

U.S. Fish and Wildlife Service

A Desert Oasis

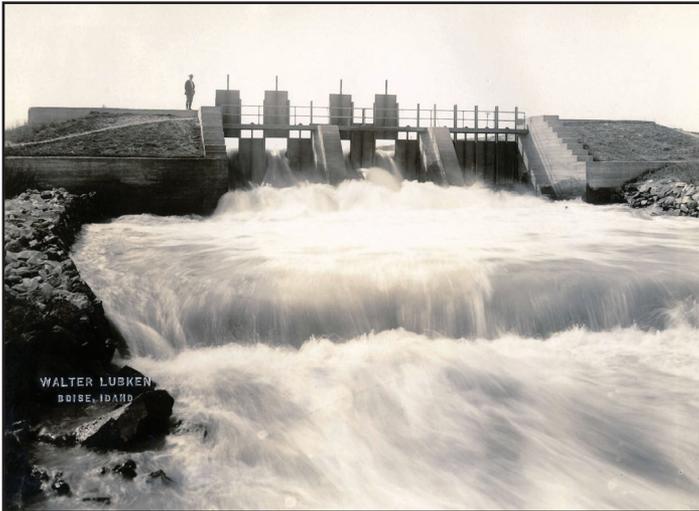
for Wildlife and People



The History of Deer Flat
National Wildlife Refuge:
From 1909 to 2009

Cover Photo:

The wetland edges and open waters of Lake Lowell provide a watery oasis for wildlife. Photo courtesy Mark McFall.



New York Canal Headgates. Photo by Walter Lubken, Bureau of Reclamation.

“People are coming from afar off purposely to see the big reservoir when it is at its fullest. It will show what a great, good work the government has done for its people.”

Middleton Herald

June 26, 1913

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A Desert Landscape



he landscape of southwest Idaho hundreds of years ago was very different from what we see today. The area's hills were covered with sagebrush, rabbitbrush, and native bunchgrasses that provided homes for wildlife ranging from burrowing owls to spadefoot toads, beetles to badgers, and butterflies to sparrows.

European-Americans who traveled through this part of Idaho in the mid- to late-1800s, and those who eventually settled here, recognized the harsh reality that little rain — only about ten inches a year — fell upon this high desert environment. It was simply a fact of life.

Occasional springs, however, supplied much-needed water sources. The grasses that thrived in these springs attracted deer and elk. The arid desert landscape near what is now Lake Lowell therefore came to be called “Deer Flat.”



Before Lake Lowell was completed, a canteen was often the only water source in the area. Photo by Walter Lubken, Bureau of Reclamation.

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Water, Water, Water



hortage of water drove the early development of southern Idaho. The easily-irrigated lands next to rivers were settled first. After that, farmers, politicians, businessmen, and engineers used private funding to build canals that would irrigate farms further from rivers. By the early 1900s, it

became clear that private irrigation companies weren't up to the challenge of irrigating all of southern Idaho. In 1904, the newly formed Reclamation Service (now the Bureau of Reclamation) began work on Minidoka Dam, the West's first hydroelectric dam, at Lake Walcott near Burley.

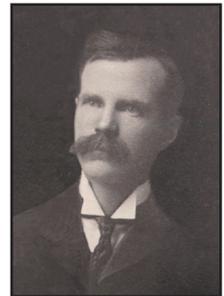
Opportunity and Challenge: Lowell's Vision for Deer Flat



mpressed by the Minidoka Project, State Engineer D. W. Ross and James H. Lowell, President of the Boise-Payette Water Users Association, successfully lobbied Congress to fund an irrigation project for southwest Idaho.

Because work had already begun at Minidoka, the Reclamation Service initially balked at diverting funds to a new project near Boise. To help convince them, Lowell organized local farmers and raised matching funds to support the project.

