

# **Humboldt Project**

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1993

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## **Humboldt Project**

Not many odes, let alone travel guides, have been written about the charm of Pershing County, Nevada. Cutting along the edge of a desert, the lifeblood of the county, the Humboldt River, would be called a creek in most places. Mark Twain recalled it as a "sickly rivulet," offering a bored man the opportunity to jump back and forth across it until overheated, and then offering just enough water to drink it dry. Another commentator chimed in that, the Humboldt "has been damned, double-damned and drained. Only a brave man would drink it." In spite of these negative observations, a few hardy men and women grew alfalfa and raised cattle in the only oasis for miles around, "The Big Meadows" of Lovelock Valley. Nevertheless, even the hardest occasionally need help. During the darkest days of the Great Depression of the 1930s, this often dry river and isolated corner of northwest Nevada benefitted from Reclamation's efforts to make the area's scant moisture available to agriculture.<sup>1</sup>

In the center of Pershing County, the Lovelock Valley has been a gateway for gold and silver prospectors since the 1860s. Farming thrives, but it is a culture separate from the comings and goings of miners, ranchers, and tourists passing through the region. In the same state, but not of the same world, the valley has none of the neon gaudiness of Las Vegas, or the ranching romanticism of "The Virginian," but Humboldt Project Nevadans are rugged individuals who outmaneuvered and mastered one of the desert's few sanctuaries.

### **Project Location**

In 1862, pioneers from the East discovered a spring bubbling from the foothills watering a natural field of rye grass. They stayed, and a settlement grew near the rye meadow. Three miles away, and more than a century later, is Reclamation's Rye Patch Dam. Rye Patch Dam and Reservoir is 22 miles upstream from Lovelock, the county seat of Pershing County. Framing project lands are the West Humboldt and Stillwater ranges to the

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1. Mark Twain, *Roughing It*, (New York: Harper & Brothers, 1913), 194; Frank deSaussure, "Rivers to Nowhere," in *Westways*, (December 1967): 5. Mark Twain was a pseudonym for Samuel L. Clemens. *Roughing It* is a recollection of his newspaper and traveling days in the American West of the 1850s.

east and the Trinity and Hot Springs Mountains to the west, the landscape of the lower river valley gently slopes from north to south, but it is almost flat in the lower reaches of the district.

Entirely contained within the borders of the state, the Humboldt River rises in the Ruby Mountains of northeastern Nevada, winding and meandering 280 miles in a southwesterly direction until it is eventually swallowed by the desert. It drains most of the northern third of Nevada with tributaries covering more than 600 miles on the ground. A spot of fertility surrounded by miles of emptiness, Lovelock Valley soil along the Humboldt is rich and productive, though saline. This desert anomaly is a mixture of sand, clay and highly organic soil. Every drop of the Humboldt is precious as the average annual project rainfall is a scant 5.76 inches. Temperatures bounce across the spectrum, as the weather rarely drops below -5 Fahrenheit in the winter and tops off at 110 degrees in the summer.<sup>2</sup>

For most of Pershing County's recorded history, mining, not agriculture, brought wayfarers to scramble across its mountains. Miners extracted silver, gold, copper, lead, iron, soda, borax and gemstones from Pershing County deposits. In the 1850s, newspaper correspondent Twain wrote "the intestines of our mountains are gorged with precious ore to plethora." Above ground only drought-tolerant desert shrubs like greasewood, shadscale and wolfberry flourished.<sup>3</sup>

This natural setting where abundance and hope have co-existed with despair and scarcity has been home to many peoples. Before the California-bound immigrants of the 1840s, the railroad builders of the 1860s and the highway designers of the 1900s, pre-historic man resided in the Big Meadows of the river valley.

### **Historic Setting**

Far away from rainy, damp England, two of her more daring sons led the way for

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2. U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Humboldt Project*, Vol. 6, 1960, 1; F. M. Spencer, "Water Users Assume Operation and Maintenance," in *The Reclamation Era*, (March 1941): 81.

