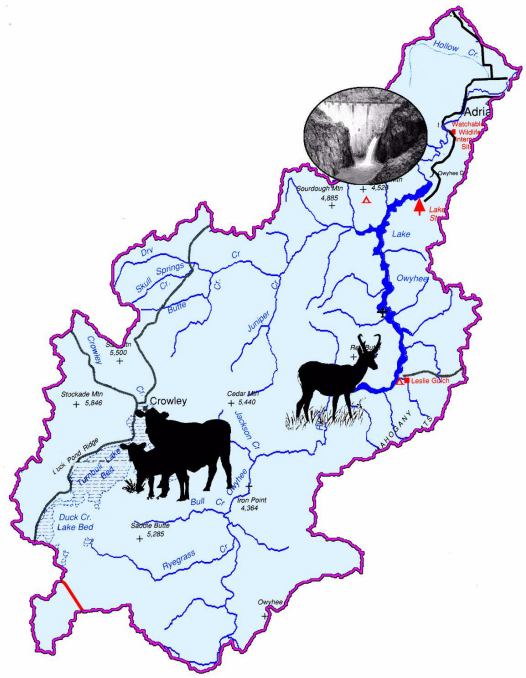

Lower Owyhee Watershed Assessment

IV. Historical Conditions

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F. Into the future

IV. Historical conditions

This account relies on many sources. Ellipses, . . . , indicate a word, phrase, or short section has been omitted. Clarifying additions by the editor have been added in brackets, [ ]. Where trappers' or pioneers' words are quoted verbatim, some of the spelling and punctuation has been changed but the words and word order are the original.

A. Pre-contact

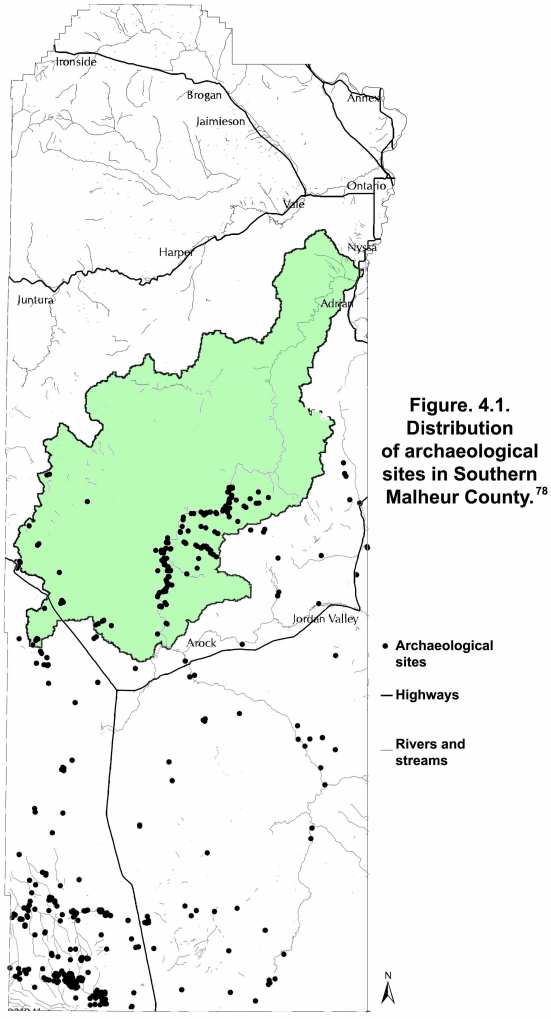

Figure. 4.1. Distribution of archaeological sites in Southern Malheur County.[78]

Historical characterization of the landscape and conditions at the time of contact is an attempt to understand the 'pre-European' state of a river drainage and region that was influenced by inhabitants for at least 10,000 years prior to European settlement. Archaeological research allows for an understanding of the prehistory which cannot be derived from historic documents. The Great Basin area of eastern Oregon has been inhabited for more than 13,000 years.[1] Since the Owyhee uplands are currently semiarid and of recent geological formation, there is little soil formation. Collected or excavated artifacts from the 511[78] known sites in the Owyhee watershed within Malheur County include lithic scatters, projectile points from many time periods, ground stone, house pits, petroglyphs, rock alignments, and some pottery (Figure 4.1).[1,3,4 ,78] The excavations at Birch Creek have uncovered artifacts including shell beads, charred wood, animal bones, and stone, bone and shell tools.[4]

The Native American inhabitants of the region were people who adapted to the environmental situation in which they lived. Like all resourceful people, they attempted to modify the environment for their advantage.

While we do not have a clear picture at present of the degree to which Native American inhabitants were altering the Owyhee environment, archaeological research in the Owyhee uplands indicates that they were doing so.[79] These 'pre-European' land use practices could have been either beneficial or harmful to mammal populations, fish populations and vegetation communities. "That prehistoric and early historic humans occupying Montana, Idaho, Washington, and Oregon influenced the abundance of game animals by their hunting practices is indisputable."[47] Great Basin Native Americans are known to have taken massive rabbit populations, employed fish traps, nets, weirs and dams, and burnt range lands.[46,83,85] One of the Native American practices was promotion by propagation of economically important plant species, which would in turn affect the composition of vegetative communities, whether they were those of upland soil, wetlands or riparian zones. "Wild seeds were sown broadcast in central Nevada but neither irrigated nor cultivated. ... All groups burned brush to facilitate growth of wild tobacco and sometimes of other wild-seed plants."[82] The plants that may have been propagated include, but are not limited to, great basin wild rye, sunflower, wild tobacco, camas, currant, biscuit root, bitter root, wild onion, sego lily, chokecherry, and wild rose. These plants currently grow in the lower Owyhee subbasin.

The Native American inhabitants of the Owyhee River drainage at the time of European contact were the Tagötöka (tuber eaters), a band of Northern Paiute.[84] As can be seen from Figure 4.2 the territory of the Tagötöka (Tagö) coincides with a large part of the Owyhee watershed and includes most of the lower Owyhee subbasin. Although interviews with two members of the Tagötöka, Dick Stanley, age 85, and his wife, age 80, were conducted in the late 1930's on the Duck Valley Reservation [85], some of the information gathered is important in understanding the pre-contact conditions of the Owyhee River drainage.

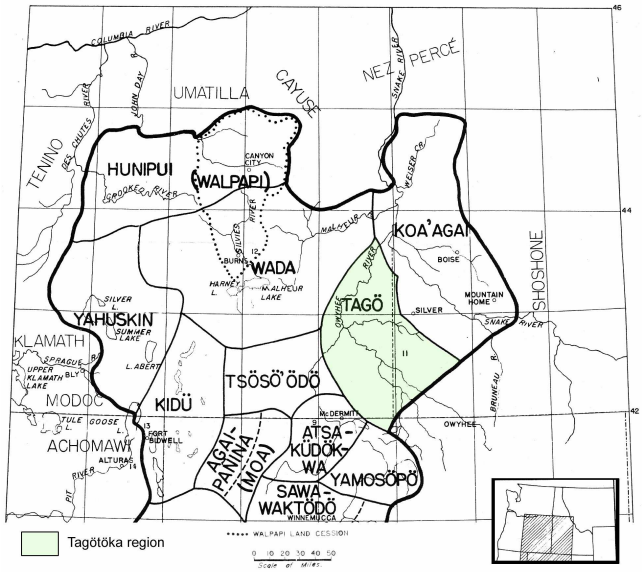

Figure 4.2. Northern Paiute bands in Oregon and Idaho

Taken from: Omar C. Stewart, 1939. The Northern Paiute Bands. Anthropological Records 2(3). University of California Press, Berkeley.

We do not know whether the fur trade that had existed on the coast had already affected the area by encouraging the taking of animals for fur by the Native Americans. In the last decade of the 1700's, "a healthy 'ship based' fur trade flourished."[40] The editor of Robert Stuart's narratives notes that "Seafaring folk who, hailing principally from Boston and Salem, Mass., had for years been accustomed to triangular voyages in which they laded their ships with trading goods beloved by Native Americans, exchanged these goods for furs among the . . . [people] on the Pacific coast, bartered these furs for tea, nankeens, and silk in China, and then with their precious oriental cargo returned to their home port."[86]

B. At contact

Characterization of the landscape and conditions at the time of contact must rely on the observations of the few individuals who kept records, primarily diaries, of their journeys. From these observations of small sections of the landscape, we can extrapolate to conditions in the lower Owyhee watershed.

It didn't take long after the journey of the Corps of Discovery across the US before the exploitation of the Western region of the continent expanded. One member of the Lewis and Clark expedition, John Colter, remained in the West as a fur trader. The fur trade spurred the initial exploration of the region by nonnative peoples. By 1809 there were 25 Russian colonies along the Pacific coast of north America, extending as far south as California.[71]

Groups of trappers were some of the first people to make written records of the conditions in southeastern Oregon and southwestern Idaho at the time of contact. Two principal trapping companies exploited the region.

John Jacob Astor, one of the world's richest men, saw dollar signs. He formed the Pacific Fur Company in 1810 intending to establish a fur-trading base of operation at the mouth of the Columbia River. Fort Astoria was established In 1811.[71] Wilson Price Hunt, sent by Astor to find a convenient overland route to the Oregon coast kept sketchy notes on his journey westwards to Astoria in 1811 to 1812. Robert Stuart, sent back to the east to gain help from Astor, kept more complete notes on his eastward journey from Astoria in 1812. Both these men, like other early travelers, found routes which followed the Snake River from what is today Wyoming to Farewell Bend.

The other principal company exploiting the region had been granted a Royal Charter in 1670. The Governor and Company of Adventurers of England Trading into Hudson Bay was better known as The Hudson's Bay Company.[49]

In the late 1770's, a group of trappers formed a third company, the North West Company or Nor'Westers. Their competition with the Hudson's Bay Company for control of the northern fur trade motivated exploration into the North American interior. Twelve years ahead of American explorers Lewis and Clark, Alexander Mackenzie, a Scotsman, had crossed Canada and reached the Pacific.[50]

The fierce rivalry which developed between the Nor'Westers and the Hudson's Bay Company led to the expansion of trade into new territories, particularly by the North West Company. However, the North West Company was overextended and unable to sustain its network. In 1820 they merged with the Hudson's Bay Company. Now the Hudson's Bay Company controlled almost three million square miles.[50]

New competition for the Hudson's Bay Company came from Americans.

By the mid-1820s, independent American traders were trapping along the Snake River. George Simpson, the Hudson's Bay Company governor felt this was an invasion of the western fur country. He decided on a scorched earth policy. Oregon and the West would be trapped clean. Not a single beaver would be left alive. He stated that "strong trapping expeditions should be sent south of the Columbia. These may be called

the 'Snake River Expeditions.' While we have access we should reap all the advantage we can for ourselves, and leave it in as bad a state as possible for our successors."[51]

One of the Hudson's Bay Company's employees, Peter Skene Ogden kept diaries of trapping trips from 1825 to 1829.

1. The journals

The written records of the trappers and later of the early travelers on the Oregon Trail recorded what were of concern to them. The trappers kept track of the number of beaver harvested, of the condition of their horses, of encounters with Native Americans, and of hunger and hardship. The records of the emigrants dealt with sickness and death in their trains, disputes among members of the parties, and lists of places where they stopped. Neither set of chroniclers set out to describe the countryside. The information included here on the conditions at the time of contact is gleaned from bits and pieces in many different journals.

Some places are referred to names other than those we now know such as "South Fork", "Lewis River", and "Saptin" for the Snake River; "Sandwich Islands River" for the Owyhee River; and "Unfortunate River" for the Malheur River.

From these different observations of the landscape and conditions, mostly in areas around the edges of the watershed, we can extrapolate to conditions in the lower Owyhee watershed at the time of contact.

2. The effect of trapping on conditions

Already by 1826, Ogden is noticing a change in the condition of the countryside. There aren't as many beaver. In February of 1826 he notes changes on two rivers close to the Owyhee River. After sending trappers up the Malheur River he writes "Trappers who have been some distance up this river . . . report there are but few beaver. . . . It is rather strange for in 1819 this stream was well stocked in beaver and from its not having been trapped since, I had hopes of finding some more."[63] He finds a similar situation on the Payette River, "it was then [1819] rich in beaver but now destitute."

Later in the journey he lays the blame first on "American traders [who are]. . . exerting themselves to ruin the country as fast as they can and this they will soon effect,"[63] and on the Native Americans "The fork we left this morning from was not many years since well stocked in beaver but the Snakes have destroy'd all not leaving one."[71]

Ironically a short while after blaming the Americans for a lack of beaver, his diary reads "This day 11 beaver 1 otter. We have now ruined this quarter. We may prepare to start."[63]

3. General description of the Owyhee countryside

There are virtually no early records specifically of the lower Owyhee subbasin. Although Ogden mentions sending trappers up the Owyhee River, they were not the ones keeping a journal. However, one member of Wyeth's 1832 party, John Ball, kept notes which he later edited. He had been traveling with a group of trappers on the

Humboldt. When some of them went westward, Ball, with 12 others, turned north and traveled down the Owyhee River to the Snake River.

"Our aim was to get back on to the Lewis [Snake] river and follow that to its junction with the Columbia. And I now presume we were on the headwaters of the Owyhee, the east boundary of Oregon. And the next day and for days we kept on the same or near. We pursued it till so shut in that we had to leave it by a side cut and get onto an extended plain above, a plain with little soil on the basaltic rock, and streams in the clefts or canyons. One day we traveled 30 miles and found water but once, and in the dry atmosphere our thirst became extreme. On approaching the canyon we could see the stream meandering along the narrow gorge 1,000 feet down, and on and on we traveled not knowing that we should survive even to reach it to quench our thirst. Finally before night we observed horse tracks and that they seemed to thicken at a certain point and lead down the precipitous bluff where it was partially broken down. So by a most difficult descent we reached the creek, dismounted and [went] down its banks to quench our thirst. And our horses did not wait for an invitation, but followed in quick time. The bluffs were of the burnt rock, some places looking like an oven burned brick kiln, and others porous. And laying over the next day and going a short distance down the creek, we found Indians who had our future food, dried salmon."[5]

Hunt's party, being the first Euro-Americans to utilize a path along the Snake River was not prepared for the arid nature of the region. He writes that, "on the 20th [November], the rain, which had commenced to fall the previous night, gave us a little water. This alleviation was timely, as several Canadians had begun to drink their urine. It continued to rain all night."[37]

Throughout the trappers' journals there are several recurring themes. Food for the men and horses is mentioned, particularly when it is lacking. The lack of water is also mentioned when they are cutting across country since the rest of the time the trappers were following streams.

