

# **Shoshone Project**

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1996

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## **The Shoshone Project**

The Shoshone Project, one of the earliest Bureau of Reclamation projects, is located near Yellowstone National Park. The major features of the project are the Buffalo Bill Dam and the Buffalo Bill Reservoir. It is appropriate for these features to be named after the famed Colonel William F. (Buffalo Bill) Cody because he was one of the originators of the project idea. The dam and reservoir are located near the city of Cody, Wyoming, also named after Buffalo Bill. The project was a long time in construction and saw many modifications to its structures even before final completion.

### **Project Location**

The Shoshone Project covers large areas of Big Horn and Park Counties in northwestern Wyoming, and a small section of Carbon County in Montana. The largest feature of the project is Buffalo Bill Dam and Reservoir, formerly the Shoshone Dam and Reservoir. The project contains four irrigation divisions; Garland, with 35,853 irrigable acres, Frannie, 14,600, Willwood, 11,530, and Heart Mountain, 27,337. Other major structures on the project include, or have included, but are no longer in operation, Corbett and Willwood Diversion Dams, Shoshone and Heart Mountain Powerplants, the Shoshone Canyon Conduit, Corbett Tunnel, the Shoshone River Siphon, Deaver Dam and Reservoir, Ralston Dam and Reservoir, and Garland, Frannie, Willwood, Deaver, and Heart Mountain Canals.<sup>1</sup>

### **Historic Setting**

Northwestern Wyoming just to the east of Yellowstone National Park and the Grand Teton Mountains is a dry and forbidding area. During the major migrations of settlers across the United States in the 1800s, few, if any, stopped in Wyoming. Most continued on to the lush green expanse of Western Oregon or to the lure of gold and California. Toward the end of the nineteenth century people began settling the barren lands of Wyoming hoping to turn it into productive farmland. To support this hope, productive farmland in the dry climate needed water.

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1. Department of the Interior, Water and Power Resources Service, *Project Data* (Washington: Government Printing Office, 1981), 1153, 1154, 1158, 1159.

Dreams of irrigating the arid regions of northwest Wyoming began in the 1890s. In 1893 Frank Mondell, a civil engineer and later a U.S. Senator, filed for a permit, from the state of Wyoming, to acquire water from the Shoshone River for irrigation. Mondell's plan never came to fruition, but later others took up the cause. In 1897 Colonel William F. (Buffalo Bill) Cody and Nate Salisbury received a permit to irrigate 120,000 acres of land with water from three canals diverted from the Shoshone River. The three canal system proved not feasible so Cody and Salisbury were forced to wait for their next opportunity.<sup>2</sup>

On May 29, 1899, Cody and Salisbury tried again and acquired water rights from the Shoshone River to irrigate 60,000 acres around Cody, Wyoming. The state of Wyoming segregated the land under the provisions of the Carey Act. Cody and Salisbury investigated the feasibility of the project and received the investigation report on September 20, 1901. The size of the project made the cost prohibitive and beyond the financial reach of both men.<sup>3</sup>

### **Project Authorization**

Early in 1903 the Wyoming State Board of Land Commissioners asked the Federal Government to undertake construction of a project. The Board expressed its willingness to relinquish the land known as the Cody-Salisbury tract to the United States. The Chief Engineer of Reclamation authorized preliminary investigation of the project on April 20, 1903. Fieldwork began in May and finished in November of the same year with 200 square miles mapped.<sup>4</sup>

Secretary of the Interior Ethan A. Hitchcock allocated \$2.25 million for construction provided that water and land rights were satisfactorily secured, and the consulting engineers reported ground conditions favorable for the project. On February 13, 1904, Cody, who had survived Salisbury, transferred the two men's rights to Shoshone River water to the Secretary of the Interior. Reclamation filed an application to enlarge the Cody-Salisbury permit with the State Engineer of Wyoming on March 23, 1903. The Stated Engineer approved the project on

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2. Beryl Gail Churchill, *The Dam Book: The Construction History of Corbett, Buffalo Bill and Willwood Dams* (Cody, Wyoming: Rustler, 1986), iii.

3. Department of the Interior, Bureau of Reclamation, *Project History, The Shoshone Project, 1910*, Record Group no. 115, box 160, 3.

4. *Ibid.*

February 10, 1904. The project began under Supervising Engineer H. N. Savage and the Project Engineer Charles P. Williams.<sup>5</sup>

## **Construction History**

### **Buffalo Bill (Shoshone) Dam**

Preliminary drilling for the Shoshone Dam began in July 1904. Because of the hard granite bedrock of the Shoshone River, the cold temperatures encountered, and the rough topography of Shoshone Canyon, the drilling was not completed until ten months later. At the end of drilling, project engineers concluded the proposed dam site was a solid foundation. During the test drilling, Reclamation began construction of an access road from Cody to the dam site.<sup>6</sup>

With preliminary drilling accomplished and the access road begun, the process of hiring a contractor started. Prendergast and Clarkson of Chicago received the contract for construction of the dam on September 23, 1905. On October 19 the firm began building the base camp on the west side of the construction site. The contractors started by building a temporary diversion dam. This dam channeled the river water into a wooden flume, through a tunnel in Cedar Mountain, into another flume which fed the water back into the river. Construction of these diversion works lasted until May 1906. The hazards of construction revealed themselves quickly when a premature explosion in the downstream portal of the diversion tunnel killed two men.<sup>7</sup>

The progress of diversion works construction elicited a letter from Reclamation saying the work was too slow. Then during January work progressed more rapidly. By the end of March, construction once again slowed due to cold weather and snow. On May 13, 1906, a flood weakened the upper diversion flume and halted construction. When work resumed it proved slower than ever and a flood in June destroyed the flume and damaged the diversion dam. Prendergast and Clarkson requested an extension for the work in May 1906, instead Reclamation suspended their contract that August. Construction came to a standstill following the contract

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5. Reclamation, *Project History, 1910*, 3-4. Water and Power Resources, *Project Data*, 1156.