3. James C. Bard, Colin I. Busby, and John M. Findlay, *A Cultural Resources Overview of the Carson and Humboldt Sinks, Nevada*, (Carson City, Nevada: Bureau of Land Management, 1981), 6-7; Twain, *Roughing It*, 186.

settlement of the Humboldt region of Nevada. Although Nevada was part of the Spanish Empire, and later Mexico, neither government had much interest in exploring the "Unknown Land." In search of beaver pelts, Peter Skene Ogden, an employee by the Hudson's Bay Company, was the first European to follow the Humboldt River. In the spring of 1829, Ogden and his party followed the river past the present site of the town of Lovelock to the river's mouth on Humboldt Lake. In the 1840s and 1850s, after three expeditions across Nevada, the adventurer John Fremont named the river after Baron Alexander von Humboldt, the German explorer and ecologist, who probably never heard of the river bearing his name. In Ogden and Fremont's wake, a small parade of mountain men, emigrants, and later gold prospectors en route to California, followed the banks of the river in the succeeding years. Sojourners and their animals could drink the often brackish water and feed on the plants near the riverbanks.<sup>4</sup>

In 1862, a determined few settlers stayed and dug the valley's first irrigation ditches. At this point, the second British subject important to the development of the valley came on the scene. In the mid-1860s, a stage stop operated by Englishman George Lovelock ran the lower valley's singular connection to the outside world. In 1868, Lovelock transferred 85 acres of his land to the Central Pacific Railroad with the condition they name their recently built railroad station after him. In the wide-open early days of Nevada's history, plaguing most nearby communities were rowdy prospectors, gamblers and desperadoes. Lovelock was spared, because it was one small point on the Central Pacific line, and local miners spent most of their time in the camps sprinkled throughout the surrounding hills. One of a handful of northwestern Nevada's railstops, the adolescent community was "smelling of new-cut lumber, sunbeaten, virile and young." In 1880, the town of Lovelock consisted of a Central Pacific station, four stores, three hotels, post office and two saloons for only sixty people. In the surrounding valley, almost 400 people lived on farms and ranches, raising 1,500 tons of grain annually and 6,000 head of cattle. Thirty years after the first ditch

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4. Bard, Busby and Findlay, *A Cultural Resources Overview of the Carson and Humboldt Sinks, Nevada*, 13, 16.

digging, about 75 percent of the water rights in the valley had been established.<sup>5</sup>

Demands on the Humboldt River grew as the population increased from the 1880s to the 1920s. Alternating years of flood and drought hampered farmers, and water allotments put strains on relations between neighbors. In 1884, during a flood season, the Oneida dam, an earthen bulwark across the lower Humboldt backed-up water into valley, destroying acres of alfalfa fields. Farmers and ranchers donned masks and dynamited the dam to reclaim the flooded land. In 1900, after a decade of personality clashes and economic setbacks, more than 14,000 acres were under irrigation in the valley, with most of the land producing alfalfa. In 1902, officials of the new United States Reclamation Service (USRS), informed settlers of Lake Tahoe, Carson and Truckee River Valleys, Carson and Humboldt Sinks and the Lovelock Valley they would soon benefit in a mammoth irrigation project covering 400,000 acres. After further study, Reclamation officials found they had overestimated the output of the Humboldt and underestimated the amount needed to irrigate vast amounts of desert acreage. The eventual project, the Truckee-Carson would service Reno, Fallon and Carson City, shutting out the people of the lower Humboldt.<sup>6</sup>

In 1911, the Humboldt-Lovelock Power and Irrigation Company (HLPIC) developed the first local attempt to create storage facilities for regional use. The firm filed an application with the state for 57,000 acre-feet of Humboldt floodwater. In 1913, HLPIC built two adjacent, shallow off-stream reservoirs, Pitt and Taylor, at the head of the river. Designed to hold 49,000 acre-feet, Pitt-Taylor now safely stores 35,000 acre-feet. Reserves in Pitt-Taylor are limited because of evaporation and the river's high alkali content. Hope melted into despair as the uncertainties of ranching and mining drug northern Nevada into its first financial depression. In spite of sagging prospects, people continued to make their way

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5. James W. Hulse, *The Silver State: Nevada's Heritage Reinterpreted*, (Reno, Nevada: University of Nevada Press, 1991), 122; Dale Lowell Morgan, *The Humboldt, Highroad of the West*, (Farrar & Rinehart: New York, 1943), 305; *A Cultural Resources Overview of the Carson and Humboldt Sinks, Nevada*, 33; U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Humboldt Project*, Vol. 1, 1934-6, 140. The Southern Pacific Railroad bought out Central Pacific in 1899.

