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Malheur's Legacy

Celebrating a Century of Conservation
1908 - 2008

Malheur National Wildlife Refuge
Southeast Oregon

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Malheur's Legacy

Celebrating a Century of Conservation
1908 - 2008
Malheur National Wildlife Refuge
Southeast Oregon

by
Carla D. Burnside



U.S. Department of the Interior
Fish and Wildlife Service, Region 1
Malheur National Wildlife Refuge
2008

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Opposite: Long-billed dowitchers. Barbara Wheeler Photography

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Foreward

Malheur National Wildlife Refuge is an incredible place, special to so many people and essential to our furred and feathered friends. The natural and cultural resources of Harney Basin and the Blitzen Valley are truly phenomenal and spectacular to behold. I can only imagine what it must have been like 100 years ago when Malheur Lake, in its full splendor, provided an abundance of food, water and habitat for wildlife.

Each season at Malheur presents a unique opportunity and experience. Spring, however, is my favorite. The distinctive call of the sandhill cranes are heard overhead, announcing that a new lifecycle is about to begin. It's a time when the peacefulness of winter is replaced by the sites and sounds of thousands of migrating birds, fresh green grass on irrigated fields, and playful newborn calves cavorting on surrounding ranch lands. Spring progresses into summer and songbirds arrive in all shapes and colors, rewarding us with their mere presence. As summer swiftly comes and goes (accompanied by the ever present, but important mosquitoes), birds hatched on the refuge acquire their flight feathers and rapidly gain strength for the upcoming fall migration. The days get shorter and the nights get nippier as autumn brings bright fall colors, seen in the cottonwoods on the refuge and willows along the Donner und Blitzen River. Then winter returns bringing back a peacefulness and serenity to the landscape that is hard to describe and is rarely experienced elsewhere.

I'm honored to be a part of Malheur's centennial celebration. It is a time to reflect on the past but also a time to consider the future. There are many management challenges facing Malheur's next 100 years, primarily in the form of invasive non-native species. Common carp, an Asian fish, populate Malheur's waters, particularly the lakes. Lakes that once produced thousands of redheads and canvasbacks in the Pacific Flyway are now inundated with carp. This drastically decreases the productivity of other species, including both bird and fish. Invasive plants, such as perennial pepperweed, also an Asian species, are capable of creating a monocultural field in just a few short years. This results in a lack of healthy habitat for native and migrating wildlife. Unfortunately management's efforts to control these invasive species are expensive, time consuming, and usually short-lived. However, giving up is not on our agenda.

Malheur's centennial precedes, by one year, the kick-off to our Comprehensive Conservation Plan. This planning process will guide management decisions and set forth goals, objectives, and strategies for the next 15 years. The effort will be pivotal in providing management direction to maintain and/or restore the ecological integrity of the refuge. The path we face may have many obstacles and detours, but I have faith that sound science, technology and good old-fashioned horse sense will ultimately be the victor, restoring Malheur to its full grandeur.

In closing, I want to gratefully recognize the hard working staff of the past and present, as well as the dedicated volunteers, local permittees, and supporters who have poured their hearts, souls, and sweat into Malheur National Wildlife Refuge over the years. Their efforts have been the foundation of this refuge and those continued efforts will be the foundation of its future. We hope that you enjoy "Malheur's Legacy", for it took over a century to create.

Donna T. Stovall
Project Leader, Malheur NWR



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Acknowledgements

This book is dedicated to all the people, past and present, who have worked on Malheur National Wildlife Refuge and to those who have lived for generations on or near the land encompassed by the Refuge.

I am grateful to Jan Cupernall and the Harney County Historical Society for allowing access to historic photos in the Society's collection. Conly Marshall graciously shared his collection of historic family photographs which contain some of the only photographs of Refuge Protector George Benson. The Civilian Conservation Corps photographs come from quarterly and annual reports archived at Malheur Refuge and from photographs donated by former CCC enrollees at Malheur Refuge.

The William L. Finley and Herman T. Bohlman photographs of their visit to Malheur Lake in 1908 are part of the Portland Audubon Society's collection. They offer a rare glimpse of the wildlife present on Malheur Lake a century ago.

I would also like to thank the photographers who provided photographs for this book. Many of the photographs were taken by refuge staff for annual narratives and other reports, however most of the wildlife photographs were taken by individuals who have generously donated them to the refuge for educational purposes. I am especially thankful to Barbara and Martin Wheeler and Roger Baker for allowing publication of their photographs in this book; without their generosity this book would not be possible.

I would like to thank Jean Harrison, Beth Coahran, and Donna Stovall for taking time to provide editorial comments. I would also like to thank Glenda Franich and Amy J. Gaskill for their layout and design support.

Carla D. Burnside
Archaeologist, Malheur National Wildlife Refuge



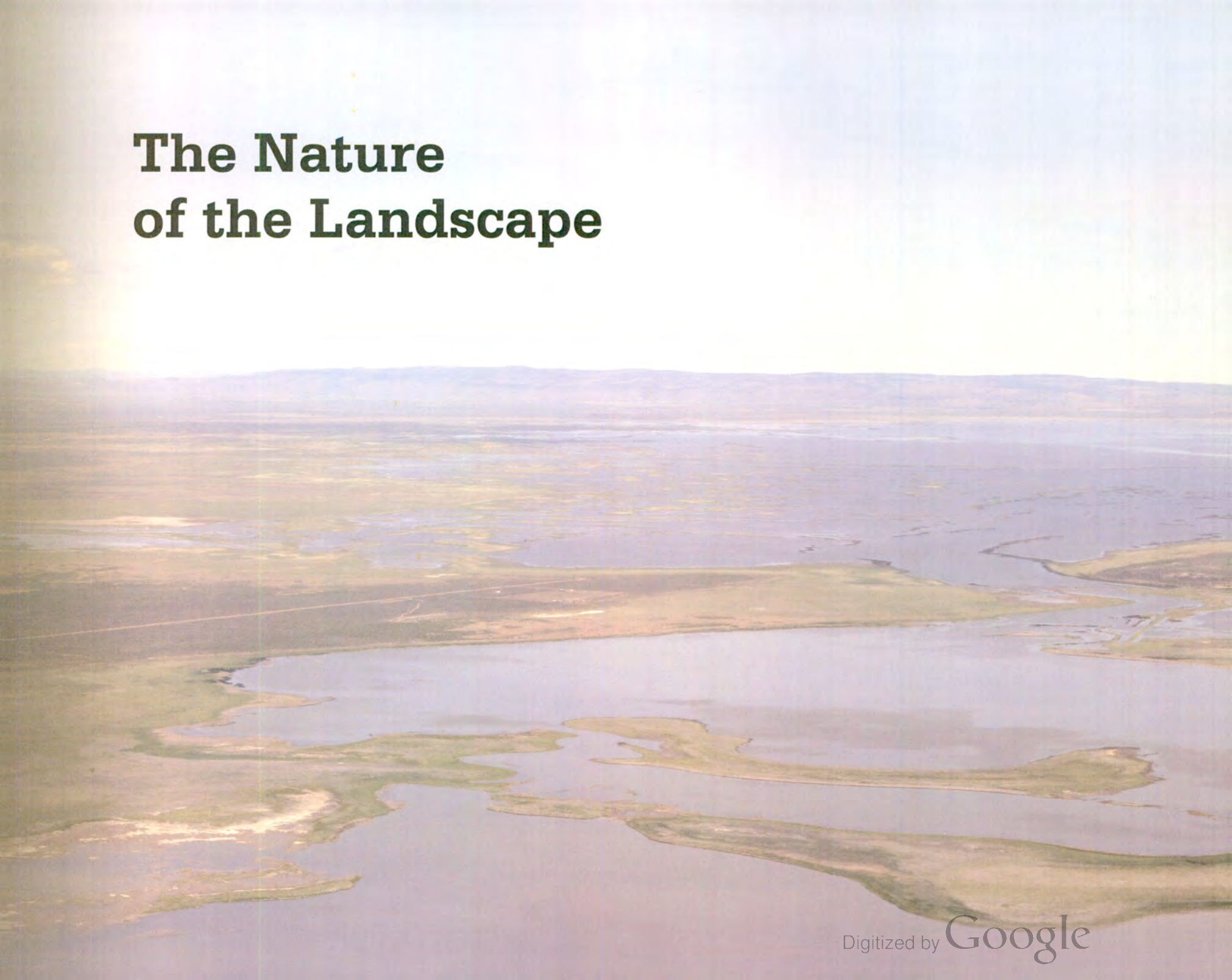
A plaque commemorating the 50th Anniversary of Malheur Refuge was dedicated to Stanley Jewett and William L. Finley for their contributions to the establishment and growth of the refuge.
USFWS

"Those who dwell,
as scientists or laymen,
among the beauties and mysteries
of the earth are never alone
or weary of life."

- Rachel Carson -

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The Nature of the Landscape



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Throughout the eons, this lush oasis supported an incredible profusion of birds and wildlife.

Previous page: An aerial view of the north side of Malheur Lake. USFWS

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Malheur National Wildlife Refuge is an oasis in the high desert of southeastern Oregon for the multitude of birds and other wildlife who make it their home. Situated in the wide open spaces of the Harney Basin on the northern edge of the Great Basin, the refuge encompasses a mere 292 square miles of the 5,300 square miles covered by the basin. The refuge includes vast cattail and tule wetlands, lakes, dry alkali playas, ponds, greasewood covered flats, lush native grass meadows, long corridors of riparian vegetation, and sagebrush covered hills bordered by impressive basalt rims. This great variety of wildlife habitats encompassed by the refuge begins in the lowest elevations of the basin and expands southward along the Donner and Blitzen River to the base of Steens Mountain and northwest into the lower reaches of the Silver Creek drainage.

Three shallow playa lakes, Malheur, Mud, and Harney, are located in the lowest portion of this vast basin and receive life producing water from the surrounding hills and mountains. Most of the water reaching the lakes arrives in the spring as snow melts and flows southward down the Silvies River, northward in the Donner und Blitzen River, and through the Silver Creek drainage from the northwest. With an average annual rain/snow fall of only nine inches, a drought year can result in extremely dry conditions, reducing the lakes to a mere fraction of their former size or becoming alkali-covered playas. The area surrounding the lakes is relatively flat, so a one inch rise in the water level will put almost three square miles of adjacent land under water. An extremely abundant year of rain and snow can force water to rise beyond the boundaries of the refuge to cover surrounding lands - doubling or tripling the size of the marsh. In the mid-1980's three years of above normal snow forced Malheur Lake beyond the refuge boundary; the lake grew from 67 square miles to more than 160 square miles. The reverse is also possible: in 1992 Malheur Lake shrank to 200 acres.



Steens Mountain from the Blitzen Valley.
Barbara Wheeler Photography

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The climatic and geologic conditions in this portion of Oregon have changed significantly over time. Nearly ten million years ago tectonic faults and regional uplifting began the formation of Steens Mountain on the south side of the Harney Basin. Eventually rising 9,700 feet above the surrounding valleys, Steens Mountain developed a vast ice field covering the upper reaches of the mountain around one million years ago. More recent glaciers carved the spectacular U-shaped gorges on the flanks of the mountain. As the glaciers slowly moved downhill, their weight and movement ground the rock below into a fine powder, or loess. This loess was captured in the numerous streams flowing from beneath the glaciers and carried down the Donner und Blitzen River and other creeks on the western flank of the mountain to be deposited on the flood plain of the Blitzen Valley. Turbulent down slope winds pushed these deposits of loess around the valley floor, eventually forming a series of low, vegetation covered dunes at the south end of the river valley.

Corresponding with the cooler and moister conditions of the late Pleistocene epoch, 1.8 million to 11,550 years ago, vast amounts of water flowed into the lowest elevations of the basin; from there it drained down the Malheur River and then to the ocean. This connection to the ocean gave salmon and other fish species access to the basin. However, this continuous access to the ocean ended around 32,000 years ago, when basalt flows erupted in the southeast corner of the basin, blocking the outlet from the lake into the river. As climatic conditions varied over the centuries with shifts in seasonal rain fall and temperature, the right combination of conditions created an enormous lake covering the floor of the basin. At several different times conditions were wet enough and water levels rose until the lake was over 25 feet deep, when this happened the water was high enough to spill over the top of the blocked outlet and reconnect the basin to the ocean. Salmon bones discovered in spawning gravels near the connection between Malheur and Mud lakes attest to one of these overflow events around 22,000 years ago.

With the end of the cold conditions of the Pleistocene, subtle warming conditions combined with abundant rain fall transformed the lower elevations of the Harney Basin into an expansive pluvial lake. With no outlet to the ocean until the level of the lake crested at over 30 feet, a major portion of the Harney Basin was covered with water by 9,300 years ago. This rise in lake levels would combine Malheur, Mud and Harney lakes into a deep lake at least four times over the next 9,000 years. A lush, narrow band of wetland vegetation bordered the edges of this lake. As the water expanded southward into the Blitzen Valley shallower areas



Left: Layers of volcanic ash on the south side of Mud Lake. USFWS

Right: Green-winged teal drake. Barbara Wheeler Photography

Far right: Sunrise at Buena Vista Overlook

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developed in to extensive cattail and tule marshes. Remnant shore lines of these pluvial lake occurrences are still evident along the south side of Harney and Mud lakes. Large gravel bars, formed under these large lakes, can be seen at various locations along the south side of the lakes and at the mouth of the Blitzen Valley.

As the level of the lakes fluctuated over the centuries, the marshes within the lakes were renewed and revitalized. During dry episodes silts and salts on the surface of the lake beds were tumbled and whipped by the wind into dunes, these dunes would be favored later as nesting areas by colonial nesting birds. The return of deeper water replenished the marsh, benefiting wildlife by providing open areas for foraging and islands of vegetation suitable for nesting. In addition, the deeper water provided safety from predators for those species nesting on the dune islands.





Barbara Wheeler Photography

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In the southwestern corner of the Harney Basin, abundant springs bubble up from an area at the base of basalt cliffs. This area was essential to wildlife during the dry episodes when the lakes shrank or disappeared. Small, narrow waterways lined with marsh vegetation extended along the base of the cliffs and water seeped into neighboring grassy meadows.



*Pintail drake feeding in the marshes of the **Blitzen Valley.*** Barbara Wheeler Photography

This presence of marsh and meadow provided ample nesting habitat for birds using the area. During wetter periods, dunes in the area grew lush stands of native grasses, providing abundant cover. In addition, low lying playas filled with water, creating areas important for shorebird feeding and nesting. These same climatic changes also had a profound influence on the Blitzen Valley. In times of plentiful snow on the upper elevations of Steens Mountain, the Donner und Blitzen River burst out of the narrow canyon at the south end of the valley,



*Water cascades down rimrock as spring runoff **begins in the valley.*** Barbara Wheeler Photography



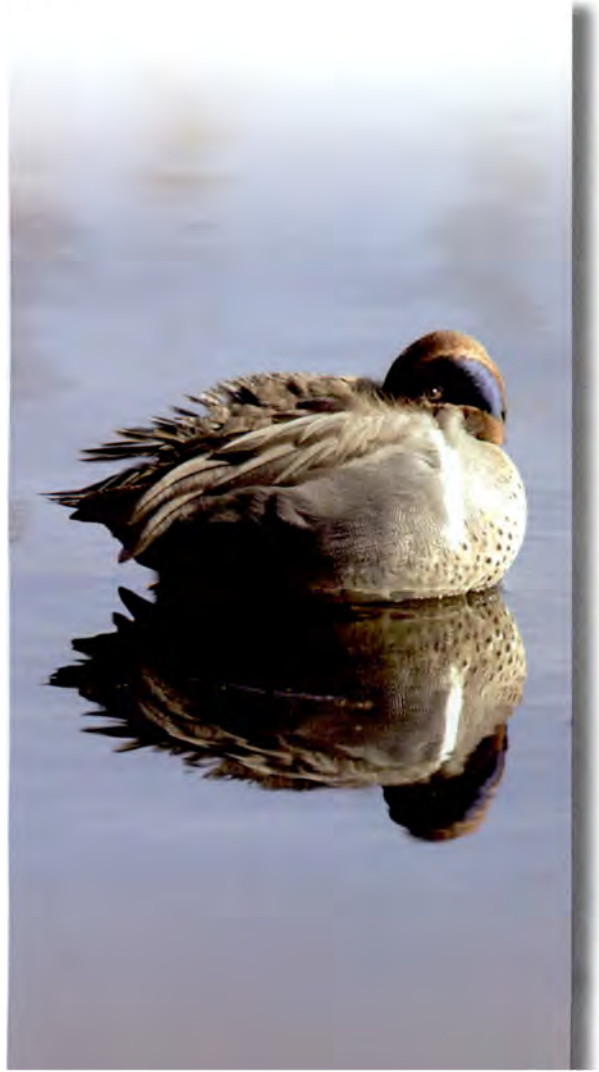
Barbara Wheeler Photography

Cinnamon teal drake

depositing nutrient-loaded sand and silt on the flood plain. Water overflowing the banks of the river settled into old channels of the river, creating small, linear ponds and providing water for nearby native grass meadows. Creeks entering the valley from the east side funneled water across these grassy meadows, creating numerous stringers of lush riparian vegetation. As water decreased in the river in the late spring or during periods of lower snow fall, these creeks became increasingly important habitat for wildlife using the area.

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Throughout the eons this lush oasis supported an incredible profusion of birds and wildlife. They adapted to repeated and extreme changes in climate, in the shrinking and swelling of lakes, in the expansion and contraction of marshes, and in the abundance or scarcity of available food. Eventually the birds and wildlife would also have to learn to adapt to the changes brought about by human use of the area.





Barbara Wheeler Photography



Roger Baker

A male sage-grouse struts for a female on a lek west of the Refuge.

Left: Green-winged teal resting on a pond in the Refuge.
Barbara Wheeler Photography

Lower left: California quail are a common sight in the Blitzen Valley.

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The appearance of snow geese marks the beginning of spring in the Harney Basin.





All photos this page: Barbara Wheeler Photography

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Native Americans in the Basin

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Archaeological research shows that people were using the area now managed by the refuge 9,800 years ago.

Previous page: Patination of the surrounding rock accentuates the designs on a panel near Buena Vista. USFWS

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The abundance of birds, animals and plants found in the Harney Basin provided Native Americans with plenty of food and resources for over 11,000 years. Use of the area was greatly influenced by climatic changes, some lasting one or two centuries. In turn, these changes altered the range of plants across the basin, influencing both wildlife and human use.

Archaeological research shows that people were using the area now managed by the refuge 9,800 years ago. At that time, the Harney Basin contained a huge lake that covered 255,000 acres. These early inhabitants used plants and animals found along the edge of this vast lake and in the surrounding uplands. Hunters used spears to hunt large game animals. Ground stone tools used to process plants, such as grass seeds and roots, have been found from this period but are not abundant and suggest that plant foods were not as highly processed as in later periods. Abundant plant resources also meant that materials used to fashion baskets were readily available. It is around this time that twined bags, mats, burden baskets, and trays begin to appear in the archaeological record.