4. Vegetation

What was the vegetation in the lower Owyhee subbasin like prior to the advent of wagon trains of Euro-Americans crossing towards western Oregon? The trappers' descriptions are probably the best records we have. On many things, the different writers have made similar observations.

a. Few trees

Wilson Price Hunt records in his diary that "The country was devoid of wood".[37] Although this comment is made slightly east of Boise, this lack of trees in the immediate vicinity of the mouth of the Owyhee River is mentioned by both Captain Wyeth and Peter Skene Ogden as a deterrent to building rafts or canoes for river travel. Wyeth "took a ride up the river to find a camp where timber, fit for a raft which we propose to build to carry some of the loose baggage and some men who are on foot can be found, [but he] found none"[94] He was camped at a spot where the river referred to could be the Snake, the Owyhee or the Malheur.

Ogden says "If this was a country of wood we might soon make a canoe . . . but we cannot even find willow to make a raft still less scarcely a sufficiency to cook our victuals."[63] He reiterates this in another entry made along the Snake River about 26 miles east of the mouth of the Owyhee river. "The country [is] level, soil sandy, no wood to be seen excepting a few willow on the banks of the river and not even in abundance."[63] The next day they "encamped on a small river destitute of wood" and the following day "In hopes of finding grass we continued on till near night, but in vain, and encamped without wood, food for ourselves, and no grass."[63]

By contrast to the other rivers, the Boise River had timber along it and this was frequently noted. At the mouth of the Owyhee, Wyeth comments that on the other side "in sight on what appears to be a river coming in from the N. side" is "the first timber we have seen since leaving the Mts."[94] Referring back to this river in writing a few days later, "it proves to be called Big Woody [Boise] on account of the timber on it"[94]

Going west the first time in 1811, Wilson Price Hunt writes, "at sunrise, we saw before us a river [Boise] which flowed westerly. Its shores were fringed with cottonwoods and willows."[37] Coming to the Owyhee, Stuart notes that "Opposite our present station a large river [Boise] comes in from the east, is well timbered, contains many beaver"[86]. Joseph Williams, an early traveler, writes "We reached Fort Bois. Some timber grows along the Bois, principally cottonwood. . . . We now started for Wallawalla, over hills and rough roads. We don't see any timber, scarcely"

Col. Fremont is more extravagant in his description of the atypical vegetation along the Boise River. "We came suddenly in sight of the broad green line of the valley of the Rivière Boisée, (wooded river), black near the gorge where it debauches into the plains. . . Descending the hills, after traveling a few miles along the high plain, the road brought us down upon the bottoms of the river, which is a beautiful, rapid stream, with clear mountain water, and, as the name indicates, well wooded with some varieties of timber — among which are handsome cottonwoods. Such a stream had become quite a novelty in this country, and we were delighted this afternoon to make a pleasant camp under fine old trees again."[80]

Beyond the Boise to the west, the landscape again lacks trees. The Burnt River does not conform to this generalization as Peter Skene Ogden notes that it "is without exception one of the finest streams for beaver in the Snake country, well lined with willows, birch, and poplar [cottonwood], the latter not very abundant. The soil sandy and banks hilly and rocky."[63]

b. Willows

If the banks of the rivers and streams did not have trees growing on them, what did they have? Ogden's statement "excepting a few willow on the banks of the river"[63] gives us some idea. Willows are mentioned when vegetation along the banks is discussed. Although he describes the "River au Malheure . . . [as] a fine stream about 1/16 mile in width and well lined with willows,"[63] most of Ogden's references to willows indicated that they were much sparser. "When we reach[ed] . . . a fork of [upper] Owyhee River but from all appearances destitute of beaver. . . also wood there being but a few willows and thinly scattered."[63] Traveling one day east of the Owyhee on the

Snake River, Ogden records that "wormwood [sagebrush] is more abundant but wood of any other kind equally scarce with the exception of a few scattered willow on the banks of the river, and even these not in abundance."[63]

Coming to the Owyhee in 1812, Stuart described it as "a Creek 70 yards wide in everything resembling the one passed yesterday". The description of the creek passed the previous day was "numerous willows and beaver . . . the bottoms . . . were extensive, covered principally with saltwood [*Atriplex sp*. or greasewood] except near the river where there are some willows".[86]

The day that they crossed the Snake River at the Owyhee, Townsend records the use of willows as a building material by the Native Americans. "Towards noon, today, we fell in with a village, consisting of thirty willow lodges of Bannecks . . . Towards evening, we arrived on Snake river, crossed it at a ford, and encamped near a number of lodges along the shore."[88]

The willow which the trappers mention is not a tree (Figures 4.3 and 11.4). It is an upright, deciduous shrub which may grow to 23 feet but is generally about 12 feet tall and about 15 feet wide. It grows in sagebrush country along creek bottoms, both on the shoreline and sometimes in the water. Willows form dense thickets of pure, even-aged shrubs. Short-lived, they are one of the most shade intolerant native species and are threatened by both fire and drought. They can not survive long if the water table becomes too low.[13,14]

c. Other vegetation

John Townsend was an ornithologist who accompanied Wyeth on his trip west in 1834. He also wrote down some observations on the vegetation. Leaving the Owyhee River he says, "We passed, this morning, over a flat country . . . abounding in wormwood [sagebrush] bushes, the pulpy-leaved thorn [greasewood], and others, and deep with sand, and at noon stopped on a small stream called Malheur's creek."[88]

Figure 4.3. Willows growing along the banks of the lower Owyhee River, April 2005.

Peter Skene Ogden also notes the sagebrush near the mouth of the Owyhee river in February 1826. "Grass scarce in this quarter but wormwood in abundance. . . . Sandwich Island River . . . is from appearance a fine large river and from the upper parts not having been visited is worthy of examination."[63]

To the south of the lower Owyhee subbasin, north of McDermitt, John Work also notes lots of sagebrush, "The road good but in places stony & embarrassed with wormwood."[93]

Since Fremont was consciously taking measurements and making observations, he gives the best description of the vegetation at the mouth of the Owyhee River. "Here we found ourselves again surrounded by the sage; artemisia tridentata, and the different

shrubs which during our voyage had always made their appearance abundantly on saline soils, being here the prevailing and almost the only plants. Among them the surface was covered with the usual saline efflorescences, which here consist almost entirely of carbonate of soda, with a small portion of chloride of sodium."[80] After they left the area, he states, "We resumed our journey; and directly leaving the river, and crossing the artemisia plain, in several ascents we reached the foot of a ridge, where the road entered a dry sandy hollow, up which it continued to the head; and, crossing a dividing ridge, entered a similar one. . . . In this hollow, the artemisia is partially displaced on the hill-sides by grass; arid descending . . ., about sunset we reached the Rivière aux Malheurs, (the unfortunate or unlucky river,) - a considerable stream, with an average breadth of 50 feet, and, at this time, 18 inches' depth of water. The bottom lands were generally one and a- half mile broad, covered principally with long dry grass; and we had difficulty to find sufficient good grass for the camp."[80]

Since their horses required grass, the condition of the grass in an area is important. For trappers or travelers with some knowledge of the area, the presence of grass could affect their plans. Peter Skene Ogden writes "We encamped an hour earlier than usual knowing well if we advanced farther our horses would be without grass."[63] Earlier, on June 17th, he had recorded his amazement at the small stature of the red clover "a strange sight to see red clover in abundance but not more than an inch in length . . . our horses being greatly fatigued and having been nearly two days without grass we encamped early on a small brook."[63]

5. Fires

Medorem Crawford thought that he had seen volcanic activity when he says that from Fort Boise he "saw a large smoke at a distance supposed to proceed from a volcanick mountain."[15] The smoke was more apt to come from fires. When Peter Skeen Ogden was staying near Ontario, he had noticed that it seemed like the "country on all sides is on fire."[64] Thomas Farnham had assumed that the fires had been deliberately set when he comments that "around our track thickly clothed with dry bunch grass. Some of them had been burned over by the Indians."[23]

6. Game

a. Lack of big game

Wyeth, Townsend, and Ogden all mention times of starvation. This is particularly amazing since the trapping parties did eat the beaver which they trapped. Also, the large groups were accompanied by hunters whose sole function was to provide the rest of the party with meat. Joe Meek explained this aspect of trapping.

> "It was the custom of a camp on the move to depend chiefly on the men employed as hunters to supply them with game, the sole support of the mountaineers. When this failed, the stock on hand was soon exhausted, and the men reduced to famine. This was what happened to Sublette's company in the country where they now found themselves, between the Owyhee and Humboldt Rivers. Owing to the arid and barren nature of these plains, the largest game to be found was the beaver, whose flesh proved to be poisonous, from the creature having eaten of the

> wild parsnip in the absence of its favorite food. The men were made ill by eating of beaver flesh, and the horses were greatly reduced from the scarcity of grass and the entire absence of the cotton-wood."[41]

Both Townsend and Ogden have many entries devoted to the lack of game. Two days east of the Boise River at an abandoned Native American camp, Townsend writes there were "several white wolves lurking around in the hope of finding remnants of meat, but, as a Scotchman would say, 'I doubt they were mistaken,' for meat is scarce here, and the frugal Indians rarely leave enough behind them to excite even the famished stomach of the lank and hungry wolf."[88] Two days later, a colt came into camp. Although they were fairly certain that it had strayed from Native Americans, "every animal that comes near us is fair game, and we were hungry, not having eaten any thing of consequence since yesterday morning". So, "a bullet sealed the fate of the unfortunate visitor" and after cooking, "all pronounced it one of the most delicious meals they had ever assisted in demolishing. When our breakfast was concluded, but little of the colt remained."[88]

Townsend emphasizes the lack of large animals when he tells about inviting a Native American to eat a stew including the remains of the colt. Upon discerning horse meat in the mixture, the Native American spat it out and left in a huff. Townsend concludes his story "It would seem . . . that the Indians . . . are opposed to the eating of horse flesh, and yet, the natural supposition would be, that in the gameless country inhabited by them they would often be reduced to such shifts, and thus readily conquer any natural reluctance which they might feel to partake of such food."[88]

As Wyeth's party reaches the Powder river, Townsend remarks that, "Our men killed, in the afternoon, an antelope and a deer fawn, which were particularly acceptable to us; we had been on an allowance of one dried salmon per day, and we had begun to fear that even this poor pittance would fail before we could obtain other provision. Game has been exceedingly scarce, with the exception of a few Grouse, pigeons, etc. We have not seen a deer, antelope, or any other quadruped larger than a hare, since we left the confines of the buffalo country [east of the continental divide]."[88]

Ogden also mentions the lack of game when commenting on the Native-Americans' use of wild plants when salmon is scarce. "This appears to be the season of roots in this quarter for all we see are busily employed in collecting them . . . if providence had not given them roots to subsist on 6 months in the year they would soon perish for want in such a barren country. They have no other resource to prevent them from dying."[63] "We well know that neither summer or winter are they any [deer] to be seen from River Malade (Sickly River) to Burnt River and this certainly, I am convinced, is the principal and only cause which obliges the Natives to go to buffalo [west of Yellowstone[44]] otherwise many would perish from want . . . those who unfortunately for them who have no horses pass their lives without ever tasting meat."[63]

Near the present day Ontario, Ogden was complaining of hunger and states that "two of the trappers who had been some distance in advance came in with nothing. Starving for the last three days, [they] have eat[en] nothing, but they have no encouragement by coming to the camp."[63] The trappers were not the only ones going hungry. "Three Snake Indians paid us visit. They came empty handed and returned in

the same way. They complained of starvation. . . . It was some consolation to me to find we are not alone that starve."[63]

The following year after descending the Malheur River, Ogden records that "many in the camp are in a starving state. As for myself, I manage so far as to secure a meal per day. . . . From the sources of this river until this day we have not seen the track of a deer or antelope. This is strange as the country is most favorable for them and but few Indians to molest them. Still not one to be seen."[64]

Meek also concludes that "It may seem incredible to the reader that any country so poor as that in which our trappers starved could have native inhabitants. Yet such was the fact; and the people who lived in and who still inhabit this barren waste, were called Diggers, from their mode of obtaining their food--a few edible roots growing in low grounds, or marshy places. When these fail them they subsist as did our trappers, by hunting crickets and field mice."[41]

To supply food for their parties, both Wyeth and Ogden record trading with the Native-Americans for salmon, dried salmon, dogs, and colts. However, the extent to which they sometimes lacked game is shown by the sacrifice at times of their own animals although loath to do so. After a very stony descent east of the Owyhee River the horses had bloody feet and Ogden says, "I trust we will preserve them with the exception of those [which] should we not procure salmon will inevitably fall for the kettle and which I cannot prevent. A more wretched country was never seen."[63] Some do end up in the stew pot. Two days march east of the Owyhee River, Ogden writes that on "these barren plains" "when we last passed here a horse was then killed for food and the same [h]as again been acted here this day."[63]

Near McDermitt, Work comments that "The best hunters are out, but as usual did not see a single animal of any sort. One of the men, P. O'Brien, was under the necessity of killing one of his horses to eat. Thus are the people in this miserable country obliged to kill and feed upon these useful animals, the companions of their labors."[93]

b. Antelope

However, the countryside was not entirely devoid of game. Antelope were occasionally mentioned by Ogden and although trained hunters accompanied the party, they weren't always successful. "Our hunters joined us as we reach'd the encampment. Only one antelope was seen by them and fortunately killed."[63] Later, near the mouth of the Owyhee River he records that, "2 beaver taken this day. Also, 1 antelope killed. Our hunters saw six but were unfortunate and could not kill."[63]

John Work, traveling North of McDermitt, notes on two successive days, "The hunters were out today but without success. Two antelopes were seen yesterday, which was a novelty." "The hunters were out, F. Payette had the good fortune to kill a male antelope. One of the men saw four sheep in the plain but did not kill any of them."[93]

"Our hunters seeing tracks of antelopes lost no time following them. They saw six, fired but without effect. A fresh meat would be very acceptable to all and to none

more so than myself. We must hope should we not find beaver ere we reach the South Branch [Snake River] that there we may find the natives who will give us a supply of salmon. Almost any thing would be preferable to the roots we now subsist on."[63]

c. Deer

Although Ogden's general description of the area talks about a lack of deer, there were apparently certain spots to the north west of the Owyhee River where they were to be found. On February 14, 1826 camped on the Malheur River he writes that "Gervaise killed two small deer . . . they are most abundant."[63] To the north, he finds deer between the Malheur and Burnt Rivers. ""One of our hunters succeeded in killing five fat deer. From being so many days on short allowance only one meal in 24 hours the sight of these deer was most pleasing."[63] Apparently near this same spot the following year he comments that, "The hunters kill'd five deer at this same place our hunters had the same success last year and it is strange they should be numerous here and in any other part of the river scarcely any are to be seen."[64]

d. Bison

Although the trappers find little game, there is no doubt that there were some deer and pronghorn. Comparing the area to the other side of the Rockies, Ogden does wonder about the lack of buffalo in certain areas and not in others. Since there are none, Ogden says "we must as we have done content ourselves with a dish of roots in lieu of buffalo or beaver."[63] Daniel Montgomery writes later, "So far as I know, there has never been a trace of buffaloes found west of the main range of the Rockies, except one report that I got thirty or forty years ago from a pioneer named Jonathan Keeney. In 1843-4 he wintered near the sink of Lost River, in central Idaho, near where . . . Mackay now stands. He told me a bunch of thirty or forty head perished there that winter."[21] Examining reasons for the lack of bison west of the Rockies, Daubenmire[36] says that the phenomena was first remarked by Zenas Leonard. In 1832 he "wrote in his diary that the failure of bison there seemed 'somewhat singular, as the country is just the same, if not better as to grass.'"[16] Lyman and Wolverton[37] review a number of different hypotheses for the "paucity of bison in southern Idaho (and areas west and north) throughout the last 10,000 years."[47]

e. Native consumption of game

The variety of game eaten by the Tagötöka is consistent with a general scarcity of game since the Tagötöka were willing to both hunt and consume small animals such as mice and chipmunks. In addition to eating deer, antelope, elk, buffalo, and mountain sheep, the Tagötöka were willing to consume mink, porcupine, jack rabbit, white rabbit, cottontail rabbit, pocket gopher, kangaroo rat, field mice, muskrat, wood rat, woodchuck, squirrel, ground squirrel, chipmunk, raccoon, bobcat, badger, and beaver.[85] In addition a number of birds were taken as food.