6. *A Cultural Resources Overview of the Carson and Humboldt Sinks, Nevada*, 33, 48, 57; Hulse, *The Silver State*, 122; David Thompson, *Nevada: A History of Changes*, (Reno, Nevada: The Grace Dangberg Foundation, 1986), 156. Truckee-Carson later was renamed the Newlands Project.

to the valley and more inhabitants meant political autonomy. In 1919, southwestern Humboldt County broke away to form the new county of Pershing, named after General John J. "Black Jack" Pershing, leader of the United States Army in France during World War One. That same year, the USRS undertook a preliminary investigation of reservoir sites and studied river runoff.<sup>7</sup>

More precious than gold in the desert, water rights occupied much state government debate and many court decisions deciding who received how much. In 1903, water users on the upper and lower Humboldt took their claims to the Nevada State Engineer's office. The center of this fight was a capricious stream that could be generous or stingy without warning. In 1907, the river generously gave 522,609 acre-feet to local farmers and ranchers. In the dry year of 1920, it produced only 7,350 acre-feet. Thirty years of hearings and court appearances produced the Bartlett Decree in 1930, named for its author, Nevada's Sixth Judicial District Court Judge George A. Bartlett. Bartlett, later supported by the Nevada Supreme Court, ruled those who had prior appropriation of the river's water held rights to use it anyway they saw fit. The sons and grandsons of the Big Meadows pioneers were vindicated, as they had fought the hardest for control of the Humboldt and now won the battle of its use.<sup>8</sup>

Except for the wet year of 1932, a drought lingered from 1928 to 1935. The desert's attempt to claim back its territory had many farmers operating at heavy net losses during those years. By 1934, combined with the added burden of the depression, many growers were victims of foreclosure. Many farms were abandoned to the County for tax delinquencies. Ranchers in northern and western Nevada demanded the Governor send in the state police to parcel out water from the Humboldt. In 1934, the Pershing County Water Conservation District (PCWCD) formed, gathering all private owners and water users in the

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7. U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Humboldt Project*, Vol. 13, 1979-80, 1.

8. Hulse, *The Silver State*, 233; U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Humboldt Project*, Vol. 2, 1937-40, (1937); 28.

Lovelock valley. Their holdings totaled of 32,048 acres of irrigable land.<sup>9</sup>

Preliminary investigations conducted by Reclamation engineer L. J. Foster in 1932-33, concluded Lovelock Valley needed storage and stream regulation. Two sites were in the running for proposed dams; Callahan some 30 miles north of the town of Lovelock, and Rye Patch. Engineers favored Callahan because of its potential for greater storage capacity and its accessibility to the existing Pitt-Taylor reservoirs. Inability to reach a working agreement with landowners near to Pitt-Taylor, resulted in Reclamation's selection of the Rye Patch site. In July 1933, Foster wrote a dam and reservoir would supplement the water supply of the Lovelock Valley and protect irrigated acreage during low-water years by capturing flood waters. It was time for the federal government to put the plan into action.<sup>10</sup>

### **Project Authorization**

Funding for authorization came from the National Industrial Recovery Act of June 16, 1933. On August 24, 1933, the Public Works Administration (PWA) approved an allotment of \$2 million for construction of the Humboldt Project, and funds were available less than two weeks later. On October 1, 1934, a contract between the federal government and the recently formed PCWCD provided for repayment of expenditures made by the government during construction. President Franklin D. Roosevelt approved the project on November 6, 1935. On November 12, Reclamation opened 21 bids in the town of Lovelock. The low bidder, J. A. Terteling and Sons of Boise, won the contract at \$256,322.80. Subsequent increases in the estimate due to redesign of the dam hiked the bid to \$302,615. The contract demanded Terteling and Sons complete the job within 400 days beginning as of December 27, 1934. A Reclamation engineer later wrote in the 1936 *Project History*, that the bid was too low and cost the contractor about \$60,000.<sup>11</sup>

Rye Patch Dam, with Hyrum Dam in Utah, and the Agency Valley Dam in Oregon,

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9. *Annual Project History, Humboldt Project*, Vol. 1, 6, 24, 138; Donald J. Pisani, "Western Nevada's Water Crisis, 1915-1935," in *Nevada Historical Society Quarterly*, (Spring 1979): 3.