The climate then became progressively drier, lowering lake levels. For a while, the shallower lake meant that the marsh covering Malheur Lake actually increased in size and supported more plants and wildlife. Eventually the dry climate caused the marsh to shrink and then disappear, limiting the resources available to both people and wildlife. Evidence of Native American use of the immediate area decreases as the climate became drier and the inhabitants of the area focus their activities around higher elevation springs.

Stone tools show that animals continued to be hunted in the area and there is a gradual change from the use of spears to the atlatl and dart. The atlatl consists of a piece of wood shaped with a handle on one end and a hook on the other end. It is used to hurl a light spear (dart) through the air with more accuracy than a hand thrown spear.

Mule deer were an important part of the prehistoric diet. Impressive bucks are a common sight in the autumn.



Roger Baker

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Use of the refuge increased around 6,000 years ago, when climatic conditions became wetter and the marsh grew in size. The first documented use of the spring at Refuge Headquarters begins around this time and would continue into the historic period. Inhabitants of the Headquarters site were fishing for tui chub, suckers and squawfish, and were hunting ducks, antelope, mountain sheep, coyote, muskrat and bison. It is during this time period that the historic pattern of seasonal movements to resource areas becomes more apparent in the prehistoric record.



Around 3,500 years ago small villages appear along the edge of the lakes and the Blitzen Valley marshes, and along the Donner und Blitzen River. These sites include either stone ring structures or house pits. Three sites excavated in the Blitzen Valley show increased use of marsh and river resources and a stable way of life. At one of these early villages, rabbit, fish and large game animals were being eaten; grass and juniper seeds were being harvested; and conifer and sage brush were being used to fuel fires. Unfortunately, the inhabitants of this village were forced to abandon their homes when hot cinders from an eruption at Diamond Craters blanketed the landscape.

Around 2,500 years ago the bow and arrow was introduced to occupants of the basin. This new technology greatly increased a hunter's accuracy. Modification to arrows included blunting the ends so waterfowl could be hunted with the bow and arrow. Before the introduction of the bow and arrow, waterfowl hunting was limited to capturing ducks and coots in long twined nets strung across narrow areas of the marsh. Large numbers of birds could be herded into the nets in the late summer when they molted their flight feathers.

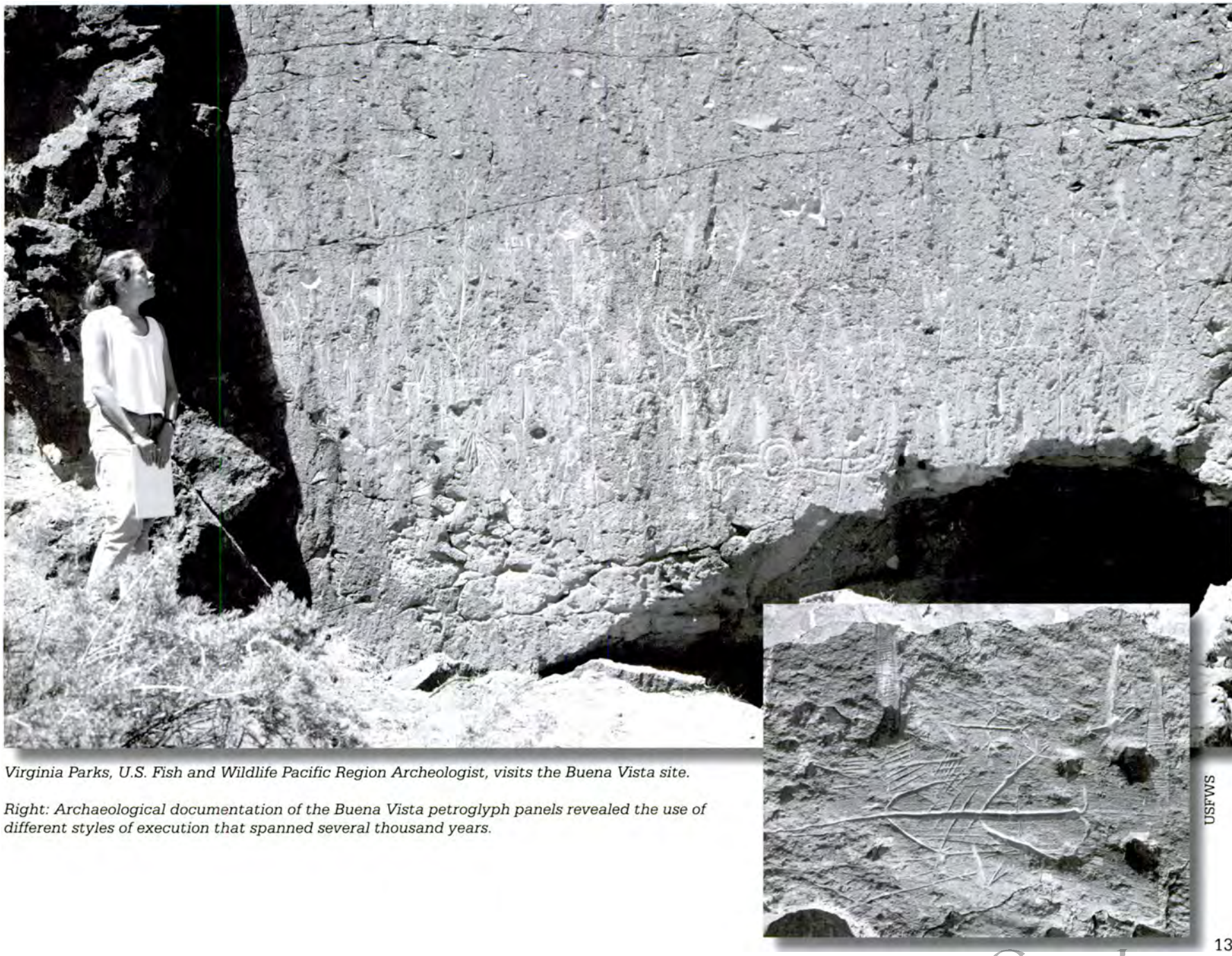
Around 1,400 years ago, the lakes and marshes shrank again, as a drought hit the area. Smaller wetlands meant fewer resources for people, so they used the area less.

The return of moist conditions brought an abundance of lake, marsh and upland resources – and people. As resources increased, so did the number of sites especially around the lakes, in the Double-O area and in the Blitzen Valley. This may be the period of most intensive use of resources in the basin.

Members of the Burns Paiute Tribe at Old Camp in the early 1900s. Burns Paiute Tribe



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Virginia Parks, U.S. Fish and Wildlife Pacific Region Archeologist, visits the Buena Vista site.

Right: Archaeological documentation of the Buena Vista petroglyph panels revealed the use of different styles of execution that spanned several thousand years.

USFWS

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Geomorphic data from the Headquarters site suggests that the lake rose significantly 1,050 years ago and again flowed into the Malheur River for a short time before it shrank to its current size. This rise in lake levels forced the inhabitants of the area to move to higher ground around the lakes including shorelines created during older high lake stands. As the lake grew deeper the size of the marsh decreased when the water became too deep to support many marsh plants. As water levels decreased, a greater abundance of marsh resources again became available for humans and wildlife.

But the cycle of wet and dry was to continue. A drought around 700 and then another around 500 years ago again briefly limited the resources available to inhabitants of the basin. As conditions improved, people increased their use of the area, living in stone ring villages in the valley or house pits on the lakes. At the Headquarters site a cache pit filled with seeds from wapato (Indian potato), bulrush and goosefoot attest to the harvest of important plant foods around 400 years ago. The presence of the cached seeds suggests that the site was occupied continuously for several years. Fish bones were found in two fire hearths from this time period, as well as charred sagebrush and willow.



Left: Patination of the surrounding rock accentuates the designs on a panel near Buena Vista. USFWS

Below: The Krumbo petroglyphs are a popular stop for refuge visitors.



Dawson

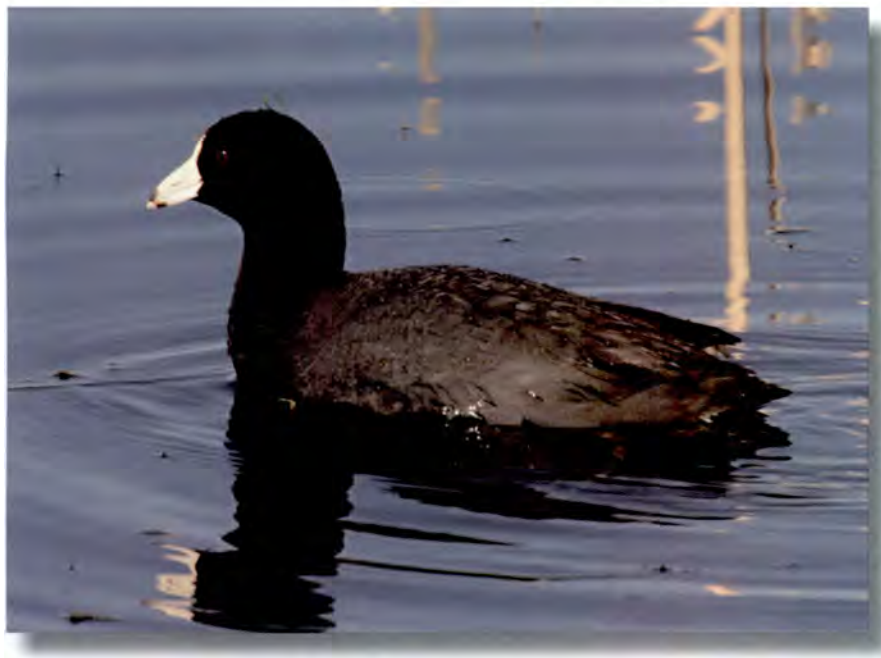
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A roasting pit of charred tui chub was abandoned on Harney Lake 200 years ago. Archaeologists discover the fire was fueled with sagebrush and the fish were caught with a gill net. USFWS

Mat covered shelters, known as wickiups, have been documented during this late period. In historic times these structures were used from late spring through early fall as the Paiute Indians moved to different resource areas to harvest plants and animals. Of particular interest during this late occupation of the basin is the harvest of tui chub at Harney Lake, where roasting pits and garbage piles filled with thousands of fish bones have been excavated. All of similar size, the tui chub were caught in gill nets, then roasted, which preserved them for long term storage.

This pattern of seasonal exploitation of resources extended into the historic period as the Wada'tika (ancestors of the Burns Paiute Tribe) continued to harvest the same resources as those identified in the archaeological record.



American coot were hunted prehistorically using coot drives. The coot were driven into nets during their summer molt and captured in large numbers. The meat was then dried and stored for the future.

Roger Baker



Members of the Burns Paiute Tribe observe as archaeologists excavate at a prehistoric site (1991).

USFWS

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Beth Coahran

Tribal elders process tules during a collecting trip to the refuge.

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Beth Coahran

Minerva Soucie works on a willow basket at the Harney Basin Heritage Fair held each year during the John Scharff Migratory Bird Festival.

The entrance of Euro-Americans had a profound impact on the resources and Native Americans of the Harney Basin. Many of these important prehistoric resources are still harvested today by the Burns Paiute Tribe at a variety of locations in the basin. Members of the Burns Paiute Tribe continue to harvest important plants on the refuge as they seek to continue and share their cultural traditions of basket weaving, tule mat construction and duck decoy construction with tribal youth.

Tribal elder Minerva Soucie is filmed as part of an anti-looting training video for the Federal Law Enforcement Training Center in 2007. The Burns Paiute Tribe has taken an active role in the preservation of the sites of their ancestors. USFWS

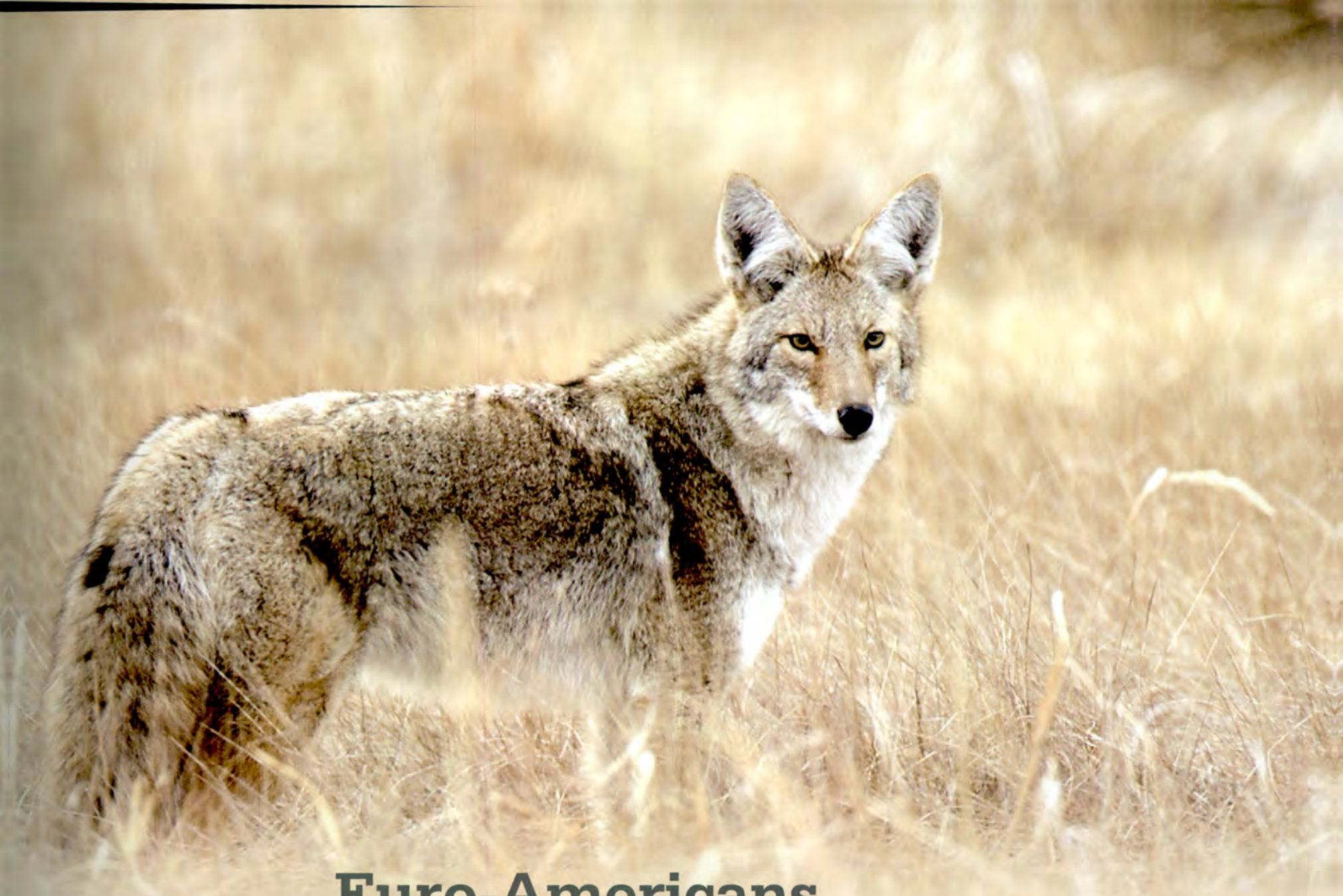
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Refuge staff look at the stratigraphic profile in a prehistoric site on Malheur Lake. Archaeological investigations examined the distribution and age of landforms used for village locations in the past (1992).

USFWS

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Euro-Americans Arrive in the Harney Basin

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"Here is a large spring coming out from the hill, having a gravelly bed. It is the only place on the lake where the water is sweet and palatable."

Previous page: Coyotes are a common occurence in the Harney Basin and on the Refuge. Barbara Wheeler Photography

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In 1826 French-Canadian fur trapper Peter Skene Ogden led a large expedition of trappers from the Hudson Bay Company into the Harney Basin. The fur trappers were looking for beaver, river otter and other fur bearing animals. On November 1, 1826 as Ogden reached the north side of Malheur Lake he recorded his impressions in his diary:

> *"At sunset we reached the lakes. A small ridge of land [the Harney Lake dunes] an acre in width divides the fresh water from the salt lakes. These two lakes have no intercourse. The fresh water has an unpleasant taste 1 mile wide 9 long. In this (salt) lake [Malheur Lake] discharge Sylavailles River [the Silvies river] and 2 small forks; but it has no discharge. Salt Lake at the south end is 3 miles wide. Its length at present unknown to us but appears to be a large body of saltish water. All hands gave it a trial but none could drink it.*
>
> *All the country is low and bare of wood except worm wood and brush. We had trouble finding wood to cook supper. The trappers did not see a vestige of beaver. Great stress was laid on the expedition visiting this quarter. Here we are now all ignorant of the country, traps in camp, provisions scarce prospects gloomy. Buffalo have been here and heads are to be seen. Fowl in abundance but very shy."*

Ogden and his company of trappers remained on the north side of the lakes. However, had they gone to the south side of Malheur Lake, they would have found fresh water at the spring near today's refuge headquarters and the abundant plant and animal resource of the Blitzen Valley.

During their late fall arrival, they encountered Paiute Indians camped along the shore of the lakes. The Hudson Bay Company frequently expected local tribes to supply food for their large expedition groups. Unfortunately, the Paiutes were entering winter after a very unproductive summer and were unable to help the explorers with food.



USFWS

The spring at Refuge Headquarters in 1936.

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Peter Skeen Ogden (1794-1854) was ***a prominent trapper and explorer who worked for the Hudson Bay Company. Ogden reached the nroth side of Malheur Lake in November 1826. Ogden, Utah is named for him.*** Used by permission, Utah State Historical Society, all rights reserved.