6. Churchill, *The Dam Book*, 25-6.

7. *Ibid.*, 26, 28.

suspension. U.S. Fidelity and Guaranty Company took over the suspended contract to prevent the loss of the contractor's bond.<sup>8</sup>

Work resumed on October 1, 1906. However procrastination appeared to be U.S. Fidelity's main contribution to the project as they failed to even clear debris from the river with any rapidity. In November the company proposed redesigning the dam, which Reclamation rejected. A severe winter in 1906-07 hindered work, but the weather improved by mid-February and the construction crew expanded to 275 men by March. In July 1907, a severe flood carried logs down from a sawmill and destroyed the southern half of the diversion dam. The flood set the construction timetable back and excavation for the dam foundation was set for late winter while repairs commenced on the diversion dam.<sup>9</sup>

In August Reclamation decided to review U.S. Fidelity's contract in the Spring of 1908 to determine if their contract should be suspended. Foremen proved inadequate during the coming months, and in November 1908, the laborers at the dam began Wyoming's first labor strike. The workers demanded three dollars a day and U.S. Fidelity agreed. The work yielded little forward progress, except uncovering bedrock in the excavation in February, 1908.<sup>10</sup>

Work progressed slowly and ground to a near standstill until U.S. Fidelity turned the contract over to Grant Smith and Company and Locher of Chicago March 8, 1908. The company assumed control of the work crews on March 17. Progress proceeded with greater speed with the change of contractors. Crews began pouring the concrete on April Fools Day, 1908. Spring came and with it, the high water that plagued the project from the beginning. The foundation pit flooded and forced crews to start over. Excavation continued over the summer and the laborers resumed work on the dam in late September.<sup>11</sup>

Laborers placed granite rocks weighing from 25 to 200 pounds, called plumrock, into the concrete of the dam. These eventually constituted 25 percent of the concrete mixture of the dam.

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8. *Ibid.*, 29, 31.

9. *Ibid.*, 34-5.

10. *Ibid.*, 35-6.

11. Churchill, *The Dam Book*, 38-9. H. N. Savage, "The Shoshone Dam, U.S. Reclamation Service, Near Cody, Wyoming," *Engineering News*, 9 December 1909, 628.

Freezing temperatures forced the work to halt in November 1908. During the winter crews worked on placing the 42 inch outlet pipes in the base of the dam. These were placed to make a powerplant downstream from the dam possible in the future. Even though the concrete pouring stopped for the winter, the contractor raised the dam high enough to protect the mixing plant and the bridge across the river against spring flooding.<sup>12</sup>

Resumption of concrete pouring began in March 1909, and marked the last season of the task. In July the most severe flooding since construction began, raised the Shoshone River 17.3 feet above the completed portion of the dam. The structure nevertheless held and work resumed in September. Italian workers on the project threatened to strike, but unlike U.S. Fidelity, Smith and Locher would have none of it and replaced the Italians with Bulgarians from the granite quarries. Labor troubles continued as workers brought to Wyoming often left when faced with working conditions on the dam. Smith and Locher hired men to make sure laborers did not leave a short time after the contractor had paid their expenses to go to work in Wyoming. This alleviated the labor shortages and in October 1909, 450 men were working on the dam.<sup>13</sup>

The same month saw crews pour 14,600 cubic feet of concrete -- the most productive month of construction. November brought freezing cold and slowed concrete placement considerably. Work continued through the cold periods, and workers heated the sand and gravel before mixing and pouring concrete. Pours were covered and heated constantly. This made the work expensive, but it did continue. Work stopped in December when the temperature stayed below zero for several days. However concrete placement resumed in late December. Laborers poured the last concrete on January 15, 1910, with the temperature at 15 below zero. The price tag of the Shoshone Dam was \$1.4 million. Beyond the monetary cost seven men died during construction.<sup>14</sup>

Upon completion the dam stood 325 feet high. The base of the dam is only 70 feet long with a maximum width of 108 feet. The crest measured 200 feet with a width of only 10 feet.

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12. *Ibid.*, 43.

13. *Ibid.*, 46.

14. *Ibid.*, 47, 52, 55.

The crest elevation stood at 5370. The total volume of concrete was 82,900 cubic feet. The spillway was an uncontrolled side channel weir with a crest length of 298 feet and an elevation of 5360. It fed the water through a tunnel in the left abutment. At the end of construction the reservoir capacity was 456,000 acre feet. Siltation dropped this figure considerably over the years.<sup>15</sup>

### **Corbett Dam and Tunnel**

In May 1904, an engineering party studied the location for the Corbett Tunnel and sites for a canal system. Reclamation's site for the tunnel and diversion dam was 16 miles downstream from Shoshone Dam. Charles Spear of Billings, Montana, received the contract for constructing the Corbett Tunnel and began constructing the tunnel in 1905. During 1906 Spear went broke and defaulted on the contract: Reclamation then assumed responsibility and finished the work by force account in 1907. No extraordinary problems occurred during construction.<sup>16</sup>

Billings Construction Company contracted to build Corbett Dam, and the Coffin Valve Company received the contract for installation of the gates. Billings Construction Company began preliminary work at the dam site on September 6, 1906. Laborers started laying the concrete on December 7. High water in June 1907, forced work to stop until October. A 160 foot section of weir in the center of the structure remained incomplete. Billings Construction finished the concrete work on January 5, 1908. Coffin Valve finished installation of the gates on March 23. Corbett Dam was a 18 foot high concrete slab and buttress weir. The weir crest length was 400 feet and the total crest stretched 938 feet. Corbett Tunnel diverted water from Corbett Dam and through the surrounding hills to Garland Canal. The tunnel is 17,355 feet long.<sup>17</sup>

### **Garland Canal and Ralston Dam and Reservoir**

Corbett Dam and Tunnel diverted water from the Shoshone River north into the Garland

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15. Water and Power Resources, *Project Data*, 1157-8. Reclamation, *Project History, Shoshone Project, 1951*, Record Group no. 115, box 172, 7.

16. Reclamation, *Project History, 1910*, 4. Water and Power Resources, *Project Data*, 1158, 1159. Churchill, *The Dam Book*, 1, 3.

17. Reclamation, *Project History, 1910*, 8-9. Water and Power Resources, *Project Data*, 1158-9.



Canal system. During construction of the dam and tunnel, work progressed on the canal. While surveying for the location of Corbett Dam and Tunnel, engineers also staked the location of Garland Canal. By September 1904 they established a location for the canal, from the mouth of the proposed tunnel to the small town of Frannie Station, a distance of forty miles. Contour maps were made of the irrigable areas between Garland and Frannie totaling 30,000 acres. In 1905 a topographic map was made of the irrigable lands south of the Shoshone River. The State of Wyoming turned the 24,000 acres in the mapped section, formerly segregated under the Carey Act, over to Reclamation. In April 1905 the engineers began survey of the Garland Canal site. They completed the survey of Garland Canal's location in 1906 to a point 12 miles from Garland. At the same time engineers surveyed the new Frannie Canal extension from the Garland Canal.<sup>18</sup>

The principal irrigable land lay on Garland Flat north of the Shoshone River on both sides of the Chicago, Burlington and Quincy Railroad with Ralston, Wyoming, on its west edge, Powell in its center, and Garland on its eastern edge. In May 1906, Reclamation established Camp Colter, near the center of Garland Flat to be the base of operations for all the work on the flat, this eventually became the town of Powell.<sup>19</sup>

Bidding for the first division of the canal progressed slowly at first. Billings Construction bid on sections two, three, and eight. Reclamation deemed the bid excessive and rejected it. Nels L. Olson of Butte, Montana, finally received the contract for all of division one and began work September 3, 1906. Scarcity of labor and delays in supply deliveries hindered work. Garland Canal flowed into a natural basin which was determined a good location for a storage reservoir. The project was made part of the Division One contract. Olson constructed a puddled earth dam to create Ralston Dam and Reservoir. A 2 x 3 foot culvert, controlled by a gate tower, transferred the canal water through the dam to the other divisions. Olson completed the contract on July 20, 1908. Various other firms received contracts for the Garland Canal and completed their work before the end of 1907. Johnson Brothers of Lovell, Wyoming,

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18. *Ibid.*, 4-5.