10. "Rye Patch Dam Completed," in *The Reclamation Era*, (July 1936): 174; State of Nevada, Bureau of Mines, *Geological Report on Four Proposed Damsites for Storage Reservoirs on the Humboldt River, Nevada*, (Reno, Nevada: 1933), 8-10. Nevada mining engineer Alfred Merritt Smith prepared the geological report.

11. L. J. Foster, "Construction of Rye Patch Dam," in *The Reclamation Era*, (July 1937): 152; *Annual Project History*, Vol. 1, 44.



were part of funding allotted to Reclamation from the PWA. According to Reclamation Commissioner John C. Page, the Bureau's reasoning to build in a high acreage-low population region was numbers based. Not numbers of people, but vast amounts of acreage in need of water. Couched in an illustration easterners could understand, Page rationalized, "Nevada has about 71,000,000 acres of land, yet only 487,000 acres are irrigated in the State, and without irrigation none of it can be farmed. It is as though in all New England with New York State added, no agricultural land could be found except in Rhode Island, and only half of Rhode Island could be farmed." The job of bringing that acreage under irrigation began January 31, 1935.<sup>12</sup>

### **Construction History**

More than a half century after its completion, Rye Patch Dam is camouflaged by its surroundings. Only the concrete arches of the spillway gate detract from the natural setting. The dam's design has three major structural features, an embankment, outlet, and spillway. The full reservoir is 21 miles long from Rye Patch Dam north to the Callahan Bridge, near the town of Imlay. The finished earthfill, rockfaced structure stood 71 feet high and its crest was 800 feet long. The 10,820 acre lake holds 190,000 acre-feet of water. The outlet works can release a thousand cubic feet per second (cfs) and its spillways can discharge 20,000 cfs. The foundation is a mixture of clay, sand, and fine gravel. A total of 322,900 cubic yards of compacted earthfill covered by 9,800 cubic yards of gravel and 36,200 cubic yards of rockfill and riprap forms the Rye Patch Dam. In 1935 and 1936, to project engineers it was important how much earth would go into the dam, but for everyone else whose futures were part of Rye Patch, it was more pivotal how many people could be put to work and how much hope could be squeezed out of a paycheck or a harvest. Rye Patch Dam was a people's project, and laborers of all types profited from its development.<sup>13</sup>

Counter-insurgents against the Depression, enrollees in the Emergency Conservation

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12. "Rye Patch Dam Completed," 174; U.S., Department of Interior, Bureau of Reclamation, *Repayment of Reclamation Projects*, (Washington, D.C.: U.S. Government Printing Office, 1972), 177.

13. "Construction of Rye Patch Dam," 154-5.

Work (ECW) program, completed a number of jobs on the Rye Patch dam and reservoir. ECW was a Roosevelt New Deal program established in 1933, and later officially named the Civilian Conservation Corps in 1937. ECW offered an opportunity to unemployed young men to fight dust storms, restock streams and save the forests for a dollar a day plus room and board. Located on the northern outskirts of town, Camp Lovelock was home for almost 200 ECW volunteers between the ages of 17 and 24. Federal funds through the ECW, and donations from local water users, paid for work done by ECW employees.<sup>14</sup>

Recruits installed a telephone line, upgraded a road around the reservoir replacing public roads submerged by reservoir construction, built a bridge, and hauled a thousand cubic yards of riprap and gravel for use in the dam and spillway. The most important task of the "soil soldiers" was maintenance and improvement of weed and willow obstructed ditches, rotted wooden water control structures, and unsafe bridges. In addition, they cleared brush from around the dam and over most of the reservoir bottom. The combination of a seven-year drought and the Great Depression put almost all the lower Humboldt water users in a position where they could not afford upkeep and repairs. Incoming workers, and long-time farm families, both benefitted as forty-two concrete diversion works, seven metal flumes, and twelve timber bridges replaced badly deteriorated structures. Each maintenance job placed a tighter grip on the Humboldt's water. At completion, an Assistant Engineer commended the contribution to a dam with a "simplicity and dignity of design, appropriate choice of material, permanence, utility, carefulness of detail, accuracy of alignment, and honesty of workmanship." Their work stood as "a monument that will long remain a worthy record of cooperative public achievement reflecting credit on its builders." The ECW camp officially closed in September 1938.<sup>15</sup>

The contractor workers' camp was half mile east of the damsite on the rim of a

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14. *Annual Project History, Humboldt Project*, Vol. 1, 134; Thomas Williamson, "CCC Construction of Parapet and Curb Walls Rye Patch Dam, Humboldt Project, Nevada," in *The Reclamation Era*, (January 1939): 16; Alfred R. Golzé, "Operation and Maintenance of CCC Equipment on Reclamation Projects -- Its Relation to National Defense," in *The Reclamation Era*, (April 1941): 118. Golzé was supervising engineer of the CCC.

