Little Wood River Project

Eric A. Stene
Bureau of Reclamation
1996

Table ofContents

The Little Wood River Project

The Little Wood River Project in Idaho, is administrated by the larger Minidoka Project which stretches from Jackson Lake Reservoir in Wyoming, across southern Idaho to the vicinity of Twin Falls. The Little Wood River Project involved enlarging the existing, privately owned Little Wood River Dam. The Works Progress Administration started construction of the dam in 1936, and a private contractor completed it in 1941.

Project Location

The Little Wood River Project lies entirely in Blaine County, Idaho, amidst the lava flows of southern Idaho and west of Craters of the Moon National Monument. The Project consists of Little Wood River Dam and Reservoir. The nearest city to the Project is Carey, Idaho, seven miles south and three miles east of the dam. The dam and reservoir serve an area approximately twelve miles long and two miles wide.[1]

Historic Setting

Two Native American groups inhabited southeastern Idaho prior to immigration by Europeans, in the nineteenth century. The Bannocks, a Northern Paiute speaking people, migrated from Oregon to the area of the Snake River plains. They differed from other Northern Paiutes by their acquisition of horses and organized buffalo hunts. The Bannocks co-existed peacefully in Idaho with area Northern Shoshones. Native grasses supported buffalo, hunted by both Indian groups, in the upper Snake River plains until about 1840. More recently, cattle grazing allowed sagebrush to replace these grasses. Fish also contributed largely to both groups' subsistence.[2]

In the 1850s, Mormon settlers established the Fort Lemhi mission in Idaho. By the end of the decade, escalating conflicts with the Bannocks turned violent. In 1857-58, these clashes

---

1. Bureau of Reclamation, *Annual Project History, Little Wood River Project, 1983-84*, Record Group 115, 1; Bureau of Reclamation, *Annual Project History, Little Wood River Project, 1983-84, Sec 1*, Record Group 115, 002; Bureau of Reclamation, *Annual Project History, Little Wood River Project, 1960*, Record Group 115, 3. Hereafter Record Group 115 cited as RG 115.
2. Robert F. Murphy and Yolanda Murphy, "Northern Shoshone and Bannock," in *Handbook of North American Indians* (Washington: Smithsonian Institution, 1986), ed. by William Sturtevant, vol. 11 *Great Basin*, vol. ed. by Warren L. D'Azevedo, 284, 285.

coincided with a U.S. military expedition to Utah, convincing Brigham Young, Utah's territorial Governor and President of the L.D.S. Church, to recall the settlers to Utah. Mormon settlers returned to southern Idaho in the 1860s. The lure of gold soon brought miners to the Sawtooth Mountains in force.[3]

The Bannocks and the various groups of the Shoshones found themselves placed on reservations starting in the late 1860s. The Federal government originally set up the Fort Hall Reservation in 1867, for the Boise and Bruneau Shoshone, and introduced the Bannock and other Shoshones to the reservation after the Fort Bridger Treaty of 1868. The government established the Lemhi Reservation in 1875, for the Lemhi and the Sheepeater Shoshone, but shut it down in 1907, and then also moved its residents to Fort Hall. The swelling of the white population increased friction between the newcomers and the native inhabitants, and the reservation system did not prevent conflicts. One such conflict, the Bannock War of 1878, started in Idaho, but moved west and ended with the Northern Paiute in Oregon. Disputes between white miners and Sheepeater Shoshones erupted in the Sheepeater War of 1878-79. Both conflicts ended the same as other confrontations between Native Americans and whites, in favor of the latter.[4]

Irrigation began in Idaho in the 1840s, when Reverend Henry H. Spalding, a missionary at Lapwai, dug a ditch from the Clearwater River to supply his dying garden with water. The Mormon settlers brought more irrigation experience with them to Idaho, and the U.S. Geological Survey first conducted investigations of irrigation possibilities of the state in 1889-90. The Idaho State Engineer ordered further surveys five years later. Private organizations toyed with irrigation possibilities for several years after 1887, but made no definitive investigations.[5]

Reclamation conducted the earliest irrigation survey of the Little Wood River area in 1904. Reclamation officials concluded from the surveys, that the cost of storing water would be excessive. Several proposals and sites received consideration later, but financial problems