Lowell's persistence and vision paid off. In 1905, Deer Flat was declared the site for a



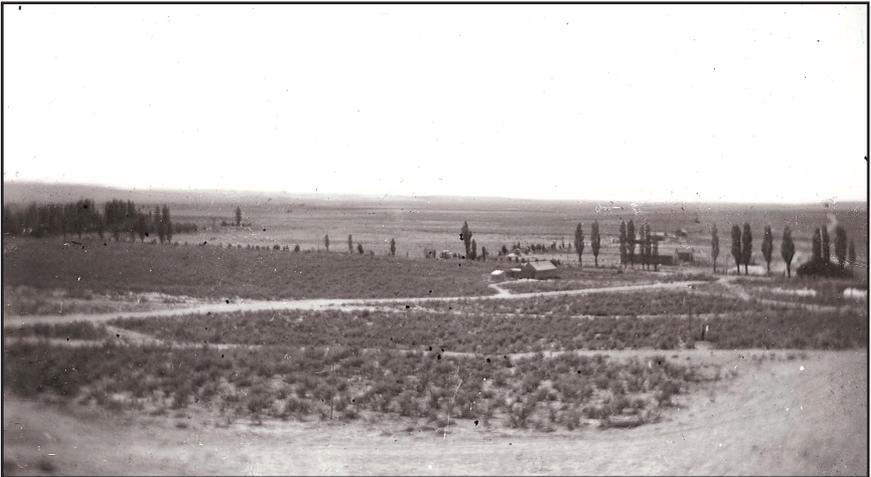
James H. Lowell.
Photo courtesy
Idaho State
Historical Society,
D60-161-1 #14.

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new irrigation reservoir as part of the Boise-Payette Project. In recognition of Lowell's efforts to develop the reservoir, Deer Flat Reservoir was officially renamed Lake Lowell in 1948.

Soon after the project was approved, the federal government began acquiring land for the reservoir. The limited availability of irrigation water had made Deer Flat lands hard for homesteaders to farm. Government surveyors for the new reservoir found many abandoned buildings, dead trees, and once-cultivated lands returned to weeds and sagebrush.

The government acquired 9,620 acres for the reservoir. Owners of improved land were offered on average \$33 per acre, whereas owners of unimproved land were offered \$12-\$15 per acre. Some landowners sold to the government at the offered prices and moved beyond the reservoir boundary. Others, however, held out for more money. Claims for 246 acres eventually went to court as condemnation cases.



A homestead, including a small orchard at left, that was eventually covered by the waters of Lake Lowell. Photo courtesy Canyon County Historical Society.

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Building the Reservoir

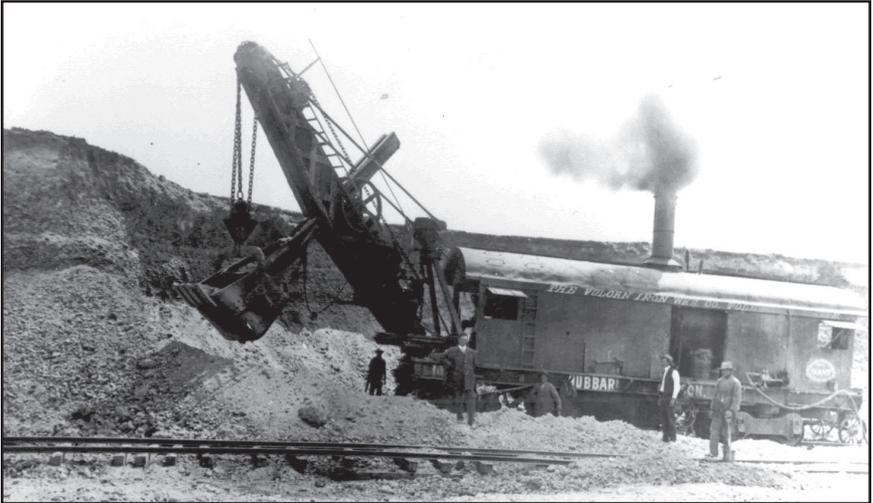
“The contractors [working on the Lower Embankment] have first-class equipment for the work, which cost \$50,000. It consists of a steam shovel weighing 40 tons, which has a dipper with a lifting capacity of 26 tons and is used for loading cars with gravel, which is hauled out on the dam and dumped.”

