

Appendix A

NORTH POWDER WILD AND SCENIC RIVER

AFFECTED ENVIRONMENT

PURPOSE OF THIS CHAPTER

To describe the character and resources of the Wild and Scenic River corridor at the time of designation. The current conditions, as well as existing trends, are described to acquaint people with the corridor and provide a basis from which to assess the consequences of the various management alternatives.

REGIONAL SETTING

The North Powder River is located in Northeast Oregon in Baker County. It originates on the Wallowa-Whitman National Forest, high on the Elkhorn Ridge of the Blue Mountains, and flows generally north-east for 24 miles until it joins the Powder River just east of the town of North Powder. The Powder is a tributary of the Snake River, which in turn flows into the Columbia River, and then to the Pacific Ocean. An 11.7 mile portion of the Powder River between Thief Valley Dam to the Highway 203 bridge is also designated a National Wild and Scenic River and administered by the Bureau of Land Management.

The North Powder River valley is a glaciated valley characterized by craggy mountain tops reaching above timberline. The upper 6.0 miles of the North Powder River was designated as a National Wild and Scenic River (W&SR) by the Omnibus Oregon Wild and Scenic Rivers Act of 1988, an amendment to the Wild and Scenic Rivers Act of 1968. The designated river length has been recalculated by the Forest Service using Geographic Information Systems and has been revised to 6.4 miles.

When Congress passed the Omnibus Oregon Act, 40 rivers, or parts thereof, were added to the National Wild and Scenic Rivers System. The classification of each river segment, as either Wild, Scenic, or Recreational, was also identified in the legislation. The designated corridor is entirely on National Forest System lands and is classified as a "Scenic" River.

The designated corridor is about 1,920 acres in size and begins at the headwaters near Cracker Saddle (Township 8 South, Range 37 East, Section 18) and ends at the National Forest boundary (Township 7 South, Range 38 East, Section 30). A 1/4 mile wide corridor on either side of the river has been established by the Forest Service for interim management purposes.

The river's name is derived from the Chinook jargon words *polallie illahe*, meaning a sandy or powdery ground used to describe the soils along the stream.

The North Powder drainage is bordered by the Dutch Flat Creek on the north, Rock Creek on the south, and the North Fork of the John Day River on the east. The North Fork of the John Day River is also a National Wild and Scenic River.

CLIMATE

The climate in the general area is characterized by a short growing season and little or no summer precipitation. Annual precipitation within the river corridor varies significantly with elevation. Lower elevations receive approximately 30 inches of precipitation per year, while upper elevations exceed 40 inches of precipitation per year, much of it falling as winter snow.

Persistence of the snow pack varies primarily with elevation, generally melting within a few days of falling in lower areas and rarely maintaining a winter-long snow pack. At higher elevations, snow persists in patches through June and early July. A snowmelt hydrography typifies the streamflow with peak flows occurring in late May.

The summer months are typically dry with less than 15 percent of the of the annual precipitation falling during July, August, and September. The rain that usually occurs during the summer is the result of local thunderstorms. On any given day, air temperature variation is primarily a function of elevation.

Summer temperatures near 90° F are not unusual in the lower reaches, while winter lows may reach zero. At higher elevations, summer temperatures fluctuate widely with hot days and cold nights. Summer highs reach the mid-70s at 5,000 feet and the mid-60s at 7,000 feet. At higher elevations, frost can occur almost any night of the year. Winter temperatures remain low for long periods and considerable snow accumulates.

HISTORY

The North Powder River drainage is included within the ceded boundaries of the Confederated Tribes of the Umatilla Indian Reservation (CTUIR). The Elkhorn Ridge of the Blue Mountains was utilized in prehistoric and historic times by members of the CTUIR for fishing, hunting, and religious purposes. The corridor was also periodically and seasonally visited by small groups from other tribes including the Nez Perce, Shoshone-Bannock, and Northern Paiute. Native Americans still travel to the area to hunt, fish, camp, and gather, continuing the traditions established prior to the coming of Euro-Americans to northeast Oregon.