On November 3rd Ogden documents his company's hardships and provides a description of the Paiutes and their small villages. He also describes the hardships the Indians were enduring because of a lack of food:

> *"From 4 a.m. snow has fallen. This will make it difficult for my 2 express men from Ft. Vancouver to find our tracks though every precaution was taken making marks at different camps; if only the Indians do not destroy these marks. It is incredible the number of Indians in this quarter. We cannot go 10 yds, without finding them. Huts generally of grass of a size to hold 6 or 8 persons. No Indian nation so numerous as these in all North America. I include both Upper and Lower Snakes....*
>
> *They lead a most wandering life. An old woman camped with us the other night; and her information I have found most correct. From the severe weather last year, her people were reduced for want of food... Unfortunate creatures what privations you are doomed to endure; what an example for us at present reduced to one meal a day, how loudly and grievously we complain; when I consider the Snake sufferings compared to our own! Many a day they pass without food and without a murmur. Had they arms and ammunition they might resort to buffalo; but without this region the war tribes would soon destroy them. This country is bare of beaver to enable them to procure arms. Indian traders cannot afford to supply them free. Before this happens a wonderful change must happen. One of Mr. McKay's party was sent back to request us to raise camp and follow his tracks. A chain of lakes [most likely the springs in the Double-O area] was all they had seen, no game. Truly, gloomy are our prospects."*

Prospects did not improve for the company and Ogden recounts on November 4th:

> *"Raised camp taking west course and soon reached the end of Salt Lake [Malheur lake] not near so long as I expected, in some parts nearly 5 miles wide and deep, its borders flat and sandy. At evening we camped near three small lakes [east side of Malheur Lake]. Swans numerous. Tho' 100 shots fired, not one killed. Nothing but worm wood this day. Salt (?) Lake may be 10 miles in length. Mr. McKay and party arrived with the following accounts – no beaver, same level country a chain of lakes of fresh water. This adds to the general gloom prevailing in camp, with all in a starving condition, so that plots are forming (among) the Freemen to separate. Should we not find animals our horses will fall to the kettle. I am at a loss how to act."*



Barbara Wheeler Photography

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On November 5th a decision is made to abandon trapping in the area and proceed westward:

> *"Bad as prospects were yesterday they are worse to-day. It snowed all night and day. If this snow does not disappear our express men will never reach us. I hope they will not fall a prey to the Snakes. I intend to take the nearest route I can discover to the Clammiitte [Klamath] Country. My provisions are fast decreasing. The hunters are discouraged. Day after day from morning to night in quest of animals; but not one track do they see."*

The lack of available food and a scarcity of fur bearing animals around the lakes led Ogden to write the name "Malheur" the French word misfortune on his maps of the area. From that time on the area would be identified it as Malheur Lake. Ogden mistakenly believed the lake was connected with the Malheur River, thus providing the river with its name. It would be nearly 20 years before the next significant presence of Euro-americans in the Basin.

The 1845 Meeks Wagon Train was the next major presence of non-natives in the area. Convinced by Stephen Meek that he knew a shorter route to the Willamette Valley, nearly 800 pioneers followed him across Oregon's high desert. As the wagon train entered the Harney Basin, their primary concerns were water and feed for their livestock. Water and grass had not been particularly abundant since the wagon train turned off the established Oregon Trail and the livestock were beginning to suffer. Under the direction of Meek they arrived in the northern portion of the Harney Basin and then, in search of water, detoured south to the lakes. They camped along Malheur and Harney lakes but found the water, because of its alkaline nature, was not fit for humans or animals. The ill fated wagon train eventually made their way to The Dalles, but not before suffering from the deprivations of the high desert. In his diary, Eli Casey Cooley tells about the wagon train's entrance into the Harney Basin and their travels along the north side of the lakes to Silver Creek.

> *"Sept Thu 4. Weather fine to day and the road has been broken for a pease and then first rate. Crossed the main divide [Stinkingwater Pass] to day which is about 7 mile from whare wee camped and about 3 miles further to a valley. This far the road is very broken and rough and some seder and pine timber. After wee got in to the valley the road was first rate to whare wee camped which was on a small drean [Malheur Slough] about 4 miles from whare wee struck the valley. Some willow and plenty of grass. Here as wee come over the divide wee saw the Cascade Mountains at a considerable distance. Here the valley appears to be perfectly level as far as the eye can reach. Saw some Indians here. The corse is about South West to day.*
> *14 miles"*

Above: River otters. Barbara Wheeler Photography

Left: American mink.

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Roger Baker

American white pelican

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"Sept Sat 6. The road to day is first rate. Weather fine. Come about 3 miles and crossed a small creek [a branch of the Silvies river]. Plenty of grass and willow here on the creek. In about 1 mile further passed the point of a ridge [Wrights Point] leaving it to the rite and in about 14 miles further camped by a lake [Malheur Lake]. Leaving it to the left the creek runs to the left. Plenty of grass, no wood, some sage here. The corse has been a little West of South. 18 miles"

"Sept Sun7. The road to day has been good. Weather fine. Come about 10 miles and struck a creek [Silver Creek] and camped. Plenty of grass and willow here. The creek runs to the left and thrugh (through) the lake [Harney Lake] and then round to the rite in to Jays river [Meek was confusing the John Day river to the north with this area] round the mountains. Wee left holes? to the rite and left. The corse has been about South West or near so. Traveled allmost towards a high point or peak [Wagontire Mountain] and to the rite is and other some distance off. Crossed a small drean just befor it."



Double-crested ***cormorant.***
Roger Baker

In September 1853 the "Lost Wagon Train" led by Elijah Elliot seeking a shorter route to the Willamette Valley followed the route of the Meeks Wagon Train into the Harney Basin. Upon entering the basin, Elliot decided to detour around the south side of Malheur Lake, where they encountered marshy areas that were difficult to traverse. The train forded the Blitzen River and, in doing so, left behind one of the only reliable sources of fresh water in the area. The wagon train continued around Mud and Harney Lakes until they reached the springs in the Double-O area. Many members of the wagon train believed they were hopelessly lost, but riders from Central Oregon eventually located the wagon train many miles west of the Double-O area and led them to safety.



Roger Baker

American white pelican in flight.

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Various military expeditions ventured into the area in the late 1850s, and several military camps were established in the basin in the 1860s. Many local landmarks received their names during these expeditions. Harney Lake received its name in 1859 in honor of General William S. Harney after he ordered an expedition through the basin in search of a reliable route to the Snake River. Steens Mountain is named after Major Enoch Steen who led an expedition to survey a military road through the area in 1860.

Many early bird observations were recorded in military journals from these expeditions. The first published observations of waterfowl and wildlife in the area occurred in 1874, when Captain Charles Bendire wrote about the birds found in the vicinity of Malheur Lake. In May 1875, he recorded the following observation about pelicans fishing in the spring at Refuge Headquarters:



Forster's ***terns.*** Roger Baker

> *"Here is a large spring coming out from the hill, having a gravelly bed. It is the only place on the lake where the water is sweet and palatable. The shore here swarms with a species of sucker about eighteen inches long, and red on the sides. I camped a night there, and this kept the birds away in the day-time. At sun-down they began to collect, first by tens, then by fifties, and in a short while there was string of them one hundred and fifty yards long, at least, and from four to six deep...*
> *For so many birds they kept singularly quiet; an occasional grunt from one, resembling a doöe, was about all I could hear...*
> *forming a semicircle, gradually closing in towards the shore and driving the fish with them, and as soon as they had them in the shallow water about one and one-half feet deep and less, they all went for them, and such a splashing I have seldom heard."*

Bendire made additional observations about pelican nests on islands in the lake, as well as a large cormorant colony, and Western gull and Forster's tern colonies. This information would later attract feather hunters to the area and eventually bring about establishment of the refuge.

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Settlers Bring Change to the Land



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Sometime after Bendire's 1875 spring ornithology visit to the south side of Malheur Lake, Peter Stenger began using the area for summer livestock grazing. He constructed a small sod structure for shelter at the location of today's Refuge Headquarters.

Previous page: Homesteader on Malheur Lake. USFWS

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Peter French
Harney County Historical Society

Ranching in the Blitzen Valley

It took ten years after passage of the Homestead Act for settlers to arrive in the Blitzen Valley. Dr. Hugh Glenn of California took advantage of the 1862 Act to begin building a vast cattle empire in Southeastern Oregon. In 1872 he sent Peter French with 1200 head of cattle, six vaqueros and a cook to Oregon. French used the Act to claim 160 acres at the south end of the Blitzen Valley for his boss. Using this as headquarters for the ranch he managed for Glenn, French continued to acquire land over the next 25 years using not only the Homestead Act, but also the Swamp Land and Desert Acts. French eventually managed a ranch that encompassed over 140,000 acres including the Blitzen, Diamond and Catlow Valleys.

Under each of the Acts, applicants were required to make "improvements" to the land for agricultural purposes, this could include improvements for livestock grazing. As a result of these stipulations the Blitzen Valley and surrounding areas underwent a transformation from the more natural conditions attributed to pre-European contact to the highly altered landscape of today. Roads were constructed; water was directed into ditches to drain or irrigate areas; streams were impounded to control the direction and velocity of flow; meadows were hayed; and uplands were grazed.



Harney County Historical Society

Prim Ortego on the porch of the P Ranch "Dog House". Ortego began working for Peter French in 1877.

Peter French's White House at the P Ranch.



Harney County Historical Society

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Buckaroos at P Ranch in 1912.
Harney County Historical Society



P Ranch willow corrals west of main ranch buildings. Harney County Historical Society



The long barn at P Ranch originally had aspen headers along the length of the center aisle. The headers were replaced with beams soon after construction as the peak of the roof settled and slipped off the ends of the aspen headers. USFWS

Below: P Ranch Long Barn.
Barbara Wheeler Photography

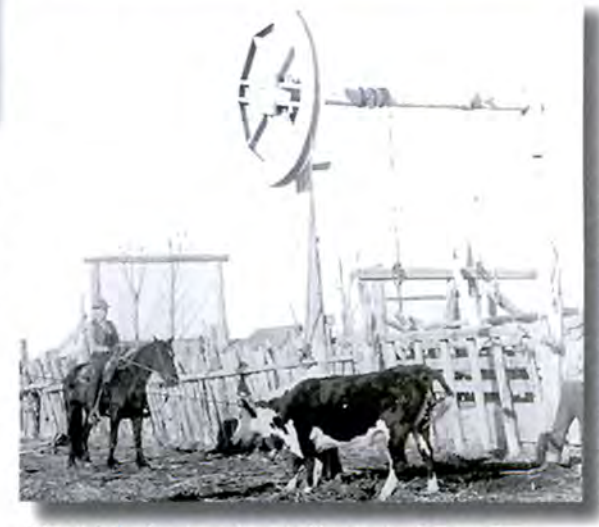


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Harney County Historical Society



Harney County Historical Society

After French's death in 1897 the ranch was managed as the French-Glenn Livestock Company until debts forced the sale of land in 1907 to Henry L. Corbett and C.E.S. Wood of Portland. They formed the Blitzen Valley Land Company under the management of area rancher William Hanley. The goal of the company was to return the property to a successful working ranch. To accomplish this, the company needed to improve water distribution in the valley. Between 1907 and 1913 the company channelized 17 ½ miles of the Donner und Blitzen River to improve drainage of adjacent wetlands. They also authorized the construction of eight miles of the Busse Ditch and four miles of the Stubblefield Ditch to improve distribution of water in the north end of the valley.

In 1916 the company was reorganized as the Eastern Oregon Livestock Company (EOLC). Louis Swift of the Swift Packing Company of Chicago purchased 46 percent of the company under this reorganization. The construction of a Union Pacific rail line from Ontario to Crane in 1916 made shipping livestock to market easier. Swift was interested in the thousands of feral pigs in the Blitzen Valley, as well as the cattle raised on the ranch. Under his direction the pigs were rounded up and herded to Crane where they were loaded on stock cars and transported to his Chicago meat packing plant.

Above left: A second round barn was located at the P Ranch. Harney County Historical Society

Above Right: Hay derrick stacking loose hay. Harney County Historical Society

Above: Using the beef wheel at Sod House Ranch.

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In 1920 the company established the Blitzen River Reclamation District. Tracts of 160 acres were laid out and leased in a sharecropping arrangement. Several dairies were established on these tracts and the EOLC used the railroad at Crane as a venue for shipping dairy products out of the county. The EOLC also established a hotel and store at Frenchglen in the mid 1920's. In 1918 an irrigation ditch was constructed from Page Springs along the west side of the valley to what is now known as Krumbo Lane. In 1928 Swift bought out Corbett's controlling shares in the company and owned the ranch until 1935 when he sold it to the U.S. Government.



Right: Tripod for hay derrick at P Ranch. Barbara Wheeler Photography

Below: Hay buck lifting a load of hay to transport it to the main stack. Harney County Historical Society



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Settling the South Side of Malheur Lake

Sometime after Bendire's 1875 spring ornithology visit to the south side of Malheur Lake, Peter Stenger began using the area for summer livestock grazing. He constructed a small sod structure for shelter at the location of today's Refuge Headquarters. This "sod house" provided intermittent shelter over the years and was used to describe the area from that time onward.

Eventually Peter French expanded the French-Glenn Livestock Company holdings to the south side of Malheur Lake. He established a sub-headquarters at Sod House Ranch to maintain control of land at the north end of the ranch. Continued expansion of the ranch eventually created conflicts between homesteaders on Malheur Lake and the ranch. As the ranch expanded northward in the 1880's more and more water was diverted from the Donner und Blitzen River to irrigate hay meadows and water was also being diverted along the Silvies River. This resulted in diminishing quantities of water reaching Malheur Lake and a corresponding change in the high meander line of the lake. The ranch claimed ownership of all land up to the high meander line, but with diminished lake levels the area between the former high meander line and the actual lake was undefined. Settlers claimed it was new public domain land available for settlement, but the ranch claimed it was just an extension of their original riparian claim. The State of Oregon claimed that the land belonged to them under the provisions of the Swamp Land Act.



Barbara Wheeler Photography

Buckaroo bunkhouse with the long barn in background at Sod House Ranch.

Below: Sodhouse Spring with the original sod house at lower left, Alva Springer homestead right center and other homesteads in the background. USFWS



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By the late 1880's settlers were building shacks on any available high point on this newly exposed land. They farmed and grazed the adjacent ground until water levels became too high, but eventually water levels would decrease and they were in business again. Eventually French was pressured into filing lawsuits against "squatters" on the south side of the lake by Glenn's heirs. While the lawsuits worked their way through the court system, the settlers became increasingly hostile towards French and the ranch holdings. Fences were cut and stores of winter hay were burned by angry settlers. Eventually these hostilities culminated in the death of Peter French. On December 26, 1897 French was shot by Ed Oliver, one of the homesteaders, while he was moving cattle near Sod House Ranch. Oliver was eventually acquitted of murder.

Hay buck being used to place hay on a net for stacking at Sod House Ranch in the 1920s. Harney County Historical Society





Feeding hay at Sod House Ranch. Main ranch buildings in the background. USFWS



Harney County Historical Society

Branding at Sod House Ranch.

French's demise did not end the conflict. Settler Sarah Marshall won her case against the French-Glenn Livestock Company, when appeals in the case reached the U.S. Supreme Court. The Court ruled in 1901 that the lands were not part of the Company's original claim based on their riparian rights, and awarded the property to Marshall as a claim on the public domain. This decision by the Court also gave the President a legal basis for declaring unclaimed land around the lakes federal property, thus providing an opportunity for establishment of the refuge seven years later.



Dr. Hugh Glenn. Conly Marshall Collection

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A Ranch on the West Side of Harney Lake

In 1875 the partnership of Amos W. Riley, Colonel James A. Hardin and John Taylor established a ranch on the west side of Harney Lake. Already owners of extensive holdings in Nevada, they claimed the springs at today's Double-O Ranch, as well as the area around the outlet of Silver Creek at Harney Lake, and land bordering Silver Creek as part of their Oregon ranch. Centered on the productive springs of the Warm Springs Valley, cattle from the ranch had access to plentiful native grasses and reliable water.

The Double-O Ranch was seriously impacted in 1878 during a raid led by Bannock Indians. The ranch had been abandoned as the crew fled to Fort Harney for protection. All of the buildings at the ranch were destroyed and most of the ranch's cattle and horses were herded west to the Wagontire area where they were slaughtered. Reconstruction began immediately and the ranch recovered to become the third largest ranch in Harney County.

Background photo: The Double-O Ranch at the turn of the twentieth century. USFWS

Inset: Rock Island homestead on the Double-O Ranch. Kit Larson



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In 1890 Taylor dropped out as a partner and Hardin sold his half interest in 1892 to Riley. Beginning with a mere 1,200 acres the ranch grew to over 8,600 acres before being sold to William Hanley in 1903. Hanley combined the Double-O property with his larger Bell-A Ranch holdings, creating the second largest cattle operation in Harney County.

In 1909 irrigation ditches were constructed from the springs to various areas of the ranch. With the addition of irrigation water the ranch grew ample amounts of winter feed for ranch livestock and for sale to neighboring ranches. Many of these irrigation ditches are still used today to move spring water around the Double-O area.

Hanley is often credited with bringing the railroad to Harney County. His efforts in 1911 to bring the railroad from the Columbia River to Bend put pressure on the Union Pacific Railroad to extend a rail line from Ontario to Crane. This improved Hanley's ability to move his cattle to market in the fall and to purchase new cattle in the spring. Hanley easily entered into a "feeder operation" and greatly increased his wealth and influence. In 1912 Hanley ran successfully for the U.S. Senate.

When Hanley died in 1933 his wife, Clara, continued operation of the ranch. The deepening nationwide depression and the ongoing drought forced reductions in the number of cattle the land could support. Mrs. Hanley finally sold 14,751 acres at the Double-O to the U.S. Government in 1941 for $116,143 and the land was added to the Refuge.





Right: William Hanley. Harney County Historical Society

Left: Log cabin at the Double-O Ranch built after the Bannock Indian attack. Kit Larson

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Setting Aside Land for Wildlife



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"1908 -
Our longing to visit the Malheur country
had at last been gratified...
Here we were standing on the high head-land
looking out over the land of our quest.
Here spread at our feet was a domain
for wild fowl unsurpassed in the
United States."

Previous Page: 1908 Finley and Bohlman hand painted slide of American white pelicans on Malheur Lake. Portland Audubon Society

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In the late 1880's, plume hunters were decimating North American bird populations in the name of fashion. The hunters were collecting breeding feathers for the hat industry, where the latest fad included wearing part or all of a bird on ladies hats. Shorebirds and colonial nesting birds suffered the most as hunters targeted large flocks, injuring birds indiscriminately and orphaning chicks. In an era when an ounce of breeding feathers was worth more than an ounce of gold, it's not surprising that plume hunters sought to make a fortune by hunting birds on Malheur Lake.