7. Fish

As mentioned earlier, when he arrived on the lower Owyhee River, Ball is happy since "a short distance down the creek, we found Indians who had our future food, dried salmon."[5] This would indicate that salmon did run up the Owyhee River. However,

there are many more comments of salmon in the Boise River. In 1812, Robert Stuart first mentions the Boise River as "where immense numbers of salmon are taken"[86] with the salmon "forming after the roots, the principal article of food which the natives of this barren tract possess."[86]

When Wyeth's party first reaches the Boise River on Aug. 19th, Townsend records that "It [the Boise River] is literally crowded with salmon, which are springing from the water almost constantly."[88] However, downstream on the Boise River they saw Native Americans fishing and tried to trade for fish. "Captain W. and his companions returned, bringing only three small salmon. The Indians had been unsuccessful in fishing, not having caught enough for themselves, and even the offer of exorbitant sums was not sufficient to induce them to part with more."[88]

Although there are many mentions of trading for salmon, the fish were not always in plentiful supply so there are some times like this one on June 22 when Ogden writes, "The natives are taking a few salmon, but not in sufficient numbers to supply their wants."[63]

One other dried fish is mentioned on the Malheur River shortly above the Snake River. "Here we found an Indian with a good stock of small dried carp. All were traded and will supply us food for three days."

The Tagötöka report catching trout, suckers and salmon within their territory.

8. The Owyhee River

When Wyeth is traveling west in 1832, he arrives on September 13th at "a creek [Owyhee River] about as large as Charles River at Watertown, where we found grass, salmon and Indians".[94] This description of the Owyhee as a broad river is reiterated by Ogden's observation in February 1826, that "Sandwich Island River . . . is from appearance a fine large river and from the upper parts not having been visited is worthy of examination. . . . Hunt this day 2 beaver altho 50 traps set."[63]

However, the trappers did not always find the water level high. On July 8, 1828 when Ogden "reached Sandwich Island River, [he] found the water remarkable low."[65]

Ogden also didn't record his trappers as having very great success on the Owyhee. On two successive days in July 1827, he wrote "I was glad to see the Owyhee River party make their appearance. At the same time, their success is miserable and report of the river very far from being flattering as regards beaver. And so far as they proceeded the bank of the river lined with rock, the stream wide and deep."[64] "At daylight I sent two men in quest of the three absent men . . . [they] succeeded in finding them in Owhyee [sic] River. . . .Their success most wretched during their absence 16 days only 20 beavers. It is however satisfactory to find them safe and all alive."[64]

9. River fluctuation

Ogden records two instances of a creek or river rising or falling in a very short period of time. On June 8th, the trappers "found many of their traps high and dry the water having fallen nearly 1 foot perpendicular."[63] Another time he comments that

"Horse thieves had certainly a favourable night for stealing but did not think proper to make the attempt, the water having risen nearly one foot perpendicular."[63]

10. Land

John Ball mentions the plains with a shallow thin soil over the basaltic rock.[5] Several of the journals have references to the land between the Owyhee River and the Malheur River (at Vale) as sandy, "traveled briskly over a sandy country. Suffered considerable for water."[15]

C. Oregon trail travelers

The picture which emerges from the trapper's observations of an area with little game, changeable river flows, and treeless rivers is largely corroborated by the observations of the first emigrants. There were two principle routes along this stretch of the Oregon Trail. The southern route followed the south side of the Snake River passed Givens Hot Springs and crossed the Owyhee near present day Owyhee Junction. The northern route crossed the Snake River at Fort Boise (Figure 4.4).

In 1836, Narcissa and Marcus Whitman traveled along the Snake returning to their mission in Walla Walla. However, the first wagon train is considered to be the Peoria Party in 1839. In the Whitman journals, it is fairly easy to tell when these emigrants were near the lower Owyhee River since many of them stopped at Fort Boise. Although the emigrants only crossed a small stretch of the lower Owyhee subbasin, the observations which they made may be considered representative of a larger area, since they are the only existing historical accounts of the region.

The emigrants began their journeys planning to carry most of the supplies that they needed to reach the Oregon Coast so there are fewer references to the availability of game. However, they may have recorded more concerns with the availability of grass since they did not carry animal feed for the cattle or horses and frequently were taking stock with them.

1. General description

Before the emigrants set out, many of them may have read Lansford Hastings's *The Emigrants' Guide to Oregon and California* written in 1845. He presumably wrote it from his personal experience traveling on the Oregon Trail. He deals in generalities about the different areas, however his observations on the Eastern area probably reflect a general perception of the time. "There are also several very extensive plains and valleys, in the immediate vicinity of Fort Boisia, which are quite fertile, and capable of producing grain and vegetables, in great abundance; yet, the surrounding country, is generally, barren and mountainous."[35]

Not only does he consider the area barren and "as a general thing, [having] a very great deficiency of timber."[35] but when compared to the more humid climates of the east and Midwest he is amazed at the temperature swings. He warns travelers that "even in the same portion of the country, one day, you have the extreme heat of a southern summer, and the next, the excessive cold of a northern winter. There are other portions of this section where, in the short space of 24 hours, you experience four

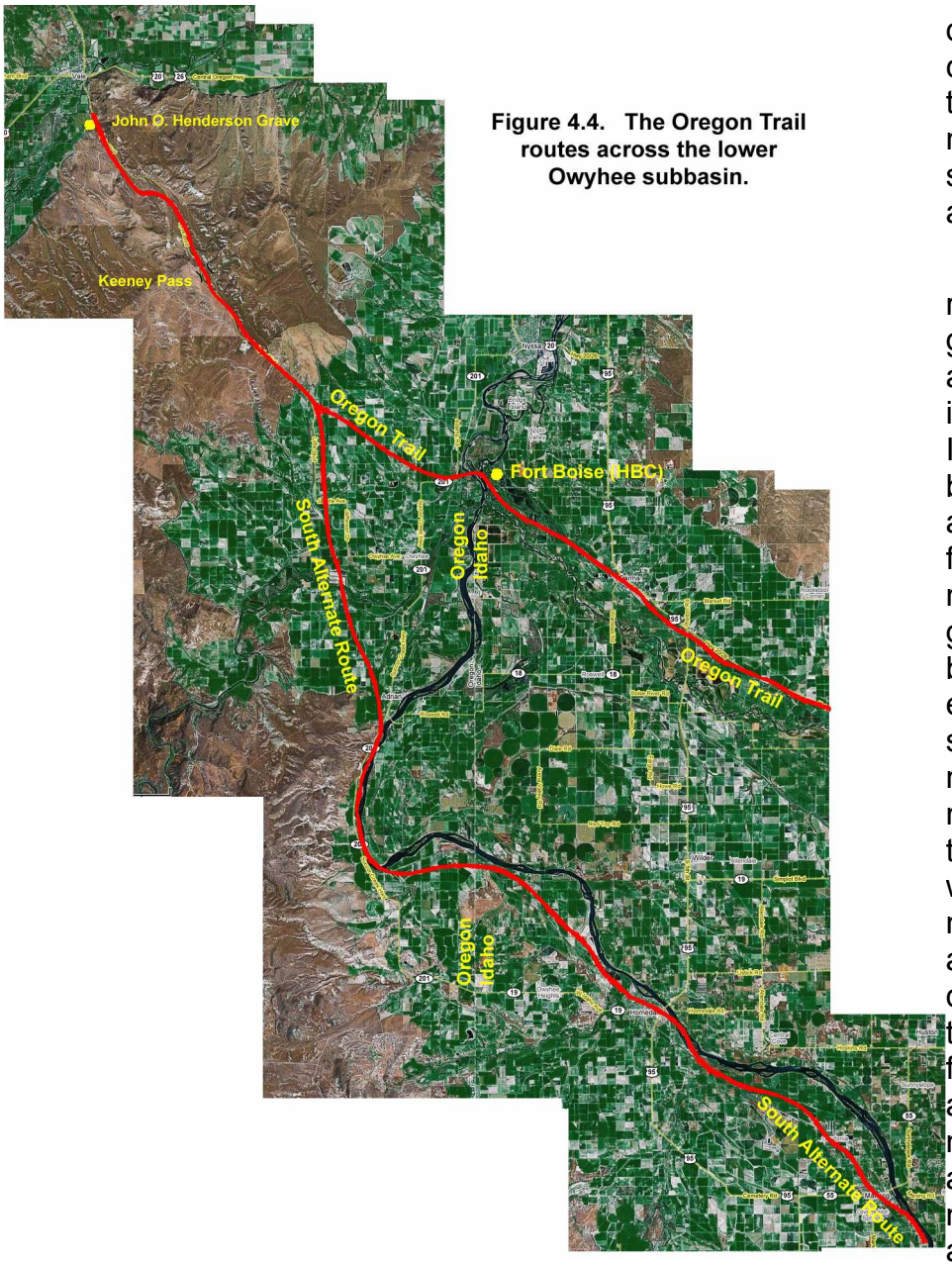

Figure 4.4. The Oregon Trail routes across the lower Owyhee subbasin.

distinct changes, corresponding in temperature, with a northern spring, summer, autumn and winter."[35]

He also reports that "the game of the Eastern and Middle sections, is not very abundant. It consists chiefly, of bear, wolves, elk, antelope, muskrats, foxes, beavers and martens. . . . No game, can be said to be very plentiful, in either of these sections. Persons may travel through many parts, of both these sections, for weeks together, and not see a wild animal of any kind, during the whole time. The fur-bearing animals are the most numerous, but they are much less numerous latterly, and they are constantly diminishing in numbers. . . . Water-fowls are very seldom met with"[35]

He doesn't see the barrenness, the lack of trees, the temperature changes, or the absence of much game as discouraging settlement but he sees the area as "better suited to the rearing of herds, than to farming purposes. Some experiments in this respect have been made, in all the different sections. In the Eastern section, at Forts Hall and Boisia, both horses and cattle are reared in large numbers, where they thrive most admirably. The Indians of this section also, rear horses in vast numbers, and of a very superior quality."[35]

Emigrants on the Oregon Trail frequently passed through the area around the Owyhee River in two or three days. Not all of them even made entries in journals during this time period. Others described Fort Boise and Mr. Payette who ran the fort. Later

emigrants listed purchases made at the fort. All of the comments quoted below were written about the area approaching and leaving the Owyhee River unless otherwise noted.

2. Climate

The emigrants coming from the higher rainfall areas of the east or Midwest frequently remarked on the arid nature of the countryside near the Owyhee River along the Oregon Trail. Sidney Smith, coming across with one of the first emigrant groups, the Peoria Party, remarked upon the continuing lack of rain at Fort Boise. "15th SUNDAY . . . for the last 4 days the wind has been from the West and very Cold and dry changing to the No. West. no rain at this place for the 5 last months; everything is burnt up by the Drouth this fort Stands upon Snake River and a most butifull location."[28]

Thomas Farnham didn't think the lack of rain would ever allow farming in the area. After leaving Fort Boise, he says "Our packs and ourselves were sent across the Saptin [Snake River] in a canoe; and our horses having swam it . . . we left . . . Our course was down the west bank of the river. The soil was sand and clay mixed in nearly equal proportions. Its composition is such as to render it fruitful; but the absence of dews and rains forbids the expectation that it will ever be so."[23]

Evans McComas gives a less generous, vivid description of traveling across country where there is no rain. "The country all the way down the Snake River is one of the most desolate and dreary waste in the world. Light soft ground with no soil on top, looking like an ash heap, dust six inch deep and as light as flour. When a man travels all day in it he looks like a miller. You can see nothing but his eyes and them look red. The dust is here so light that it sometimes raises 300 feet above the train."[53]

3. Vegetation

a. Grass and shrubs

Grass and sagebrush (wormwood) are often mentioned together by the emigrants. Grass is a concern and mentioned frequently because not only the horses or oxen but also any stock being moved with the emigrants needed to feed on it. Coming west with one of the early pioneer parties in 1842, Medorem Crawford describes the countryside in three journal entries before reaching the Owyhee river. "Astonishingly barren country . . . found Indians plenty towards evening. Camped near their village [29 miles east of Fort Boise], poor grass." "Camped on the river [14 miles east of Fort Boise], poor grass." Almost across from Fort Boise "No alteration in the general appearance of the country . . . very poor grass. Camped in the evening on Warior River [Owyhee], a branch of the Snake."[15]