19. *Ibid.*, 5, 24.

subcontracted most of their work to fellow Mormons.<sup>20</sup>

Only the Billings Hardware Company entered a bid for building structures on Division One. The bid was rejected as too high and plans were made to complete the structures by force account. Before that could happen W.D. Lovell submitted an informal bid that Reclamation accepted. Lovell began work in May, 1907, and started laying concrete June 14. Lovell completed the contract on February 28, 1908. No bids were received for structures on the remaining divisions so work by force account was authorized and started in May of 1907. On this work a temporary wood flume across Alkali Creek was completed in April of 1908.<sup>21</sup>

Garland Canal travels 18.5 miles from the end of Corbett Tunnel to a point near Garland. Ralston Dam was an earthfill dam 35 feet high and 2200 feet long at the crest. Ralston Reservoir is no longer used for irrigation storage. It only serves as an emergency waste route during storms and collects drainage water.<sup>22</sup>

### **Deaver and Frannie Canals<sup>23</sup>**

Grading for the Frannie Canal system started in 1910. Frost caused some difficulties, but labor and weather conditions proved favorable for completing the work. R. M. Lynn began schedule three October 18, 1910. Lynn finished on May 6, 1911, five days after the contract expired incurring a penalty of \$20 per day past the expiration day. Other contractors finished their schedules well within the time constraints of the contracts.<sup>24</sup>

Reclamation received bids for structure construction on the Frannie system in 1915, but considered all too high. The work was re-advertised and Reclamation received more bids in May, 1916. The Security Bridge Company of Minneapolis received the contract for schedule one structures on the first unit, but their proposal for the unit's schedule two structures was considered too high. Work by force account was approved for schedule two. Labor scarcity

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20. *Ibid.*, 10, 12, 13, 17, 18. A. J. McGuffey and Blood of Cody, R. M. Lynn of Lovell, and Emanuel Thomas of Byron, Wyoming contracted for work on Garland Canal.

21. *Ibid.*, 20-2.

22. Water and Power Resources, *Project Data*, 1158.

23. Deaver Canal is not mentioned in the Project Histories of the Shoshone Project. It is probable the canal is included in the Frannie Canal system.

24. Reclamation, *Project History, Shoshone Project, 1911*, Record Group no. 115, box 161, 113-5. Emanuel Thomas and J. E. Hilton and N. Farlow contracted work on Frannie Canal in 1911.

hampered Reclamation's work as much as it did the contractors throughout the project. Higher wages being paid elsewhere forced Reclamation to raise wages, and this did not guarantee keeping workers on the job. At one time construction halted because of a lack of labor. As a result, progress on the construction moved slowly.<sup>25</sup>

Like contractors elsewhere, Reclamation encountered some bad luck on Frannie Canal. Severe winter weather shut down the Reclamation forces from November 10, 1916, to April 2, 1917. Then on June 16, 1917, at 6:15 P.M. a storehouse at Deaver burned with all its contents. The building loss cost Reclamation \$900 while the lost supplies cost \$5683.59. Peter Shirts began construction on his schedule, but unsatisfactory progress caused Reclamation to suspend his contract and take over the work by force account.<sup>26</sup>

Work on Frannie Canal continued slowly in 1918. Hoyt Hayden completed the second unit of the canal on November 4. On October 8, Lynn Brothers completed backfilling the government built structures. Reclamation forces finished most of the canal structures to the Chicago, Burlington, and Quincy Railroad. The government built 114F siphon was used to fill the Deaver Reservoir. Deaver Dam was an earthfill structure 14 feet high with a 12 foot crest and an 80 foot base. The dam was 1300 feet long with a volume of 30,000 cubic feet. The only outlet work was a cast iron pipe through the dam. Inability to secure labor continued hampering the project during 1918. The *Project History* stated, "The outstanding features of the years'[sic] work were the same as those of last year, namely, slow progress and high costs due to insufficient and inefficient high priced labor and high priced materials."<sup>27</sup>

Construction and excavation of the first and second units of the Frannie Canal continued and was completed in 1919. Most contract work went smoothly. William Peterson completed the schedule one structures on Frannie Canal's second unit, of Peter Shirt's suspended contract.

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25. Reclamation, *Project History, The Shoshone Project, 1916*, Record Group no. 115, box 163, 8-9.

26. Reclamation, *Project History, 1916*, 10, 63. –Project History, *The Shoshone Project, 1917*, Record Group no. 115, box 163, 7-9, 49, 53, 152-5. Contracts were given to Hoyt Hayden, Lynn Brothers and Peterson, H. Downer, J. L. Baker, Smith and Crashley, Dickson Brothers of Kane, Wyoming. David Lewis, Tebbs and Taggart, and N. O. Mortenson, all of Cowley, Wyoming also received contracts. Security Bridge Company subcontracted out to Threet Brothers.

27. Reclamation, *Project History, The Shoshone Project, 1918*, Record Group no. 115, box 164, 70-2. Water and Power Resources, *Project Data*, 1159.