Caldwell Tribune

August 31, 1907

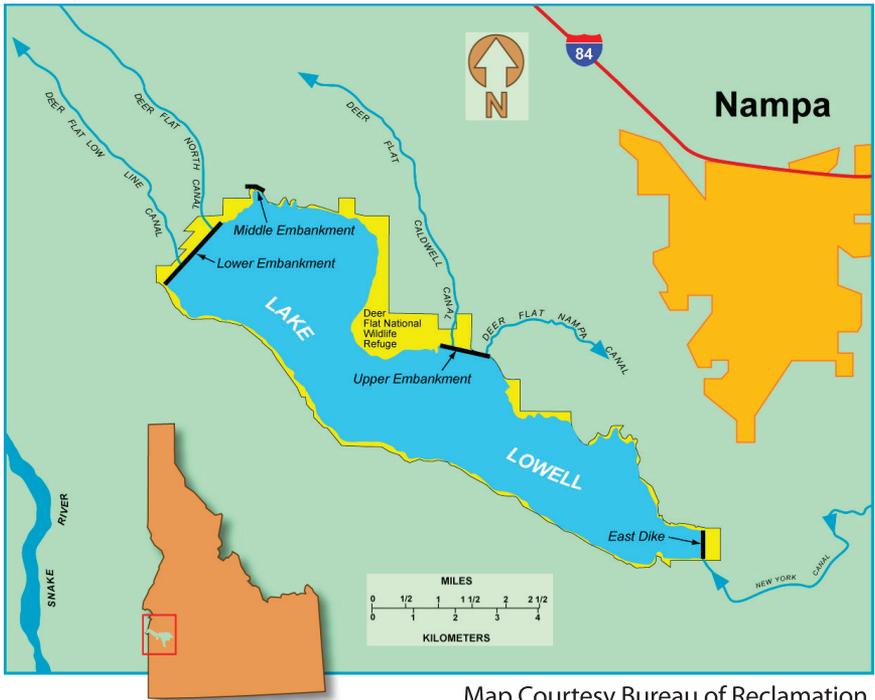
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eer Flat Reservoir was constructed between 1906 and 1908 and cost \$2,500,000. Workers quarried approximately 4,000,000 cubic yards of gravel, dirt, and lava rock for the reservoir’s construction. When it was completed, it was the largest off-stream reservoir on earth, held in by four earth-fill dams.



A steam shovel loading excavating material for the Lower Dam at Deer Flat Reservoir. Photo by F.C. Horn, Bureau of Reclamation, June 1907.

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Map Courtesy Bureau of Reclamation.

The longest dam, the Lower Embankment, stretches one-and-a-half miles long and is 44 feet tall. The tallest dam, the Upper Embankment, is 74 feet tall and three-quarters of a mile long. The Middle Embankment is less than one-quarter mile long and only 14 feet high. The east dike is almost three-quarters of a mile long and only 12 feet high.

To recognize Deer Flat Reservoir's importance in the development of southwest Idaho, the Upper and Lower Embankments are included on the National Register of Historic Places.

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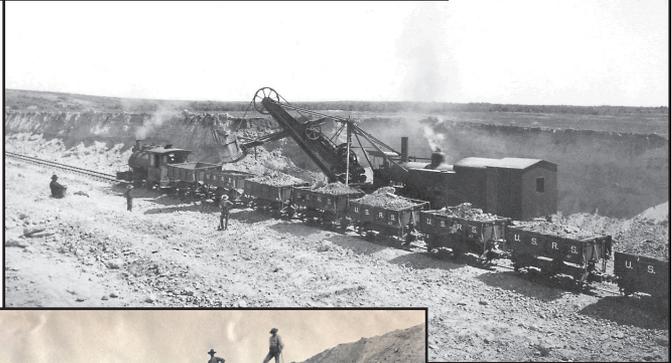
Building the Reservoir: A Waterway Engineering Feat

To build the dam, horse teams pulled Fresno scrapers to scrape off the topsoil. When the bedrock was exposed, a mixture of gravel, clay, and soil was dumped on the dam site. Steam shovels excavated



Four-horse teams dragging Fresno scrapers, circa 1906. Photo by F.C. Horn, Bureau of Reclamation.

Steam shovel east of Upper Dam loading railcars. This shovel could fill all 12 cars in 8 minutes. Photo courtesy Bureau of Reclamation.



Horse teams spreading gravel. Photo courtesy Bureau of Reclamation.

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the dirt and gravel. At the dam sites, graders spread the mixture out evenly. A five-ton roller then compacted the earth.



Concrete grooved roller pulled by a horse team, April 1906. Photo by F.C. Horn, Bureau of Reclamation.



Compacting roller pulled by a steam-driven thresher, June 1907. Photo by F.C. Horn, Bureau of Reclamation.

Reclaiming Arid Lands

- The Newlands Reclamation Act, passed in 1902, established the Reclamation Service and funded irrigation projects throughout the arid west.