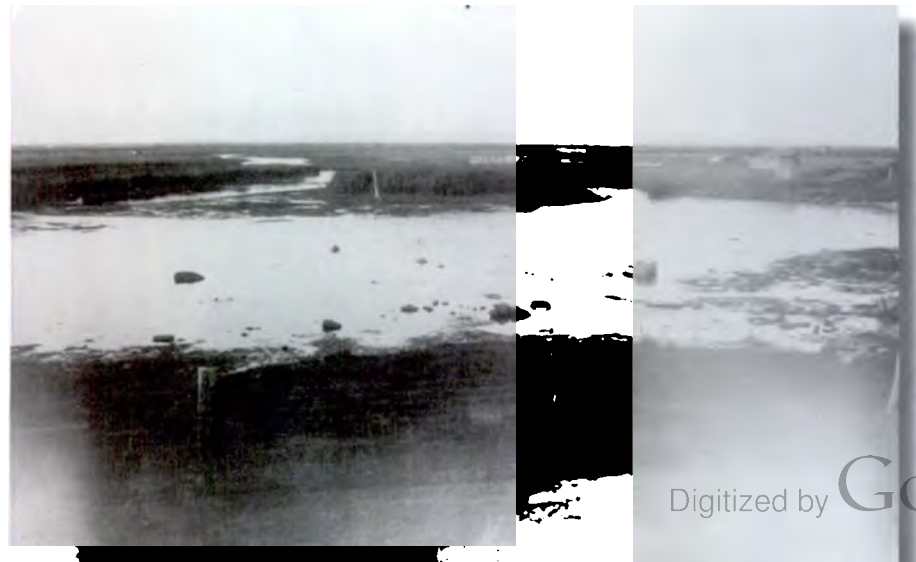
On a trip to Harney County in 1908 to photograph nesting white herons (later renamed great egrets) on Malheur Lake wildlife photographers William L. Finley and Herman T. Bohlman learned that most of the white herons had been killed in 1898 by plume hunters. After ten years the white heron population still had not recovered. In a 1910 Atlantic Monthly article entitled "The Trail of the Plume-Hunter", William Finley provides a vivid description of their time on Malheur Lake:

1908 - Our longing to visit the Malheur country had at last been gratified... Here we were standing on the high head-land looking out over the land of our quest. Here spread at our feet was a domain for wild fowl unsurpassed in the United States.

This is historic ground for the bird man. In the early seventies the well-known ornithologist, the late Captain Charles Bendire, was stationed at Camp Harney on the southern slope of the Blue Mountains, straight across the valley from where we stood. He gave us the first account of the bird-life in this region. He saw the wonderful sights of the nesting multitudes. He told of the colonies of white herons [great egrets] that lived in the willows along the lower Silvies River.

On the south side of the lake, at the site of the historical old Sod House, a large spring rises at the base of the gravelly hill, and winds out through the meadow-land. For a mile it meanders along till it comes to the main part of the tule marsh, -- thousands of floating islands between which flow narrow channels that are endless in their windings. The main body of the lake is still a mile beyond the place where the spring branch enters the tule jungle. The tules grow from eight to twelve feet high, so that when one enters the mass, he has no landmarks, unless, perchance, he can read signs in the heavens above.

On Malheur Lake - We spent the next four days hunting here and there through the vast extent of tule islands and water, searching and keeping watch all day, trying to find white herons. Late one afternoon we came to a place where another big colony of blue herons was nesting. We had been seeking this place. Malheur Lake is divided into several parts by the long lines of tule islands. We were in the northern part. The colony was on two long tule islands that lined up with Pine Knob and the east end of Wright's Point. On the north end is a big cane-brake.



Sodhouse spring in 1909 looking north towards Malheur Lake. Conly Marshall Collection

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We sat in the boat at the edge of the cane-brake, and watched the big birds as they sailed over, dropped in, and departed. We were tired from the long day's search. I did not then know the story as I know it now; but hidden in the end of this cane-brake a hunter had had his blind, ten years before.

That summer of 1898 was eventful in white-heron history here on Malheur Lake. Early in the season two men had arrived at Narrows, bought lumber, and built a flat-bottomed, double-ended boat. They set out from Narrows with a small outfit. They fought mosquitoes day and night as we had, they drank the alkali water, they slept in the boat or on muskrat houses while they hunted up and down the waters of the lake and the tule islands. They saw the great flocks of white pelicans, cormorants, terns, gulls, grebes and other birds. They saw the white herons in slow stately flight wherever they went, but it was not till after several days that they located the big colony here on the island by the cane-brake, the greatest colony they had ever seen. What a sight it must have been, thousands of these birds, dazzling white in the sun, coming and going from the feeding grounds, and hovering over their homes!

On all sides were the homes, built up a foot or two from the surface, each having three or four frowsy-headed youngsters or as many eggs. At each end of the colony a plumer sat hidden in his blind. At the first crack of the gun, a great snowy bird tumbled head-long near its nest. As the shot echoed across the lake, it sounded the doom of the heron colony. Terror-stricken, on every side while wings flapped, till the air was about filled. Shot followed shot unremittingly as the minutes passed into hours. Still the heron mothers came to hover over this scene of death and destruction. Mother-love was but the lure to slaughter.

By two o'clock in the afternoon, the day's shoot ended. It took the rest of the day for the hunters to collect the dead and take the plumes. Stripping the plumes is rapid work. It takes but a slash of the knife across the middle of the back, a cut down each side, and a swift jerk.

Long after dark the plumers heard the steady quacking clatter of young herons crying to be fed. Far into the night, hoarse croaks sounded over the still lake, greetings of those birds that had spent the day fishing in distant swamps. It argued good shooting again for the morrow.

The second day was a repetition of the first. Heron numbers thinned rapidly. Here on these two islands, the plumers harvested a crop that yielded twelve hundred dollars in a day and a half. They collected a load of plumes worth their weight in gold.

Malheur has seen many such massacres, but none so great as that. Little did we know of these facts as we sat watching the blue herons coming and going, expecting to find at least a few white herons somewhere about the locality.

The following day we found the biggest colony of gulls and white pelicans I have ever seen. It was the sight of a lifetime. As we approached, out came a small delegation to meet us. When we got up to the colony, the whole city turned out in our honor. I have seen big bird-colonies before, but never one like this. I was so excited I tripped over one of the oars, and fell overboard with three plate-holders [photographic plates for a large format camera] in my hand.

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After hunting for seven days we returned to camp for more provisions, and set out to visit another part of the lake. This time we stayed out for nine days, and saw – two white herons! At the time we thought these must be part of a group that nested somewhere about the lake; yet more likely they were a single stray bird that came our way twice. I am satisfied that of the thousands of white herons formerly nesting on Malheur, not a single pair of birds is left.

Outraged by their observations, they presented the situation to fellow members of the Oregon Audubon Society. Facing similar circumstances at Klamath Marsh, the Society pushed for designation of both areas as wildlife refuges. As President of the Society, Finley approached President Theodore Roosevelt with the proposal. Already familiar with Finley and Bohlman because of their involvement in the establishment of Three Arch Rocks Refuge in 1907 on the Oregon Coast, Roosevelt was amenable to Finley's proposal.

The Lake Malheur Reservation was established on August 18, 1908 by executive order of President Theodore Roosevelt. Roosevelt set aside unclaimed government lands encompassed by Malheur, Mud and Harney Lakes "as a preserve and breeding ground for native birds." The newly established "Lake Malheur Reservation" was the 19th of 51 wildlife refuges created by Roosevelt during his tenure as president. At the time, Malheur was the third refuge in Oregon and one of only six refuges west of the Mississippi.





Egret feathers were used to make high fashion hats in the early 1900s.

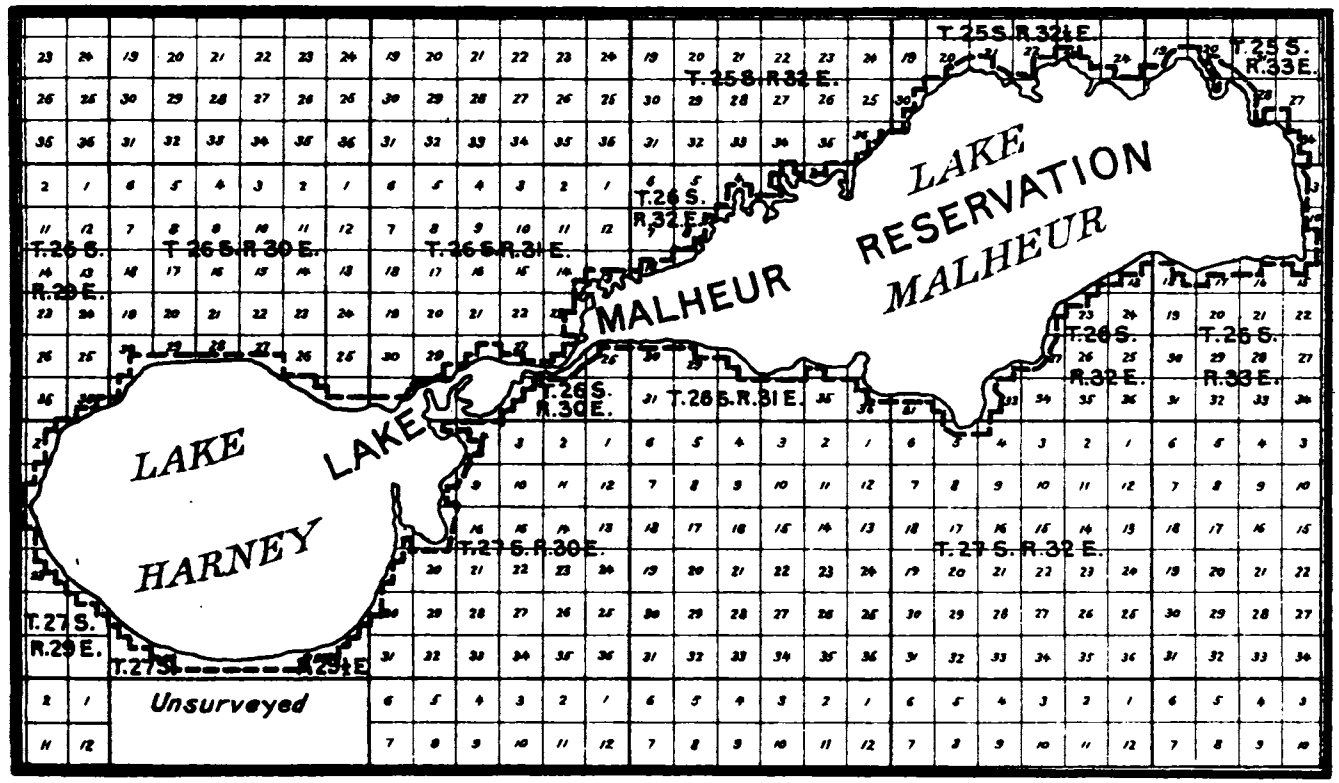
Left: William Finley in boat and Herman Bohlman taking photo at Klamath Marsh 1905. Portland Audubon Society

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LAKE MALHEUR RESERVATION

OREGON

Embracing all least subdivisions touching the shore lines of Lakes Malheur and Harney and their connecting waters in Tps. 25 S. Rgs. 32, 32½ and 33, Tps. 26 S. Rgs. 29, 30, 31, 32 and 33., and Tps. 27 S. Rgs. 29, 29½, 30 and 32 all east of Willamette Meridian, Oregon. segregated by broken line and designated "Lake Malheur Reservation"



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Barbara Wheeler Photography

Great Egrets were once called white herons.

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Portland Audubon Society

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Portland Audubon Society

Above: 1908 Finley and Bohlman hand painted slide of an American white pelican colony on Malheur Lake.

Left: 1908 Finley and Bohlman hand painted slide of a California gull colony on Malheur Lake.

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1908 Finley and Bohlman hand painted slide of a black-crowned night ***heron on it's nest on Malheur Lake.*** Portland Audubon Society



Portland Audubon Society

1908 Finley and Bohlman hand painted slide of a juvenile great blue heron on a nest on ***Malheur Lake.***

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1908 Finley and Bohlman hand painted slide of a Northern pintail drake on Malheur Lake.
Portland Audubon Society

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Portland Audubon Society

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Portland Audubon Society

Above: 1908 Finley and Bohlman hand painted slide of a white-faced ibis on Malheur Lake.

Left: 1908 Finley and Bohlman hand painted slide of a mallard hen on Malheur Lake.

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Portland Audubon Society

1908 Finley and Bohlman hand painted slide of a yellow-headed black bird on Malheur Lake.

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Portland Audubon Society

1908 Finley and Bohlman hand painted slide of a juvenile great horned owl near Malheur Lake.

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Great egrets in breeding plumage were the target of plume hunters in the late 1880s and early 1900s.
Barbara Wheeler Photography

Barbara Wheeler Photography

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Barbara Wheeler Photography

Above: American white pelican.

Left: Great blue heron. Barbara Wheeler Photography

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Barbara Wheeler Photography



Barbara Wheeler Photography

Above:
American badger

Right: Cottontail rabbit

Left: Bobcat



Barbara Wheeler Photography

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Protecting the New Bird Reservation

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With the addition of the Blitzen Valley in 1935, the bird reservation grew to encompass 146,503 acres of habitat for native birds and other wildlife.

Previous page: Refuge patrolman Albert Olfsen in 1936 in the Blitzen Valley. USFWS

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Management of the new Lake Malheur Reservation was given to the Department of Agriculture's Bureau of Biological Survey. Oversight was provided by the Washington D.C. Office, but the Reservation remained unstaffed until 1911. In 1910 the Oregon Fish and Game Commission was created to oversee hunting and trapping in the State. In 1911 William L. Finley, one of the main proponents for establishing the refuge, was appointed State Game Warden. Concerned about the continual illegal activities on the new bird reservations, Finley appointed State game wardens to enforce the no hunting ban and to monitor trapping activities at the Malheur and Klamath Marsh Reservations. The new game wardens were paid by the Bureau of Biological Survey, but were selected by the State Game Commission and enforced state game laws.

During 1911 the task of Game Warden for Malheur and Klamath Marsh was appointed to Harry Telford. As activities increased in 1912 at the Lake Malheur Reservation, F.H. Fawcett was appointed as the Game Warden for Malheur. He worked with adjacent landowners on a variety of issues until 1915 when he was replaced by Frank W. Triska. As the new Game Warden, Triska not only enforced the hunting ban and tracked trapping activities, but also began gathering the first data about the refuge by documenting lake levels and bird populations.

In 1916 the Bureau of Biological Survey banded birds at Lake Malheur Reservation. George M. Benson, later to become the Game Warden, spent time on the lake banding a variety of migratory birds. Triska continued as the Game Warden until 1918 when he left to enter the military for World War I. Benson replaced Triska as Warden, earning $25 a month. He continued in this position until 1920 when he was promoted to Agent for $50 a month, and was then supervised directly by the Bureau. Benson preferred to use the title Refuge Protector.

Benson rented a small home on the south side of Malheur Lake from which he performed all of his duties as Refuge Protector. In addition to enforcing state hunting and trapping laws, Benson spent a considerable amount of time banding birds. His banding books show that he was catching and banding swans, canvas ducks, redhead duck, mallards, and pintails. Using his banding records the Bureau of Biological Survey was able to determine bird population trends on the lakes. Benson used the services of local children to help with many of banding projects.



Tundra swans in Benson's banding pen on Malheur Lake. Conly Marshall Collection



Conly Marshall Collection

George Benson on the left with Iris and Mary Marshall and other settlers on Malheur Lake in 1919.

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Harland and Carl Jones, Mabel Lees and teacher Ethel McGee (Benson) at the Voltage school in 1925.
Conly Marshall Collection

In 1921 Benson discovered bison skulls on the east side of Malheur Lake. He sent several skulls to the Smithsonian Institute for evaluation as well as to other universities and schools across the country. Investigation of the bison site revealed that the skulls represented the remains of a small herd of bison that became mired in mud while trying to drink water from a diminishing lake. The bison remains were just another example of the fluctuating lake levels that have influenced wildlife populations across the centuries.

The drought years of the 1930s would also have a profound effect on the bird reservation. Lake levels shrank with the decrease in flows from the rivers and creeks that fed the lakes. Without a permanent fence around the bird reservation, Benson was tasked with keeping adjacent land owners from using lands within the reservation for agricultural purposes. His log books and letters to his supervisors document his frustrations with the new task facing him. Resolution did not come until 1935 when the Blitzen Valley was added to the bird reservation.

William L. Finley again played an integral part in the purchase of the Blitzen Valley as an addition to the reservation. Finley worked closely with J.N. "Ding" Darling, Chief of the Bureau of Biological Survey

Right: Refuge Protector Benson wraps bison skulls found on Malheur Lake for shipment in 1921.



Conly Marshall Collection

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at the time, and later with Ira Gabrielson, first Director of the U.S. Fish and Wildlife Service, to purchase the valley. Control of the valley meant control of the Blitzen River. And control of the river allowed the reservation to restore water to the lakes by releasing water held behind ranch dams. The purchase was aimed at acquiring the water rights held by the ranch for waters flowing from Steens Mountain.



Varied thrush. Barbara Wheeler Photography

With the addition of the Blitzen Valley in 1935, the bird reservation grew to encompass 146,503 acres of habitat for native birds and other wildlife. The 64,717-acre Blitzen Valley portion of the refuge was acquired from the Eastern Oregon Land and Livestock Company for $675,000 and added to the Lake Malheur Reservation under an Executive Order signed by President Franklin D. Roosevelt. The Order specified that the land was for use "as a refuge and breeding ground for migratory birds and other wildlife". At the same time the name of the reserve was changed to Malheur Migratory Bird Refuge.

William Finley returned to the Refuge on September 5, 1935 to commemorate the new addition to the wildlife refuge he helped establish. His speech poetically describes the importance of the enlarged refuge.

"The romance of the old West is still much in evidence on one of the nation's greatest wildfowl refuges located at an elevation of about 4000 feet at the west base of the Steens Mountains in Eastern Oregon. Some sixty years ago a far-sighted young Californian, Pete French by name, in search of good cattle range wandered into what is now known as the Blitzen Valley, a wide flat plain watered by a fine stream, green with wide meadows of luxuriant grasses, interspersed with thickets of willow, and with great areas of swampy ground and shallow ponds. Mr. French was truly a pioneer builder. His cattle business prospered, he built long fence lines, barns, and corral of juniper wood which still stand in a state of perfect preservation. His cattle numbered thousands and his ranch, well managed, contained some 132,000 acres.



Conly Marshall Collection

The white house at P Ranch in the 1930s.

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About half of this area is now included in the Malheur Migratory Waterfowl Refuge, administered by the Biological Survey of the Department of Agriculture. Mr. Stanley Jewett, the best expert in Oregon on Wild bird and animal life, has been placed in charge of the project. His sixteen years' experience in the field service of the Biological Survey has well equipped him for handling this large and important refuge. Malheur and Harney Lakes with the Blitzen Valley, comprise an extensive area, almost an empire in itself, of some 164,000 acres of what is conceded by naturalists, sportsmen, and conservationists as the greatest single wildlife area in the nation.

Within the boundaries of this refuge such favorite waterfowl as Canada Geese, Mallards, Pintails, Gadwalls, Redheads, Ruddy Ducks, and Cinnamon Teal nest and rear their young by the thousands, while during the fall and spring migrations myriads of northern-bred ducks and geese find a haven of refuge on Malheur Lake and in the swamps of the Blitzen Valley where natural food is abundant.

