

BLM

Benefits of the Deschutes Project

The Deschutes Project provides the water irrigators need to succeed. It also provides recreation benefits and water for municipal and industrial users.

What's the Yearly Value

Irrigated crops: \$108 million
Recreation: 220,000 visits - \$9 million



Haystack Reservoir



The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

www.usbr.gov/pn • Bend Field Office • (541) 389 6541



Printed on paper containing at least 20 percent postconsumer fiber.

August 2011

RECLAMATION

Managing Water in the West

The Story of the Deschutes Project

OREGON



U.S. Department of the Interior
Bureau of Reclamation

The Terrain

Unlike the Oregon coast's lush forests, the terrain east of the Cascade Mountains is a high desert with plenty of evidence of its volcanic past. About 15 million years ago, rivers of molten lava covered much of central Oregon with basalt and obsidian.



Topinka, USGS

Big Obsidian Flow 20 miles southeast of Bend

Wind and water then deposited a sandy loam over the rock and ash. The summer's drying winds, low precipitation (between 8 and 12 inches a year), and high evaporation rate prevented most seeds from germinating. However, human intervention has made it possible to farm this high desert.

Farming in the High Desert

Irrigation began in 1871 when farmers diverted water from Whychus Creek near the town of Sisters. Local farmers developed several canals and formed irrigation districts by the early 1900s, but the amount of irrigated land remained small. The valley plains were first devoted to grazing sheep and cattle. Dryland wheat farming gradually replaced grazing, with initial harvests of 30 bushels per acre. In the 1930s, soil moisture became depleted, the yields dropped, and farmers began searching for more water. Some were in favor of developing irrigation at any cost; others were wary of a Federal partnership.

Building the Project

Congress passed the Reclamation Act in 1902 to boost development of the arid West. The Bureau of Reclamation began creating water storage and irrigation networks by supporting locally developed projects. Irrigators in the Deschutes River basin petitioned for a Federal water project at the turn of the century, but the area first appeared too wild, too remote, and of too little value for Reclamation to develop. The partnership of poverty and drought that nearly broke the West in the 1930s finally brought engineers and irrigators together.



Early wheat farming

Congress approved the Deschutes Project in 1937. President Roosevelt immediately dispatched Civilian Conservation Corps enrollees to begin construction. The corps quickly rehabilitated the Crane Prairie Dam in 1940. World War II delayed the project's completion, but conscientious objectors reinforced the corps. Wickiup Dam and the 65-mile-long North Unit Main Canal were completed in the late 1940s. Though simple in design, the project features mid-century cutting-edge technology built by an unusually large labor force.

Enhancing Irrigation

Building the project did not end with the main canal and the two dams. Reclamation built Haystack Dam and Reservoir in 1957 to improve water delivery by storing water 40 miles closer to area farms. The North Unit Irrigation District built the Crooked River pumping plant in 1968 to make additional water available.

Irrigation enhancement and water conservation continue today as the irrigation districts work with Reclamation to reduce seepage by lining canals and replacing open canals with buried pipelines. The area districts are also fine-tuning their water use by adding measurement structures.

Reclamation continues to monitor and inspect the dams to ensure they will continue to provide irrigation benefits to the area. With the cooperation of water districts, Reclamation monitors and repairs the structures to help them withstand the aging process and enhances the canals and laterals to increase the project's efficiency.



Water travels through both lined and unlined canals



Wickiup Dam

Constructed: 1939 1949
 Height: 100 ft
 Crest Length: 13,860 ft
 Water Storage: 200,000 acre feet

Crane Prairie Dam

Constructed: 1939 1940
 Height: 36 ft
 Crest Length: 284 ft
 Water Storage: 55,300 acre feet

Haystack Dam

Constructed: 1956 1957
 Height: 105 ft
 Crest Length: 1,200 ft
 Water Storage: 5,600 acre feet

1 acre-foot of water is enough water to cover 1 acre of land 1 foot deep in water, or 325,850 gallons.

Haystack Dam and Reservoir

Water from Wickiup Reservoir is diverted into the North Unit Main Canal and carried over 40 miles to Haystack Reservoir where it is stored until needed for irrigation.

Haystack Reservoir is a popular location for fishing, waterskiing, and even hydro boat racing.