Members of several wagon trains commented on poor stands of grass. Abigail Scott says ". . the grass is miserable the dust very annoying & the sun oppressively hot we lost another ox to day from eating some poisnous herb."[76] Lafayette Spencer records a "Camp on Malaher River. Grass scearse."[81] Even at the Owyhee River, there are mentions of the scarcity of grass. Philemon Morriss writes that they "came to Oywhee river today. . . . Grass rather scears, warter plenty."[59] William Lieuallen says "We travel a round the bend and left Snake river a little & came to Owyhee river in

Oregon Baker Co. & campt on the same & lay over the rest of the day. Poor like grass."[29] Since there were few routes, the lack of grass along the Oregon Trail may have been partially due to previous groups passing along the same route so that between 1839 and when these journals were written in 1847, 1852, 1852, and 1864, respectively, the grass had been eaten repeatedly. However, even before the emigrant trains began coming, Ogden recorded areas within the region with poor grass or no grass.[63]

Worse than poor grass was the complete absence of grass. On a different day Abigail Scott writes, "We find, no grass, willows, or even sagebrush, nothing like vegetation is to be seen except the thorny Greasewood and a species of herb resembling the garden wormwood."[76] John McDowell complains "In camp for dinner 5 miles east of the Snake River where we cross. This is an awful dusty country. Dry and no grass but lots of sagebrush. In camp for the night on the Snake River close to the Ferry."[55] The night before reaching the Owyhee, Evans McComas records they "encamped without grass."[53] In almost the same spot, Philemon Morriss who complains of the poor grass at the Owyhee river writes, "Tollerable fore grass and fuel such as willows and wild sage and some dusty. I hope wee will soon get out of the cursed sage."[59]

In 1839, Robert Shortess noted some of the other vegetation, although his description makes it seem very sparse. "The natives had nearly all left their fisheries and there was scarcely any sign of life, either animal or vegetable, except sagebrush, dried grass and an occasional stunted cedar or pine clinging to the rocky bluffs, or a few dwarf willows on the river's margin. We arrived at Boise".[29] Near the Owyhee River, Evans McComas notes that "The ground is covered with two of the most detestable shrubs that grows, greasewood and artimecia or wild sage."[53] and Thomas Farnham describes the vegetation as "bunchgrass and wild wormwood."[23] Mrs. Joseph Myers' relative recalls vegetation near the mouth of the Owyhee River which helped feed the pioneer family. She says "a very poor emigrant cow came along, which we killed and ate. By mixing the beef with rosebuds and pusley, (purslane?) we made it last us two weeks."

b. No trees

Some emigrants remarked on the trees along the Boise river just as the trappers had done, because the trees were a novelty. Narcissa Whitman says they "Arrived at Snake Fort [Boise] about noon. It is situated on Bigwood river, so called because the timber is larger than any to be seen this side of the mountains. It consists chiefly of cottonwood and is small compared with timber in the states."[91] And Joseph Williams writes, *"September 1st.* We reached Fort Bois. Some timber grows along the Bois, principally cotton wood."[30] "Indians knew the Boise Valley as "cop-cop-he-bash -- or the 'much cottonwood feast valley,' [and there] the Indians found shade trees, luxuriant grass, hot springs, and salmon in abundance for food."[56]

Trees are such an unusual site that Abigail Scott comments upon some which they see. "The country around is barren in the extreme. We saw some trees this afternoon in a S. W. direction from us along the Snake river. We encamped upon the

Owyhee. This is a clear and rapid stream with a peply bottom; It is (about) twenty five yards in width. . . . The water is clear and palatable but is rather warm."[76]

Likewise, the absence of trees is indicated by the naming of a single tree which emigrants reached before arriving at the forested hillsides of the Blue Mountains. Hastings' describes this in his Emigrant's Guide. "In the midst of this valley, is a single pine tree, which is called l'arbour seuel, the lone tree, from which circumstance, the valley is called the 'Lone Tree valley.' There is not a sufficiency of timber in the immediate vicinity of this valley."[35]

Some emigrants record their arrival at such an obvious landmark. Medoram Crawford is within sight of the blue mountains when he writes that "At some distance we could discover a tree which we at once recognized as 'the lone tree' of which we had before heard. . . . I believe [it] is respected by every traveler through this almost treeless country."[15] Narcissa Whitman says they "came as far as the Lone Tree. The place called Lone Tree is a beautiful valley in the region of Powder river, in the center of which is a solitary tree, quite large, by the side of which travelers usually stop and refresh themselves."[91] Joseph Williams says they "nooned at the Lonely pine So Called from the fact that their is no other pine in Sight and this Rears its head in the prairie like a towering monument as a guide for the Lonly traveler of the Prairia"[28]

Narcissa Whitman gives us an idea of what grows along the waterways instead of trees when she described the construction of a canoe at Fort Boise on the Snake River (Figure 4.4). "This being a fishing post of the Indians, we easily found a canoe, made of rushes and willows [Figure 4.3], on which we placed ourselves and our saddles (Sister Spalding and myself), when two Indians on horseback, each with a rope attached to the canoe, towed us over. (O! if father and mother and the girls could have seen us in our snug little canoe, floating on the water.) We were favorites of the company. No one else was privileged with a ride on it. I wish I could give you a correct idea of this little bark. It is simply bunches of rushes tied together, and attached to a frame made of a few sticks of small willows. It was just large enough to hold us and our saddles."[91]

After escaping a Native American attack on their wagon, two families traveled about 60 miles on foot. Arriving at the Owyhee River, they felt they couldn't proceed further and constructed shelter from the available willows. We "were obliged to build wigwams, which we did as well as we could, with willows. Here we lay by entirely. This was on the Owyhee River, about three miles from Ft. Boise which was deserted."[95]

4. Wildlife

Mostly, wildlife in the area is not mentioned in the travelers' diaries. However, Franklin Owen is thankful for some wild fowl. "For three days I had eaten nothing. But that evning, Dave, Bruce & Will, Howard, went out killed, & brought to camp some Prairie Chickens, which were dressed, & prepared by one of our best women that ever lived, who made Soup for me that I have, & shall ever think was the panasea that Saved my life."[67]

5. Fish

Not only is fishing for salmon by the Native Americans mentioned, but two of the early travelers comment on the abundance of salmon. In 1839, reaching the confluence of the Boise and Snake Rivers, Sydney Smith says "the River abounds in Salmon."[28] When Joseph Williams stays at Fort Boise in 1841, he not only complains about the Native American noise at night but that "the salmon also kept a great noise, jumping and splashing about in the water."[92]

There was an abundance of salmon for food at the Boise River. The "Shahaptain-Shoshoni tribes spent the early summer here . . . Oral traditions tell of fishing and harvesting as late as the 1860's when white prospectors moved in."[56] Probably the abundance of salmon in the Boise River means that some salmon were also migrating up the Owyhee River.

6. Oregon Trail Roadside conditions Owyhee to the Malheur

Although the emigrants on the Oregon Trail made many observations pertinent to understanding the conditions in the lower Owyhee subbasin in the 1840s and 1850s, only a short section of the Oregon Trail was in the lower Owyhee subbasin. The South Alternate Route of the Oregon Trail entered the subbasin just beyond Adrian. The principal Oregon Trail crossed the Snake River at Fort Boise and entered the subbasin just before the two routes joined. The combined routes of the Oregon Trail exited the subbasin around Keeney Pass (Figure 4.4).

Joseph Williams, traveling in 1840, describes this section of the trail after leaving Fort Boise. "We now started for Wallawalla, over hills and rough roads. We don't see any timber, scarcely. . . We passed some more hot springs to-day, and traveled some very dangerous roads."[30]

By 1852, greater traffic along the Oregon trail had resulted in a somewhat improved "road". Philemon Morriss describes his travel over the same stretch on August 8th. "This morning wee struck out for Malhear river. 15 miles over a good road, some dusty. A long and a graguel [gradual] assend and then a long desend. Good grass 3/4 of a mile above the road and warter [maybe after arriving at the Malheur River]. Willows for fuel. It is warm today."[59]

In 1853, the more heavily traveled road is seen as not only dusty, but lacking water. D.B. Ward writes, "Our next camp after leaving the Snake River was fifteen miles away. . . . Between these two points we suffered more for want of water than at any other time of the road, because, being short of teams we did not fill -- as was our custom -- our water casks, and the day being exceedingly warm and the road dry and dusty, our suffering for water was intense."[89]

Evans McComas, in 1862, also comments on the lack of water. "Had to drive another long drive without water. . . . to the 'Malhue' River and encamped."[53]

By 1864, there are a couple of dwellings and a ferry where the southern route crosses the Owyhee River. Ameil Clude describes the day's journey, "Travel about 18 miles heavy dust without water or grass. We came by the ferry on Owyhee by 2 houses

then up a sandy rise to the road that came by Boisee City then up a long cannun & over the hill & down another cannun to Malheigh river."[46]

7. Conclusions

The Oregon trail was in regular use from 1843 until the 1870s; by 1849 about 11,000 people had come through the area and by 1853 the number was well over 50,000.[11] The emigration of so many people inevitably changed the area and ended the era which we can characterize as "at contact". What sort of picture emerges from the writings of the trappers and emigrants who recorded what they observed while skirting around the lower Owyhee subbasin?

Predictably, the observed climate is very similar to what we would note today. The summer days are hot with almost no rain. Away from the main rivers, there are few easily accessible water sources in the summer.

The Owyhee River is observed as both a broad river and as having little water in it. Other water courses in the area are also noted as varying in width on different visits to the area. There are even observations of overnight fluctuations both up and down.

The vegetation along the rivers in the area was generally willows similar to the coyote willow present along the river banks today (Figure 4.3). Mostly, the area was treeless, so that the presence of trees was noted. The Boise River was known for the trees along it, and there is some mention of trees when travelers reached the Burnt River. Even the willows were not always abundant along river banks. The willow was used by the Native Americans as a building material. Mrs. Whitman[24] describes the construction of a canoe from willows and Fremont[14] describes the use of willow in the construction of Native American housing.

The barrenness of parts of the region is frequently mentioned. Combined with complaints about dust, it is obvious that it is not only lack of trees that is causing this observation but also poor ground cover. The vegetation in many of the areas is sagebrush and greasewood. Although the stands of bunch grass are sometimes described as good, they are at other times decried as poor.

Perhaps the most amazing observation, particularly from the trappers' diaries, is the almost complete lack of big game, game birds, and rabbits.

There are salmon in the rivers, including the lower Owyhee River. There are times of year when the rivers were teeming with salmon. Fremont[14] describes seines made out of willows which the Native Americans strung clear across the Snake River to harvest the salmon.

D. Early settlement

Even after the Union Pacific completed the railroad to the West Coast in 1869, there were still some wagon trains on the Oregon Trail clear into the 1880's. The End of the Oregon Trail Interpretive Center says that they've had visitors who recalled that, because their family couldn't afford the train fare, they traveled the trail by wagon as late as 1912.

Although many people passed through the Snake River Valley, "To those who had grown up in the environment of mixed meadowland, hardwood, and conifer forests of the eastern United States, the Snake Plains particularly seemed forbidding and beyond consideration by “civilized’ people".[8] The emigrants were headed to other areas.

Fort Boise contained a few residents. The Hudson's Bay Company tried to have its outposts self-sufficient and encouraged them to farm and raise stock, both to support the employees and to help the trappers working in the area. In 1846 "Fort Boise had two tilled acres, twenty-seven cattle, and seventeen horses".[8] James Gibson concludes that the efforts enabled Fort Boise "not only to feed their own personnel but also to succour American migrants on the Oregon Trail in the first half of the 1840s."[25] The Fort was built of adobe and was largely destroyed by the great flood of 1853. The rebuilding was only partially done when even this brief occupation of the valley ended. Fort Boise was abandoned in 1854 due to frequent Native American raids.[24]

"While the army was busy fighting the Snakes, civilians finally began to enter the vast interior of East Oregon for reasons other than travel or exploration. A military order issued in 1856 against settling east of the Cascades [was] revoked two years later."[12]

1. Discovery of gold

Henry Griffin had been on an unsuccessful expedition in search of the Lost Blue Bucket Mine when he struck gold just a few miles south of Baker City, Oregon in October 1861. By the summer of 1862, a tent city with a population of over four thousand had sprung up.[18] Gold was discovered in the Boise Basin in 1862 and the population of the area boomed. As areas were claimed, newcomers searched elsewhere.[38]

In 1863, a group of prospectors stopped by a stream in the Owyhee Mountains to camp. The first scoop of gravel one of the men tried panning had "about 100 colors". Within an hour, every member of the group had successfully panned some gold.[90] The rich placer deposits of gold along Jordan Creek led to the discovery of quartz ledges where hardrock mines were developed by the fall.[90] Not only did 2500 miners leave the Boise Basin and move to the Owyhees, but the gold seekers from elsewhere also came. With both placer and hard rock mining, there were "two hundred fifty mines recorded from 1863 to 1865."[32] The towns which grew up to supply the mines, Booneville, Ruby City, and Silver City, were the first permanent settlements in the Owyhee watershed.

2. Description of the environment

As with the trappers and emigrants, most of the descriptions of the environment during the 1860s are written about areas which surround the lower Owyhee subbasin or skirt through the edge of it.

During the 1850s the wagon roads west of the Cascades had been built by the U.S. Army. In 1864, Lieutenant Colonel Drew of the Oregon Calvalry explored a route which took him across southern Malheur County along roughly the route planned for the Oregon Central Military Wagon Road (Figure 4.5). The Oregon Central Wagon Road was suppose to start at Springfield, Oregon. After entering Malheur County it would run

northeast to Crooked Creek, down Crooked Creek to the Owyhee River and present day Rome, and up Jordan Creek to Silver City, Idaho.[42,66]

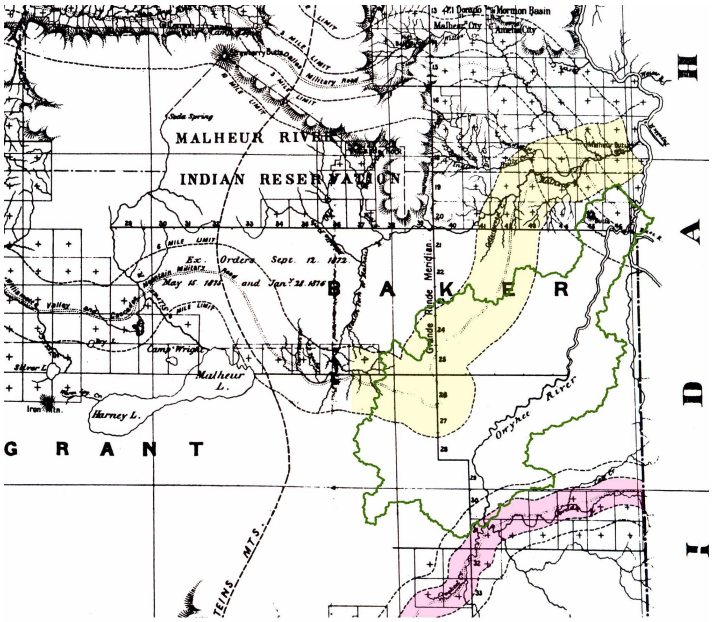

Figure 4.5. An 1876 map from the General Land Office which shows the location of the three federal grant roads that came across Malheur County

Since Lieutenant Colonel C.S. Drew's journey took him across southern Malheur County, it provides a good description of the landscape in some of the Owyhee watershed directly to the south of the lower Owyhee subbasin. Since he refers to "the old route", it is possible that there was some sort of trail through the area.