Not only are ducks and geese found here but the great American egret, the White-faced Glossy Ibis and the Black-necked Stilt, common in sub-tropical regions, nest in colonies on this refuge. The Sandhill Crane, formerly common over most of the nation, but now greatly reduced in numbers, still come to breed in large numbers on this refuge. Herons, bitterns, coots, grebes, and great colonies of California and Ring-billed Gulls, Forster's Terns, black Terns, and other marsh-loving birds held the interest of the visitor.

These are not all, for a great variety of the snipe and plover family live along the lake shores and in the swamps. The stately avocet with its turned-up bill, stalks about the shallows. The long-billed Curlew combs the salt grass flats for its diet of beetles and grasshoppers. The western willet, screaming her protests against the intruder, solemnly perches on a fence post to watch the passer-by; and many other voices are heard, the plaintive cry of the killdeer, the cooing call of the Wilson Phalarope, and the flight



Conly Marshall Collection

Alfred Marshall and Robinson after a waterfowl hunt on Malheur Lake.

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of the Jack Snipe as the sun sinks in the West. All these delight the lover of nature. The crackling song of the Tule Wren, the witchety-witchety song of the Yellow throats, the innumerable multitude of Yellow-headed and Red-winged Blackbirds all add to the bird chorus.

Of upland game and song birds there is an unusual population. Sage Hens stalk about the sagebrush covered slopes, and the California or Valley Quail scurry under the thickets. The introduced Hungarian Partridge and the Ring-necked Pheasant find the climatic conditions here to their liking.

During a ten-day study of bird life on this refuge in May of 1934, a total of 120 species of birds was recorded, and in the fall and winter months many more may be added to this number.

Although birds, both in number of species and number of individuals, form the greatest of the wildlife population, the visitor can find a large number of beaver along the Blitzen River. Mule Deer in bands frequent the willow thickets and meadows, and the Prong-horned Antelope roam the sagebrush flats.

Malheur and Harney Lakes were first set aside as a federal wildfowl refuge in 1908 by special executive order of President Theodore Roosevelt. Twenty-five years later found this whole lake region dried up and practically destroyed because of the lack of water and the change of conditions. Waterfowl have diminished in numbers so rapidly during the past decade that a year ago last spring funds were allotted to the Biological survey for restoring breeding, and feeding areas that has been destroyed. After a study of the many regions from the Atlantic to the Pacific, Malheur Lake was chosen No. 1 on the list.



Barbara Wheeler Photography

Mule deer bucks.

Below: Sagebrush covered uplands with Steens Mountain in the background.
Barbara Wheeler Photography



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Black-tailed jackrabbit.
Barbara Wheeler Photography

The Biological Survey has a large force of men at work developing this wildlife refuge. Dykes are being built to better conserve the water of both Malheur Lake and the Blitzen Valley, and canals to carry water to favored feeding grounds. Roads are being constructed to better patrol the area and combat fire during the late summer, telephone lines for better communication and look-out towers to assist refuge protectors in guarding wildlife. These and other improvements will make this region a super refuge, one of the greatest in the United States."



The Bureau of Biological Survey continued managing the refuge and George Benson remained the Refuge Protector. However, a Refuge Superintendent, Stanley Jewett was appointed to oversee all aspects of refuge development. Jewett's first priority was to establish Civilian Conservation Corps camps on the refuge to begin working on refuge projects, including construction of a boundary fence around the Refuge. Jewett was replaced by John Scharff in 1937, who served as Refuge Superintendent until he retired in 1971 at the age of 70.

In 1940 the Migratory Bird Refuge was renamed Malheur National Wildlife Refuge after the Bureau of Biological Survey was combined with the Bureau of Fisheries in 1939 to become the U.S. Fish and Wildlife Service.

Above: Pronghorn antelope doe and buck. Pronghorn survived the transition from the Pleistocene to the Holocene.
Barbara Wheeler Photography

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STATE OF OREGON

27

To Whom These Presents Shall Come, Greeting:

KNOW YE, That under the authority vested in the State Board of Fish and Game Commissioners, F. H. Fawcett ,

of Lake *County, State of Oregon, is hereby appointed*

Deputy Game Warden

for the State of Oregon, to serve from September 1, 1911, until this Commission is revoked. Feb 28, 1914

State Game Warden

Dated: Portland, Oregon, this 29th *day of* August , *191*1.

USFWS



USFWS

Above: Appointment certificate for F.H. Fawcett the first full-time Game Warden at Malheur Bird Reservation.

Left: Refuge Patrolman John Crow at Camp Buena Vista in 1936.

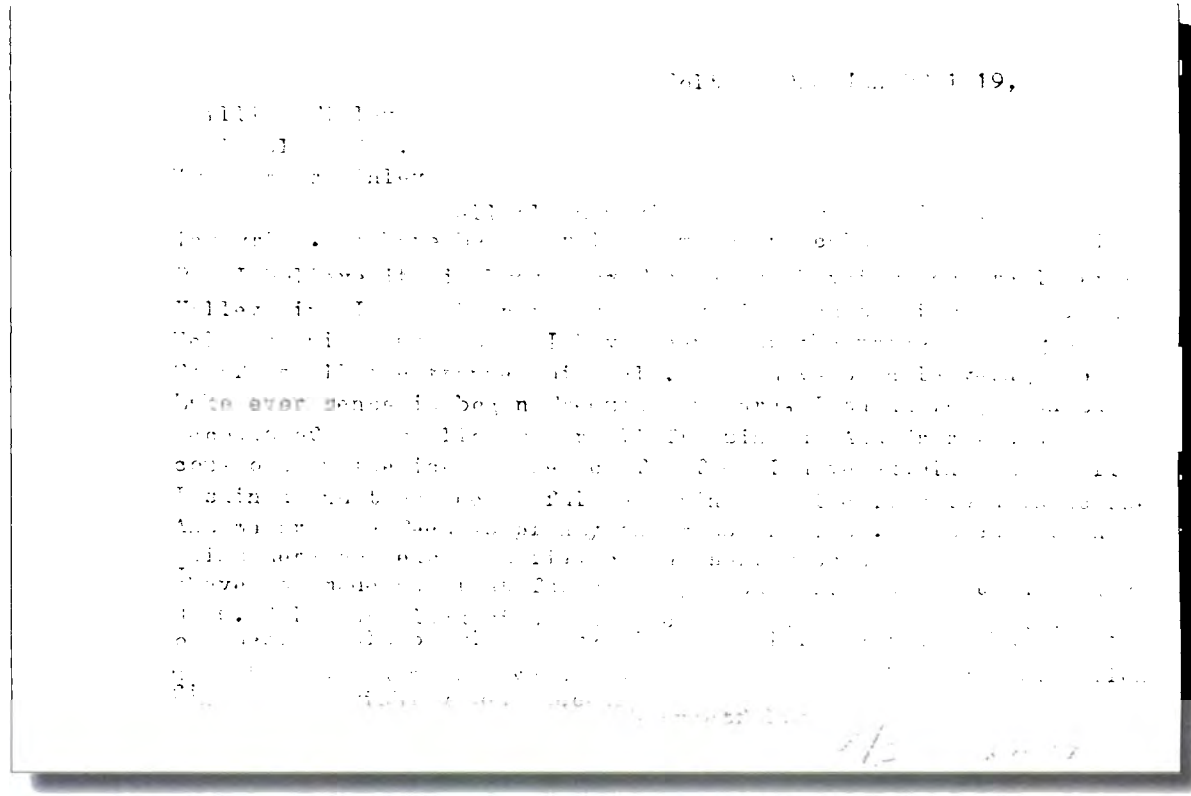
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Western kingbird. Barbara Wheeler Photography



Ethel and George Benson in 1947 at the Hunter Check Station at Benson Pond. USFWS



USFWS

Letter from George Benson to William Finley discussing muskrat trapping on the bird reservation.



Left: Muskrat.
Barbara Wheeler Photography

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The Civilian Conservation Corps Builds the Refuge



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The three CCC camps on Malheur Refuge left behind an incredible legacy that remains today. Initial projects undertaken by the camps included fencing over 200 miles of the Refuge boundary; some of this fence is still in use today.

Previous page: Rocks to be used for the construction of Diamond Lane are gathered by hand and transported to the work site by enrollees. USFWS

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The Great Depression greatly impacted the country with economic turmoil and rampant unemployment throughout the nation. In an effort to revive America, President Franklin Delano Roosevelt in 1933 created the Civilian Conservation Corps (CCC). This action would ultimately have a profound effect on Malheur Refuge.

Roosevelt's plan was to recruit thousands of unemployed young men, enroll them in a peacetime army, and send them to do battle (or to wage war) against destruction and erosion of our natural resources. This young, inexperienced $30-a-month labor force met and exceeded all expectations. Enrollee families received $25.00 of the enrollee's monthly wage. The economic boost provided by this money was felt in cities and towns all across the nation. Between 1933 and 1942 three million young men worked on CCC projects across the United States; more than 1000 young men would complete projects during this time at Malheur Refuge.

With the purchase of the Blitzen Valley portion of the Eastern Oregon Land and Livestock Company holdings, the Refuge became an ideal location for CCC projects, and would host three CCC camps. A seasonal camp was built near today's Refuge Headquarters during the spring and summer of 1935. The first permanent camp was established at Buena Vista Station in October 1935. Large camps were located at Refuge Headquarters, Buena Vista Station and at Five Mile Lane, north of Frenchglen. A small side camp was set up at Ewing Springs on Malheur National Forest to cut timbers for work projects on the refuge. The last camp was closed in 1942 with the start of World War II. Little evidence remains of the camps, as the wood buildings associated with the camps were dismantled by the army and moved to Alaska to serve as barracks during construction of the Alaskan Highway.

An excellent description of the construction of the permanent camp at Refuge Headquarters comes from the May-June 1936 Camp Sod House Narrative:

"Sod House Camp was established here on May 5, 1936, having been moved from Cottonwood Camp in Idaho.

Approximately 121 boys are in camp for duty. The picture shows the mess hall, most of the boys' quarters and officer's quarters, is shown, with the Blitzen river in the right foreground. Malheur Lake is beyond the trees in the left foreground and next to the low hills in the distance.



Camp Sodhouse in 1936 with the Blitzen River and Malheur Lake in the background.

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1937 CCC Camp Sodhouse on road from Idaho. USFWS



USFWS

Construction of the manager's residence at Headquarters. It is now as the main office and visitor center.



Enrollees quarry local stone for construction of buildings. USFWS



USFWS

Enrollees shape stones for construction of buildings

The site is the place where one of the earliest buildings stood adjacent to Malheur Lake, a sod house built by two brothers, Chapman, and from this place came to be called Sod House Spring. The site for the headquarters was selected because it is centrally located, geographically, with respect to the lands of the refuge, accessible, both from the lands of the original refuge bordering the lake and the recently added sixty five thousand acres of the Blitzen Valley which extends thirty five miles south from the shores of the lake.

The site of the buildings is on the north slope of a low hill giving a fine view of the lake to the north and an abundant supply of water is furnished by Sod House Spring."

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The manager's residence is completed in 1936 in time for winter. USFWS

In communities close to the camps, local purchases averaging about $5,000 monthly staved off failure of many small businesses. Each of the three Malheur Refuge camps sent trucks to Burns for food and other provisions at least weekly - if not daily. This, in addition to local hires, contributed about $15,000 per month to the Harney County economy. Skilled, local men were hired by the CCC and the Refuge to teach enrollees a variety of tasks, including carpentry, heavy equipment operation, surveying and concrete construction techniques. In addition to classes offered at the camps, the enrollees learned many life skills from these men in the course of their interactions and many used them to develop careers later in life. The Biological Survey, later to become the U.S. Fish and Wildlife Service, selected work projects, while the Army ran the day to day operations of the camps.



USFWS

STANDARD FORM No. 14A
APPROVED BY THE PRESIDENT
MARCH 10, 1926

DEPARTMENT OF AGRICULTURE

Bureau of Emergency Conservation Work
BUREAU Biological Survey

CHG. APPROPRIATION 8/0X815 (Transfer to War Act March 31, 1933)

GPO 5-4026

TELEGRAM

OFFICIAL BUSINESS—GOVERNMENT RATES

NIGHT LETTER

Washington, D.C. January 31, 1935.

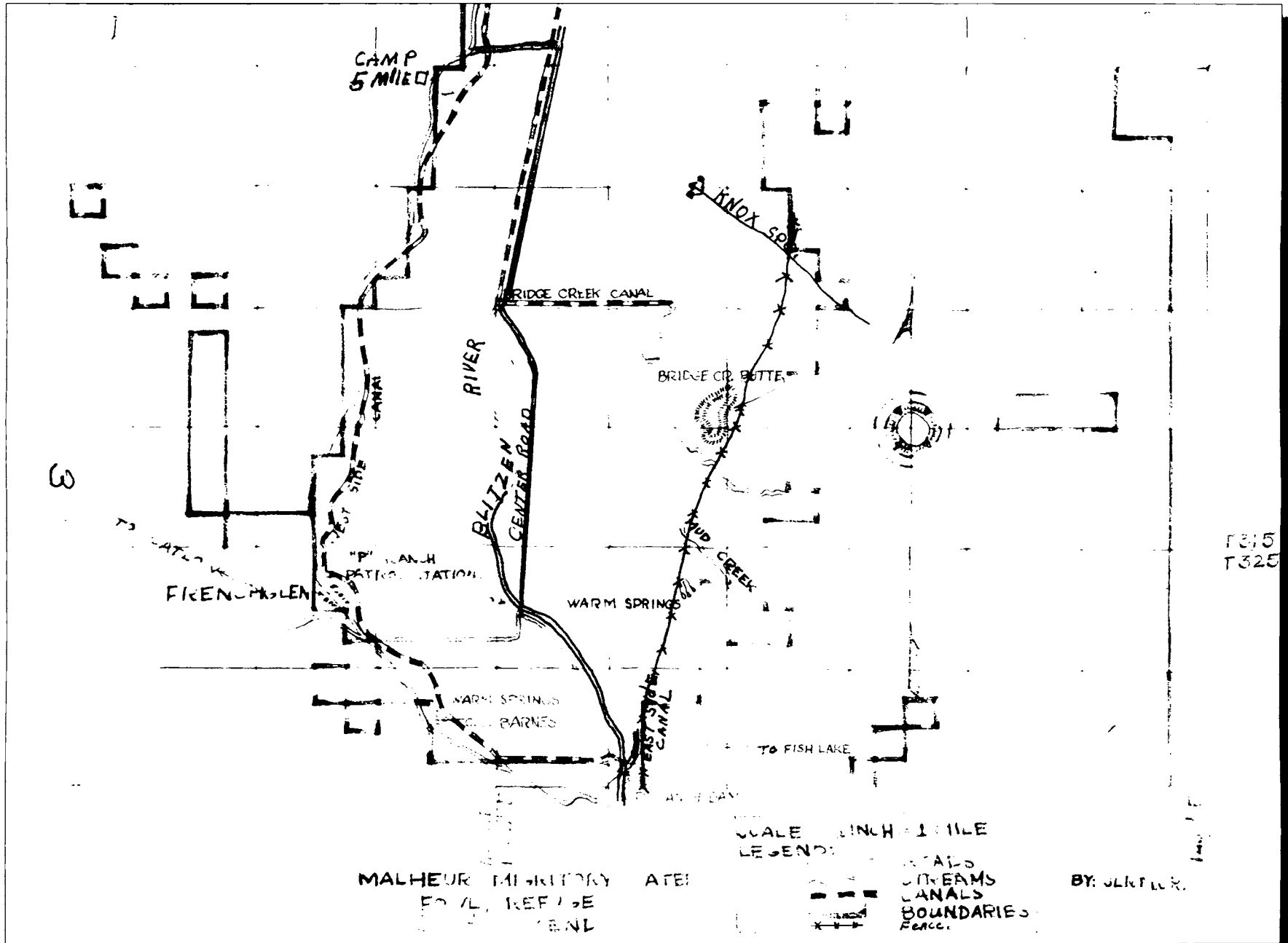
C.D. Morse
Liaison Officer 9th Corps Area
The Presidio
San Francisco, California

Reference your telegram to Forest Service relative CCC Camps to be established in ninth corps area during fifth period under work direction Biological Survey STOP The following representatives of the Survey should be contacted regarding the establishing of approved CCC Camps for refuge work E R Sans three twelve Post Office Building Reno Nevada and Ernest J Greenwalt Cedarville California for Camp BF one Charles Sheldon Refuge Nevada Ira N. Gabrielson four naught four New United States Court House Portland Oregon and George Benson Princeton Oregon for proposed Camp BF two Hitzen Valley Refuge Oregon Robert S. Norton Moiese Montana proposed Camp BF one National Bison Range Montana George E. Muehbach Brigham Utah for continuing present camp BF one Utah on Bear River Refuge

W. C. Henderson
Acting Chief

COPY

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Map used by the CCC to track progress.

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May 1, 1937 before Camp Sodhouse is set up near the spring. USFWS



USFWS



USFWS

Top: Camp Sodhouse is moved to the east side of the headquarters area away from the spring and residences.

Above: Camp Sodhouse in 1937 at a new location on the east side of Refuge Headquarters.

Left: May 2, 1937 after Camp Sodhouse is set up near the spring. USFWS





Civilian Conservation Corps patch

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"Of the incoming Company one hundred forty of the one hundred sixty here in camp were interviewed personally during November and invited to take part in camp classes, athletics, glee club, field trips, correspondence courses, and practical courses. One hundred two of our enrollees have never attended school beyond elementary level. Fifty four enrollees are educated to a high school level while two are on a college level."

"Camp classes include arithmetic, spelling, writing, geometry, nature study, book keeping, clerical work, journalism, and typing. Practical subjects cover auto mechanics, bulldozing, masonry, building and bridge construction. We have nineteen enrollees taking correspondence courses. During November we had two field trips, one for geology and one for Refuge study. Three formal lectures were offered enrollees during November. We have a first aid class, a teacher training class and a glee club meeting each week."
Camp Buena Vista,
November 1936 Narrative



Education classes are held outside at Camp Five Mile. USFWS





CCC enrollees cool off in the swimming hole on McCoy Creek in the Diamond Valley. USFWS

Left: Enrollees built a Refuge Float for the Harney County Fair parade. USFWS



USFWS

Softball was a favorite sport. Enrollees travelled to Burns to compete against local teams.



Lee Pucket

Music was a popular past time for enrollees.