15. *Annual Project History, Humboldt Project*, Vol. 1, 120, 134-5; "CCC Construction of Parapet and Curb Walls Rye Patch Dam, Humboldt Project, Nevada," 16.

canyon overlooking the river. Access to the construction site was by a 1¼ mile long road and a railroad reaching from the Victory Highway (now U.S. 40). Twenty 15' X 15' bunkhouses holding four men each took up most of the space on the campsite along with two warehouses, a cook house, a blacksmith forge, and a machine shop. Offering a few moments of relief from the heat, a small open shower operated in the summer only. On March 16, 1936, the only major accident during construction resulted in a fire destroying the machine shop. No one was seriously injured.<sup>16</sup>

The longest delay resulted from the government's inability to provide steel sheet piling to the contractor at the scheduled time for foundation work. After a 91 day wait, both sides agreed to add the extra time to the contract schedule. Some Reclamation engineers groused about the "second-hand stuff" passing for Terteling's and Sons equipment often resulting in breakdowns and adding to the slow pace of construction, but the job met its timetable and the dam and reservoir remain in sturdy condition.<sup>17</sup>

Contractor's wages during the depths of the Depression were good for the lucky few. The maximum wage for skilled labor was \$1.10 an hour, and the minimum for unskilled labor was 45 cents an hour. In the fall of 1935, the contractor boosted the unskilled minimum to 62½ cents an hour for the duration of the project to meet the State of Nevada's minimum wage scale. Except for those in management jobs, no one on the project worked more than eight hours a day or over 40 hours a week.<sup>18</sup>

The earthfill in the dam was spread in layers eight inches thick along a horizontal plane. The embankment materials did not take water in the dry conditions and the sprinkling method used on earthfill dams in more hospitable locations did not help the material compaction. Engineers developed an injector application to supply enough moisture for the earthfill to settle. After injection, the embankment was kneaded and compacted by tractors and a sheep-foot roller. The machines made 46 passes across the surface to get the material

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16. *Annual Project History, Humboldt Project*, Vol. 1, 115, 117.

17. "Construction of Rye Patch Dam," 152, *Annual Project History, Humboldt Project*, Vol. 1, 113.

18. *Annual Project History, Humboldt Project*, Vol. 1, 117.

to compact. The embankment is sealed into the foundation by refilled cut-off trenches and a line of wood sheet piling. A boulder field two miles southeast of the dam furnished the dam's fill and riprap. Crews operated two steam shovels among the boulders, one to load rock and the other to excavate and run the rock over a grizzly (a screen used for separation of ore, gravel or soil) to remove waste materials.<sup>19</sup>

A trash rack covers the outlet entrance into a 12-foot diameter concrete lined circular tunnel running 472 feet where, two sets of high pressure slide gates control flow into two steel discharge pipes. A gate chamber and a control house, connected by a section of the tunnel, is the location for inspecting and operating gates. Maximum capacity is 2,700 cfs and discharge is into the spillway stilling basin. The gate section, chute, and stilling basin are made of reinforced concrete. The spillway's width is 110 feet, length is 353 feet, and its full capacity is 20,000 cfs. Discharging the flow into the spillway are five steel radial gates, 17 feet high by 20 feet wide. Hoists lift the gates on the operating platform. A 30-foot wide roadway spans the top of the spillway arches.<sup>20</sup>

In the summer of 1936, allowing a brief moment of candor unknown to most Federal officials, Acting Reclamation Commissioner John C. Page praised the Rye Patch project. Rye Patch, and its sister dams in Oregon and Utah were "not large and their construction was not dramatic," but "are vital to the people of the projects they serve and the States in which they are located." The final cost of \$1,341,739 was the price of bringing service and stability to the Lovelock Valley.<sup>21</sup>

### **Post-Construction History**

Once Rye Patch went into service many upstream settlers were jealous. Soon after the reservoir gathered its first drops of water, people on the upper Humboldt wanted a share. Some north of the Lovelock Valley attempted to secure better priorities than provided by the Bartlett Decree. From 1937 to 1941, lawsuits, and threats of lawsuits, reverberated through

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19. *Annual Project History, Humboldt Project*, Vol. 13, 1; *Annual Project History, Humboldt Project*, Vol. 1, 8-9, 45; "Construction of Rye Patch Dam," 154-5.