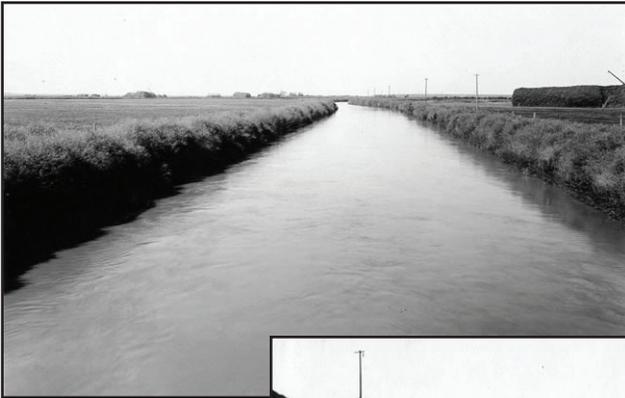
- Deer Flat Reservoir was one of the first constructed by the Reclamation Service. The innovative methods used at Deer Flat became waterway construction standards.

- More than 600 Bureau of Reclamation dams on waterways throughout the West provide irrigation water for 10 million acres of farmland, which provide 60% of the nation's vegetables and 25% of its fruits and nuts.

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Providing Water: Building the New York Canal

Lake Lowell is filled with Boise River water that travels forty miles through the New York Canal. The canal was originally built by New York investors to irrigate land south of the Boise River. As part of the effort to build Lake Lowell, the Bureau of Reclamation acquired the New York Canal in 1906. Between 1906 and 1908, contractors enlarged the existing canal from the Boise River to Indian Creek and constructed a similar canal from Indian Creek to the reservoir.



New York Canal flowing toward Lake Lowell, September 1912. Photo by Walter Lubken, Bureau of Reclamation.



Repairs to the New York Canal, November 24, 1917. Photo by Walter Lubken, Bureau of Reclamation.

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A Team Effort: Building the Dams and Canal

Hundreds of men came from near and far to build the reservoir. Local homesteaders displaced by the reservoir were hired first. Others came from as far away as Vermont. Even local drunks collected by the police force of Nampa worked on the project.



Construction crew at the Upper Dam. D.W. Ross, State Engineer, at far right. Photo by R.J. Newell, courtesy Idaho State Historical Society, #3788.2.

Hubbard and Carlson construction crew at the Lower Dam, circa 1906. Photo courtesy Idaho State Historical Society, #74-88.1/b.



Arthur Wilkerson lived with his wife Ellen and son Grant in this camp tent while helping build the Upper Dam in 1907. Photo courtesy Ernest A. Hoidal.

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Water Sustaining Life



ince it was completed in 1909, Lake Lowell has provided vital irrigation water to over 150,000 acres of farmland producing everything from corn and wheat to sugar beets, mint, and fruit trees.

Lake Lowell is part of the Boise-Payette Irrigation Project, which includes 6 major reservoirs, 2 diversion dams, 3 power plants, 7 pumping plants, and over 2500 miles of canals, ditches, and drains. Without Lake Lowell and other parts of the Boise Project, much of southwest Idaho could not have been settled.



Lettuce on S.H. Peters' farm a half mile west of the Deer Flat Lower Dam, September 1922. Photo by W.G. Steward, Bureau of Reclamation.

Sacked potatoes harvested on a farm irrigated with water from Lake Lowell, circa 1945. Photo courtesy Bureau of Reclamation.



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Shocks of oats at Perrett Ranch near Lake Lowell, August 1914. Photo by H.T.C., Bureau of Reclamation.

Ditch Riders

Idaho's irrigation history includes a long tradition of ditch riders, who deliver irrigation water to farmers and make sure water is allotted fairly and conservatively. Farmers who need water fill out a daily request card. The local ditch riders pick up the cards and calculate how much water to release into each lateral and ditch. Ditch riders work seven days a week for seven months straight during the growing season.

According to John Callaway, a local retired ditch rider and water master, "Farmers depend on ditch riders like you depend on the mailman."



A ditch rider in 1967 near the shed and corral where he kept his horse and equipment. Photo by J.D. Roderick, Bureau of Reclamation.