"Considerable difficulty was experienced in getting the contractor to finish the work," proclaimed the year's *Project History*.<sup>28</sup>

Work began on Frannie's third unit in August, 1919. Bad weather in the Fall forced the suspension of all work. Albert Gillis' schedule was given to Riley Brothers. Government forces handled unit three's structural work. Through the years 1920-22 work on Frannie Canal continued progressing despite problems with contractors. The contractors finished most of this work in 1921, but some continued, along with force account structural construction, into 1922. Frannie canal extended 44 miles from Garland Canal to a point near Frannie. Deaver Canal traveled from Frannie Canal past Deaver Reservoir.<sup>29</sup>

### **Shoshone Powerplant**

Force account work began on the Shoshone Powerplant under R.V. Sass, Superintendent of Construction, on November 10, 1920. The powerplant was located on the north side of the Shoshone River, 600 feet downstream from Shoshone Dam. It was constructed to supply power for various towns on the project and for construction of the project's Willwood Diversion Dam. In preparation for construction, crews built three bunkhouses for 20 men each, a mess-hall for 80 men, and remodeled a bunkhouse remaining from previous Shoshone Dam construction. Excavation for the powerplant began on January 4, 1921. In the first weeks laborers removed loose rock by hand, later switching to two jackhammers. After reaching solid rock, work crews converted two "dreadnought" drills, left from tunnel drilling, into jackhammers and added them to the excavation.<sup>30</sup>

At the beginning of June 1921, when some of the concrete forms were about ready to set, warm weather and rain raised water in Shoshone Reservoir over the spillway, threatening construction on the powerplant. By June 13 water reached 5.2 feet above the spillway,

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28. Reclamation, *Project History, The Shoshone Project, 1919*, Record Group no. 115, box 165, 96, 98, 99-100. – *Project History, The Shoshone Project, 1920*, Record Group no. 115, box 165, 82.

29. Reclamation, *Project History, 1919*, 98, 101-2, 107. – *Project History, 1920*, 82, 85. – *Project History, The Shoshone Project, 1921*, Record Group no. 115, box 165, 107-8. – *Project History, The Shoshone Project, 1922*, Record Group no. 115, box 165, 96. Water and Power Resources, *Project Data*, 1159; Contractors on construction of the Frannie Canal included: Frank Briggs, M. S. Bean, E. R. Parsons and Joe Smith, Riley Brothers, H. Downer, Albert Gillis, W. A. Bullard, G. B. Wilson, W. E. & E. H. Mitchell, and Clarence A. Noland. Reclamation suspended Gillis' contract and finished the work by force account.

30. Reclamation, *Project History, 1920*, 100-1. – *Project History, 1921*, 126-7.

discharging of 12,000 second feet of water. The flooding delayed construction about seven weeks. Excavation resumed on July 8 and in less than a month excavation for the powerplant floor was complete. Solid rock constituted half the base for the floor while it proved necessary to dig ten more feet to find a solid footing for the other half. Workers filled this hole with boulders and concrete to the level of the bottom of the concrete flooring. A crushing plant was established on the site for concrete, and crews gathered rock for the crusher from the cliffside. Laborers poured the first concrete on August 5, 1921. By 1922 most of the powerplant was completed except for the concrete roof, and the bypass house was nearly complete. Preparations for installing the hydraulic and electrical equipment for the powerplant also began before the first of 1922.<sup>31</sup>

Excavation of the powerplant tunnel's east portal began February 19, 1921. Work continued without major problems until April when broken piston rods on the drills twice halted work early in the month. On April 13 workers completed 307 feet of the tunnel from the east portal. The next day work stopped on the east portal and began on the west. Work on the west portal started from a raft on the river. For a month the drills needed a large number of repairs. Changes in foremen resulted in less maintenance, leading to the conclusion that the drills were previously misused. Work progressed steadily resulting in completion of excavation and concrete lining of the 600 foot tunnel by the beginning of 1922.<sup>32</sup>

### **Willwood Dam and Canal**

Preliminary exploratory drilling on the Willwood Dam site, on the Shoshone River began using force account in 1921. Reclamation established a temporary camp in early July of 1922, and permanent structures began going up later that month. Workers built a foot bridge 400 feet downstream from the dam site. In addition they constructed a pipe bridge with a sawdust filled box holding the air, steam, and water pipes to prevent freezing. Foundation excavation began August 7, and laborers commenced laying concrete on December 1. To keep the concrete warm at night, crews kept it covered with boards and canvas with a steam hose underneath the

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31. Reclamation, *Project History, 1921*, 129-33. – *Project History, 1922*, 100.

32. Reclamation, *Project History, 1922*, 139-40, 142. – *Project History, 1923*, 100.

covering. From December 4 to December 19 the temperature at the dam site never rose above zero. On the 19th a Chinook Wind warmed the weather to warm up considerably and new laborers brought the total to 153 permitting more rapid progress.<sup>33</sup>

During the course of construction Reclamation twice changed to the dam design; the crest was raised five feet and engineers added an inspection gallery to check pressure on the foundation. The first concrete pour on the dam occurred January 1, 1923. Cold weather delayed work from January 28 to February 6 and from February 12 to 15, but few delays occurred due to breakdowns or lack of material. In spite of the fear that it could not be accomplished, construction of the dam's south half finished on March 8 before the advent of high water. Laborers began laying the concrete on the north half of the dam March 15, before the north half of the concrete apron, necessary to protect the river bed below the dam against erosion. The concrete on the dam was laid before the apron in order to get the north side above high water, and because the excavation was not completed for the apron.<sup>34</sup>

The concrete on the north side of the dam proved the easiest to place because of the short distance from the mixer to the site. This allowed the dam to be raised to elevation 4461, considered safe from high water, by March 28. Work on the apron began the next day and finished on April 5. Afterward construction continued on the dam finishing the concrete to the crest by May 23. The steel highway bridge built across the dam consisted of three 90 foot spans and was completed July 16.<sup>35</sup>

Work on the tunnel for the eight foot diameter horseshoe diversion conduit began while excavation for the dam progressed. The conduit transferred water diverted by Willwood Dam to the Willwood Canal system. In 1923 the decision was made to increase the tunnel to nine feet. The first 25 feet of the tunnel remained eight feet high. Ten feet of the tunnel provided the transition from eight to nine feet, and the remaining section continued at nine feet high. Tunnel excavation finished before the end of 1922. The concrete lining was in place by the end of 1923.

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33. Reclamation, *Project History, 1921*, 25. – *Project History, 1922*, 135-7, 144, 154, 157, 163-5.