---

3. F. Ross Peterson, *Idaho: A Centennial History* (New York: W. W. Norton, 1976), 51, 52; Murphy and Murphy, "Northern Shoshone and Bannock," 302.
4. Peterson, *Idaho*, 71, 72, 83-5; Murphy and Murphy, "Northern Shoshone and Bannock," 302.
5. Bureau of Reclamation, *Annual Project History, Minidoka Project, 1912*, RG 115, 3; Peterson, *Idaho*, 44-5, 124.

prevented construction until 1936. Construction of the Little Wood River Dam started under the Works Progress Administration (WPA) in 1936. Confronted by winter weather, lack of funds, and floods, the WPA stopped construction in 1939. Construction of the dam finished in 1941, under contract, for an estimated $300,000. After construction, Little Wood River Dam eventually came under ownership of the Little Wood River Irrigation District (LWRID) which formed in 1935.[6]

The original Little Wood River Dam, known locally as Carey Dam, stood seventy-seven feet high upon completion, lower than originally planned. The dam had a rolled clay upstream core and a downstream dumped rockfill section. Little Wood River Dam was 1,026 feet long, and supplied water to the irrigation district through a rock walled canal. Little Wood River Reservoir initially had a capacity of 12,100 acre-feet.[7]

Project Authorization

In 1947, the Board of Directors of the Little Wood River Irrigation District started investigating the feasibility of raising Little Wood River Dam thirty-five feet. A private engineering firm made a report and prepared plans and estimates, but the fact that the LWRID could not arrange financing, put an end to the idea. Reclamation began investigating dam enlargement in the summer of 1954, and repeated its findings in June 1955. Congress then authorized the Little Wood River Project on August 6, 1956. Estimates for the Project cost reached $2,012,000. The authorization set aside $30,700 for recreational facilities, and $1,983,300 for increasing the capacity of the reservoir.[8]

Construction History

In preparation for enlarging the Little Wood River Dam, Reclamation transferred Orville

---

6. Bureau of Reclamation, *Annual Project History, The Little Wood River Project, 1959*, RG 115, 79; Bureau of Reclamation, *Annual Project History, Little Wood River Project, 1983-84, Sec 3*, RG 115, 025; George A. McLeod, *History of Alturas and Blaine Counties Idaho*, 3d ed., (Hailey, Idaho: Hailey Times, 1950), 118.
7. Bureau of Reclamation, *Annual Project History, Little Wood River Project, 1958*, RG 115, 5; Bureau of Reclamation, *Annual Project History, Little Wood River Project, 1960*, RG 115, 3; McLeod, *History of Alturas and Blaine Counties Idaho*, 118; Bureau of Reclamation, *SEED (Safety Evaluation of Existing Dams) Report on Little Wood River Dam: Little Wood River Project, Idaho--Pacific Northwest Region*, Division of Dam Safety, Assistant Commissioner--Engineering and Research, Denver: August 24, 1987, Management Summary, 5.
8. Reclamation, *Project History, Little Wood River Project, 1958*, 5; Reclamation, *Project History, Little Wood River Project, 1959*, 79.

L. Kime, Construction Engineer of the North Side Pumping Division of the Minidoka Project, to the Little Wood River Project to serve as Construction Engineer. On August 22, 1958, Reclamation awarded the contract for the dam's enlargement to Lewis Hopkins Company and Arthur R. Sime for $1,093,945. The contractor began work before the actual award of the contract, instead of waiting for an Idaho District Judge to approve the repayment contract between the LWRID and the Department of the Interior, as per Idaho law.[9]

Lewis Hopkins first tackled clearing and stripping of the borrow areas. The wild bushes, cottonwood trees, pines, quaking aspens, and other growth proved heavy and difficult to remove. The contractor pushed the brush to the side and left it for a year to dry out before burning. Lewis Hopkins then started stripping and excavating the spillway. The contractor completed both clearing of the borrow areas and excavating the spillway by the end of 1958.[10]

On September 9, 1958, Lewis Hopkins placed embankment material in a bog hole at the upstream end of the dam to support construction equipment there. Because of the construction equipment's weight, the contractor placed the material in thick layer. Lewis Hopkins then started stripping the existing dam embankment during September. The contractor started placing the new embankment in October 1958. Freezing weather stopped the work on November 5, 1958.[11]