Where Wildlife Comes First: Deer Flat National Wildlife Refuge

The Lake Lowell Unit



Lake Lowell was originally built for irrigation, but President Theodore Roosevelt realized that a lake in the desert would also be a wildlife oasis. On February 25th, 1909, just three days after Boise River water was released into the New York Canal to begin filling the reservoir, President Roosevelt signed

Executive Order 1032 to establish Lake Lowell as the 21st refuge in the National Wildlife Refuge System. The NWRS now includes 550 refuges and is the only national network of lands and waters set aside for the conservation and management of the nation's fish, wildlife, and plant resources for the benefit of present and future generations.

Nestled in the rolling sagebrush hills of southwest Idaho, the watery oasis at Deer Flat National Wildlife Refuge provides an important breeding area for birds and mammals, as well as other wildlife.

The refuge is also a significant resting

and wintering area for birds migrating along the Pacific Flyway, including spectacular concentrations of mallards and Canada geese.



Canada Geese. Photo courtesy Fish & Wildlife Service.

Wildlife management activities include creating wetlands,

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wildlife monitoring studies such as nesting surveys and waterfowl banding, and cooperatively farming 240 acres of wheat, barley, corn, and other crops as winter feed for wildlife.



Mule deer. Photo courtesy Fish & Wildlife Service.



Refuge staff catching mallards for banding, 1962. Photo courtesy Fish & Wildlife Service.

Theodore Roosevelt: The Conservation President

- In 1903, President Theodore Roosevelt established the first National Wildlife Refuge at Pelican Island in Florida.
- Pelican Island was managed by the U.S. Biological Survey (now the U.S. Fish & Wildlife Service) to provide habitat, forage, and nesting grounds for birds.
- Roosevelt left a legacy of conservation. In addition to setting aside 55 National Wildlife Refuges, he also established 150 National Forests, 18 National Monuments, 5 National Parks, and 21 federal irrigation projects.
- In total, Roosevelt protected more than two hundred million acres of land and waters for wildlife — and for the American people.



Photo courtesy Fish & Wildlife Service.

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The Snake River Islands Unit



In the 1930s, America's waterfowl populations had drastically declined due to drought, over-harvest, and habitat destruction. This alarmed both conservationists and hunters, so President Franklin D. Roosevelt launched efforts to increase the number of National Wildlife Refuges providing waterfowl habitat and to provide better tools for wetland conservation.

As part of these efforts, the new Chief of Refuges, J. Clark Salyer II, went on a cross-country journey in 1934 to identify possible new refuges. Among those identified were 36 waterfowl nesting islands in the Snake River. In 1937, President Franklin D. Roosevelt designated these islands as the Snake River Islands National Wildlife Refuge to be managed by staff at Deer Flat National Wildlife Refuge. The two refuges were combined in 1963.

Father of the National Wildlife Refuge System

- J. Clark Salyer II served as the head of the Division of Wildlife Refuges in the Bureau of Biological Survey (now the Fish & Wildlife Service) from 1934-1961.
- Salyer's first assignment, in 1934, was to identify potential new waterfowl refuges. Because he had a fear of flying, he drove over 18,000 miles in six weeks in a government-issued car and identified 600,000 acres of new refuge lands.
- Salyer has been dubbed the Father of the National Wildlife Refuge System. During his service, the System increased from 1.5 million to nearly 29 million acres.



Photo courtesy Fish & Wildlife Service.

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Since the 1930s, additional islands have been added to the refuge. Some had been occupied by homesteaders who had built houses, barns, corrals, cellars, and chicken coops. They had cultivated fields and orchards with water pumps and irrigation ditches, and had run electric wires across the river for electricity. Unaware of required paperwork or unwilling to pay taxes on their land, some of the island homesteaders did not file a deed claim or register with the local tax assessor's office after they had made significant improvements. Without a legal record of their ownership, the homesteaders were classified as squatters and had to leave their homes. Remnants of these homesteads are still visible on some of the refuge islands.



Refuge islands from the Walter's Ferry Bridge, 1961. Photo courtesy Fish & Wildlife Service.



Abandoned homestead on Goose Egg Island. Photo by Lauren Giebler, Fish & Wildlife Service.

Deer Flat National Wildlife Refuge now manages about 1,200 acres of wildlife habitat on over 100 islands. These islands are distributed along 113 river miles, from the Canyon-Ada County line in Idaho to Farewell Bend in Oregon.