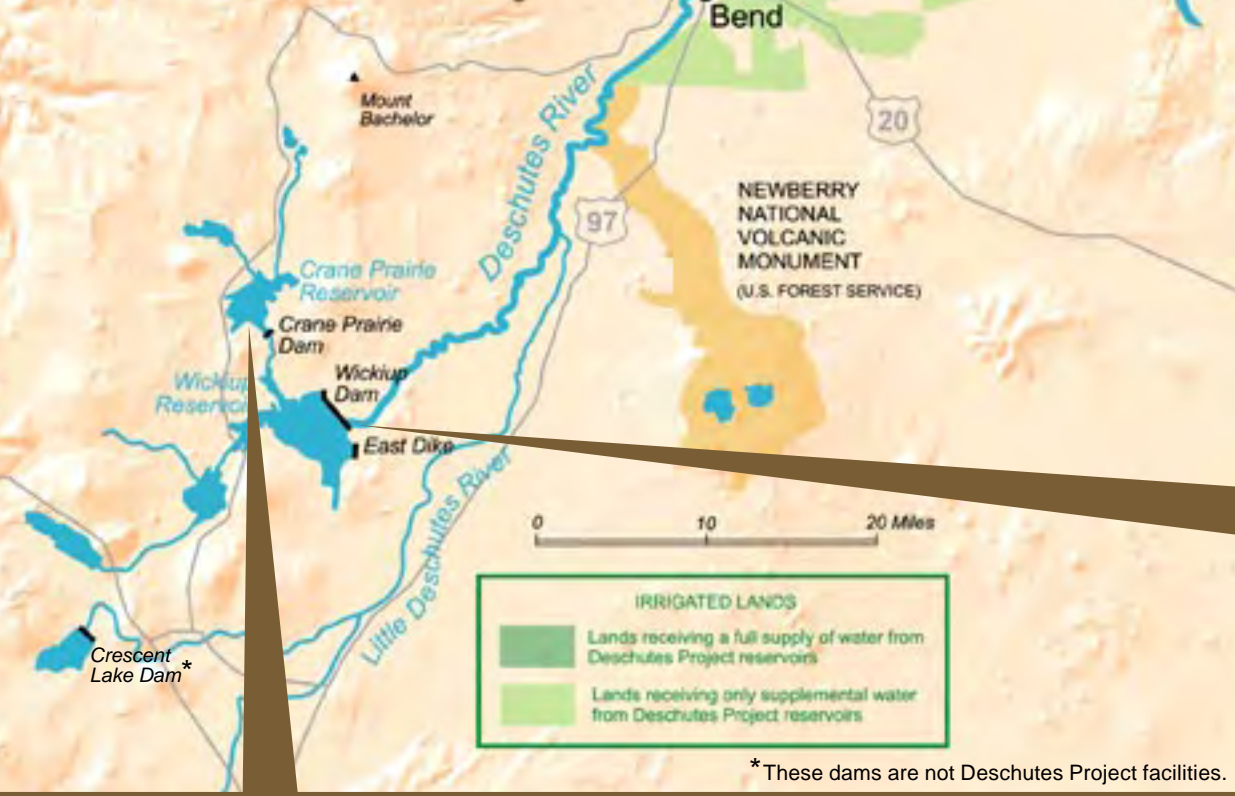
Crooked River Pumping Plant

The North Unit Irrigation District pumps water 150 feet up from the Crooked River Gorge into the North Unit Main Canal to provide additional irrigation water.



Delivering the Water

Just north of the city of Bend, up to 1,000 cubic feet per second of water enters the North Unit Main Canal and travels about 65 miles to farms. The trip isn't always on smooth ground. Flumes, siphons, and tunnels help the water overcome the sometimes rugged terrain.



*These dams are not Deschutes Project facilities.



One of Oregon's Largest

Typically, dams are anchored in the narrowest spot in a river canyon. Wickiup Dam was anchored in a prairie to create a large reservoir bottom. When full, Wickiup Dam's 2.5 mile long crest creates a 15 square mile reservoir surface, one of Oregon's largest bodies of water.



Premier Fishing Opportunities

In addition to providing irrigation water, Crane Prairie Reservoir offers premier fishing and a blue ribbon rainbow trout fishery. Hundreds of acres of an 80 year old submerged forest provide excellent habitat for fish and aquatic insects. The reservoir is also an excellent breeding and nesting ground for a variety of waterfowl.



For the Fish

Wickiup and Crane Prairie Reservoirs support numerous species of fish, including German brown trout, rainbow trout, brook trout, kokanee, and large mountain whitefish.



What's Growing

Today, over 102,000 acres use Deschutes Project water to grow alfalfa, wheat, mint, pasture, bluegrass seed, carrot seed, potatoes, and other specialty crops. Area dairies and livestock operations use project grown feed supplies to produce milk products, beef, and lamb.



For the Birds

Sandhill cranes, great blue herons, Canada geese, bald eagles, and osprey frequent the project's 16,000 acres of reservoir surface and 75 miles of shoreline. Birdwatching opportunities are plentiful.



Recreation in the Deschutes River Basin

The Deschutes Project supports the tourism and recreation industries of central Oregon. Recreation at the reservoirs includes trophy fishing, camping, boating, swimming, hunting, hiking, and biking. The Deschutes National Forest manages the campgrounds around Crane Prairie and Wickiup Reservoirs, and each reservoir is near a private concession for lodging and recreational supplies. The concessionaire at Haystack Reservoir also offers boats for rent.

Scott Richmond, Crane Prairie, Deschutes Headwaters

Dr. Ernest Keeley, Idaho State University

McCabe, USDA