Reclamation decided to abandon the proposed spillway in favor of a natural drainage channel north of the original spillway site. Incorporating the natural channel, the contractor carried out excavation of the spillway on a twenty-four hour basis to remove rock, and facilitate foundation grouting and concrete placement in the fall. The spillway grouting became more extensive than anticipated, but Lewis Hopkins Co. still accomplished more work before the end of 1958, than Reclamation officials originally estimated.[12]

Work crews kept the placement temperature of the concrete between fifty and sixty degrees Fahrenheit. The contractor covered the concrete with a framework "shack" and

---

9. Reclamation, *Project History, Little Wood River Project, 1958*, 6, 7; "Major Recent Contract Awards," *The Reclamation Era*, November 1958, 112.
10. Reclamation, *Project History, Little Wood River Project, 1958*, 7, 8.
11. *Ibid*., 10, 11, 19, 23.
12. Reclamation, *Project History, Little Wood River Project, 1958*, 6; Reclamation, *Project History, Little Wood River Project, 1959*, 81, 84.

tarpaulins.[13] Three bottled gas heater, two automatic oil burners with blowers to circulate the heat, two salamanders, and one oil stove heated the small structure and the concrete. Small lanterns protected areas that required additional heating.[14]

Lewis Hopkins completed excavation and concrete placement in the chute section of the outlet works, including the conduit extension, in February 1959. The contractor sluiced embankment material in around the conduit extension. Water level increases in the reservoir caused seepage water to enter the outlet shaft, breaking up the clay and rocks into small pieces. Reclamation officials estimated the seepage flow had a rate of ten to fifteen miners inches or 500-750 cubic feet per second by Idaho measurements. The contractor placed the new trashracks in the old structure in October 1959. While a steel strike during the year delayed delivery of the new high pressure gates, they finally arrived on November 3, 1959. Lewis Hopkins installed the gate frames and completed the concrete to the level of the gate chamber floor in December 1959.[15]

Lewis Hopkins started placing embankment material on April 14, 1959. Increasing the height of the dam necessitated extending embankment fill to the right abutment at the new level. Equipment failures in June caused a work slowdown on embankment placement for one and one-half days. The contractor finished stripping the old dam's spillway structure and right abutment, and started placing the new dam embankment on that section.[16]

September rain interfered with Lewis Hopkins' September 20, 1959, target date for completion of the embankment, and snow on September 28 added to the delay. The weather shut down operations for fourteen shifts. Because the right abutment consisted of fractured rhyolite, the contractor consolidated the material with tire rollers. Tamping hammers would have crushed and loosened much of the rock, making it unusable. The contractor finished all earthwork zones on the dam in October 1959. Lewis Hopkins completed clean up work by burning uprooted trees, brush, and other debris cleared from one of the borrow areas. Additional work on the

13. Reclamation, *Project History, Little Wood River Project, 1959*, 15.
14. *Ibid*.
15. *Ibid*., 15, 29, 49, 57, 59.
16. *Ibid*., 22, 31, 35, 43, 83.

contractor's haul road made it into a permanent access road to the dam.[17]

Coinciding with embankment placement, preparation for work on the spillway structure started in April 1959. The work included removing loose rock, and cleaning out clay seams and cinder pockets. After the end of the preparation work, concrete placement started, and the contractor laid 324 cubic yards in the structure by the end of April. The finished concrete included the spillway training wall, crest, and apron. The contractor completed the spillway structure in June 1959.[18]

Reclamation awarded the contract for clearing the enlarge area of Little Wood River Reservoir to Valley Tree Service of Payette, Idaho, issuing notice to proceed on January 9, 1959. The contractor started work in February, but bad weather forced Valley Tree to stop work and wait for more favorable conditions. The company resumed work on April 1. Valley Tree Service completed reservoir clearing in May 1959, placing the cleared vegetation aside to dry for later burning. The contractor started burning the material in October 1959, but wet weather slowed progress. Reclamation accepted the reservoir clearing November 10, 1959, with nearly half of the contract time remaining.[19]

Work completed on the dam during 1959, included public use facilities, a boat ramp, and a water supply well. With Little Wood River Dam so close to completion, Reclamation dedicated the structure on December 19, 1959. The ceremony included a luncheon and entertainment at Carey High School.[20]

Reclamation cut back its construction force on the Little Wood River Project in October 1959, as work neared completion. At the beginning of 1960, only seven Reclamation employees remained on the Project, including Project Construction Engineer Orville Kime. During the year Reclamation assigned all personnel to other projects. Kime went to the Vale Project in September 1960. The Minidoka Project office in Burley, Idaho, handled administration of the

17. *Ibid*., 47, 49, 50, 52.
18. *Ibid*., 22, 29.
19. *Ibid*., 12, 16, 23, 53, 58.
20. *Ibid*., 5, 6.

