 1852-1863 (\$1.5 million), 1864-1896 (\$1.2 million) and 1870-1879 (\$800K). All amounts from 1880 to 1901 are from Diller (1914:29) as reprinted in Brooks and Ramp (1968:15). Both these sources report gold production value, in dollars, and do not separate placer and lode. Production in troy ounces was calculated from these values at the standardized gold price of \$20.671835 per ounce, as set by the U. S. Treasury in 1837 and remaining in effect until 1933 (see Brooks and Ramp 1968:4).
- ³⁵ See Table 5. Combined gold production in Jackson and Josephine counties dropped below 10,000 ounces in 1911 and did not return to that level until 1929.
- ³⁶ In 1910 Jackson County's population was 25,756 and Josephine County's was 9,567. In 1920 those figures dropped to 20,405 and 7,655, respectively. The 1930 census reported Jackson County at 32,918 and Josephine at 11,498.
- ³⁷ The U. S. Treasury set the price at \$35.00 per fine troy ounce, a 169.312497% increase over the \$20.671835 value established in 1837 (Brooks and Ramp 1968:4).
- ³⁸ See Table 5. Gold production in this period was almost entirely placer in Jackson County, but it was fairly evenly divided between placer and lode in Josephine.
- ³⁹ In defending this new policy, these reports point out that the limited numbers of operations in a given county could easily be attributed to a single mine and so were consolidated state-wide to avoid disclosure.
- ⁴⁰ Statewide production rose from 170 to 256 ounces, or approximately 66.4 percent.
- ⁴¹ The Oregon Department of Geology and Mineral Industries [DOGAMI] maintains a database of mining claims and mineral activity in the Jackson, Josephine and Douglas county portions of the study area. This database includes 164 claims with copper present, most of which are coexistent with gold or other minerals. At fifty-two sites, copper was the primary focus of the claim. Of these, 14 show some level of copper production. The cultural resource inventory of the Medford BLM/RRNF reports 19 copper-mining related sites. A comparison of the DOGAMI data and mining-related sites currently inventoried by either the Medford District of the BLM or the RRNF provides some data as to the potential quantity of sites in southwestern Oregon (see Appendix 1).
- ⁴² See *Mineral Wealth* (1904:45) and Hundhausen (1947:4).
- ⁴³ Simply for comparison, the mines of Butte, Montana, largest in the world, between the late 1880's and 1950 produced an estimated 6.6 million tons of copper ore (<http://www.geocities.com/Yosemite/Trails/6617>).

- ⁴⁴ See, for example, the report of a recent cinnabar strike on the "Terrill Ranch, in the Mt. Pitt Country" (*Ashland Tidings* 1917b).
- ⁴⁵ More than 50% of all of the mercury *ever* produced in Oregon came from a single mine in Douglas County.
- ⁴⁶ The DOGAMI database documents 62 cinnabar claims in the Jackson and Josephine county area, including gold mines with some cinnabar present. Only thirteen of these recorded any actual cinnabar production. Ten cinnabar mining-related cultural resource sites have been inventoried by the Medford BLM/RRNF.
- ⁴⁷ The vast majority of the nickel mining sites are in Josephine County, in Townships 38 and 40 South. Two nickel mines in Jackson County are identified, one of which produced some nickel in the early 1900s. In the 300 mining-related cultural resource site reports of the Medford BLM/RRNF, *none* is related to nickel mining as the primary material.
- ⁴⁸ The DOGAMI database lists 220 claims in the study area with silver present, 104 of which actually recorded some level of silver production. Only four mines list silver as the primary focus, as it was typically mined in connection with gold (88 sites) and other metals. No silver mines, as such, are cited in the Medford BLM/RRNF historic site inventory.
- ⁴⁹ Coal developments in the first two decades of the century were yet another in the line of anticipated mineral "booms" to captivate southwestern Oregon. Extensive developments in the Wagner Creek and Phoenix areas (the name of "Coal Mine Road" remains the most lasting remnant of the operation) came to naught when the high ash content and poor quality of the coal made it unprofitable as a power or heat source.
- ⁵⁰ Iron mining in Gold Hill was yet another short-lived boom, expected to solve "...the problem of securing local ore for the Oswego steel plant, near Portland" (*Ashland Tidings* 1917a).
- ⁵¹ The Chisholm Mine is documented as BLM Site 35HS11-92, USBM No. 0410290066.
- ⁵² The *Ashland Tidings* article is a reprint of an undated earlier report published in the *Grants Pass Courier*.
- ⁵³ Southwestern Oregon miners actually sued the Federal government for reimbursement for development work on chromite deposits made in response to government needs. Some of these claims were not settled until the 1930s.
- ⁵⁴ After 1920 most of the world's chromite came from Turkey, generally considered an unreliable source should the U.S. become active in what would become World War II.
- ⁵⁵ Following Josephine County in production were Grant, Curry, and Douglas. Jackson County's production rank is not indicated.