34. Reclamation, *Project History, The Shoshone Project, 1923*, Record Group no. 115, box 166, 133-4, 160.

35. Reclamation, *Project History, 1923*, 136-7, 158.

Willwood Dam was a concrete gravity weir that stood 70 feet high and with the embankment wings, the total crest measured 476 feet long.<sup>36</sup>

Excavation of the Willwood Canal began August 28, 1922. Charles Pease of Garland and W. A. Bullard received contracts for sections of Willwood Canal. Heavy rains and extremely cold weather prevented completion of either contract. Slow progress by the contractors forced Reclamation to give them each two extensions, but they eventually completed the work. High bids for structural work on the canal resulted in Reclamation completing the work by force account. Pease received a contract for nine more sections. Pease started work on April 17, but lack of significant progress influenced Reclamation to suspend the contract. Reclamation awarded contracts to various companies who proved more reliable. The main canal and all lateral earthwork was completed in 1925. When finished the canal measured 24.8 miles in length.<sup>37</sup>

### **Heart Mountain Canal and Powerplant**

To take advantage of unoccupied lands west of the Shoshone Project, Reclamation began construction of Heart Mountain Canal in 1937. The Shoshone Canyon Conduit became the first feature begun on the Heart Mountain Canal system. The Utah Construction Company of Ogden, Utah, contracted to build the conduit. Construction began February 21, 1937. Laborers consistently encountered sulphur during excavation, the fumes proving dangerous to workers. Fumes contributed to the deaths of two workers in 1937. Three men entered the tunnel too soon following an explosion. All three succumbed to the fumes and were run over by an incoming motor. The accident killed two of the men, but the third revived after being taken out of the tunnel.<sup>38</sup>

Concrete placement on part of the conduit by Taggart Construction began March 16, 1937 and finished November 25. Placement of the concrete began on the next section two days

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36. Reclamation, *Project History*, 1922, 157. – *Project History*, 1923, 156. Water and Power Resources, *Project Data*, 1158.

37. Reclamation, *Project History*, 1922, 159. – *Project History*, 1923, 179. – *Project History*, *The Shoshone Project*, 1924, Record Group no. 115, box 166, 56, 61-2. *Project History*, 1924, 65-6, 69. – *Project History*, *The Shoshone Project*, 1925, Record Group no. 115, box 166, 21. Water and Power Resources, *Project Data*, 1159.

38. Reclamation, *Project History*, *The Shoshone-Heart Mountain Project*, 1936, Record Group no. 115, box 174, 20, 34, 36. The report did not identify the "motor" involved in the accident.

later. A large cave in the path of the conduit excavation necessitated a concrete flume, consisting of two 70 foot spans, to cross. Because of gas in the cave and the confined working space, a different method of supporting the flume forms was devised. The two inch planking of the floor form was laid on top of a four inch bed of sand. The wall forms connected directly to the floor forms. When the forms were removed, workers sprayed the sand out with high pressure water jets allowing the flume to be free of the fill between the abutments and the pier.<sup>39</sup>

Work continued until completion on July 3, 1938. Final cleanup took until September 30. On that date Reclamation formally accepted the work. When Utah Construction finished work on September 30 they were 77 days ahead of their contract schedule. The conduit was a 12 foot horseshoe tunnel spanning 2.8 miles.<sup>40</sup>

Morrison-Knudsen Company of Boise, Idaho received the first contract for excavation of the Heart Mountain Canal. Work started February 23, 1937. Only two firms bid for construction of the Shoshone Canyon Conduit outlets, both deemed too high and the contract was scheduled for re-advertisement. Other contractors for the Heart Mountain Canal in 1938 included; Northwestern Engineering of Rapid City, South Dakota, J. A. Terteling and Sons of Boise, Taggart Construction, and Barnard-Curtiss, of Minneapolis. Northwestern Engineering experienced problems with concreting operations, so the firm subcontracted canal lining to James Crick in an effort to beat the winter weather. Crick began laying concrete on September 11.<sup>41</sup>

Barnard-Curtiss completed construction in December 1939. The company encountered no significant difficulties in construction, and work proceeded steadily. Consolidated Steel Corporation contracted to build the Shoshone River Siphon and the Buck Springs Creek Siphon. Olson Manufacturing of Boise subcontracted to place the pipe for the two siphons. Consolidated manufactured the pipe in Los Angeles and shipped it to Wyoming. Qualified welders proved

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39. Reclamation, *Project History, The Shoshone-Heart Mountain Project, 1937*, Record Group no. 115, box 174, 38, 51. – *Project History, The Shoshone-Heart Mountain Project, 1938*, Record Group no. 115, box 175, 41, 43.

40. Reclamation, *Project History, Shoshone-Heart Mountain, 1938*, 43, 47. Water and Power Resources, *Project Data*, 1158.

41. Reclamation, *Project History, Shoshone Heart Mountain, 1937*, 42. – *Project History, Shoshone Heart Mountain, 1938*, 51, 54, 56.



difficult to find, but enough were hired in time to prevent any major delay. Delays did occur when some sections of pipe arrived out of order. In spite of such occurrences workers placed the pipes quickly. The painting of the pipe, removal of wooden falsework, and cleanup proceeded rapidly as well. Reclamation accepted the work 102 days before the end of the contract. For a time, in 1939 work progressed swiftly under some contractors of Heart Mountain Canal. Utah Construction finished their section of the canal 99 days ahead of schedule. Barnard-Curtiss completed the earthwork and concrete work on the Buck Springs Siphon 100 days before the contract expired.<sup>42</sup>

Ray Schweitzer received a contract for three laterals and associated sublaterals in 1940. Schweitzer subcontracted most of the work to Luther F. Fife and Company, M. J. Gilpatrick, and Spenser Tolley. Reclamation observed a lack of cooperation between Schweitzer and his subcontractors early in the construction. Schweitzer's forces were to carry out excavation. Fife, who was to lay concrete, reinforcement, and pipe, arrived at the site with equipment in late April, 1941. Schweitzer's excavation crew arrived nearly a month later. Schweitzer's group proceeded with poor quality excavation which severely hampered Fife's workers. This in turn slowed down the other subcontractors. Eventually cooperation, although never very good, improved and resulted in a better progress.<sup>43</sup>

Camp BR-72 of the Civilian Conservation Corps (CCC) provided workers for part of Heart Mountain Canal System in 1941. CCC work consisted primarily of grading and graveling roads. The CCC completed most of the work by October 31 when the camp closed under orders from the Washington office. The CCC resumed work in February 1942, grading the canal for a bentonite lining.<sup>44</sup>

During World War II the War Relocation Authority (WRA) Camp located at Heart Mountain provided Japanese and Japanese American labor for sections of the canal system. In

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42. Reclamation, *Project History, The Shoshone-Heart Mountain Project, 1939*, Record Group no. 115, box 175, 31, 33, 37.

43. Reclamation, *Project History, The Shoshone-Heart Mountain Project, 1940*, Record Group no. 115, box 176, 45. – *Project History, The Shoshone-Heart Mountain Project, 1941*, Record Group 115, box 176, 50-1.

44. Reclamation, *Project History, Shoshone-Heart Mountain, 1941*, 46. – *Project History, The Shoshone Project-Heart Mountain, 1942*, Record Group 115, box 177, 19.