His first record in the watershed is near the headwaters of Crooked Creek. He says they "continued eastward along the old route over a continuous sand and sage plain, with a few spots covered with fragments of lava, and two small, dry, hard bottomed, basins, to the large cluster of springs that are the source of Crooked creek."[20] At the springs he notices that "all but the largest are thoroughly shaded by manges of wild parsley. Between and around these springs there is perhaps two square miles of very good land, covered with a fair growth of grass. The usual sage and a little greasewood is all there is for fuel."[20]

Although the area around the springs has grass and some riparian vegetation, the vegetation disappears as they travel on down Crooked Creek toward the Owyhee River. It passes "through deep volcanic chasms that widen occasionally sufficient to allow a little inferior grass to grow along the waters edge at the bottom, and finally empties into the Owyhee a few miles below the crossing."[20] Above the gorge, the "country through which it passes is covered almost entirely with lava, sand and sage."[20]

At the Owyhee River, they cross it "by a gravely ford, smooth, and in the summer season, with but little depth of water. The river here is about sixty yards wide." On his first crossing on September 2nd and his return crossing on September 23rd he remarks that "the greatest depth of water on the ford was not to exceed fourteen inches."[20]

After climbing the eastern side of the Owyhee canyon, the four miles to the entry to the Jordan Creek Valley are described as a route that again goes "over lava and sand, and through sage and some greasewood."[20] Water was not running in Jordan Creek, but instead "Jordan Creek, through nearly the whole length of the valley, was in pools, and of course its waters are correspondingly poor. Some of these pools are deep and four or five miles long, and are somewhat abundant with fish. The line of the creek is heavily fringed with large willows."[20]

The vegetation along Jordan Creek in the valley is contrasted to the mountain vegetation near the headwaters of the creek. This Drew describes as "quite well timbered with fir, some pine, and a little of the cottonwood."[20] By the time he reaches Silver City he is describing the mountains as being "sparsely covered with fir, and some pine, that answers for the practical use for which it is required, but the quality is not good. The first lumber mill of that region went into operation in September."[20]

Even before the miners had discovered gold in the Owyhees, Lewis Scholl, a member of the Wallen expedition trying to locate a wagon route between Salt Lake in Utah and Dalles City, Oregon entered Jordan Valley in 1859.[74] He had come up the Owyhee River and he contrasts what he sees in the valley with the "somber color of the hills and bluffs, barren the entire distance I traversed to date."[96] Now the landscape "changed suddenly as by magic. . . . to a most cheerful green."[96] He too can see the distant mountains, "a high range covered with heavy timber, and a little scattered snow . . . towards the south."[96] After "crossing previously rich bottom land and a few small rivulets," he describes the encampment as "close to a small brook. Prairie chickens and sage hens were in abundance here . . ."[96]

Alexander Fuqua Canter recalls that when he came to Jordan Valley in 1864, "All that I found in this valley was an abundance of grass and prairie chickens. . . . I had to kill a couple of prairie chickens for each meal or go hungry while I mowed hay."[43]

The willows along Jordan Creek and the grass in the valley didn't offset the generally negative impression of the arid conditions for some other early travelers through the region. Arriving at Crooked Creek, Lieutenant Gates tells travelers going the other direction towards Boise to "expect nothing but more of the same -- sand, sage, alkali, and rocks."[32] Major Gorham Gates Kimball is even less flattering when he writes, "I was brought up and educated to believe there is a hell where all had to suffer for their sins. . . . I now think there was one once and the country over which I have just passed must have been the place where it was located. I have seen no boundary lines, but the marks of the heat are still there -- and I guess all the rocks that were not used were thrown into the devil's half acre."[32]

a. Willows

In the records of the early settlers, when willows are mentioned, they are along the streams. David Shirk recalls wondering if they should "make a break for the willows along Jordan Creek."[77] when attacked by Native Americans. J.W. Hill explains how he ended up in Jordan Valley with only "shirt tails". He had been at the Owyhee ferry and writes "it will be understood that often on the frontier clothing is scarce. I only had one pair of pantaloons, and in the morning previous to the Indian attack I had washed and hung them out to dry on the willows by the river."[31] Describing how in another instance the Native Americans lured vigilantes into a trap, Mike Hanley describes the place where they were camped as a "box canyon, a place known long to the Paiutes as *Sihwiyo*, 'Willows Growing all in a Row.' The stream running through the center was lined with willows."[32]

In 1864 Camp Henderson was established on Crooked Creek southwest of Jordan Valley. It was the closest cavalry camp to the Owyhee Crossing. A description

of the time describes "the soldier-made huts as being constructed of material at hand, wild cane grass (rye grass) [great basin wild rye], sagebrush, and willows."[74]

Slightly to the north of the subbasin, at the Malheur ford where Vale now stands, in 1863 Jonathan Keeney took up a squatters right and built the Wayside Inn. Like the soldier's huts, the building was made of willows, but he plastered them with mud.[36]

3. Introduction of resource based industries

Following the discovery of gold, there was an influx of miners. Traders and some settlers began supplying the miners with the necessities of life.

Not only did the miners require food, but their horses required feed. The land with creeks from which water could easily be diverted was the first settled by men "who found they could make more money cutting hay and raising vegetables to sell to the miners. . . . Jordan Valley and its tributary, Pleasant Valley, were settled quickly from 1864 on as an adjunct to the mines in the Owyhee Mountains."[43]

Ruby City was requesting hay as early as 1864, but Alexander Canter recalls that "no one of us had a team, neither was there a road to haul hay over had we a team. But a few of us succeeded in trading hay for oxen and wagons, and went at building roads over the mountain side via Cow Creek, then we began delivering hay to the mining towns."[43] Although initially it was settlers closest to the mining towns who supplied the towns, as population grew some of the supplies were being produced in the lower Owyhee subbasin.

a. Livestock industry

Other entrepreneurs recognized the grazing potential of the land. In 1867 Con Shea brought in a herd of Texas long horns from Texas for the start of the cattle business in the Owyhee region[7] "and for years operated one of the largest stock ranches in the west."[27] Not only were cattle introduced to the region to feed the miners, but sheepmen realized that "gold-seekers would pay high prices for mutton, especially when beef was scarce."[32] Once the stock were run out onto the range from wintering grounds along the Snake River, many of them would have ended up grazing in the lower Owyhee subbasin.

Raising cattle and sheep to feed the miners was the beginning of the livestock industry in Jordan Valley,[43] but there was also a growing need for horses, mules, and oxen. These draft animals were needed to bring goods to Silver City, which depended completely on supplies brought in from outside.[31] David Shirk recalls that in "those days, feed for stock was everywhere abundant, and the few ranchers in Jordan Valley seldom or never put up hay for their stock."[77] The lure of free grass and the demand both for meat on the hoof and for draft animals brought more families to eastern Oregon to raise livestock.

In 1872, "Peter Keeney and Thomas Glenn were the first to begin ranching on the lower Owyhee River. They had cattle and there was some grass available, especially in the spring. There was a market for beef since Silver City had a sizeable population. The Owyhee River provided an adequate water supply for the cattle."[87]

b. Farming

The first farming in the county began to supply the livestock industry and was limited to raising hay and grain. Where water could be used, small pieces of ground were being planted. The Ruby City newspaper comments that although "many let their livestock rustle for themselves during the winter, there was a demand for winter feed"[43] and imported grain was expensive. Small patches of grain were planted. To the north of the lower Owyhee subbasin, in 1868, David Dunbar began a wild hay ranch about two miles southeast of present day Ontario.[43] By the 1870s settlers along the Owyhee River in the lower Owyhee subbasin grew wild hay.

c. Salmon

In July 1859 upstream from Jordan Creek, Louis Scholl describes the Owyhee River as "abounding with salmon."[74] An idea of what "abounding with salmon means comes from the story of four travelers in 1852 who "came to a small stream, presumably Burnt river, which they said was literally alive with salmon. So numerous were the fish that, with forked sticks, they caught all the fish they could eat"[27]

Although there may have been fish in the rivers at the time of the early settlements, fishing is not recorded as a local enterprise. About this time or a little later, there was an elderly Dutchman who put a salmon seine in the Snake river. Dan Purcell who worked for him recalls that a "day's catch would run maybe 52 or 53 salmon, weighing 8 to 18 pounds apiece." The salmon were sold to peddlers who peddled them to mining camps.[22]

d. Timber

The timber industry developed to supply wood to the mines and new towns. Wood was used by the miners as fuel both for cooking and heating during the cold Owyhee winter. When David Shirk first arrived in the area, he acquired a "wood ranch situated at the head of Blue Gulch, six miles from Ruby City, the main town at that time."[77] Timber was also used for building and to shore up the mines. Originally the timber that wasn't big enough for use in the mines was burnt in the smelters.[6] Later, the mines hired people to cut trees for the fires.[70] "The miners came to the Owyhees in 1863 and by 1867 most of the timber and brush was gone."[31]

The lack of timber around Silver City, probably meant that the timber on the Mahogany Mountain, in the lower Owyhee subbasin became attractive as a source of wood.

4. Water

Early in the spring 1866, the water in the Owyhee River below the mouth of Jordan Creek had been very high. Jean Baptiste Charbonneau, Sacajawea's son, became very wet crossing the River, contracted pneumonia and died.[45] The flow in the Owyhee varied throughout the year, being highest in the spring.

The spring floods could also be damaging. During the winters the Owyhee River froze and no water was visible. The snow melt flowing into the Owyhee River in the spring and the warmer temperatures would cause the ice to break up and form

dams. When these ice dams broke, the water which was released carried the ice and rocks downstream. Many years the ice and rocks scoured out the river bed. Most years, the spring floods turned the Owyhee River into a torrent which uprooted everything within reach of the raging water. The rest of the year the flow in the Owyhee varied, dwindling to a small trickle in the hot summer time.[87]

Although there was plenty of water in the Owyhee River during part of the year and the land along the river was fertile, the early settlers were limited in their ability to remove water from the river and use it to raise hay and grain for their cattle.[87]

5. Roads

After the discovery of gold on Jordan Creek and the rapid growth of the mines, access was still only by foot. Pack strings could go where wagons couldn't, so supplies were carried in by pack trains. The quartz ledges which had been discovered required heavy machinery including stamp mills to break up the rock.[43,31] Some roads were built by the cooperative efforts of neighboring settlers, but frequently roads, ferries and bridges were built privately so that tolls could be charged.[43]

Three principal roads connected the mines to the rest of the country. Two roads went south, one to Chico, California and the other to Winnemucca. One road went northeast, through Murphy to the Boise Valley. None of these roads passed through the lower Owyhee subbasin.

a. Willamette Valley and Cascade Mountain Military Wagon Road

Although the military conducted some early surveys searching for easier transportation and communication routes, later the "military roads" were privately constructed. To encourage private construction, the Republican congress gave companies willing to construct roads large tracts of land. In Oregon, these privately constructed roads could ostensibly be used for military purposes so they were called "military wagon roads."

Since the roads were supposed to be toll free, the private companies received land grants in place of either payment for construction or future tolls. Land grants consisted of alternate sections of land within six miles on either sides of the road. To assure that the received lands had rich potential, the company's road surveyors, when possible, laid out routes along major stream courses through lush bottomlands.[42,43,57,66]

One of the military roads ran through the lower Owyhee subbasin. In Malheur County, the Willamette Valley and Cascade Mountain Military Wagon Road ran from the Crowley area northeast to the Malheur River near Little Valley (Figure 4.5).[52] However, it is doubtful whether the road building crew ever constructed anything in Malheur County. When J.B. McNamee was sent from Washington D.C. to examine the road in 1887, he wrote "From the South Fork of the Malheur to Barren Valley (Figure 4.6) no road was made by the company. It is possible the construction party drove through that country, as there is some testimony that wagon tracks have been seen there. At the head of Barren Valley the construction party came into a branch of the Fort McDermitt road and followed it for about 6 miles . . . From that locality to the mouth of Cottonwood Creek, a distance of about 50 miles, no road was ever built until within the past five

years. Ranchmen who had come into the country made roads for their own convenience and then over only part of this line."[43] In return for building a road which would be public and toll free, the company received alternate odd numbered sections, three per mile of road, in a belt on each side of the road (Figure 4.5).[43]

The roads in other areas had an effect on where settlements were established. However, since this road was not built, there was not the increased access for people to the surrounding areas and the consequent impact of people upon those areas. The land grants for the military road may have done more for populating the area than the road itself, since the companies tried to sell the land which they had acquired. [43,52]

6. Settlements

In addition to communities being established along the early roads, mining, grazing and farming all led to settlements in the Owyhee watershed. Most of these early settlements were around the edges of the lower Owyhee subbasin. Each of these settlements had some effect on the area where it was located. Fuel was collected for cooking and heating. Naturally occurring edible vegetation and game was harvested. Canter recalls that he "had to kill a couple of prairie chickens for each meal or go hungry" and Frank Cable "actually dug camas, a root that grows here, and lived on it alone for weeks."

7. Effects of livestock

When livestock were first introduced, the grass on public lands was "free" and lured livestock growers to turn out herds of sheep, cattle, and, sometimes, horses to roam freely. There was a "winner take all" attitude that encouraged grazing. Not only were there herds in Malheur County, but even animals not raised in Malheur County were driven across to the new railroad terminus at Winnemucca.[34,43]

Although many of these observations were made in subbasins upstream from the lower Owyhee subbasin where the first settlements were located, they provide a glimpse of the conditions in the still largely uninhabited lower Owyhee subbasin.