A field trip to Kiger Gorge on Steens Mountain. USFWS

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An impressive example of how enrollment in the CCC enriched the lives of many rural young men comes from the April 1937 Camp Five Mile Narrative:

> *"Leader Howard Archer, who has had 4 years continuous service in the CCC as junior enrollee, is going home to farm. He has saved his money, (earned while enrolled) and his parents have put aside a portion of their allotment to stock and equip the ranch. We are sure he will make a success of farming, especially if hard work has anything to do with it. Report has it the first shoes Archer ever wore he received after joining the CCC. We don't like to lose Archer, but are very glad he has something better to do than when he "joined up."*

Construction materials could not always be purchased from local businesses, so these items were often manufactured by CCC enrollees on site or at other locations. The stone blocks used to construct the buildings at headquarters were quarried near Buena Vista Station, while the basalt used for the house at Buena Vista Station was transported from the Diamond Craters area. Willow stays, used for fence construction, were cut from many of the creeks in the Blitzen Valley. Procuring these materials often meant moving equipment and enrollees closer to the needed resources:

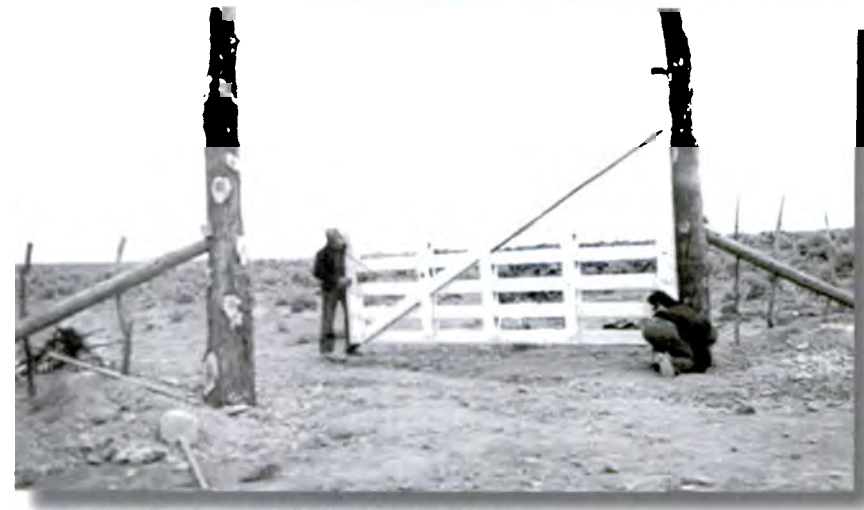
> *"A side camp, for the purpose of getting materials such as telephone poles, fence braces, fence staves, bridge piling, foot-bridge stringers and other timber products that will be needed for development of the Refuge, was established on June 7th at Ewing Springs in Malheur National Forest. At present there are 31 men at the side camp but this number will be increased to 49 as soon as enrollee replacements arrive at the main camp."*
> *Camp Sod House Narrative, June 1938*



Willow stays are wired to barb wire to provide greater strength. USFWS



Willow stays were cut from willow patches along ditches and the river. USFWS



*A **new** board gate is installed in the new fence*

USFWS

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USFWS



USFWS



The Ewing Springs Spike Camp was set up on the Malheur National Forest so enrollees could fell trees for telephone poles and bridge piling.
USFWS

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Right: Enrollees stack stone for a bridge abutment on the Blitzen River. USFWS

Pilings for bridges on the Blitzen River are unloaded in Burns for transport to the refuge. USFWS





Pounding spikes into bridge planking.



USFWS



USFWS

An enrollee works in the Blitzen River as he drills a hole in cross bracing to be secured to bridge pilings.



USFWS

A dozer is used to shape a portion of the Center Patrol Road along a channelized portion of the Blitzen River.

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Above: Fence routes were surveyed before construction started. USFWS

Below: The residence at Buena Vista Station under construction. USFWS



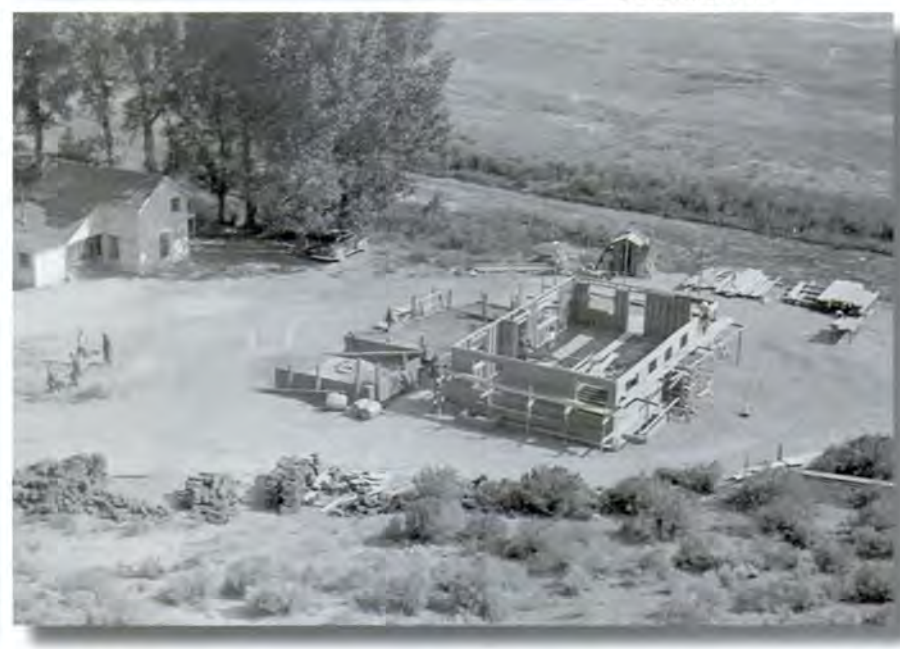


The three CCC camps on Malheur Refuge left behind an incredible legacy that remains today. Initial projects undertaken by the camps included fencing over 200 miles of the Refuge boundary; some of this fence is still in use today. Cattle guards were installed at all access points to the Refuge to prevent trespass by adjacent cattle. At refuge headquarters, work began on construction of four stone buildings (two residences, an office and a barn) to better manage the Refuge. The CCC also extended the telephone lines from the Narrows to refuge headquarters, and then on to the communities of Diamond and Frenchglen.

The telephone lines followed improved or new roads. Major portions of Highway 205 south of the Narrows were surveyed and constructed by enrollees from all three camps. This not only improved access to the camps and made transportation of materials more efficient, but enhanced the transportation network used by refuge



Left: The shop and storage building are ready for use. USFWS



Camp Buena Vista enrollees begin removing old buildings at Buena Vista Station in preparation for construction of new shop and storage buildings.

Far left, bottom: The footings for the Buena Vista shop are laid out. USFWS

USFWS

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neighbors. The enrollees also improved access to the community of Diamond as bridges were constructed across the Donner und Blitzen River. Along portions of the river channelized by the Eastern Oregon Land and Livestock Company in the early part of the century, enrollees used dozers to sculpt the dredge piles into a network of roads that would traverse the center of the valley. Over 35 miles of road would provide access to the center of the refuge for better management of the newly acquired lands. Seven bridges were constructed by the CCC along this newly created Center Patrol Road.


USFWS



Engineer Charles Clark surveying the Highway 205 right-of-way near Saddle Butte. USFWS

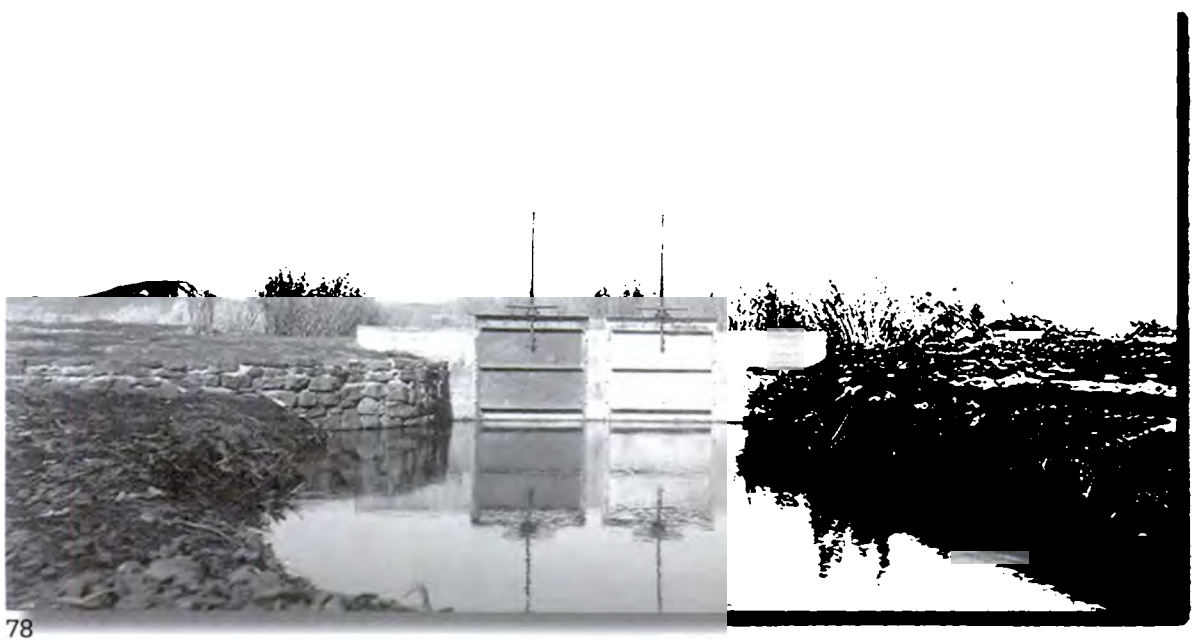

USFWS

Top: Camp Five Mile on the west side of the Blitzen Valley, five miles north of Frenchglen.

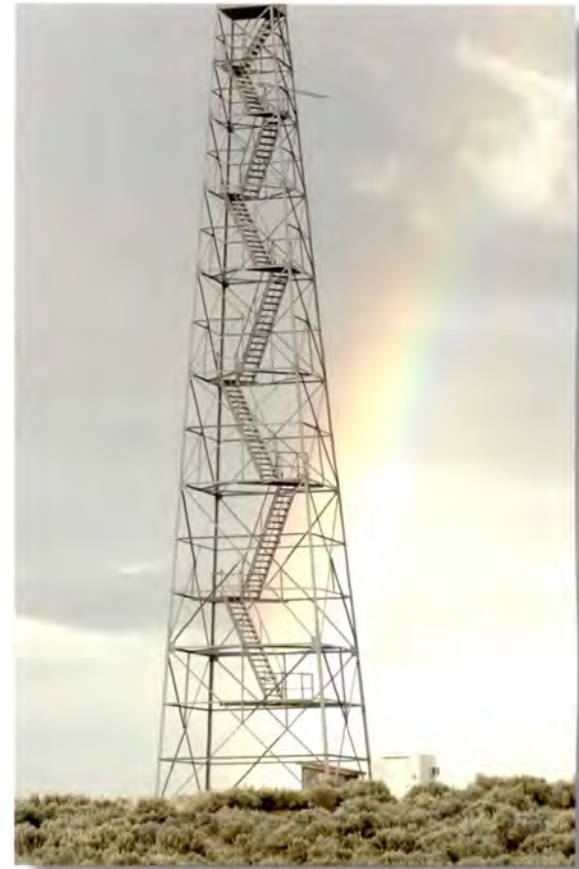
Above: Four towers, two wood and two metal, were constructed for wildlife and fire observations.

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USFWS



Barbara Wheeler Photography

Above: CCC steel tower at Refuge Headquarters.

Left: The headgate on the Stubblefield Canal diversion structure is modernized by the CCC. The original structure was constructed while the valley was under private ownership.

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Stone well house constructed by the CCC at Benson Pond.
Barbara Wheeler Photography

The Frenchglen Hotel was included with the purchase of the Blitzen Valley in 1935. The CCC added to the back of the hotel as one of their projects.



USFWS

As work progressed over the next seven years the CCC enrollees would construct five concrete diversion dams on the Donner und Blitzen River. Several of these dams replaced existing smaller wood structures left over from the ranching days. All five dams improved diversion of irrigation water along hundreds of miles of new or revamped irrigation ditches. Major diversion ditches, including the Buena Vista Canal, the East and West Canals, Ram Ditch and the Stubblefield Canal, increased the amount of water that could be diverted over a greater distance in the Blitzen Valley. Much of this water was directed to new ponds (the Buena Vista Ponds, Wrights Pond, the Knox Ponds, and Boca Lake) that were crafted from the valley floor.



USFWS

The White House at the P Ranch after renovations by the Camp Five Mile enrollees.

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A new chimney was added to the P Ranch White House during renovations by enrollees. USFWS



Prim "Tebo" Ortego, caretaker of the P Ranch, had been with Peter French since 1877. He was still at the ranch in 1936 and was admired by the CCC enrollees working on ranch projects. USFWS

As transportation improved across the refuge, the CCC also made significant improvements elsewhere on the Refuge. Two large shop buildings and a residence were constructed at Buena Vista Station to facilitate management of the north end of the valley. At the south end of the valley major renovations were made to Pete French's White House to improve living conditions for new Refuge employees. Existing ranch buildings at the P Ranch were modified for new Refuge uses. An addition was also added to back of the Frenchglen Hotel, which became part of the Refuge with the purchase of the Blitzen Valley.

The improved access throughout the valley and better distribution of irrigation water led to increased public use. Four lookout towers were constructed in the last years of the CCC improvements. Two metal towers and two wood towers were placed at strategic locations across the valley for fire and wildlife observation. The most famous of these towers is the metal tower at P Ranch that is a favorite roost for scores of turkey vultures. The CCC was also responsible for early development of camping facilities at Page Springs Campground.

As the United States involvement in World War II loomed in the future, the CCC camps began closing on the Refuge. Young men who served with the CCC at Malheur would enlist in the armed forces and serve across the world as the war escalated. Many of the very skilled men from the camps would become civilian employees of the military and work under contract in many areas of the South Pacific. The final report made by the Sod House Camp commanders in May 1942 describes many of the improvements made by CCC enrollees on the refuge:

> *"Since the inception of the C.C.C. on the Malheur Refuge, there has been a great improvement made in the appearance of the area. Old fences obliterated and new ones constructed, several old buildings razed and a general cleanup made of the entire Refuge.*
>
> *The construction work that has been done so far is, no doubt proving its worth as indicated by the increase of bird life from year to year. Nesting areas have been greatly improved by the better distribution of water, which is largely due to the construction of new canals and enlargement of the ones that were previously constructed, with control structures installed in the many places needed, also the dike program has greatly aided in the conserving of the water supply that some seasons is very limited.*

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USFWS

Camp Sodhouse in 1942 before it is closed.

There is still a considerable amount of development work to be done here to better facilitate the control of the water, such as the construction of dikes, water control structures and the opening of channels."

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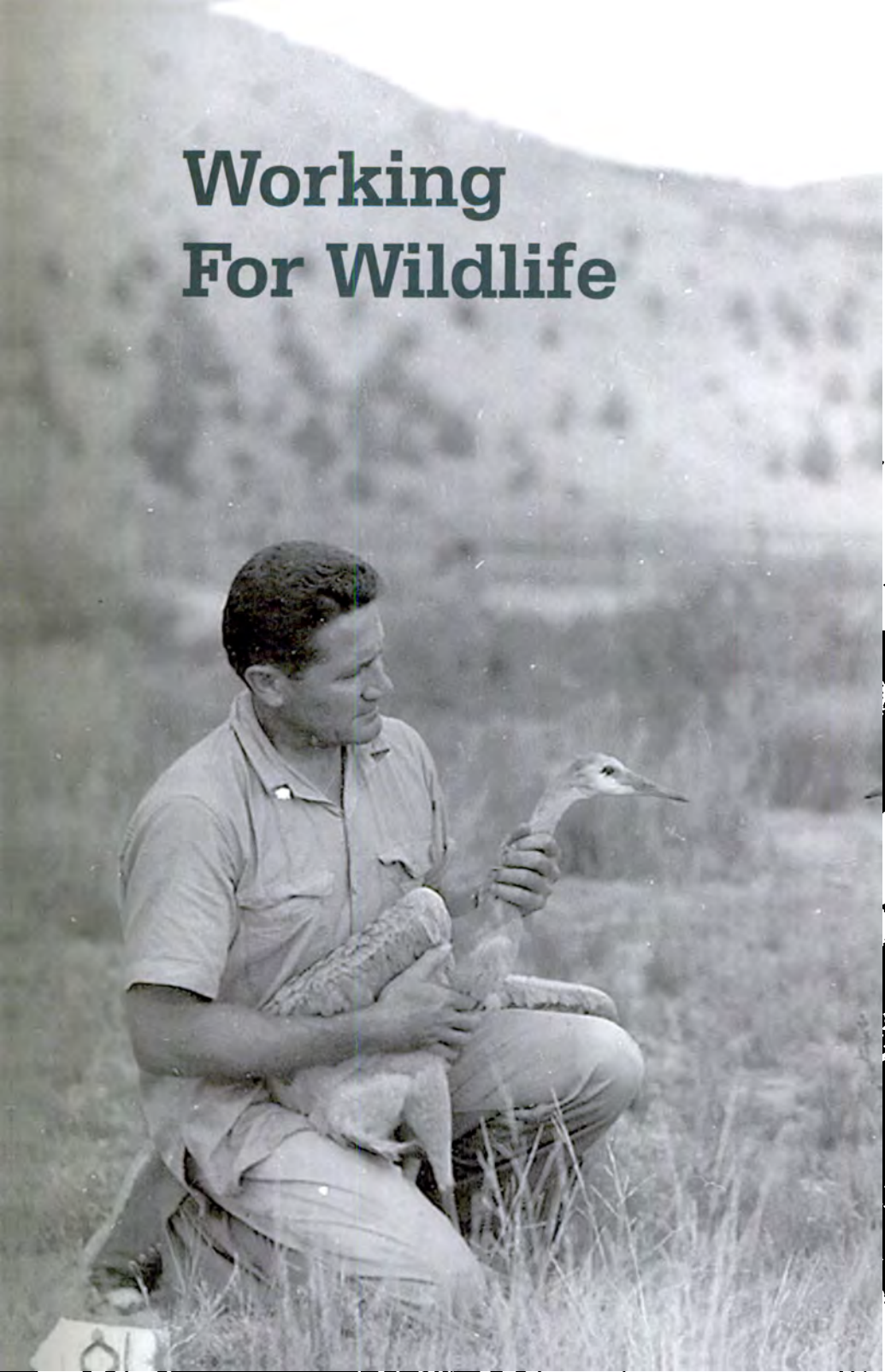