1942 internees from the camp constructed works originally slated for contract work. H. B. Berkey of Missoula, Montana, subcontracting concrete work on a section of canal received permission to employ Japanese internees from the Heart Mountain Camp. The *Project History* claimed the WRA forces needed better efficiency, because the work done was equivalent to that of half as many CCC employees.<sup>45</sup>

In 1943 the WRA formulated a policy for using Japanese and Japanese American labor. In an agreement with Reclamation it was decided to use such labor on the section of canal directly supplying the agricultural needs of the relocation camp. Once again the *Project History* denounced the efficiency of the internee labor. This did not stop their use in any case. Barnard-Curtiss, faced with the labor shortage caused by World War II, used internee labor on their contracted section, though it was lamented "...their services were not as satisfactory as labor from the same source employed in the fall of 1942."<sup>46</sup>

During 1943 Reclamation forces did no work on the project. The following year no construction was accomplished. When 1944 arrived the WRA program for the internees used nearly all of them for work on the relocation camp and the agricultural program, because expansion of canal construction proved impossible. They continued working on small features in the system, but nothing more. No internees participated in canal construction after May, 1944. In spite of the *Project Histories'* lament regarding the internees' efficiency they seemed to have accomplished a fair amount in the first five months of 1944. The internees excavated 2816 cubic yards of canal, and 815 cubic yards of borrow pit, laid almost 3000 cubic yards of lining, laid over 4000 cubic yards of rock paving, graded 340 cubic yards of road, and placed 1640 cubic yards of gravel on roads. Reclamation did no work on the project in 1943 or 1944.<sup>47</sup>

Construction of Heart Mountain Canal resumed following the war, and Wyoming Construction Company of Laramie and Otis Williams Company of Helena, Montana, received

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45. Reclamation, *Project History, Shoshone-Heart Mountain, 1942*, 19, 22.

46. Reclamation, *Project History, The Shoshone-Heart Mountain Project, 1943*, Record Group no. 115, box 177, 21, 26.

47. Reclamation, *Project History, The Shoshone-Heart Mountain Project, 1944*, Record Group no. 115, box 177, 20, 22. – *Project History, Shoshone-Heart Mountain, 1943*, 22.

contracts for sections of it 1946. Labor and material shortages hindered work by both the contractors and Reclamation forces. The government was unable to buy reinforcing steel and bridge timber during the year. Reclamation's pre-war stock steel provided enough for 35 percent of the requirements. Work on the canal finished in 1947. Heart Mountain added another 26.2 miles to the Shoshone Project's canal system.<sup>48</sup>

To supply more electrical power to the project, Reclamation decided to build a powerplant in the Heart Mountain Division. Samuels and Franklin, Gibbons and Reed Company began construction of the Heart Mountain Powerplant on September 9, 1946. Work progress proved slow, but steady. Construction proceeded under both contract and force account until 1948. The powerplant went into operation December 8, 1948, with some temporary installations. Samuel's and Franklin completed all their contract work, but some of the government-installed equipment was not ready. At initial operation the powerplant still needed three transformers for the switchyard, louvers, fans, and ventilating equipment for the powerplant.<sup>49</sup>

### **Post Construction History**

Shoshone (Buffalo Bill) Dam required upgrading soon after its completion in 1910. The dam released excess water resulting in loose silt from the emptied reservoir drying out and blowing across nearby farms and homes. Two 30 inch valves were placed on the pipes to prevent excess water from escaping. All did not go smoothly as one valve sustained damage during installation and could not be opened. The next year crews placed two 58 inch balanced valves in the short tunnels that discharged into the canyon. Laborers finished placing the valves in May, 1915.<sup>50</sup>

Reclamation decided to close the 42 inch outlet pipes in 1919 to prepare for hooking them up to the soon to be constructed powerplant. Closing them would be accomplished with

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48. Reclamation, *Project History, The Shoshone-Heart Mountain Project, 1946*, Record Group no. 115, box 177, 26-8. Water and Power Resources, *Project Data*, 1159.

49. Reclamation, *Project History, Shoshone-Heart Mountain, 1946*, 29. – *Project History, The Shoshone Project, 1948*, Record Group no. 115, box 171, 22-3.

50. Reclamation, *Project History, The Shoshone Project, 1913*, Record Group no. 115, box 162, 8-9. – *Project History, The Shoshone Project, 1914*, Record Group no. 115, box 162, 10. – *Project History, The Shoshone Project, 1915*, Record Group no. 115, box 162, 9.

two concrete filled wooden balls placed inside the pipes. This proved more difficult than originally thought. Work commenced in January, 1921. The steel trash racks protecting the pipes from floating debris first caused problems for the crews. Hooks and cables broke under the strain of pulling on the trash racks. When workers believed the racks had been pulled far enough from the pipes on February 3 they lowered one of the balls into the south pipe, effectively closing it. They tried the same procedure on the north pipe, but unfortunately the trash rack was not raised enough, and the force of the ball closed it. The ball stuck to the rack requiring workers to retrieve the ball and pull the rack up again. This took a several weeks to accomplish. On April 3, 1921, a new ball closed the north pipe after nearly three months of work.<sup>51</sup>

Modifications to the canals began with Garland Canal in 1914. Workers constructed an inclined drop to replace the temporary wood flume over Alkali Creek. Willwood Canal needed repairs even before it was fully completed. September 25, 1924, the north bank of the C. J. Coulee slipped destroying the flume crossing it. H. B. Berkey received a contract to rebuild and extend the flume in April, 1925. By 1929 water undermined the Peerless Coulee by washing out the grade and making it unsafe. Workers trying to stabilize it found themselves frustrated by floods, their work being inundated six times before completion.<sup>52</sup>

Loose silt from the drawdown Buffalo Bill Reservoir blew onto private property. In 1952, Reclamation built a siltation dike next to Buffalo Bill Dam to prevent a majority of the silt from blowing out.<sup>53</sup> The next year 500 golden willow and 500 russian olive trees were planted along the shore of Buffalo Bill Reservoir to control silt erosion. Most died because high water drowned them. Reclamation planted 12,000 golden willows and chinese elms along Alkali Creek Drain in 1952 to prevent erosion. In addition crews placed 3.9 miles of fence and 427 cubic yards of broken concrete slabs for riprap along the Alkali Creek Drain. Concrete structures throughout the project received needed repairs in 1953. A rockslide in Shoshone

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51. Reclamation, *Project History, 1919*, 102. – *Project History, 1921*, 119-23, 126.

52. Reclamation, *Project History, 1914*, 11. – *Project History, The Shoshone Project, 1925*, Record Group no. 115, box 166, 26. – *Project History, The Shoshone Project, 1929*, Record Group no. 115, box 167, 20.

53. Reclamation, *Project History, The Shoshone Project, 1952*, Record Group no. 115, box 173, 68. "Buffalo Bill Returns as Shoshone Dam is Renamed," *Reclamation Era* (June 1946): 136. On March 11, 1946 President Harry S. Truman signed legislation changing the name of Shoshone Dam and Reservoir to Buffalo Bill Dam and Reservoir.