- ⁵⁶ This four-part categorization of resource type is adapted from Chappel (1995:48).
- ⁵⁷ The term "tunnel" is also associated with lode or hard-rock mining (see 2(a) "Adits," below).
- ⁵⁸ Theoretically in constant operation, wooden flume elements would swell when saturated, so that while they were not "watertight" in the modern sense, they were most certainly capable of conveying large amounts of water for long distances.
- ⁵⁹ Various mining histories define adit differently, some using the term to denote a *horizontal* shaft (as in a tunnel) as opposed to a vertical shaft. Others use the term to refer to the excavated "entrance" to a vein, be it horizontal or vertical. Generally, the former definition has been used during previous cultural resource studies in Oregon and so is used here.
- ⁶⁰ The original dredge "cups," which were used to scoop up dirt, reportedly still remain in the small picnic area next to the Foots Creek market (Fiske 1999).
- ⁶¹ The basic "district" framework presented here is based on the organizational structure of the Special Midsummer Edition of the *Oregon Mining Journal*, published in 1897, augmented by later sources. One cannot help but surmise that more attention was granted to the mining developments in Josephine County than in Jackson.
- ⁶² While not specific, this presumably refers to the area around the extensively developed Granite Hill Mine, formerly referred to as the "Louse Creek District."
- ⁶³ The Pickett Creek District was located "...fifteen miles northwesterly from the city of Grants Pass [and] the mine that is most prominent in the district is the Big Four Hydraulic Mine" (Grants Pass Commercial Club 1911:21).
- ⁶⁴ The Silver Creek District "lies just west of the Galice District" (Grants Pass Commercial Club 1911). It should be pointed out that Brooks and Ramp (1968:213) designate the "Silver Creek Area" as occurring in Douglas County, southwest of Canyonville.
- ⁶⁵ Brooks and Ramp (1968) wisely avoid the entire "district" confusion issue by calling their geographic sub-regions "gold mining areas."
- ⁶⁶ See Figure 34 in Brooks and Ramp (1968:166) for the specific locations of these mining areas.
- ⁶⁷ Current status of the 300 identified mining-related resources within the Medford BLM and RRNF is summarized in Appendix 2.
- ⁶⁸ This section, particularly as concerns the legal framework, is taken largely from Chappel (1995).
- ⁶⁹ One example of a relocated mining-related resource is the "Taylors Creek Mining Cabin," built in 1933 in Josephine County and relocated to the grounds of the Kerbyville Museum in 1981.

- ⁷⁰ The broad authority of the General Mining Law of 1872 has been long controversial. As this is written in June 1999 the latest in a long line of attempts to revise or limit the rights to public lands under the 1872 legislation are before both the U. S. Congress and the Federal judiciary.
- ⁷¹ For informational purposes, in February 1998 there were reportedly 39 "notices of intent" and three "plans of operation" on the lands of the Rogue River National Forest.
- ⁷² The Siskiyou National Forest, working in conjunction with the River Network, purchased miner Darrell Brown's 145-acre patented claim and some 2,115 unpatented acres in the middle of Kalmiopsis Wilderness Area as a way of protecting water quality and natural habitats (Fattig 1999).
- ⁷³ An excellent example of this latter situation is the "Rich Gulch" claims, portions of which are owned by the Jacksonville Woodland Trail Association, an area non-profit that has worked with BLM to secure NR-designation of some of southwestern Oregon's earliest pioneer mining sites.
- ⁷⁴ While not directly the focus of this context statement, chromite mining in the study area also tended to occur on lands that remain under federal management and so might be evaluated and managed as per this document.
- ⁷⁵ Nearly one-third (93) of the 300 identified mining sites in the BLM/RRNF inventories have some evidence of late-20th century mining activity. With some duplication, nearly half (147) were active in the mid-20th century.
- ⁷⁶ This listing of priorities is *in addition* to the evaluation matrix prioritization of extant resources, multiple periods of activity, and inter-connected systems that convey the complex nature of various mining technologies (e. g., the evaluation matrix aides in determining whether or not a resource is significant). The listing of priorities is intended as an aide toward the allocation of management dollars for restoration, maintenance, interpretation, and education efforts devoted to identified significant resources.
- ⁷⁷ The PA process is found at 36CFR800.13.



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