8. Changes and constants

By the beginning of the 1870s, changes in the lower Owyhee subbasin included the introduction of cattle and sheep on the range. However, some things had not changed. Residents of the area recorded weather events that were unusual. Two winters were recorded as unusually severe. In 1865-66 the Snake river at Weiser was almost frozen over.[27] In 1867-1868 when the snow started falling in early November, the Snake River froze solid from bank to bank. That year, conditions changed dramatically overnight. David Shirk writes that when they "retired the previous evening, there was fully twenty-four inches of snow covering the ground. At about eight o'clock, the Chinook wind began blowing, and in eight hours, not a particle of snow remained anywhere in the valley."[77]

E. End of the nineteenth century, early twentieth century

The changes in the areas surrounding the lower Owyhee subbasin during the 1860s set the stage for trends which continued into the succeeding decades in the

lower Owyhee subbasin. Some changes were recorded, but some were so gradual that they weren't even noted by the individuals involved. Many of the records consulted for this section of the history do not have exact dating, especially those recollections written long after the fact. There has been an attempt here to develop an accurate sequence for the changes recorded below, however many of the topics cover several decades and there may be some unintentional errors.

Despite the government's best attempts to give away government lands between 1862 and 1934, there were 13,000,000 acres in the high desert of Oregon that were not claimed. Of this, 1,137,800 acres is in the lower Owyhee subbasin and is now managed by the Bureau of Land Management.[39]

1. Mining

Mining upstream from the subbasin continued even after the panic which followed the repeal of the Silver Purchase Act in October of 1893 (endnote 1). The Owyhee mines didn't depend only on silver. There was also mining for gold, copper, lead, zinc, and manganese.[32] Some of the negative effects of the mining affected downstream communities. Locally, it is known that in 1909 a big flood washed out cyanide vats at the Delamar mine and killed willows down Jordan Creek and there could have been effects further downstream in the lower Owyhee subbasin.

2. Grazing Pressure

The cattlemen were the principal users of the range lands from 1870 to 1880.[32] As the mines began to fail in the 1880s, some of the miners started raising stock and ranching.[27] As the small mines played out and prices dropped, raising livestock became the principle industry of Malheur County. After the Native Americans on the midwestern prairies were forcibly evicted, there was a need for livestock to stock the prairie grasslands. Buyers came to southeastern Oregon to purchase both cattle and horses.[43]

Before the constant pressure from homesteading began, the big cattle outfits in the Owyhees had tacitly divided the land so that they wintered their cattle in different areas, and, after meeting at Dry Creek for branding in the spring, they headed their cattle in different directions for the summer. When "ranches began springing up on all sides"[32] the understood domains no longer worked.[32] The Desert Land Act of 1877 encouraged settlers to settle on arid and semiarid lands and develop privately managed irrigation developments. To protect their interests to the free grazing range, livestock owners acquired lands with water resources. "Owning the sources of water was a means of controlling the surrounding grazing lands."[43] The increase in the number of cattlemen led to an increase in cattle numbers. By the 1880s the region from Jordan Valley west to Fort Harney and north through the lower Owyhee subbasin contained hundreds of thousands of cattle.[33]

The rivalry between cattlemen, sheepmen and small settlers didn't come to open violence in Malheur County, but these three main factions tried to control or divide the public lands. The competition led to overstocking the range.[43] The buildup on the range of large numbers of cattle, sheep, and horses meant that there was a need to find markets. The transportation to distant markets was greatly improved by the extension of the Oregon Short Line to Ontario in 1883.[12,43]

There were several years when range stock died from a lack of food due to winter conditions. In 1873-74 stockmen estimated they lost 10 percent of their range stock. In the winter of 1880-1881 livestock loss was estimated to be 15 percent. That year the Snake river froze over to a depth of three feet.

During the winter, cattle were moved to areas where they wintered on bunch grass and white sage and few of the ranchers thought about putting up hay.[33] This changed after the summer and winter of 1888-1889. There was a terrible drought in the spring and summer. Waterholes dried up and feed was scarce. Cows that survived were in poor condition. Before the long winter even began, there was as average of two feet of crusted snow on the winter ranges. Dave Shirk used rye grass from the roofing on his buildings to feed his milkcow and several calves. Ranchers who hadn't put up hay lost almost all their cattle. [32,33,77]

Many of the same ranchers who ran cattle also had sheep. In 1900 most of the Owyhee sheep and cattle operators respected each other's right to the range. Like the cattlemen, some of the sheepmen had their "traditional" grazing grounds. "We'd winter in the Owyhee, shear at Iron Cabin, then trail through the country to South Mountain where we'd summer the sheep."[58] Bud Baltazar recalls that there "wasn't any trouble between the sheepmen and cattlemen in those days as there was enough grass for everybody. When the bunch-grass turned white . . . it was as tall as the sheep."[6]

The established sheep and cattle operators had a base property. Many of these were developed to raise hay for wintering the stock.[61] "It was the tramp cowman and tramp sheepman who caused the friction. They had no base property, so mooched off those who had put together an outfit. Cattlemen and sheepmen alike fought these itinerant individuals."[32] Although they approached congress and charged that the range was being destroyed by indiscriminate use, nothing was done.

Besides cattle and sheep, horses ran in the area. Frank Dobie thinks that it was doubtful if there was even one wild horse in eastern Oregon in 1848.[19] The number of horses in the Oregon desert was not substantial until the end of the last of the Indian wars in 1878.[39]

Bud Baltazar writes that when his "dad first came to the Owyhee Country in 1881, there were a lot more horses on the range than cattle. The horsemen rode all summer branding and taking care of them. So there weren't any real wild horses at that time, although, I guess they would be called wild horses today as they were hard to catch.[6] The large horse operations were quitting the business around 1895. After they had sold most of the horses, the horses that were left in the Owyhee Breaks were the start of the wild horses. Sometimes a thoroughbred stallion or a draft stud got out onto the range and serviced some of the wild horses.[6]

Around 1900 the wild horses roamed the country between Rome, Oregon and the mouth of the Owyhee River. Bud and his father made a living catching and breaking wild horses. One of the hardest jobs they had was to keep the horses they raised from returning to the wild horse country. This area was known as the Owyhee Breaks. Several other settlers would run the wild mustangs to get their saddle horses -- good horses but hard to catch.[62] Bud remembers about 2000 head running in this area.[6]

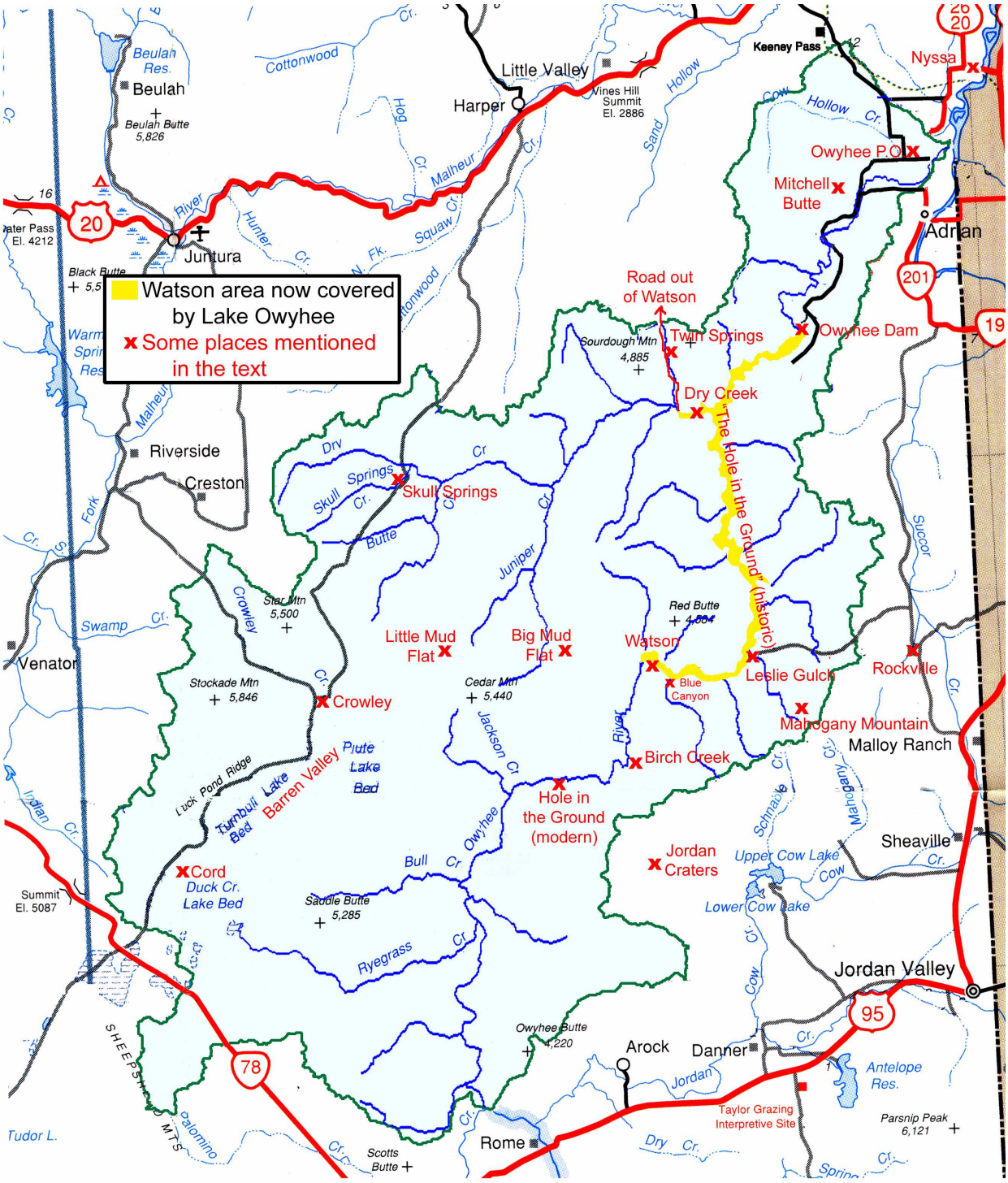

Figure 4.6. Historical locations in the lower Owyhee subbasin overlaid on a modern map.

There were so many wild horses in the Owyhee Breaks that the ranchers themselves decided the numbers had gotten out of control. In 1905 the Akins brothers were hired to thin out and bring down the number of wild horses. There were about 100 head left on the range when they finished. During the next decades, the individuals who

ran the wild horses usually sold them to a packing house. By 1946 the herd of wild horses had grown to around 6000 head.[26]

Bill Murphy recalls that there were two bunches of wild horses in the early 1900s and that the wild and domestic horses ran in the same area. He writes that every "year in June the ranchers . . . would go out and round up these horses and separate the domestic mares and their colts from the wild horses."[61] Walter Perry says they would let their horses run wild on the range until they were three to five years old before breaking them.[72]

Since sheep were trailed back and forth, there were some areas with heavy grazing pressure from the sheep traffic. There were probably more than 100,000 sheep which crossed the Owyhee bridge each year on their way between the valley and Mud Flat.[10]

The number of animals on the range varied, but tended to increase. In 1890 there were 58,000 sheep, 21,000 cattle, and 14,000 horses on the range in Malheur County. During 1900-1910 the "remaining public lands were overstocked in this decade, with an incredible 360,000 sheep, 37,859 cattle and 15,000 horses."[43] During the 1920s an estimated 294,000 sheep and 53,000 cattle were still on the range.[43] By 1930 these numbers were estimated at 40,000 head of beef cattle and 366,000 head of sheep were on the range in Malheur County.[27]

3. Fauna

Bud Baltazar rode all over the area to catch the horses. He recalls that in "the early 1900's there were very few deer and antelope in the Owyhee Country. . . You could ride the range all day and never see a deer track so when you'd hear a rider say 'I saw a deer track on the mountain today', that was news."[6] However, he contrasts the scarcity of deer to the abundance of sage chickens. "They were everywhere you went."[6] They also provided good eating "better than chicken".[69]

Ray Nelson remembers lots of wild horses and rattlesnakes. He recalls only a few deer, antelope, and wild sheep. The wild sheep were domestic sheep which went wild and lived in the rimrock.[62] Walter Perry says they hunted ducks and geese.[72]

Another animal which was abundant in the late 1800s and early 1900s was the jackrabbit. The jackrabbit population cycles peaked every few years. With extra pressure on their natural food supplies, the rabbits migrated to irrigated fields.[43] In January 1888, W.L. Geary of Ontario, shipped a train carload of rabbits to the Portland meat market. During the next two years the jackrabbits "bred like rabbits" and again destroyed gardens and decimated young alfalfa crops. The county put a bounty of three cents on each pair of rabbit ears. Later they had to reduce, then eliminate the bounty because there weren't enough funds to pay for as many jackrabbits as were being brought in.[27]

Rabbit drives were organized to reduce the jackrabbit population. Large numbers of settlers would gather. They would encircle an area and gradually drive the rabbits towards the center. As rabbits tried to break out of the circle, they would be clubbed to death. To prevent accidents to the participants, firearms were banned.[27]

Sam Boardman, the father of Oregon's park system, explained eastern Oregonians' frustration with the jackrabbits' habit of eating bark on young trees. He said, "after I'd plant a tree, I'd come out in a few days to water it and I'd notice a young jack would come loping over the prairie. He'd see my tree and think to himself he'd never seen that before. So he'd hop up to it, smell it, then sit down and start to eat the bark."[39]

Coyotes, wildcats, and an occasional cougar were problems since they killed calves, sheep and chickens.[7,43,68] Skunks, raccoons, chicken hawks, and porcupines also killed chickens.[43]

The scalp bounty of $1.00 put on coyotes and wildcats was supposed to be for the protection of the sheepmen.[27] It wasn't worth it for many ranchers or sheepherders to collect it. They just killed the animals. Likewise, government hunters were prohibited from collecting the bounty. Even assuming that the bounty wasn't paid on many bobcat kills, between October 1, 1913 and December 31, 1914 there were 595 bobcat bounty payments in Malheur County.[39]

There was another problem in the wild coyote and bobcat populations in the 1920s. There were a lot of rabid coyotes. They transmitted hydrophobia to domestic stock when they bit the animals.[68] They also posed a health problem to residents of the lower Owyhee subbasin. Opel McConnell's father was bit by a rabid bobcat near Dry Creek (Figure 4.6) and they had to get the medicine sent to Vale from San Francisco to treat him.[43]

Trapping provided extra income for some people. The furs of bobcats, coyotes, muskrats, beaver, and a very occasional lynx would be shipped out. Bobcat were trapped around the rimrock, muskrats up and down along the river banks, and coyotes in pastures or along trails.[61,72]