Canyon on November 21, 1953, damaged the highway and lodged material in the spillway of the reservoir necessitating repairs.<sup>54</sup>

Reclamation found it necessary to make more repairs on concrete structures in 1954. In that year a car went out of control and plunged into the Ralston Reservoir chute threatening to block one of the drops or the Frannie Canal head gates. Crews shut off the water for eight hours while they searched for the car and removed it. The sudden drop in Garland Canal caused several hundred feet of bank to give way below Ralston Reservoir, and repairs took several days. In 1955 a rockslide in Shoshone Canyon damaged the Shoshone Powerplant. Eagle Construction of Loveland, Colorado contracted to repair the plant and remove debris. The lower outlet works of Buffalo Bill Dam's right abutment were abandoned in 1959 due to deterioration. In 1961 the gates were removed and the outlet plugged.<sup>55</sup>

Reclamation shut down the Shoshone Powerplant in 1979 for rehabilitation. In 1985 Reclamation and the State of Wyoming embarked on a \$120 million rehabilitation of the project with Wyoming paying \$47 million of the cost. The plan involved raising Buffalo Bill Dam 25 feet, enlarging and gating the spillway, for more efficient management of the reservoir, construction of three new siltation dikes to further restrict blowing silt, installing a new three megawatt generator in the Shoshone Powerplant, and constructing the new 18 megawatt Buffalo Bill Powerplant. Renovation raised the structural height of the dam to 350 feet. Reservoir capacity increased from 375,900 acre-feet, due to siltation, much less than its original capacity, to 623,557 acre-feet. The renovation, was completed in 1993.<sup>56</sup>

### **Settlement of the Project**

#### **Water Users' Associations and Water Used**

Early in the Shoshone Project's history, residents formed three water users' association:

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54. Reclamation, *Project History, 1952*, 68. – *Project History, The Shoshone Project, 1953*, Record Group no. 115, box 173, 6, 51-3.

55. Reclamation, *Project History, The Shoshone Project, 1954*, Record Group no. 115, box 173, 7, 19. – *Project History, The Shoshone Project, 1955*, Record Group no. 115, box 173, 6. – Division of Dam and Structural Safety, Assistant Commissioner- Engineering and Research, *SEED Report on Buffalo Bill Dam, Upper Missouri Region, Shoshone Project, Wyoming: Examination Report*, Denver: 1982, 3.

56. Reclamation, *SEED Report: Management Summary, 1. – Buffalo Bill Dam*, pamphlet. – *Summary, Buffalo Bill Dam Modifications, Shoshone Project, Wyoming, January, 1991*, 1, 3.

the Shoshone Water Users' Association, the Water Users' Association, Frannie Division, Shoshone Project, and after World War I, the Shoshone Project Veterans' Water Users' Association. The Shoshone Water Users' Association was the first settlers' organization on the project. For several years the Association had no official function and no contract with the Secretary of the Interior. In 1915 the association voted to take steps leading to the formation of a legal water users' association. Eventually the Shoshone Water Users' Association became established and soon clashed with project management. The Association's Board of Directors passed a formal resolution not to conduct business with the local project managers in 1918. This antipathy blew over within the year. By 1921 the Shoshone Water Users' Association served the Garland Division, while the Water Users' Association, Frannie Division, Shoshone Project, created later, served farmers in the Frannie Division. The Shoshone Project Veterans' Water Users' Association represented ex-servicemen in both divisions.<sup>57</sup>

In 1922 all three water users' associations petitioned for modifications in the repayment plans, but with no results. Reclamation turned operation of the Garland Division over to the Shoshone Irrigation District on January 1, 1927. Deaver Irrigation District assumed control of the Frannie Division on January 1, 1930. Willwood Irrigation District took over management of the Willwood Division at the beginning of 1949. On July 17, 1953 Reclamation created the Heart Mountain Irrigation District, but retained control of it.<sup>58</sup>

At the beginning of the Shoshone Project engineers predicted 150,000 acres would receive irrigation water from the project. Through the years the amount of land irrigated steadily increased, but by 1960 still did not reach that projection. The project irrigated 25,753 acres in 1915. 1928 saw 41,331 acres irrigated. In 1953 the project irrigated 77,560 acres, only about half the projected amount, even though all divisions were operational.<sup>59</sup>

### **War Contingencies**

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57. Reclamation, *Project History, 1911*, 263. – *Project History, 1915*, 18. – *Project History, 1919*, 222. – *Project History, 1921*, 283. – *Project History, 1922*, 312.

58. Reclamation, *Project History, 1922*, 320-1, 324, 329-30. – *Project History, The Shoshone Project, 1949*, Record Group no. 115, box 171, 14, 37, 38. – *Project History, 1953*, 86.

59. Reclamation, *Project History, 1910*, 2. – *Project History, 1915*, 132. – *Project History, The Shoshone Project, 1928*, Record Group no. 115, box 167, 86. – *Project History, The Shoshone Project, 1953*, Record Group no. 115, box 173, 36.

World Wars One and Two both impacted the operations of the Shoshone Project. During World War I the military posted guards at Shoshone Dam to prevent sabotage. Corbett Dam received two more guards. World War II had a greater effect on the project. Following the declaration of war, officials of the Shoshone and Deaver Irrigation Districts met to iron out the employment of guards at Corbett Dam and Tunnel. The Army's Seventh Service Command placed guards at the major structures controlled by Reclamation. The Seventh Service Command conducted a practice blackout at Shoshone Dam and Powerplant on December 7, 1942. In 1944 the military determined guards were no longer necessary, but the powerplant operator remained armed for the entirety of the war.<sup>60</sup>

### **Heart Mountain Relocation Camp**

The greatest impact of World War II in the Shoshone Project was the Heart Mountain Relocation Camp. In May 1942, the War Relocation Authority investigated the Heart Mountain Division for a site to construct a relocation camp for Japanese and Japanese Americans evacuated from the West Coast of the United States to prevent any underground activity. The Army Corp of Engineers began building the camp in June. The first internees arrived on August 12 under military escort. Heart Mountain Camp consisted of 1294 camp site acres and 1843 agricultural acres. At the camp's peak 11,000 Japanese and Japanese Americans resided at the camp, making it the second largest city in Wyoming at the time.<sup>61</sup>

As stated before internees labored on the Shoshone Project as well as their own and local farmers' agriculture. During the war many Japanese hired out to pick crops on nearby farms. Approximately 700 internees served in the armed forces during World War II. The last internees left the camp December 20, 1945. In spite of the conditions in which the government held the Japanese, many Americans did not see any negative aspects of their captivity. One post-war article claimed, "Heart Mountain was not a prisoner-of-war camp despite the fact that the

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60. Reclamation, *Project History, The Shoshone Project, 1917*, Record Group no. 115, box 163, 160, 166. – *Project History, The Shoshone Project, 1942*, Record Group no. 115, box 169, IX, XI. – *Project History, The Shoshone Project, 1943*, Record Group no. 115, box 169, 8. – *Project History, The Shoshone Project, 1944*, Record Group no. 115, box 169, 71.