20. *Annual Project History, Humboldt Project*, Vol. 1, 9.

21. "Rye Patch Dam Completed," 174.

the valley involving Pershing County Water Conservation District, Humboldt-Lovelock Power and Irrigation and local land owners. In June, after months of negotiations, state and federal agencies and private parties adopted a "Treaty and Compact" settling disagreements, withdrawing litigation and reestablishing the authority of the Nevada state engineer to supervise distribution of the Humboldt. In 1941, after the PCWCD assumed operation in January, the reservoir delivered its first stored water. Two years later, a repayment contract with a 36 year term between the PCWCD and the federal government commenced.<sup>22</sup>

Attempting to bring the Humboldt River's scattered collection works under one umbrella, local and federal agencies purchased land and water rights across Northern Nevada. On January 21, 1939, government forces completed acquisition and construction of minor works near Battle Mountain, 125 miles east of Rye Patch Dam. Collectively known as the Battle Mountain Water Collection and Development System, rights to 1,925 acre-feet of its water were transferred from Rye Patch Reservoir to Battle Mountain users. Physical transfer of purchased water from Battle Mountain to project lands required the straightening of 27 miles and the widening of three miles of river channel, construction of nine miles of levees, and removal of 11 diversion dams.

In 1945, the PCWCD purchased the water rights in the Pitt-Taylor Reservoir to use its 35,000 acre-feet capacity in conjunction with Rye Patch Reservoir. Pitt-Taylor Reservoirs provide supplemental storage only in years when Rye Patch Reservoir is full. A mid-1950s rehabilitation and betterment contract provided repair of original levees, construction of the Iron Point Relief Channel, some eighty miles northwest from project lands. At the same time, Reclamation accomplished channel clearance, straightening and reconstruction of the Upper Slaven Diversion Dam, nearly 130 miles east of the valley. On October 6, 1955, the PCWCD signed a contract with the government for rehabilitation and betterment of works in Battle Mountain. Reclamation purchased two ranches totaling 30,065 acres, and the water rights of five other ranches, totaling 47,742 acre-feet. The

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22. *Annual Project History, Humboldt Project*, Vol. 13, 1979-80, 1; U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Humboldt Project*, Vol. 2. 1937-40, (1937), 27, (1940), 16, 25-6.

PCWCD owed \$122,988 to the federal government, paid in twenty installments from 1957 to 1978.<sup>23</sup>

Years after Rye Patch there continued some resentment over water rights on the Humboldt. On the upper Humboldt, two dry years in succession means major crop losses. A big flood will hit once in a decade and periods of low flow happen two or three years out of ten. In 1963, then Director of the Nevada Department of Natural Resources, Hugh A. Shamberger, admitted the Humboldt Project was a "very effective water resource development," but its planning did not "include basin-wide consideration of the overall problem of relating the basin's water supply to the total land resources of the basin."<sup>24</sup>

In 1971, the district sought to enlarge Rye Patch Dam and Reservoir and turned to the Federal Government for help. In 1975-76, construction raised the height of the dam by three feet and lifted normal water surface elevation by two feet. The necessity of enlarging the Rye Patch works coincided with another capricious weather cycle. In 1975, winter and spring rains resulted in run-off of 390,000 acre feet, 2½ times higher than normal. The following spring, run-off was 134,000 acre feet, 10 percent below average. After enlargement, Rye Patch Dam is 78 feet high and its crest is 1,074 feet long. Improvements increased the reservoir's storage capacity an additional 23,000 acre-feet bringing its active capacity to 213,000 acre-feet. Expansion cost the district \$287,210.<sup>25</sup>

An additional feature of the Humboldt Project are irrigation distribution systems built before Reclamation's arrival. They include six canals (Young, Union, Rodgers, Big Five, Irish American and Pitt-Taylor Diversion) and five ditches (Old Channel, B&B, Lakeshore, Tule, and Seven) constructed, owned and maintained by independent companies not incorporated into the project. The PCWCD operates and maintains most of these private distribution systems under separate agreements with each ditch company.<sup>26</sup>

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23. *Annual Project History, Humboldt Project*, Vol. 13, 1; U.S., Department of Interior, Bureau of Reclamation, *Repayment of Reclamation Projects*, 177.