Little Wood River Project.[21]

Pegram Construction Company subcontracted installation of the high pressure outlet gates from Lewis Hopkins. Pegram installed the gates in January 1960, but adverse weather conditions closed down work before the contractor could make them operational. Pegram started work on March 29, 1960, intent on completing enough work to make the outlet gates operational before the opening of the irrigation season, with plans to come back in June to finish the job. The contractor resumed work in June, and finished the outlet works July 20, 1960. Titus, Inc., started placing a gravel surface on the access roads to the dam on July 20, 1960, and finished ten days later.[22]

Enlargement of Little Wood River Dam increased its height by about fifty-two feet. The dam is a zoned earthfill structure 129 feet high and 3,100 feet long at the crest. Little Wood River Dam has a top width of twenty-five feet and a maximum base width of 635 feet with a total volume of 959,000 cubic yards. The spillway structure is an uncontrolled crest on the left abutment, and the spillway is a natural channel which drops over a basalt cliff below the dam. The outlet works consist of a tunnel and concrete conduit through the right abutment with two six by four foot gates. The LWRID has one diversion dam, fifty miles of canal, and ten miles of laterals in the project area.[23]

Post Construction History

Reclamation discovered a leak, of one-quarter of a cubic foot per second (c.f.s.), in the spillway of Little Wood River Dam on April 24, 1960. As the reservoir rose the flow of the leak increased to 8.84 c.f.s. on April 29, and later to 9.46 c.f.s. as the reservoir reached the spillway crest on May 1, 1960, the same day Little Wood River Reservoir started spilling. Reclamation only found one hole where water escaped from the reservoir, one-quarter of a mile above the spillway structure. On May 5, 1960, Reclamation employed one man to search for holes along

21. Reclamation, *Project History, Little Wood River Project, 1959*, 53; Reclamation, *Project History, Little Wood River Project, 1960*, 2, 4, 5, 13.
22. Reclamation, *Project History, Little Wood River Project, 1960*, 7, 10, 16, 18.
23. Water and Power Resources Service, *Project Data* (Denver: Government Printing Office, 1981), 585; Reclamation, *SEED Report on Little Wood River Dam*, 20.

the shore line of Little Wood River Reservoir as the water drew down. During the month, the employee found twenty to twenty-five holes suspected of leaking. In June, the reservoir leaks decreased as the water level fell.[24]

Regulation for flood control in 1962, a wet year, started at Little Wood River Reservoir on April 18. Over 50,000 acre-feet spilled from the reservoir before the first irrigation delivery on June 27, 1962. After construction, sink holes appeared in the spillway inlet channel. An inspection for the sink holes in the mid-1960s revealed nothing, and Reclamation officials presumed the holes sealed up in the intervening years.[25]

In 1977, drought conditions afflicted the western United States depleting water storage. The As with other irrigation projects across the west, increased usage emptied all irrigation storage from Little Wood River Reservoir.[26]

In 1983, the LWRID started investigating the possibility of power development at Little Wood River Dam. Reclamation voiced no objections as long as it did not interfere with the dam's primary functions; irrigation supply, fish and wildlife, and recreation. Under contract with LWRID, Bingham Engineers and their subcontractors completed construction of a power project in the mid-1980s.[27]

Settlement of Project

Sixty-five full and part-time farms in Blaine County received supplemental irrigation water from Little Wood River Dam in 1959. The farms had a total population of 248, and 9,549 acres. Blaine County had a population of 13,552 in 1990. In 1991, the Little Wood River Project served sixty-four full and part-time farms with a population of 403.[28]

Uses of Project Water

The short growing season of Blaine County limited agriculture to alfalfa, grains, pasture