4. Fish

In 1871, James Henoty began operating a salmon fishery at the Washoe Ferry on the Snake River upstream from the Malheur River. The fishery continued operating until at least 1888. Although salmon from the Snake River were not recorded as entering the Owyhee River, in 1873 they filled the Payette river and adjacent sloughs so thick that they could have been caught with forked sticks.[27] In 1902 a salmon hatchery was established on the Snake River where fish racks across the river at the lower end of Morton Island were used to harvest salmon eggs. However, it was abandoned about three seasons later because of "a decline in the salmon specie of the finny tribe."[27]

Walter Perry recalls the water wheel at Island Ranch in the Watson area (Figure 4.6) on the Owyhee picking up a salmon about 30 inches long and putting it into the ditch. The other migrating fish that his water wheel used to catch were lampreys. He says he's seen "them so thick in the field after they come up the flume that you couldn't hardly get out into the field because of them old dead eels."[72] Wally Jones of Ontario remembers the lampreys piling up at the base of the Owyhee dam right after it was built.[44]

There were also bullhead catfish in the Owyhee. As soon as the line hit the water they would bite. James Page says they "used to catch a hundred or two of them and clean and fry them."[68]

5. Vegetation

Since there was no timber to make into lumber left nearby in 1903, Bud Baltazar's parents brought lumber from Winnemucca, Nevada and from Drybuck near Ola, Idaho.[6] Bill Murphy's parents hauled lumber from the mills in Burns to build their "tar paper shack."[61]

The lack of other fuel meant that sagebrush was used for both heating and cooking in a wood range.[7,17,43,69] Sagebrush burnt hot but didn't last very long.[61,7] His wife says that one of Bill Murphy's memories is "of dragging in sagebrush for fuel for both cooking and heating. As he tells it they had to have several 'mountains' near the house all year round, and he and his brothers, Rae and Dick, had this never-ending chore, drag it in and chop it."[60]

Besides burning sage, sometimes the residents along the Owyhee River near Watson (Figure 4.6) burned mountain mahogany or juniper.[43,69] There were juniper trees on Cedar Mountain to the west of the Owyhee River.[69] That is probably where Sophia Bethel's father got their big juniper Christmas tree every year.[9]

Mountain mahogany wooden blocks were used on the moving parts of the water wheels along the Owyhee. The mountain mahogany came from Mahogany Mountain (Figure 4.6).[9,17]

Settlers wanted trees like they had "back home." In 1885 "Aunt Phyann" Van Ness planted the first tree in Ontario. Although she irrigated the silver maples by hand with well water, only one survived. It was still growing in 1950.[27] After getting irrigation onto the rich bottom lands of the Watson area, at least three of the residents planted large apple orchards which grew well.[43,68]

The lack of timber meant that there was still a lot of construction from willows (Figure 4.3). James Page says that if there was a barn in the Watson area, it was made out of willow and sagebrush. Their barn had walls of willows woven together, a sagebrush roof and some straw over the sagebrush. There were also lots of willow corrals.[68] When the first alfalfa field in the county was planted, the alfalfa seed was harrowed into the ground with a drag made of willow boughs."[27]

Not all range plants were edible. George Palmer remembers that seven head of cattle out of around 30 died after eating larkspur.[68]

In 1930, Mahogany Mountain still had good bunch grass. Walter Perry says "if it weren't for the sagebrush and rock in it, it would have mowed a half ton to the acre." He says the "only time we had to feed was when the snow got so deep the cattle couldn't get to grass.[72]

6. Geology

George Palmer moved to the mouth of the Blue Canyon (Figure 4.6) between Birch Creek Ranch and Leslie Gulch along the Owyhee River in 1902. He said that

although the "geologists claim that the Jordan Valley [Figure 4.6] volcano hasn't been active for thousands of years. But since we moved out there in 1902, up until 1909 or '12, I saw ashes blow out of that old volcano and heard it roar."[69] He says that it would shake the country and even shook dishes out of the cupboard at a home on Cow Creek.[69]

Since he occasionally did welding, he knew where there were some small veins of high grade coal along the Owyhee River. When he wanted a little good coal for welding, he would dig it out of the cracks.[69] He also noticed that there were some pieces of ground covered with alkali. The horses would dig at it until they had made a puddle that would fill up with water.[69]

7. Settlements

Within the lower Owyhee subbasin, one of the earliest homesteads was at the area currently known as Hole in the Ground (Figure 4.6). Mr. Horn not only filed on the homestead, but he also filed on the water rights in the 1860s.[17]

In 1871 there were four towns in Malheur County: Glennville, Eldorado, Malheur City, and Jordan Valley.[27] The settlements in the lower Owyhee watershed were slow to grow at first, since a community needs an economic base. The primary settlements were small towns around the perimeter of the lower Owyhee subbasin. Besides Jordan Valley to the southeast, in 1883 Vale acquired a post office[52]. That same year Ontario was platted, named, and held the first school term.[43] The rail line reached Nyssa in December 1883 and by 1886 they held school. Vale didn't have a school until 1887.[43] Arcadia, north of Nyssa, was established by the company of Kiesel, Shilling & Danilson in 1892[15] and had a post office from 1896 to 1908.[73]

Although none of these towns were located in the lower Owyhee subbasin, they continued to be important to the people who did settle in the subbasin. As Ray Gregg explains, "When I came in 1886, the population of the town [Ontario] was about fifty. The business transacted by the two general stores was more than double the trade of any ordinary town of that size. Supplies for the interior for more than 150 miles inland were hauled by freight teams from Ontario, which was the railroad center for Malheur and Harney counties.[27]

There was a period of growth on the Snake River Plains in the early 1880s. By 1883 the lands bordering the lower Owyhee River had some settlers on them.[43] When Charles Bradly came in 1887 there were only eight families located between Mitchell Butte and the Snake River.[43] By 1892, the Owyhee School was established, and in 1893, 18 children attended.[43] The Owyhee post office began operation in 1886 (Figure 4.6).[73]

The first settlers to establish homesteads along the Owyhee River (thirty-five to forty miles above where Owyhee Dam is today) arrived in 1893-94. They settled in a large warm valley known at the time as "The Hole in the Ground" (Figure 4.6) and now covered by Owyhee Reservoir.[27,43] A school district was organized in 1896[29] and the Watson post office began operating in 1898 (Figure 4.6).[73]

Another area that had some homesteading in the late 1890s was the Barren Valley area (Figure 4.6). There were homesteads around Cord in 1892 and a school house was built at Cord in 1896 (Figure 4.6).[43] The Cord post office began operations in 1897.[73] In the early 1900s there were small settlements spread out along the road north of Cord from Crowley to Harper. Crowley had a post office in 1911[52] and the Crowley school district was organized in 1912 (Figure 4.6).[43] There was a post office established at Skullspring in 1902, but in 1914 there were only two students in the one-room school (Figure 4.6).[43] Mud flat south east of Skullspring had more students, although there wasn't a post office (Figure 4.6).[43]

By 1913, there was enough population in the Sand Hollow area southeast of Nyssa that the Sand Hollow school was organized.[43]

Possibly many of these towns were like Watson. A private dwelling served as the post office and that was all there was to town.[7,9] The post office and the school served scattered ranches; in Watson the ranches were up and down along the river.

8. Farming and the first irrigation along the lower Owyhee River

During the 1870s, the first settlers along the rivers in the Treasure Valley were living on wild hay ranches. The wild hay was naturally sub-irrigated from sloughs adjacent to the rivers. Meadow lands were considered the most desirable.[43] After alfalfa was introduced in about 1880, it became the main forage crop, largely replacing wild grass hay.[27]

In order to farm in this arid region, water is necessary. There were about eight families farming lands bordering the lower Owyhee River who joined together in 1883 to construct a ditch along the north bank of the Owyhee River to supply water for a gravity system of irrigation. The "Old Owyhee Ditch" took water out of the river downstream from Mitchell Butte (Figure 4.6). The farmers annually built a diversion dam across the river of rocks and sagebrush to funnel water into the ditch. The original ditch was not very long and only watered their own lands.[27,43,87]

The diversion structure was built where the river bed was soft. Sections of the dam gave way from time to time and it washed out in flood seasons and had to be reworked every year. In the summer when the water level in the Owyhee River was lower, the dam had to be reworked and tightened up so that it could raise the water level high enough to go into the ditch.[43,87] Over time other settlers along the banks of the Owyhee "extended the ditch to their own lands, so that eventually the ditch reached six miles in length."[43]

There were settlers above the ditch who wanted water for their land. In 1888, they formed the Owyhee Ditch Company. All the water users under the Old Owyhee Ditch joined the venture since the new ditch would be five feet higher and would irrigate more of their land. The diversion dam was southeast of Mitchell Butte at the site of the present diversion works and two and a half miles above the original dam.[43,87] The Owyhee Ditch Company was granted a permit allowing them to take 41,000 acre feet of water from the Owyhee River.[87] By 1894 the ditch had been extended clear to Ontario.[27,43,87]

"The Owyhee Ditch Company's diversion dam was constructed with a row of rocks across the river, then a row of sagebrush, another of rocks, then a row of big long willows, then more rocks and sagebrush. It was some four feet high, and also had to be tightened in the summer months with loads of sagebrush, manure, straw, and mud. Every spring flood would take the top of the dam off and much of the sagebrush, and the stockholders would have to repair it before irrigation season began."[43]

The ditch brought not only water but maintenance and political problems. Because of the great fluctuation in the amount of water in the Owyhee River, there was lots of water in the early spring and very little by the hot dry summer. Since the Owyhee River could dwindle to little more than a trickle during the summer, some farmers took more than their share of the water. Ditch breaks could result in flooding and destroyed crops. There were lawsuits from farmers who suffered damages and enough fights over water that attorney Robert Lytle handled mostly water litigation cases. [48,87]

There was also a problem of how to raise the water up out of the ditch and on to the adjacent lands. Water wheels were not permitted in the ditch; they were an obstruction and prevented cleaning and maintenance. Water wheels were being used upstream to lift water out of the Owyhee River by settlers on lands adjacent to the river. "The problem with a water-wheel was that unless it was very securely protected from the spring-runoff and the movement of ice and boulders, it would be destroyed annually."[87]

9. River functioning

The problem of spring-runoff and resultant damages is a common source of stories for people who lived along the river and used water wheels. High flows in the spring would send the river over the tops of dams and out of its banks. It could be a mile wide in some places when it was high.[10] The high flows could carry ice and rocks. Walter Perry explains that they would have to fix the rock dams in the spring since the "dam would back up the ice, and the ice would get the rocks rolling, and the first thing you know, you had a hole through there."[72]

The flooding could also wash away improvements. Joe Beach recalls his father standing on the side of the river channel in 1904. The river was high and flooding so it had torn out fences and buildings. His father lassoed "posts and poles and pieces of lumber . . . He got enough for posts for fencing and corrals, and sheds to give us a start."[7] Josephine Lytle says that when "Old man Page's wheel went out, and the whole neighborhood was along the river with ropes, trying to catch that waterwheel. They finally did catch it."[69] It then had to be dismantled, moved back, and rebuilt.

The flooding of properties could also result in losses. When a sudden flood caused ice to jam the river in January 1920, water flowing over adjacent feeding grounds drowned 3,500 sheep and 800 cattle. It also damaged the railroad bridge over the Owyhee on the Homedale spur. A.H. Keck's ferry near the mouth of the Owyhee river was swept away.[87]

Gene Stunz explains in his history of hydroelectric power in the Owyhee Project how "The Owyhee River drains about 11,000 square miles of desert and mountainous country. When there is significant precipitation or runoff in that vast area and all of the

water is channeled to the narrow Owyhee Canyon, a tremendous natural force is generated."[87]

When government agencies set up a station "on the Owyhee near its mouth to measure stream flows, their charts revealed what every farmer and stockman in the county already knew, the waterways have a high run-off in the early spring when the snows melt, and then usually drop to a comparative trickle in the summer and fall."[43]

The water could be so high in the spring that it had to be crossed in a boat. Walter Perry remembers that it could be unsafe to cross the Owyhee River with a team and wagon until the middle or end of June.[72] There would then be little flow in the summer.[87] Some of the tributaries of the Owyhee River have even more irregular patterns of flow. Clinton Anawalt lived on Bogus Creek. Although Bogus Creek comes from a spring, it would go dry sometimes and stay dry for four or five years. It could also flood to the extent that "you could swim a horse in it" when there was a cloudburst on the upper end of the creek.[2]

Several people who lived in the Watson area commented on some of the benefits of the river freezing over in the winter. The youngsters used to ice skate up and down the river for miles.[7,72] Ice blocks could be cut from the river during the winter for use in the summer. In an ice house they layered ice with layers of sawdust and it could last almost to the end of the summer.[54,75 ,87]

A frozen river was also easy to cross. Walter Perry says they used to take not only sheep or a team and wagon across, but even cars.[72] Chesley Blake's parents' house burnt down. They bought the house across the river from them. Using seven or eight teams of horses, they pulled the house across the frozen river.[10]

Conversely, when the river level went down and the water would get warm, the children would swim in the river.[10]

10. Watson Area

a. People

In 1980, Julie Ann Martin conducted interviews for the Vale District Bureau of Land Management with people who had lived along the Owyhee River in places that were later inundated by filling the Owyhee Reservoir. At one time there had been about 32 families who lived up and down the river. About eight families lived near the mouth of Birch Creek and another concentration near the mouth of Dry Creek (Figure 4.6). In 1906 about 44 children attended the one school at Watson. Later there were three schools; one at Watson, another about two miles below Leslie Gulch and the third one 12 miles downstream from Watson. About 65 children attended one of these schools in 1930.[10,68,69,72]

The ranches were largely self sufficient although the largest irrigated ranch was about 60 acres. The families used to go to town about twice a year to get supplies like flour, sugar, salt, and dried fruits.[10,54,68,69] Although Opell McConnell remembers going into town in the spring and fall with four or six horses and two wagons,[54] James Page says they only went into town once a year with one team and one wagon.

b. Roads

The road conditions and isolation meant that three or four families might go into town about the same time so that they could have help in case one of them broke down.[10] Most of the travel was still by team and wagon in the early 1900s but later a few cars would use the roads. There were three principal routes that were used: up Leslie Gulch, from Dry Creek past Twin Springs to Vale over 51 miles of rough road, and from Dry Creek past Twin Springs coming out at Nyssa (Figure 4.6).[54,62,68,72] Joe Beach says there really wasn't much of a road. Since many people went by horseback, there were lots of cut-off trails that a wagon couldn't follow.[7]