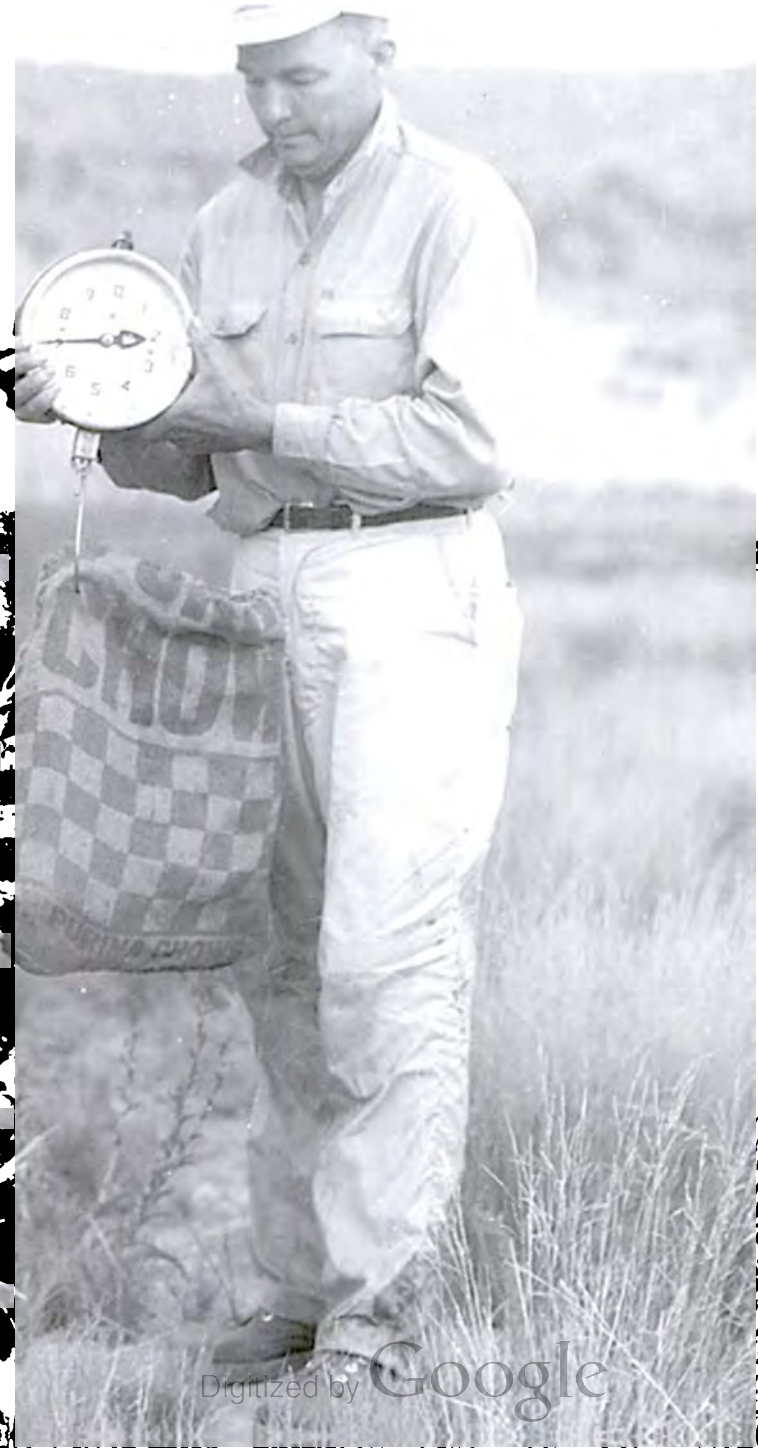
Roger Baker

The Manager's residence now serves as an office and visitor center.

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Working For Wildlife





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As the Refuge enters a new century of conservation, refuge staff will be faced with the challenge of maintaining premier habitat for the wildlife species using the refuge, while preserving resources that have intrinsic value to people today and to future generations.

Previous page: Biologist Ray Erickson holds a scale with the weight of a sandhill crane colt during a 1961 study. USFWS

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Stanley G. Jewett began working for the Bureau of Biological Survey in 1916 and made the transition to the US Fish and Wildlife Service when it was created. While he never resided on the refuge he was the first superintendent and it was through his and William L. Finley's efforts that the Blitzen Valley was purchased as an addition to the Lake Malheur Reservation. Over the next year and a half he established three Civilian Conservation Camps and guided other developments on the Refuge.

When John Scharff was promoted to refuge superintendent in 1937 he faced the daunting challenge of not only keeping CCC enrollees busy but, at the same time, overseeing management of this vast, tremendous natural resource. While the CCC constructed much of the infrastructure we see today, Scharff and his staff built many of the features we see today on the landscape. Major projects undertaken by the staff included construction of Krumbo Reservoir for impounding irrigation water; construction of the museum at refuge headquarters; battling the increasing destruction of carp on the refuge after their introduction to the Silvies River in the 1940s; the reintroduction of trumpeter swans to the refuge from Red Rocks Lake, Montana; the construction of the Malheur Job Corps Center on the refuge (now used as the Malheur Field Station); and increased use of the refuge by educational and conservation groups, and recreationalists.


USFWS

Above: John Scharff in 1970 inspecting the refuge before his retirement.


USFWS

Seventeen trumpeter swans were transported from Red Rock Lakes National Wildlife Refuge in 1955 for transplanting at Malheur.

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USFWS

Above Right: Teachers attend an environmental education workshop in 1972 at the refuge.

Above: Disney's film "Wild Geese Calling" is filmed at the P Ranch in 1968. The film aired in 1969 as the first film on The Wonderful World of Disney show. USFWS

Lower right: John Scharff with Icabod, a greater sandhill crane colt he raised. Icabod appeared in a movie later that year.



Members of the Oregon Audubon Society gather in front of a photography blind dedicated to William L. Finley and Herman T. Bohlman in 1960 at Refuge Headquarters. The blind was destroyed by ice during the flood of the 1980's. USFWS



USFWS

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The first phase to create a new parking area, boat ramp and dock nears completion in 1991 at Krumbo Reservoir. USFWS



USFWS

A Super Cub is loaded with Pro-Noxfish in 1968 as part of a carp eradication project on Malheur Lake. Carp were introduced into the Silvies River for sport fishing, but rapidly spread into the lakes. Carp are bottom feeders and destroy important aquatic habitat.



A 1955 effort to eliminate carp from the lakes resulted in dense layers of dead carp in the lake. USFWS



USFWS

Dead carp float on the surface of the Blitzen River as it enters Malheur Lake. The Rotenone treatment in 1961 killed an estimate 150,000 carp.

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USFWS

Four trumpeter swans being transported from Red Rocks Lake National Wildlife Refuge to Malheur for transplanting (1991).

Above: The 1976 Youth Conservation Corps crew assist with the annual Canada goose banding project. USFWS

Right: The Malheur Job Corps Conservation Center was dedicated in 1965. The Corps performed many projects on the Refuge while training young men to use construction equipment. The Center is now the Malheur Field Station supported by a consortium of Universities and colleges.



USFWS

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Left: Biologist Gary Ivey places a unique identification collar on one of the refuge's resident trumpeter swans (1984). Ivey initiated this project as a refuge volunteer in 1980. USFWS

Below: John Scharff talks with Girl Scouts in 1958 about pronghorn antelope raised at Refuge Headquarters. USFWS





Biologist Walter Anderson searches for unusual spring migrating birds (1970). **USFWS**



Sean Furniss, refuge manager, performing a spring brood count (1970).

USFWS

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Left: Rainbow trout from Hagerman National Fish Hatchery in Idaho are transplanted into Krumbo Reservoir for the first time (1959). USFWS

Below: Soil is tamped down in 1958 around the outlet structure at Krumbo Reservoir as the project nears completion.



USFWS



Electro-shocking is used to check for spawning trout in Krumbo Creek a year after the first release of trout in the reservoir (1960). USFWS



USFWS

Grain Camp Dam undergoes renovations in 1962 as galvanized steel head gates replace the old wood gates.

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Florence and John Scharff in Washington DC where he received a Distinguished Service Award for his 34 years of service with the US Fish and Wildlife Service. USFWS

Scharff served as Refuge Manager for over 34 years until he retired at age 70. Scharff maintains the longest tenure for an on site manager in the Refuge System and he was awarded the Department of Interior's Distinguish Service Award in 1971.



USFWS

Above: Former Biologist Ray Erickson visits with John Scharff during a 1984 visit to the refuge.

Left: The opening day of fishing at Krumbo Reservoir is always well attended. This intrepid crew used a twenty man life raft for the 1961 opener. USFWS



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Joseph Mazzoni replaced Scharff after he retired in 1971. At that time, Reforms in national environmental policies and laws were changing the way the American public viewed management of public lands. As America's social values shifted to support greater conservation of resources, environmental groups began using political pressure to bring about changes in national policy which would in turn affect how refuges were managed. Mazzoni's first priority was a Refuge Land Use Plan for habitat management. Extensive changes were made in the way habitat was managed on the refuge to bring it into alignment with directives from within the U.S. Fish and Wildlife Service. Reductions in the season and number of cattle grazing habitat within the refuge caused turmoil within the ranching community, while bringing praise from the conservation community.

Waterfowl habitat on the lakes provided excellent opportunities for hunters in 1978. USFWS

Right: Krumbo Lane receives modifications in 1977 to improve access to the reservoir. USFWS

Far right: Maintenance mechanic Charles Yriarte sprays herbicide on white top in 1979 in the Lava Beds Field.





USFWS

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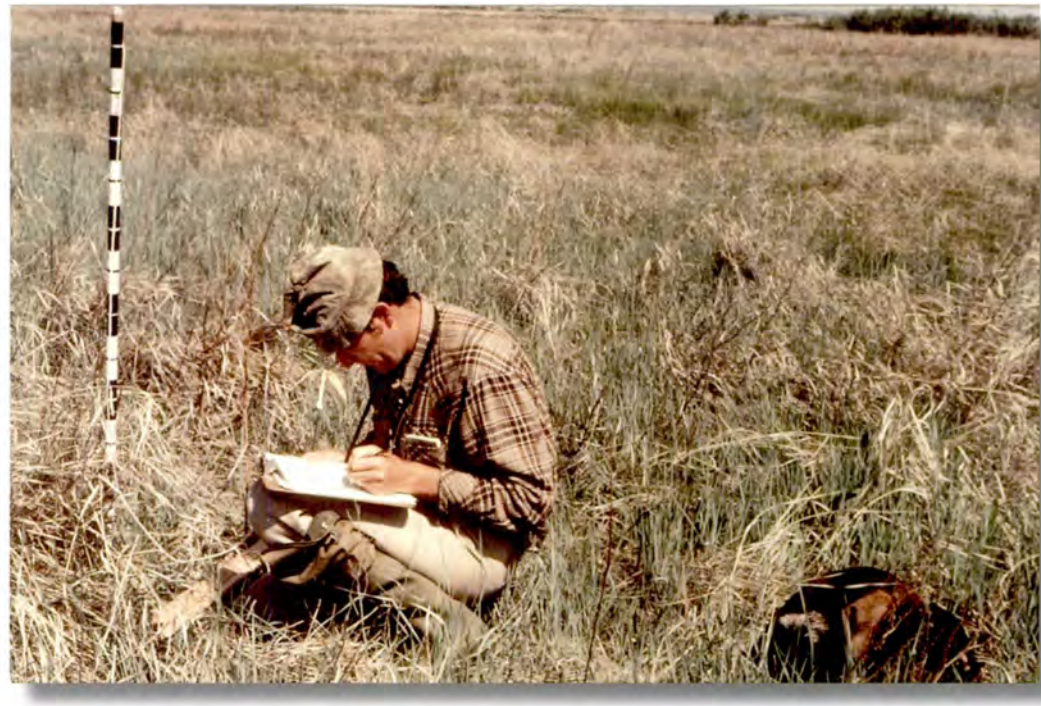




The Bay City Mobile Crane is used in 1979 to install a new 7 foot diameter crossing at Stubblefield Canal and Rockford Lane. USFWS



The Boca Lake Drain in Dredger Pond is cleaned in 1980 using a dragline. USFWS



USFWS



Upper left: Monetary award bands are placed on mallard hens during the 1972 duck banding project. Hunters can cash in the bands and biologists learn where the birds migrated to after leaving the refuge. USFWS

Above: Dave Paullin monitoring habitat at the Double-O as part of a management plan study (1981).

Left: The first reintroduction of river otters on the refuge occurred in 1982. USFWS

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Highway 205 goes under water in 1983 as lake levels begin to rise above normal levels as the result of higher than normal winter precipitation. The gulls are feeding on carp swimming across the highway.
USFWS



USFWS

Muskrats try to find higher ground in 1983 as Malheur Lake extends beyond the refuge boundary. The loss of hardstem bullrush drastically reduced the muskrat population for over a decade on the lake.



The new Buckaroo Dam nears completion in the Fall of 1984. The dam is used to divert water from the Blitzen River into refuge meadows.
USFWS

George Constantino succeeded Mazzoni as manager in 1983. Constatino was tasked with the development of a Master Plan for the Refuge. The Master Plan would guide management direction of the refuge for more than two decades. Constantino worked to diminish the hard feelings felt by the community by including community members in the Master Plan process. By learning about the process and national Fish and Wildlife directives many citizens gained a better understanding of the how - and why - the Refuge was to be managed under the new plan.

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Highway 205 was inundated in the late 1980s as three years of higher than normal precipitation accumulated in the Harney Basin. USFWS

Constantino and staff were on hand to witness the effects of the higher-than-normal precipitation of the mid-1980s. As water levels increased in the lakes, the staff briefly witnessed increased waterfowl production. Soon after, however, carp populations exploded and degraded the wildlife habitat. Refuge staff saw fences and roads go under water; they witnessed destruction of neighboring ranches by water and ice; they learned of efforts to seek ways to drain the expanding lakes into the Malheur River and they saw a reconfiguration of refuge headquarters as houses and other structures were moved away from the rising lake waters.

As flood waters receded, they witnessed the destruction of Native American sites on the lakes by looters. Constantino and staff began working with the Burns Paiute Tribe and professional archaeologists to alleviate some of the destruction and ~~to~~ increase law enforcement efforts. His efforts with the Tribe forged a positive relationship that continues today.

Maintenance Worker Tom Downs assists with the recovery of birds killed by botulism on Malheur Lake (1984).



USFWS



USFWS

Maintenance Mechanic Marv Jess installs a fish trap in 1988 in the fish ladder at Sodhouse Dam.

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Water from the 1980s flooding slowly recedes from Refuge Headquarters in 1990. USFWS

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As quickly as the water rose in the 1980's, it rapidly diminished and by 1992 Malheur Lake was down to a mere 200 acres. USFWS

Forrest Cameron replaced Constantino as Project Leader in 1989. Cameron arrived as flood waters were rapidly decreasing. With the lower water levels the Refuge was faced with severe damage to its infrastructure in the northern end of the Blitzen Valley and around the lakes. Boundary fences needed to be reestablished; water control structures and dikes were gone; roads would need to be rebuilt; and the looting continued on prehistoric sites. Cameron would lobby vigorously with the Regional Office to procure funds to deal with the heavy backlog of maintenance projects left by the devastating floods.

A special appropriation from Congress provided the refuge with funds to add a full time law enforcement officer to deter looting and to deal with trespass livestock. An archaeologist was also hired to continue working with the Burns Paiute Tribe to resolve issues surrounding the looting of sites and the disposition of hundreds of human burials that surfaced as the lake levels declined. A Memorandum of Understanding between the Service, the Burns Paiute Tribe and the State Historic Preservation Office would guide disposition of the burials.





USFWS

Members of the Burns Paiute Tribe tour prehistoric sites inundated by the flood in the mid 1980s. The Tribe worked closely with the Refuge to protect sites from looters, while allowing archaeological investigations at many of the prehistoric villages sites. USFWS

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USFWS

Cameron brought improved visitor opportunities to the refuge at a time when visitation by wildlife enthusiasts was increasing dramatically. Recreation staffing was augmented to meet the new demands, and maintenance staff numbers were increased to deal not only with flood replacement projects, but improve recreational opportunities on the refuge. Major visitor-oriented projects included replacing an unsafe overlook on the butte above Buena Vista Station with a new viewing structure and interpretive panels; improvements at Krumbo Reservoir included a concrete boat ramp, boat dock, accessible fishing platform, picnic area and toilets. In addition, a visitor center was incorporated into the main headquarters building with a sales outlet for books and refuge memorabilia. New interpretive displays were created for the refuge museum; and the refuge entered into the internet age with its own web page.



USFWS

Above: Welcome sign at parking area above Refuge Headquarters. USFWS

Above right: Interpretive panel and Visitor Center at refuge headquarters.

Right: The re-designed Buena Vista overlook site and interpretive panels. USFWS, Jean Harrison

Far right: Newly constructed improvements at Krumbo Reservoir.




USFWS

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Left: A refuge permittee prepares rake-bunch piles the old fashioned way in 1991. The rake-bunch piles provide winter forage for cattle while removing decadent vegetation from meadows. USFWS



USFWS



Above: Biologists Gary Ivey and Rick Vetter prepare two subadult trumpeter swans for transport to Summer Lake Wildlife Managment Area (1991). USFWS



USFWS

Above: Equipment Operator Bruce Aldrich excavates a trench for a waterline at the newly constructed Windmill Brood Pond in the Double-O Unit (1991).

Left: Habitat Manager Mike Rule releases a river otter on the Blitzen River after it was transported from a State Fish Hatchery where it was causing problems (1990).

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Fish passage and screening became more important as the movement of native fish in the Blitzen River and its tributaries received increasing attention from the State and conservation groups. Insuring passage at the dams for redband trout and other native fish as they moved up river to spawn also enabled the refuge to prevent carp from moving through the system. Since introduction of carp the refuge had been battling their destructive feeding habits in the lakes and ponds on the refuge. Increased funding allowed the refuge to install fish passage at dams within the refuge and construct screens to prevent fish from entering irrigation canals and ditches.

Above: Biologists from Inner Mongolia learn to band sandhill cranes during a 1992 exchange program sponsored by the International Crane Foundation. The biologists spent the summer at Malheur Refuge learning about crane biology and management techniques. USFWS

Right: A solar powered fish screen on Bridge Creek has been an effective barrier to keep fish out of irrigation ditches.





Dynamite was used to eliminate carp from the Headquarters Display Pond in 1992. Two large pumps were used to decrease water levels before the dynamite was placed. USFWS



A Rotenone treatment was used to eliminate the carp remaining after the dynamite blast. USFWS



Dead carp were removed from the pond for several days after treatment. Keith Henstock in the backhoe and Pat Hickey were part of the clean up crew. USFWS

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Scott Stenquist, a Regional Office specialist, examines a stand of noxious perennial pepperweed (1992). USFWS



USFWS

Above: Prescribed fire is one of several habitat tools used to remove decadent vegetation from refuge meadows (1992).

The Highline fish screen and passage is installed in the East Canal to prevent diversion of fish into irrigation ditches, while allowing fish passage between the Blitzen River and the canal. USFWS



A contractor uses a large boom truck to apply herbicides to eliminate perennial pepperweed and other noxious weeds (2006).