24. Shamberger, "Water Management and River Basin Planning," 110-1.

25. *Annual Project History, Humboldt Project*, Vol. 13, 1975-6, (1976), 13, 16.

26. *Annual Project History, Humboldt Project*, 1979-80, Vol. 13, 1.

## Settlement of Project

In 1940, the Pershing County Chamber of Commerce promoted rural growth with a free advertising campaign and listing service helping farmers to sell their land. Trying to stimulate investment in Lovelock Valley, the chamber mimeographed forms to Nevada farmers describing the value of valley property. The Bureau's magazine, *The Reclamation Era*, also provided ad space for anyone wishing to sell their land. That same year, the town's population numbered 1,375.<sup>27</sup>

There have been a few half-hearted attempts to attract newcomers since the 1940s, but Pershing County remains sparsely populated at the close of the twentieth century. For almost a hundred years, the land area of north-northwest Nevada comprises 20 percent of the state's land area, but holds only two percent of its total population. According to the 1990 census 4,336 reside in the county with 2,069 living in the town of Lovelock. In comparison, to Nevada's total population of 1.2 million, Pershing County remains the "Unknown Land." The grandchildren and great-grandchildren of the original settlers still live in the area. That continuity reflects the ethnic homogeneity of Pershing County. In 1990, 79.1 percent of its citizens are white. Next are Hispanics comprising 15.3 percent of the population. Median age is a youthful 31.7 years old.<sup>28</sup>

In the mid-1980s and early 1990s, the region rode the renaissance of another prospecting boom cycle. The town and valley were accomplishing a diversification of the local economy through agriculture and mining. Still, the fluctuating nature of each area meant the valley still felt bad times deeper than the rest of Nevada. In the late 1980s, a gold rush in a nearby three county area (Lander, Humboldt and Elko) produced a ripple effect similar to the original boom of the mid-nineteenth century. This rush was the largest in American history, as Nevada produced more than half the nation's gold, valued at \$1.5

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27. U.S., Department of Interior, Bureau of Reclamation, *Annual Project History, Humboldt Project*, Vol. 2, 1937-40, (1940), 51; U.S., Department of Interior, Bureau of Reclamation, *Crop Report and Related Data; Federal Reclamation Projects, 1939-43*, Vol. 1, 1941, 1.

28. U.S., Department of Commerce, Bureau of Census, *1990 Census of Population and Housing, Mountain Division, Nevada*, Vol. 1, Washington, D.C.: 1991, Summary Tape File 1A.

billion in 1987. Excitement in this corner of the state, stimulated plans for luring industry to the town of Lovelock. Boosters promoted the valley's proximity to Reno, 90 miles away, and railroad and interstate connections to the metropolises of the West Coast. The money brought by tourists retracing the steps of the Donner Party, or wishing to relive Nevada's silver rush, often finds its way into Lovelock's shops, motels, and restaurants. Lovelock's reputation as a place to go only to get to someplace else continues.<sup>29</sup>

### **Uses of Project Water**

Before Rye Patch, the valley's agricultural production mainly consisted of hay sales to California dairymen, local and mining camp demands for dairy products, poultry and finished livestock, and dressed turkeys shipped to Pacific Coast markets. In 1934, a year before construction, the alfalfa crop provided 5000 tons. After damming the Humboldt, local farmers, buoyed by their perceived command of the river, and a sense of experimentation, branched out to introduce new crops to the valley. Corn was first planted in 1939. A year previous, the harvesting of 500 acres of sugar beets was immediately hailed as a "new and fairly successful experiment." A contract with Spreckles Sugar Co. of California anticipated a long marriage between sugar company and the growers. Planters' confidence in beets increased acreage the following year to 1,549. In 1938-39, the most of the valley's 17,504 tons of beets traveled approximately 250 miles from the town of Lovelock to the Spreckles beet processing mill at Woodland, California. In 1940, the dream died quickly as a total crop failure due to insects and vegetable mosaic wiped out the beet acreage. The following year, a few acres of beets were raised as cattle feed. As of 1990, no beets grew on the Humboldt Project.<sup>30</sup>

Since 1936, principal crops have been alfalfa, wheat, hay, oats, and barley grown on a total acreage of 39,623. In 1936, 10,000 acres provided 45,000 tons of alfalfa and an additional 4,000 acres of grain averaged around 40 bushels per acre. In 1990, 12,257 acres

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29. Hulse, *The Silver State*, 328-30.