The mail came in by "stage" from Rockville (Figure 4.6) on the road through Leslie Gulch. When Old Man Symes drove, he would leave on Thursday and come back Friday. In the spring it might be so muddy that it would take him longer.[54,68] On the other roads mud was also a problem in the winter and spring. Wheels could get so much mud on them that they wouldn't even turn and freight wagons could sink in the mud clear up to the axle.[10,68] When George Palmer was freighting, he explains "I drove with a jerk line . . . I usually drove eight horses, two wagons".[69]

The river was a barrier to dealings between the two sides of the river. Sophia Bethel's family lived on the opposite side of the river from the road leading out to Vale. She says there were two or three months of the year when the water was so high that there was no way of getting out.[9] When the water went down, a temporary bridge to get sheep across could be made by running a couple of wagons into the river and putting planks across them.[68] A bridge was constructed across the Owyhee River in 1912. After the bridge was built, it might be necessary to go up one side of the river to the bridge and back down on the other, but it was possible to get across all year.[7]

When the CCC was operating in the area, there was one of the corpsmen who "was a whiz with a bulldozer." With the help of ranchers dynamiting, he dozed off the rim above the current Hole in the Ground (Figure 4.6) so that they could build a road from there to Jordan Valley.[17]

c. Vegetation

Around the Watson area the land was dry and full of sagebrush except where people lived. In addition to crops and gardens, they had planted trees, lawns, shrubbery and flowers.[54] George Palmer worked with his mother for two or three summers to completely clean up their ranch. He says it was all "sagebrush, big high sagebrush"[69] and they chopped out the sagebrush and greasewood. Playing games at school, it would take a while to find the ball if it were hit into the greasewood.[7] The younger children would "ride stick horses out in the brush at noon."[54] When they had to return to school, they would race back "jumping all the gullies."[54] However, Palmer says the range was so good that they never even fed their milk cow hay.[69]

d. Climate

The weather along the Owyhee River varied depending on whether it was in the river canyon or up on the rim. There wasn't as much snow along the river, but it would come in the fall and stay till spring on the rim. Even though the river would freeze over,

snow wouldn't stay long.[7,72] At the present day Hole in the Ground there could be snow at the Rinehart Ranch on the mesa, and it would be warm enough for shirt sleeves down by the river.[17]

Some of the things that the residents of the Watson area remember about the climate reflect the observations of the earlier settlers. Temperatures from one year to the next could be unpredictable so that even in the Owyhee Breaks (Figure 4.6) in bad weather they could lose all the lambs to a freeze. On Big Mud Flat (Figure 4.6) 18 inches of snow fell on the 18th of April and killed a number of bucks.[69]

Some changes in the climate were noted by different people. Stacia Davis said that before the dam filled, present day Hole in the Ground never had fog. After the dam was constructed, there would be foggy mornings, but the fog would burn off by noon.[17] Bill Ross, Walter Perry, and George Palmer all comment that the weather used to be colder in the winter.[69,72,75] George Palmer also thinks that it has become hotter and drier with fewer water holes on the desert.[69]

e. Crops

The crops were irrigated. Alfalfa hay was raised as winter feed for stock.[7,69,68,72] Corn was also raised to feed animals. George Palmer says they got 110 bushes per acre of corn. Everyone raised a big garden including all kinds of vegetables.[68,72] There were also berry patches and irrigated apple orchards.[7,54,68] Joe Beach says that just as their trees began to produce, the beavers would come every night or two and cut one down. His father waited up at night until he had killed the beavers that were attacking the orchard.[7] The soil up and down the river was termed as the "best in the world"[69] and "as good a soil as there was in Malheur County".[72]

f. Livestock

Some of the animals on the ranches were what could be expected for personal use. There were chickens, cows and horses. Hogs were butchered for bacon and ham. A few sheep could provide fresh meat since with no refrigeration, a small animal could be used up. James Page's family had seven or eight milk goats. Some animals were also raised as commercial stock.[7 ,9 ,17,68,69]

A number of the ranchers ran cattle on the range. They might have 25 head or 300 head. Some of the people who ran cattle also ran sheep and some of the ranchers were just sheepmen. The large sheep outfit ran as many as 30,000 sheep[41] on the open range from the Owyhee Breaks to the Blue Mountains, but generally 1200 to 4000 head.[7 ,10 ,17,68,69,72]

There were wild horses on the range and Joe Beach and his father would catch them. Sophia Bethel says they traded for a bunch of range horses; they were really wild and they spent two or three years chasing them. Most of the wild horses went for chicken feed.[9] Ranchers also raised horses. It was Stacia and Conley Davis's primary source of income. They raised horses to sell to the government remount service. The government furnished the stallions and the ranchers furnished the mares. She says they registered more mares "than anyone in the United States."[17] The horses along with the cattle were turned out and ran on the open range.[7 ,17,68,72]

g. Turkeys

During the years just before the dam was built, many of the ranchers in the Watson area raised turkeys as a cash crop. They raised corn for feed and the "kids used to herd them out in the fields for them to get the bugs -- that was part of their feed".[9] They had to be herded to keep the coyotes out. After cooling the turkeys over night, they were wrapped and hauled out with freight teams.[9,10,68,69]

h. Moonshine

Another source of cash income was moon shine. There were stills up nearly every canyon and gulch.[9,10,62,68,72] Bill Ross says that there "was always someone holding up a moonshiner and stealing his whiskey. They couldn't complain to the law".[75]

i. Watson water use

Stacia Davis says that although all the other ranches along the Owyhee used water wheels, their place had a canal. They had a dam across the Owyhee River and it moved water into a large ditch. The canal moved more water than a wheel. They had the oldest water rights in the valley, filed at the same time the land was homesteaded in the 1860s.[17]

Figure 4.7. The water wheel at Birch Creek Ranch, May 2007

The rest of the ranches irrigated with water wheels.[7,10,17,68,69,72] In order to install a water wheel, a rancher had to file for a water right for a water wheel. The right was recorded at the courthouse just like a homestead right.[69]

Dams were used to divert water from the Owyhee River and through the water wheel. A head gate before the wheel could be used to control the amount of water provided to the wheel and it was closed to stop ice from going through the wheel. The amount of water entering the wheel determined the speed of the wheel and the speed of the wheel governed the amount of water delivered.[7,68,69,72]

The height of the wheel depended on the location of the ditch above the land to be watered. Joe Beach's father used a homemade level to survey a ditch around the edge of the hill. The smallest water wheel mentioned was 12 feet high. Around 32 feet tall was probably average. One steel wheel was 50 feet high and some may have been 60 foot wheels.[7,68,69] The original wheels had metal parts from a foundry in Baker, timber from Drewsey, fir spokes, and mahogany blocks. When people started using metal wheels, they were shipped from Seattle.[7,17,69]

Water wheels would last a long time even though they ran day and night during the irrigation season, but they required maintenance. They had to be perfectly aligned. Normal maintenance included greasing them. Damage to the wheels had to be fixed. A tree felled by a beaver that went through the water wheel would tear off a bunch of paddles. Ice through it in the spring also could tear out pieces. Dams that washed out had to be built back up to get water through the wheel.[7,68,69,72]

Some people along the Owyhee River started using gasoline pumps. They weren't as satisfactory because they were heavy, clumsy, and hard to start. The fuel had to be freighted in.[7,68]

Joe Beach explains how his father prepared to irrigate. The first year they leveled the land and corrugated it for irrigation. He ran water and made adjustments so that the water wouldn't pool in low places. Even after planting, if he found a place that was a little high or low, he would work to level it out.[7]

j. Attitude to the dam

After it was obvious that the dam would be built, the farmer's didn't improve anything. One of the farmers who had purchased a developed farm in 1920 sold all the orchard trees for wood. Most of the residents felt gypped by the amount of money they received. The land was priced as if it were unimproved range land. They also lost a way of life.[7,68,69,72] To establish new water rights for the people who were going to irrigate from the dam, the existing water wheels were locked up for 30 days, although the ranchers unlocked them as soon as the government personnel left.[17]

11. Water use - below dam

The arrival of the Oregon Short Line Railroad in 1883 provided a means for valley settlers to move their livestock and farm crops to eastern markets. There was also an increase in the late 1880s and early 1890s of settlers who had been farmers in the Midwest. Farming using irrigation had gradually increased until the government finally became interested.[27,87] The development of irrigation in the lower Owyhee and adjoining lands was the result of decades of cooperative community involvement and promotion.[27,43]

Although the Owyhee Ditch company was examining the feasibility of a dam and looking at potential reservoir sites to secure a more reliable water supply, the money to support such a venture was not available. From 1903 to 1905, the USBR made a topographical survey of the land which could be irrigated from the Owyhee River and of potential reservoir sites. In 1905 they even drilled at the Red Butte site in the Watson area and decided that the rock formations wouldn't be suitable for a dam and the canyon was too wide.[87]

In 1910 the Owyhee Ditch company voted to construct the High Line Canal. It would provide irrigation water to land up to 275 feet higher than their present Owyhee Ditch. The government had a policy of not interfering with private enterprise developing irrigation projects, so they stopped work on the proposed Owyhee government project. When the company financing the High Line Project went broke, the private attempt to irrigate more land was abandoned.[27,43,87]

Early irrigators decided in 1912 that a key to a better future was a dam that would hold enough water to reliably provide irrigation water throughout the growing season. In 1913, the Argus reported that the Shoestring ditch between Ontario and Nyssa was completed and 6,200 acres were being irrigated by that project.[87]

There were different irrigators or groups of irrigators using electrical pumps in 1923. Pumping by irrigators became much more dicey when Idaho Power Company instituted a policy that irrigators would only be able to use surplus power. Also, the low water levels in the Owyhee River during the summer meant that there was adjudication of water rights between at least two factions.[87] As in all of the arid west, the availability of water and its use was of great concern. Upstream from the lower Owyhee subbasin, the water in Jordan Creek had been used by ranches along the creek. By 1924, the construction of Antelope reservoir had already modified the way water was fed into the lower Owyhee from the Jordan Creek basin. Some of the runoff water from South Mountain in Idaho was now diverted into Antelope reservoir. Water stored in Antelope Reservoir would be gradually released and fed into ditches by a diversion dam in the creek.[32,43,61]

In 1924, the Secretary of the Interior, Hubert Work, articulated that the "primary purpose of all reclamation construction is to extend irrigation. In all storages there will be incidental benefits to come from the development of power . . . there should be such control by the government as to prevent interference with the use of the stored water in irrigation.'[87]

A study presented to President Calvin Coolidge in 1926 recommended that the Owyhee Project be authorized. The Owyhee River was described as having an adequate average annual flow, but its flow was completely utilized by the Owyhee Ditch Company during the summer and the Owyhee ditch company required supplemental water.[87]

In 1928, the board of the Owyhee Ditch Company began work to replace the loose rock dam with a new concrete diversion dam in the river. By October, the first train used the completed railroad to the construction site of the Owyhee dam. In the following months, power and telephone lines were extended to the dam and the fifty buildings of the permanent camp for construction workers grew to include a school with 40 students, a hospital, and a movie theater which showed movies twice a week.[43,87]

Most of the landowners in the Watson area whose land would be inundated by the water behind the dam had settled their claims. Lawsuits to condemn their land were brought against the four who had not settled, and the new Owyhee Irrigation District board purchased the Watson School district property. The Attorney General sought and established a water right for the Duck Valley Reservation of 90,000 acre-feet.[87]

When the diversion tunnel was completed in August 1929 and the Owyhee River water was diverted through it, the natural river bed was left dry to permit construction of the dam. Construction work on the dam took three years and $6,000,000. At the time it was dedicated in 1932, it was the tallest irrigation dam in the world. It was also the first dam built with an elevator in it. However, a new system of canals, ditches and laterals

was needed to deliver the water to farmers. It was 1935 before the first water from the Owyhee project was supplied to farmers.[27,43,87]

12. Water on the range.

Adjacent to the Owyhee River, the water table was shallow, replenished by the river. Wells were 12 to 24 feet deep. However, it wasn't very practical to drill wells on the range, although some people tried. Instead, dirt dams were placed in dry draws and intermittent streams to make reservoirs to supply water for the stock. Sometimes portable gasoline operated pumps supplied a novel way to water the cattle. "There were pockets of water in these lavas that did not dry out. Pipe was put into these pockets and water was pumped into watering troughs. This had to be done about every other day."[61,69]

Walter Perry discovered that he could build a reservoir on his homestead on Mahogany Mountain, but the reservoir could only be used for stock water. He couldn't get a water right for irrigating and making a stock ranch out of the homestead.[72]

13. Taylor Grazing Act

Years of unbridled use of the range eventually resulted in the passage of the Taylor Grazing Act of 1934. To undo the over-grazing of the open range by sheepmen herding sheep wherever there was grass and water and by cattlemen and horse owners who turned their herds out onto the public domain, the Taylor Grazing Act required livestock owners to show proof of a base of operations. This requirement would eliminate "tramp" operators. The BLM began to adjudicate the range based on the productive capability of the base property, a system of seniority that gave old time operators preference over late comers, and prior use of the federal land.[32]

The Taylor Grazing Act also reversed the policy of the previous 150 years of getting public lands into private ownership. It withdrew public lands from homesteading. Now to file a desert claim, a man had to prove that his quarter section was more valuable for agriculture than for grazing. "The only way he can prove that is to get water enough to irrigate it."[39]

F. Into the future

By 1935, the public rangelands of the lower Owyhee subbasin were being managed to turn back damages of overgrazing in the previous decades. The mechanisms were in place to determine who could use them and how they could be used. Irrigation water from the Owyhee project was being delivered to the farmlands of the lower Owyhee subbasin below the dam. The area was moving into a new chapter of productive development and environmental awareness and stewardship.

Endnote

1. The Sherman Silver Purchase Act was enacted in 1890 as a United States federal law. While not authorizing the free and unlimited coinage of silver, it increased the amount of silver the US government was required to purchase every month by an additional 4.5 million ounces of silver bullion every month. The law required the Treasury to buy the silver with notes that could be redeemed for either silver or gold. People (mostly investors) turned in their silver Treasury notes for gold dollars, thus depleting the government's gold reserves and threatening to undermine the

gold standard. After the panic of 1893 broke, President Cleveland called a special session of Congress and secured the repeal of the act.[97,98]

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In some cases the date for the original observations follows the bibliographical entry in italics.

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