24. Reclamation, *Project History, Little Wood River Project, 1960*, 13-6.
25. Bureau of Reclamation, *Annual Project History, Little Wood River Project, 1962-64*, RG 115, 3-4, 7; Bureau of Reclamation, *Annual Project History, Little Wood River Project, 1965-67*, RG 115, 18.
26. Bureau of Reclamation, *Annual Project History, Little Wood River Project, 1983-84, Sec. 3*, RG 115, 029.
27. Reclamation, *Project History, Little Wood River Project, 1983-84, Sec. 1*, 016; Reclamation, *Project History, Little Wood River Dam, 1983-84, Sec. 3*, 015.
28. Reclamation, *Project History, Little Wood River Project, 1959*, 61; Bureau of Reclamation, *1991 Summary Statistics: Water, Land, and Related Data*, Bureau of Reclamation, Land, Recreation, and Cultural Resources Branch, 1991, 148.

land, some seed potatoes, and some dairy and beef cattle. In 1959, hay constituted 53.2 percent of crop production, grains 38.8 percent, and pasture 8 percent. Little Wood River Project farmers had a total of 7,722 acres in crop rotation in 1991. The crop variety in 1991, remained fairly small. Alfalfa hay was the predominant crop on the Project, comprising more than half of the acres cropped. Blaine County farmers raised nearly 2,000 acres of barley in 1991. Other lesser crops included oats, wheat, other hays, irrigated pasture, silage and ensilage, and early potatoes.[29]

The $30,700 spent for recreation development went toward a boat ramp, public use facilities, and a water supply well. Little Wood River Dam's somewhat isolated location made it popular for boating, fishing and camping. As of 1981, Reclamation operated a picnic area, the boat ramp, and a small campground near the dam. Trout and Kokanee salmon are the main species of fish in the reservoir.[30]

Conclusion

Reclamation enlarged Little Wood River Dam nearly two decades after the initial construction. This differed from most Reclamation's projects, but the Little Wood River Project reflects much of the agency's work in many other ways. Attention may focus on larger projects like Boulder Canyon, Central Valley, and Columbia Basin, or the large dams; Hoover, Shasta, and Grand Coulee, but most of Reclamation's projects are fairly small. Little Wood River mirrors the smaller projects. The Project consists of one dam and reservoir, and serves a small population, but benefits the small farmers the Reclamation Act originally was intended to support.

About the Author

Eric A. Stene was born in Denver, Colorado, July 17, 1965. He received his Bachelor of Science in History from Weber State College in Ogden, Utah, in 1988. Stene received his Master of Arts in History from Utah State University in Logan, in 1994, with an emphasis in Western U.S. History. Stene's thesis is

---

29. Reclamation, *Project History, Little Wood River Project, 1959*, 6, 60; Reclamation, *1991 Summary Statistics*, 148.
30. Reclamation, *Project History, Little Wood River Project, 1959*, 5; Water and Power Resources, *Project Data*, 585.

entitled *The African American Community of Ogden, Utah: 1910-1950*.

Bibliography

Manuscript and Archival Collections

Record Group 115. Department of the Interior. Bureau of Reclamation Records. National Archives and Records Administration, Denver office.

Annual Project History, Little Wood River Project: 1958-60, 1962-7, 1983-4.

Annual Project History, Minidoka Project: 1912.

Government Documents

Bureau of Reclamation. *SEED (Safety Evaluation of Existing Dams) Report on Little Wood River Dam: Little Wood River Project, Idaho–Pacific Northwest Region*. Division of Dam Safety, Assistant Commissioner–Engineering and Research. Denver: August 24, 1987.

Bureau of Reclamation. *1991 Summary Statistics: Water, Land, and Related Data*. Bureau of Reclamation, Land, Recreation, and Cultural Resources Branch, 1991.

Water and Power Resources Service. *Project Data*. Denver: Government Printing Office, 1981.

Books

McLeod, George A. *History of Alturas and Blaine Counties Idaho*. 3rd ed. Hailey, Idaho: Hailey Times, 1950.

Murphy, Robert F., and Yolanda Murphy. "Northern Shoshones and Bannock." In *Handbook of North American Indians*, ed. by William Sturtevant. Vol. 11, *Great Basin*, Vol. ed. by Warren L. D'Azevedo, 284-307. Washington: Smithsonian Institution, 1986.

Peterson, F. Ross. *Idaho: A Bicentennial History*. New York: W. W. Norton, 1976.

Articles

"Major Recent Contract Awards." *The Reclamation Era*, November 1958, 112.

Index