Conservation Through Service and Partnerships



Service corps, volunteers, and partners have helped with on-the-ground conservation efforts at Deer Flat National Wildlife Refuge throughout its history. Examples include the Works Progress Administration and Civilian Conservation Corps, Job Corps, Friends of Deer Flat Wildlife Refuge, and thousands of refuge volunteers.

The Works Progress Administration and Civilian Conservation Corps

The WPA and the CCC were New Deal work-relief programs established by President Franklin D. Roosevelt during the Great Depression. Designed to combat unemployment, these popular programs created jobs for millions of men and women across the nation. CCC and WPA crews helped manage habitat and build infrastructure on over 50 National Wildlife Refuges and National Fish Hatcheries. One thousand eight hundred CCC and WPA workers served at Lake Lowell and Deer Flat National Wildlife Refuge.

Refuge staff oversaw WPA crews from 1938-1942. They built refuge patrol roads and the



CCC camp near the Lower Dam, September 1935. Photo courtesy Bureau of Reclamation.

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CCC building parapet wall at Lower Dam in 1937. Photo courtesy Bureau of Reclamation.

original refuge headquarters and shop complex. They also managed wildlife habitat by removing willows and cottonwood trees, planting smartweed as habitat and forage for migratory waterfowl, and building observation towers to count birds and monitor the refuge.

The Bureau of Reclamation oversaw CCC Company 2506 at the Lower Dam from 1935 to 1941. During that period, over 750 young men, mostly from New York, Ohio, West Virginia, and Kentucky, faced the Upper and Lower Dams with lava rock to repair damage caused by wave action and to help prevent further erosion. They also built decorative stone walls with parapets along the top of each dam.

A 1936 article in the camp newsletter, the **Damsite Echo**, gave a good sense of the work involved in this project: “The boys have hauled and placed approximately 2,438,000 pounds of rock, many of which weighed nearly three tons. They have driven trucks a total of 237,760 miles, burning approximately 90,000 gallons of gas and 150 barrels of lubricating oil. They have used about 25,000 pounds of dynamite to date. They have moved 26,760 cubic yards of rock in rip-rap on the lower embankment and padded out the dike with 28,200 cubic yards of gravel in places where it was badly washed.”

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Centennial Job Corps

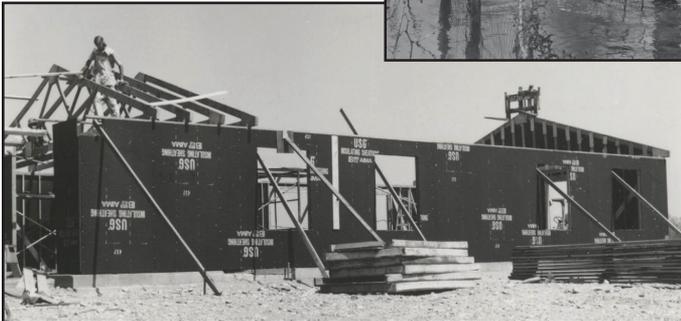
Since 1965, the Marsing (now Centennial) Job Corps has been an important refuge partner, helping refuge staff build and maintain refuge structures and manage wildlife habitat. Modeled after the CCC and created during the 1960s as part of President Lyndon Johnson's War on Poverty, the Job Corps program emphasizes vocational training and education for young men and women. It is the only program of its kind still in operation today.

Over the years, Job Corps enrollees have assisted Deer Flat National Wildlife Refuge with projects from fencing and duck banding to stonework and painting. One of the largest Job Corps projects was to build the refuge visitor center between 1971 and 1975. Enrollees involved in the project learned brick-laying, electrical work, and various other construction skills.

Job Corps crew member baiting a duck trap with barley. Photo by J.D. Roderick, Bureau of Reclamation.



Job Corps crew building the visitor center. Photo courtesy Fish & Wildlife Service.



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Friends of Deer Flat Wildlife Refuge

In 2006, A group of Treasure Valley citizens with a shared interest in the Refuge and the needs of wildlife formed the Friends of Deer Flat Wildlife Refuge. The non-profit group's mission is to promote, protect, and provide resources to preserve and enhance Deer Flat National Wildlife Refuge for the enjoyment of present and future generations. Since 2006, the Friends have worked with refuge staff to build a wildlife-viewing blind near the refuge visitor center, install a bookstore in the visitor center, organize special events at the refuge, and financially support refuge environmental education programs.