61. Reclamation, *Project History, Shoshone-Heart Mountain, 1942*, 8. Carl J. Thye "The Bureau Reclaims Its Own," *Reclamation Era*, April 1947, 90.

community was barbed-wire enclosed and certain restrictions were imposed upon it."<sup>62</sup>

### **Pre-and Post-War Settlement**

In the 1930s Reclamation attempted to attract settlers to the Shoshone Project region by distributing pamphlets describing the attractive aspects of farming in the area. The campaign did not last long, but following the Second World War it rose again with new targets, returning war veterans. Veterans, who originated from farming families, returned hoping to obtain their own farmland. The Federal Government capitalized on this desire by promoting land in the Shoshone Project. The government used relocation camps as centers for the Veteran Settlement Program, and Heart Mountain Camp served northwest Wyoming. The settlement program allocated two barracks and some equipment from Heart Mountain to Ray C. King, a war veteran. This type of allotment served to sweeten the incentives for settlement.<sup>63</sup>

Following the initiation of the Veteran Settlement Program, Heart Mountain Camp reverted to Reclamation's control as per Public Law No. 478 of the 79th Congress. The camp functioned as project headquarters until August 13, 1951. After that the camp served as a warehouse, motor pool, and the field office for the Heart Mountain Division.<sup>64</sup>

### **Uses of Water**

The primary goal of the Shoshone Project was irrigation. Alfalfa hay constituted the largest crop on the project. Alfalfa decreased in acreage over the years from 218 in 1922 to 10 in 1927. Sugar beets continued as an important crop on the project. Apples constituted a very small segment. Barley and beans increased in acreage while clover hay decreased. Clover seed decreased as well. Indian corn and corn fodder decreased on project acreage. Onions disappeared from the project by 1927 as did millet seed, but onions reappeared in 1928. Beet tops, grain stubble, peas, and melons appeared on crop reports by 1927. Acreage devoted to

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62. Thye, "The Bureau Reclaims Its Own," 92. Reclamation, *Project History, The Shoshone-Heart Mountain Project, 1945*, Record Group no. 115, box 177, 6.

63. Ray C. King, "A Veteran's View," *Reclamation Era*, July 1948, 137. Thye, "The Bureau Reclaims Its Own," 90-1. Reclamation, *Opportunities for Farm Ownership on the Willwood Division: Shoshone Irrigation Project, Wyoming* (Washington: Government Printing Office, 1934), Engineering Reports, Record Group no. 115, box 774.

64. Reclamation, *Project History, The Shoshone Project, 1947*, Record Group no. 115, box 170, X. – *Project History, The Shoshone Project, 1951*, Record Group no. 115, box 172, 98. – *Project History, The Shoshone Project, 1952*, Record Group no. 115, box 173, 10, 47.



potatoes, oats, and wheat decreased from 1922-27, but oats and potatoes increased in 1928.

Cabbage and garden crops maintained a steady acreage. By 1927 more acres were being devoted to pasture lands.<sup>65</sup>

The increase in pasture land coincided with an increase in livestock. Early in the project livestock increased steadily. In 1913 horses numbered 1011, mules 38, cattle 1229, sheep 1149, hogs 3214, fowl 16,817, and beehives 270. By 1921 horses numbered 2767, mules 140, beef and dairy cattle 2661, sheep 6705, hogs 2434, fowl 39,779, and beehives 1569. 1928 showed sheep to be the stock of choice while other numbers went down. Sheep increased to 12,855. All other groups showed decreases; horses 1635, mules 79, beef and dairy cattle 1687, hogs 698, fowl 31,314, and beehives 1397. During World War II the government blamed the deficiency of livestock on the project on farmers who devoted the good land to "cash crops" instead of pastures. The report intimated a need for livestock on the project because the relocation camp created a demand for milk.<sup>66</sup>

Buffalo Bill Dam and its surrounding areas provided recreational activities on land and water. Fishing and boating comprised the major activities on the reservoir. People staked out 20 cabin sites on the shore of Buffalo Bill Reservoir. Cutthroat, rainbow, brown, and mackinaw trout stocked the reservoir. Chinese pheasants, prairie chickens, blacktail and whitetail deer, and redhead, mallard, wood, golden eye, and teal ducks provided hunters with game.<sup>67</sup>

### **Conclusion**

The Shoshone Project helped to irrigate a large part of northwest Wyoming. The project also found itself in the middle of one of the United States darkest periods of history in relation to the treatment of a minority of the country's citizens. In addition to the name of Buffalo Bill Dam and Reservoir the project has its share of history. Buffalo Bill Dam was one of the first concrete arch dams in the United States. It was also the tallest dam in the U.S. at its completion. In 1971

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65. Reclamation, *Project History, 1922*, 381-2. – *Project History, The Shoshone Project, 1927*, Record Group no. 115, box 166, 99-100. – *Project History, 1928*, 104-5.

66. Reclamation, *Annual Operation and Maintenance Report, The Shoshone Project, 1913-17*, Record Group no. 115, box 164, 27. – *Project History, 1921*, 343. – *Project History, 1928*, 109. – *Project History, 1942*, 40.

67. Reclamation, *Project History, The Shoshone Project, 1951*, 99. – *Project History, 1954*, 14.

Buffalo Bill Dam was put on the National Register of Historic Places. The American Society of Engineers declared the dam a National Civil Engineering Landmark.<sup>68</sup>

Heart Mountain Relocation Camp remained in peoples' memories even though it did not gain the spotlight. The camp site was added to the National Register of Historic Places in December, 1985. In June, 1986 former internees of Heart Mountain returned to the camp site to dedicate a plaque honoring the 22 internees killed in the armed forces during World War II. By that time the Shoshone Project irrigated 90,000 acres.<sup>69</sup> This fell far short of projections, but proved significant nevertheless. The project provided ownership possibilities for potential farmers returning from World War II to start a new life and continues to provide crops to the American market.

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68. Reclamation, *SEED Report: Examination Report*, 3, 4.

69. John C. Ensslin, "World War Two Internees to Return to Wyoming Camp," *Rocky Mountain News*, 21 June 1986, p. 48. Churchill, *The Dam Book*, iv.

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