30. *Annual Project History, Humboldt Project*, Vol. 1, 140; *Annual Project History, Humboldt Project*, Vol. 2, 1937-40, (1938), 2; (1939) 31, 36; (1940) 56, 91.



harvested 61,285 tons. In the same year, the overall value of crops grown on Humboldt project lands was \$10.1 million. Despite the increase of crop value, during the same forty year period, the trend of larger acreage farms and decreasing numbers of farm families transpired. In 1941, 80 farms provided a home and a living for a thousand people. Almost fifty years later, in 1990, the project is home to 92 full-time farms managed by 250 people. The trend does not yet concern the valley where the tractor allegedly made its first appearance in Nevada, but it does mirror a drift faced by all of rural America.<sup>31</sup>

The livestock industry is a vital element to the Northern Nevada economy, lifestyle, and legend. At the turn of the century, Pacific Coast stockmen and Basque immigrants sent cattle and sheep into Lovelock Valley for pasture and feeding. In 1908, 100,000 head of livestock roamed the valley. By 1934, drought and depression decreased this number to 5,000 head of cattle. A turnaround happened two years later, as 11,000 head of cattle and 12,000 sheep ate grass watered from the Rye Patch Dam. Poultry was also important, as 50,000 pounds of turkeys were marketed in the late 1930s. Hungry livestock herds on the upper Humboldt Basin and in the Central Valley of California were the two largest markets for Lovelock Valley alfalfa. Nearly a third of the project's alfalfa is sold to California markets for processing. Local processing facilities include alfalfa mills and grain elevators. Ranchers and farmers ship their products via the Southern Pacific Railroad and by truck down Interstate 80 and U.S. 95.<sup>32</sup>

Although not as publicized as the drought in California, what little water there is in northern Nevada has also disappeared, and battle lines have been drawn among its users. Animals and fish are dying as farmers empty the Rye Patch Reservoir to water their alfalfa fields. One night in August 1992, Park Ranger Randy Moore went fishing on the reservoir. The next day he found the riverbed layered with 1.5 million dead and decaying fish, a result

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31. *Crop Report and Related Data*, Vol. 1, (1941), 1; U.S., Department of Interior, Bureau of Reclamation, *1990 Summary Statistics: Water, Land and Related Data*, (Denver: Bureau of Reclamation, 1990), 173; *Annual Project History, Humboldt Project*, Vol. 1, 129. Approximately, 1,700 acres of project land are not in agricultural use.

32. *Annual Project History, Humboldt Project*, Vol. 13, 1979-80, 1; *Annual Project History, Humboldt Project*, Vol. 1, 132.

of one night of draining the reservoir by the farmers. Moore described the scene: "The fish were so solid it looked like pavement." This example of the competition over whether farmers, recreationalists, and environmentalists control the water will soon escalate into a war if the events of that night are repeated in the future.<sup>33</sup>

### **Conclusion**

Seizing the narrowest of opportunities and taking advantage of unique circumstances is the thread running throughout the Humboldt story. It began with a patch of green encircled by desert, and a trickle of water, called a river by explorers and settlers venturing in the vast arid area. Pioneers wrenched every drop from the river and gathered what they could grow from the land. The ingenuity of the settlers of the lower Humboldt resulted in a protracted water rights battle which eventually paid off for their descendants. Reclamation's decision to build Rye Patch Dam was as much a testimony to one group's efforts as it was a desperately needed Depression-era project. In 1991, historian James Hulse wrote the Humboldt is a "very small river by national standards," but "it has had an importance far beyond its size." For 150 years, the lives, struggles, and small victories of the inhabitants of the Lovelock Valley have confirmed that statement.<sup>34</sup>

### **Suggested Readings**

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33. *Los Angeles Times*, 7 September 1992, p. A-18.

34. *The Silver State*, 13.

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