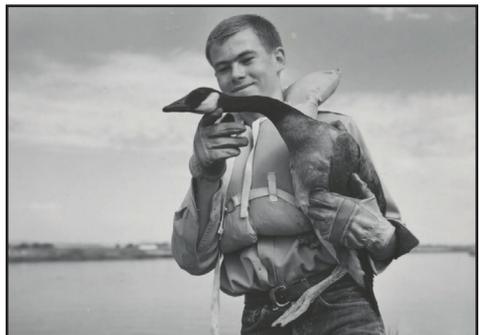


Viewing blind built by the Friends of Deer Flat. Photo copyright Robert Allen.

Refuge Volunteers

Each year, hundreds of refuge volunteers contribute thousands of hours, helping with habitat-improvement, wildlife-monitoring, maintenance, and visitor-services projects.

Volunteer holding Canada goose to be banded, 1967. Photo by J.D. Roderick, Bureau of Reclamation.



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An Oasis for People as well as Wildlife



People flocked to Lake Lowell even before it was completed. The Caldwell Interurban Railroad, an independent electric railway, began carrying passengers from Caldwell to the Lower Dam in 1907.

In 1913, Charles Sebree, son of Caldwell businessman Howard Sebree, built a dance pavilion at the Lower Dam. The pavilion opened a week before the Fourth of July in 1913. It was expected to become a delightful resort between Salt Lake City and Portland. People traveled to Lake Lowell and Sebree's Pavilion on the Interurban from Boise, Nampa, and Caldwell. The pavilion was a popular place for picnics, dances, and parties. It remained open until 1928.

Historical recreational activities at Lake Lowell have included

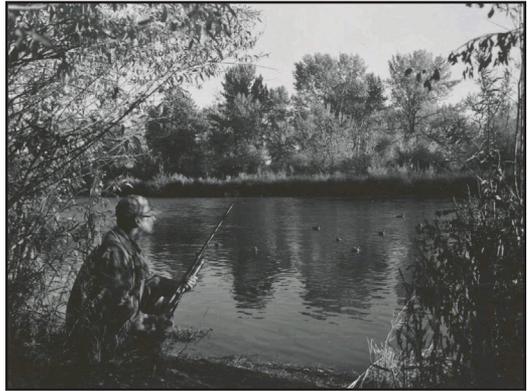


Sebree's Pavilion. Photo courtesy Canyon County Historical Society, #80-P-1a.

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picnicking, camping, fishing, hunting, boating, and, in the winter, ice skating, hockey, and ice fishing. People have also harvested timber, mushrooms, and asparagus from around the lake shore and cut blocks of ice from the lake for iceboxes.

Although some of these activities are no longer allowed, today's visitors can still find a wide variety of outdoor recreational activities. The National Wildlife Refuge System Improvement Act of 1997 defined six wildlife-dependent recreational uses on National Wildlife Refuges: hunting, fishing, wildlife watching and photography, environmental education, and environmental interpretation. The Act requires that these "Big Six" uses receive priority consideration in refuge planning when they are appropriate and compatible with the refuge mission. Visitors enjoy all of the "Big Six" activities at Deer Flat National Wildlife Refuge.



Duck hunter in the Snake River Islands Unit, 1966. Photo courtesy Fish & Wildlife Service.



Fisherman with his catch of bullheads at Gotts Point, 1960. Photo courtesy Fish & Wildlife Service.

This pamphlet was funded by a Preserve America grant to the Friends of Deer Flat Wildlife Refuge from the National Fish and Wildlife Foundation and made possible by support from the following partners: Boise State University; Bureau of Reclamation; Canyon Agricultural Foundation for Education; Canyon County Historical Society; Canyon County Parks, Recreation, and Waterways; College of Idaho; Deer Flat National Wildlife Refuge; Idaho State Historical Society; and Wal-Mart.

The Friends of Deer Flat Wildlife Refuge is a non-profit organization whose mission is to promote, protect, and provide resources to preserve and enhance Deer Flat National Wildlife Refuge for the enjoyment of present and future generations. Members share the common bond of enjoying the refuge and wanting to protect and nurture its resources.

Whether you use the refuge for wildlife viewing, hiking, hunting, fishing, or other recreation, you might want to consider joining this group. The group raises funds through membership fees and other activities, and uses those funds to support the preservation and protection of the resources at the Refuge.



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