USFWS

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Left: Inverted stone weirs were placed along a four mile stretch of the Blitzen River in 2002 to raise water levels and restore portions of the degraded channel. USFWS



USFWS

Equipment Operator Orritt Hoffman spent a considerable portion of the winter of 2002 positioning large boulders in the inverted weirs.

David Stanbrough became Project Leader in 1999 when Cameron accepted a position in the Regional Office. Water rights were a significant focus during Stanbrough's tenure. Oregon Water Resources Department asked the Service to clarify how water was used on the Refuge. The result of this request was two applications: one transferred existing irrigation rights to use for wildlife refuge management. The second legalized the annual diversion of water from October to March. These efforts to secure water for current and future management strategies will significantly benefit wildlife for years to come.

During Stanbrough's time major efforts were also undertaken to address aquatic resources in the Blitzen valley. Several fish passage and screening projects were completed and 5 miles of the Blitzen River was extensively restored. This restoration project raised the level of the deeply incised river, reconnected the river to the floodplain and created instream/riparian habitat. This very successful project will serve as the model to restore the remainder of the Blitzen River.



Swifter Bumpatter

Redband Trout like you would find in the Malheur area.

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USFWS

A completed weir raised the water level, provided fish passage and created deep pools in the Blitzen River.

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West Canal fish screen under construction in 2005 near Page Springs Dam. USFWS



Right: Volunteers learn how to determine the sex of a duck during a night time banding project in 2005. USFWS



USFWS

A fish screen installed at the West Grain Camp Field diversion in 2006 prevents fish from entering the irrigation ditch.

Donna Stovall was named Project Leader in 2003 following Stanbrough's retirement in 2002. Faced with tougher funding circumstances and gearing up for a major effort to develop a new management plan, or Comprehensive Conservation Plan (CCP). Stovall encouraged proactive partnerships and collaborative community efforts in advance of this planning effort. Under her direction, a greater emphasis was placed on the use of volunteers for numerous tasks to help staff, who would be heavily involved with the CCP. In the never-ending battle with invasive plant species innovative solutions were encouraged and the holders of refuge haying and grazing permits were involved in creating solutions to combat perennial pepperweed and other nonnative plants.

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USFWS

As the Refuge enters a new century of conservation, refuge staff will be faced with the challenge of maintaining premier habitat for the wildlife species using the refuge, while preserving resources that have intrinsic value to people today and to future generations.





Roger Baker

Above: Red-breasted nuthatch.

Above left: Rodeo herbicide aerial application in 2007 to open up areas of water in the Buena Vista area. USFWS

Left: Former Biologist Dave Marshall is introduced to the crowd at the 2008 John Scharff Migratory Bird Festival Banquet.

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USFWS

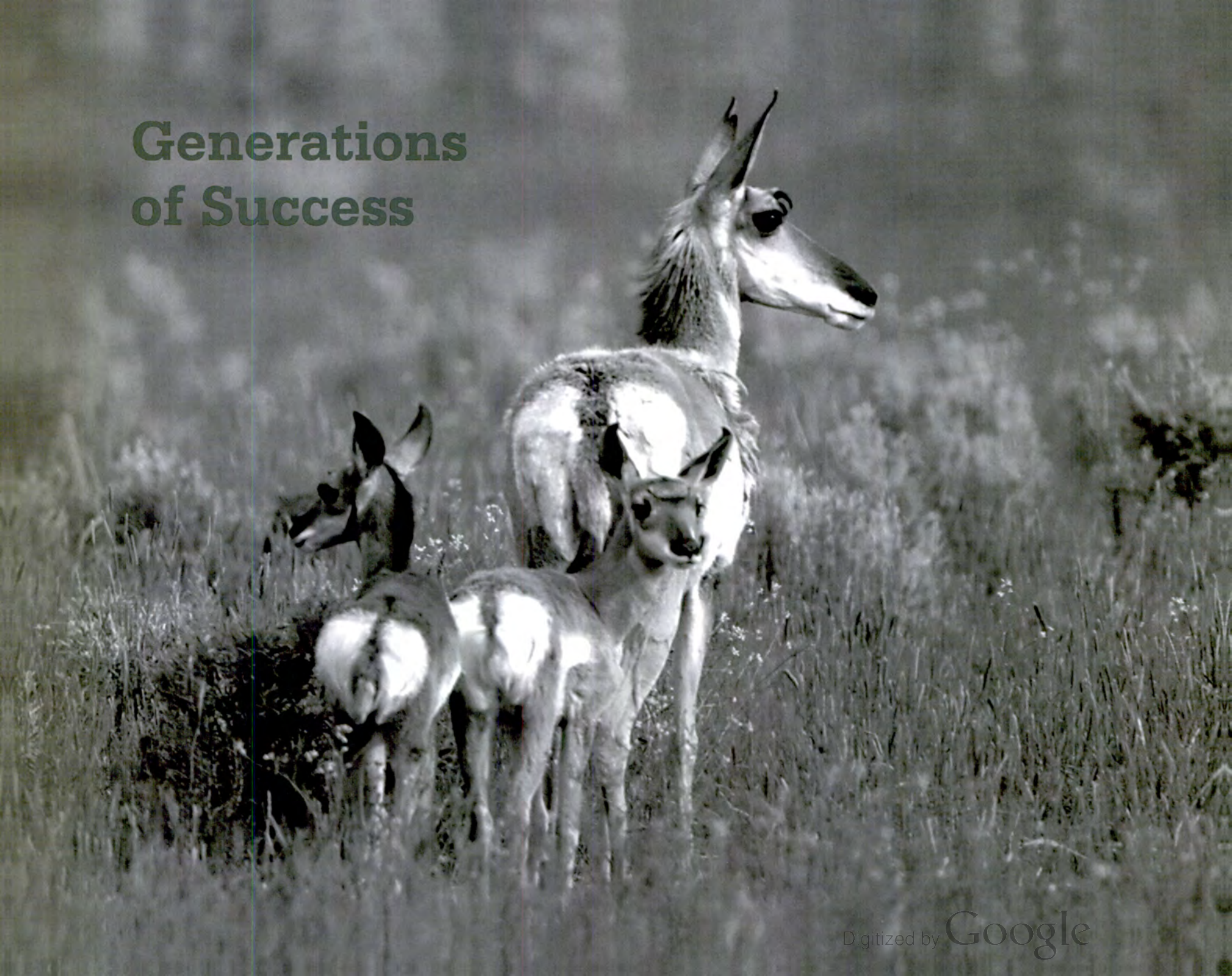

USFWS


USFWS

"If a child is to keep alive his inborn sense of wonder,
he needs the companionship of at least one adult
who can share it, rediscovering with him the joy, excitement
and mystery of the world we live in."

- Rachel Carson -

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"Refuges are places where the music of life has been rehearsed to perfection, where nature's colors are most vibrant, where time is measured in seasons, . . ."

- Jamie Rappaport Clark -

Previous page: Pronghorn antelope doe and kids. Barbara Wheeler Photography

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Former U.S. Fish and Wildlife Director Jamie Rappaport Clark discussed the importance of refuges in a 1999 report (*Fulfilling the Promise, The National Wildlife Refuge System: Visions for Wildlife, Habitat, People, and Leadership*). Her words illustrate why Malheur Refuge has successfully provided habitat for wildlife and opportunities for many generations.

> *"Refuges are places where the music of life has been rehearsed to perfection, where nature's colors are most vibrant, where time is measured in seasons, and where the dance of the crane takes center stage. They are gifts to ourselves and to generations unborn—simple gifts unwrapped each time a birder lifts binoculars, a child overturns a rock, a hunter sets the decoys, or an angler casts the waters. They are living, breathing places where the ancient rhythms still beat. To many, they provide a sense of place, a timeless connection to instincts barely discernible, and a tie to a natural world which nourishes the spirit of individuals, and a nation. Refuges, as such as the monuments in Washington, D.C., the boyhood homes of presidents, the sequoias in California, the vast forests of the western mountains, or the expansive swamps of the Everglades, are national treasures in the truest sense. Yet, they are also a tool which has been used effectively to rescue and recover species from extinction, has safeguarded breeding and resting areas for millions of birds, and has staved-off the loss of unique and irreplaceable ecosystems squeezed by a growing country."*



Barbara Wheeler Photography

Western grebe with chicks.

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Barbara Wheeler Photography

Clark's grebe and passengers.

Eared grebe with young.



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American coot with chick.

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Barbara Wheeler Photography

Redhead hen with ducklings.

Cinnamon teal hen with ducklings.



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Barbara Wheeler Photography

Canvasback hen and ducklings.

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Barbara Wheeler Photography

Ruddy duck hen and ducklings.

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Above: Greater sandhill crane on nest. Barbara Wheeler Photography

Right: Greater sandhill crane and colt.



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Barbara Wheeler Photography

American avocet with chick.

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American **avocet** *with chicks.* Barbara Wheeler Photography



Barbara Wheeler Photography

Black-necked stilt chick.

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Killdeer chick.
Barbara Wheeler Photography



Killdeer on a nest.

Kit Larsen

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American robin and chicks. Barbara Wheeler Photography



Barbara Wheeler Photography

American robin chicks.



Barbara Wheeler Photography

Mourning dove chicks.

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Yellow warbler chicks are kept supplied with a steady diet of dragonflies.
All photos this page Barbara Wheeler Photography.

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Barbara Wheeler Photography

Above: Northern Harrier chick.

Left: Golden Eagle and eaglet.
Barbara Wheeler Photography

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Above: Great horned owl adult. USFWS

Right: Great horned owlets at Refuge Headquarters.



Barbara Wheeler Photography

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Barbara Wheeler Photography

Short-eared owlets.

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Barbara Wheeler Photography

Trumpeter swan and cygnets on Benson Pond.

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Barbara Wheeler Photography

Above: Mule deer doe and fawn.

Left: Mule deer fawn.
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Robert McRae

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Barbara Wheeler Photography

Above: Coyote pups outside their den.

Left: Bobcat kitten at Refuge Headquarters.

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Belding's ground squirrels.

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Celebrating One Hundred Years of Conservation



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"A true conservationist is a man who knows that the world is not given by his fathers but borrowed from his children."

- Audubon -

Previous page: American kestrel pair. Barbara Wheeler Photography
Opposite page: White-faced ibis. Barbara Wheeler Photography

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"Like the resource it seeks to protect, wildlife conservation must be dynamic, changing as conditions change, seeking always to become more effective."

- Rachel Carson -

"It is our task in our time and in our generation, to hand down undiminished to those who come after us, as was handed down to us by those who went before, the natural wealth and beauty which is ours."

- John F. Kennedy -

"What a country chooses to save is what a country chooses to say about itself."

- Mollie Beattie -
Director,
U.S. Fish and Wildlife Service
1993-1996



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Images of Life on the Refuge



Above: Male rufous hummingbird.
Roger Baker

Right: Calliope hummingbird



Roger Baker

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Barbara Wheeler Photography

Above: Red-breasted nuthatch

Golden-crowned kinglet.
Barbara Wheeler Photography

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Barbara Wheeler Photography

Barn swallows

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Roger Baker



Roger Baker

Top: Yellow-rumped warbler.

Above: Wilson's warbler.

Left: Yellow-breasted chat. Roger Baker

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Bushtit. Barbara Wheeler Photography



Bewick's wren

Barbara Wheeler Photography

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Marsh wren. Barbara Wheeler Photography



Rock wren

Barbara Wheeler Photography

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Roger Baker

Vesper sparrow



Roger Baker

White-crowned sparrow



Roger Baker

Lark sparrow

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Chipping sparrows. Roger Baker



Barbara Wheeler Photography

Belted kingfisher

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Above: Eastern kingbird. Barbara Wheeler Photography



Barbara Wheeler Photography

Right: Ash-throated flycatcher

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Evening grosbeak

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Barbara Wheeler Photography

Red crossbill

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Roger Baker

Spotted towhee

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Barbara Wheeler Photography

Digitized by Google



Barbara Wheeler Photography

Above: Loggerhead shrike

Left: American pipit

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Barbara Wheeler Photography

Western bluebird

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Western meadowlark. Barbara Wheeler Photography



Brewer's blackbird

Barbara Wheeler Photography

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Right:
Black-billed magpie.
Barbara Wheeler
Photography

Far right:
Red-winged blackbird.

Below:
Yellow-headed blackbird.
Roger Baker

Opposite page:
Cedar waxwing





Barbara Wheeler Photography

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Above: Northern flicker. Barbara Wheeler Photography

Right: Lewis' woodpecker.



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Above: Chukar. Barbara Wheeler Photography

Right: Mourning dove



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Barbara Wheeler Photography

California quail

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Barbara Wheeler Photography

Above: Common nighthawk

Right: Dragonfly



Roger Baker

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Above: Merlin. Barbara Wheeler Photography

Right: Northern harrier



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Roger Baker

Above: Osprey.

Left: Swainson's hawk.
Barbara Wheeler Photography

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Above: Burrowing owl. Barbara Wheeler Photography

Right: Long-eared owl



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Barbara Wheeler Photography

Short-eared owl

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Barbara Wheeler Photography





Barbara Wheeler Photography

Top: Long-billed dowitchers.

Above: Wilson's snipe. Barbara Wheeler Photography

Right: Virginia rail

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Barbara Wheeler Photography



Barbara Wheeler Photography

Above left: Long-billed curlew.
Barbara Wheeler Photography

Above: Willet

Left: Sora

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Snowy plover. Barbara Wheeler Photography



Left:
Red-necked ***phalarope.***
Barbara Wheeler
Photography

Below:
Black-crowned ***night***
heron



Barbara Wheeler Photography

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Left: American bittern. Barbara Wheeler Photography

Below: Double-crested cormorant



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Barbara Wheeler Photography



Barbara Wheeler Photography

Above: Ring-billed gull. Barbara Wheeler Photography

Above right: Black terns

Right: Forster's tern

Opposite page: Franklin's gull

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Barbara Wheeler Photography

Above: Ruddy duck drake

Left: Greater white-fronted geese

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Barbara Wheeler Photography

Above: Greater sandhill cranes in flight

Left: Greater sandhill cranes

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USFWS

Trumpeter swan at nest.

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Selected Bibliography

Aikens, C. Melvin
Archaeology of Oregon, BLM, Portland, Oregon. 1993

Bassett, Karen, Jim Renner, and Joyce White
Meek Cutoff 1845. Oregon Trails Coordinating Council, http://www.endoftheoregontrail.org/oregontrails/meek.html 1998.

Brimlow, George Francis
Harney County Oregon and Its Range Land. Harney County Historical Society, Burns, Oregon. 1980

Bureau of Land Management
North Steens Ecosystem Restoration Project, Draft Environmental Impact Statement, US Department of the Interior, Burns. District Bureau of Land Management December, 2005.

Civilian Conservation Corps
Civilian Conservation Corps Camp Monthly, Quarterly and Annual Narratives. On file Malheur National Wildlife Refuge, Princeton, Oregon.

Cooley, Michael F. and Mary Lou
The transcribed diary of Eli Casey Cooley as he came across the Oregon Trail and the Meek Cutoff in 1845 for the Officer-Cooley Family Association, November 2004. http://www.oregonpioneers.com/CooleyDiary.htm

D'Azevedo, Warren L.
Handbook of North American Indians: Great Basin. Volume 11, 1986, Smithsonian Institute, Washington D.C.

Dugas, Daniel P.
Formation Processes and Chronology of Dune Islands at Malheur National Wildlife Refuge, Harney County, Oregon, 1996. US Department of the Interior, Fish and Wildlife Service, Region 1, Cultural Resource Series Number 12.

Finley, William L.
"The Trail of the Plume-Hunter", September 1910, The Atlantic Monthly.

Fuller, Richard E.
The Geomorphology and Volcanic Sequence of Steens Mountain in Southeastern Oregon, 1929. University of Washing Publications in Geology. Available at http://www.nps.gov/history/history/online_books/geology/publications/state/wa/uw-1931-3-1/intro.htm

Gibson, Elizabeth
Elijah Elliot's Lost Wagon Train, His Folly Nearly Kills 1,000 Pioneers on the Oregon Trail. http://americanhistory.suite101.com/article.cfm/elijah_elliots_lost_wagon_train

Gray, Edward
Life and Death of Oregon "Cattle King" Peter French, 1849-1897. Your Town Press, Inc., Salem, Oregon. 1995

Hill, Wayne R.
"The Double-O Ranch: Its History with Plans for Restoration, Interpretation, and Development". Report on file Malheur National Wildlife Refuge, Princeton, Oregon. 1978.

Digitized by Google

Homestead Laws
http://encarta.msn.com/encyclopedia_761557066/Homestead_Laws.html

LaLande, Jeff
The Oregon History Project, Oregon historical Society, 2005 http://www.ohs.org/education/oregonhistory

Langston, Nancy
Where Land and Water Meet: A Western Landscape Transformed. University of Washington Press, Seattle, Washington. 2003

Laut, Agnes C.
Journal of Peter Skene Ogden: Snake Expedition, 1826-7, as copied by Miss Agnes C. Laut in 1905 from Original in Hudson's Bay Company House, London, England.

McDowell, Patricia F.
"An Overview of Harney Basin Geomorphic History, Climate, and Hydrology", in Land and Life at Malheur Lake: Preliminary Geomorphological and Archaeological Investigations, Intermountain Research, 1992. A report submitted to the US Fish and Wildlife Service.

Mehringer, Peter J. Jr
"Prehistoric Environments". Handbook of North American Indians: Great Basin. Volume 11, Smithsonian Institution, Washington, DC.

The National Association of the Civilian Conservation Corps Alumni.
http://www.cccalumni.org/history1.html

Oregon Council for the Humanities
The First Oregonians, 1991, Portland, Oregon.

Oregon Historic Trails Fund
http://www.oregonhistorictrailsfund.org/trails/showtrail.php?id=8

Raven, Christopher and Robert G. Elston
Land and Life at Malheur Lake: Preliminary Geomorphological and Archaeological Investigations. Report to the US Fish and Wildlife Service. 1992

Roosevelt, Theodore
A Book-Lover's Holidays in the Open, 1916.

Soucie, Minerva
"The Wadatika Today", Burns Paiute Tribe available at http://www.burnspaiute-nsn.gov/Wadatika.htm

Talbot, Caryn
"P Ranch: History, Preservation and Interpretive Development". Report on file Malheur National Wildlife Refuge, Princeton, Oregon. 1976.

U.S. Fish and Wildlife Service, Department of the Interior.
Fulfilling the Promise, The National Wildlife Refuge System: Visions for Wildlife, Habitat, People, and Leadership. The National Wildlife Refuge System, March 22, 1999.

Wheat, Margaret M.
Survival Arts of the Primitive Paiutes. University of Nevada Press, Reno, Nevada. 1967.

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