Unlike much of the rest of the Elkhorns, this drainage did not receive the lasting attention of early prospectors and miners. The river corridor does have a number of pre-1930's mining sites. The primitive road found paralleling the stream today is a portion of an route to early-day mining camps located high on the west flanks of the Elkhorns. This road was originally constructed in 1864 by the Dealy Wagon Road Company as one of the earliest routes across the Elkhorns. As this was a difficult route it was not heavily used and easier alternate routes were soon constructed elsewhere. Historic references can be found to its early use and even mention its use by Native American travelers.

The river corridor was also used as a sheep driveway. Prior to the gold rush era, it is likely that early day trappers traveled the river corridor. Beyond these few pieces of information, historical accounts of activities in the North Powder River drainage are limited.

Aside from the early establishment of a stage route over the Elkhorns in the North Powder drainage and some prospecting, the area seems to have escaped the attention or interest of Euro-Americans during

historic times. Several cultural resource sites exist in the North Powder River corridor, including evidence of Native American use and old mining activity, but these are not significant nor are they listed on the National Register of Historic Places. Since surveys have not been completed in the river corridor, the extent of other cultural sites is unknown. Based on surveys conducted in other portions of Elkhorn Ridge, it is likely that historic and prehistoric sites exist in the river corridor.

LANDOWNERSHIP

The 1/2 mile wide river corridor encompasses approximately 1,920 acres entirely within the Wallowa-Whitman National Forest. All 1,920 acres are National Forest System lands.

The following is a chart of landownership with the designated Wild and Scenic River corridor:

**CHART A-1
LANDOWNERSHIP**

LANDOWNER	ACRES	PERCENT
USDA Forest Service	1,920	100
Private	0	0
Total	1,920	100

AMERICAN INDIAN TREATIES

The entire river corridor is within the lands that were ceded to the United States Government, through a ratified treaty, by the Confederated Tribes of the Umatilla Indian Reservation (Cayuse, Walla Walla, and Umatilla Tribes). The river corridor does not include any reservation lands. Under the provisions of the 1855 Treaty, members of the tribes retain specific rights and privileges on lands ceded by past treaties. These treaties entitle them to hunt, gather roots and berries, and pasture stock on non-claimed (Federal) lands within the river corridor. In addition, these treaties entitle members of the tribes to fish at all usual and accustomed fishing sites. These tribes still continue to use the area for hunting, fishing, and other traditional practices at usual and accustomed places. The tribes also actively pursue protection of cultural and sacred sites,

which include burials, and other treaty rights. Their rights to believe, express, and exercise their traditional religions (including having access to sites, use, and possession of sacred objects, and the freedom to worship through ceremonial and traditional rites) are also protected by law.

GRAZING

The river corridor and the entire Elkhorn Ridge area of the Blue Mountains is not part of any grazing allotment. Most of the drainage is considered unsuitable for sustained grazing activity due to erodible soils, lack of forage, and rugged terrain. Deer and elk populations account for the current browse use.

Domestic livestock grazing began in the late 1800s when settlers grazed large sheep herds in portions of the watershed. The higher elevations were used for summer range while the lower portions, where mild winter conditions prevailed, were used for domestic livestock winter feeding grounds.

Historically, sheep grazing was an important early industry in this region. Some excessive sheep grazing did occur in the area in the early 1900s. Sheep grazing has resulted in some plant community alterations in the watershed. Sheep grazing continued into the 1970s but was characterized by much smaller bands used over a larger growing area. Grazing was halted in the area in the 1970s to protect fragile soils. It is unlikely that the watershed will ever be included in a grazing allotment.

RESIDENCES, CABINS, AND RECREATIONAL SERVICES

There are no cabins or recreational structures located within the river corridor.

TIMBER

Forests cover most of the river corridor. The current river corridor (1/4 mile each side of the mean high water line) lies mostly in Management Area 7, Wild and Scenic Rivers, and Management Area 6, as specified in the Wallowa-Whitman National Forest Land and Resource Management Plan (Forest Plan). Two areas of Management Area 15, Old-Growth, are also in the river corridor. The lower portion of the corridor contains 200 acres in Man-

agement Area 1, Timber Production, and Management Area 3A, Timber/Wildlife. If conflicts arise between any of the provisions of these management areas within the river corridor the more restrictive apply.

Commercial timber stands along the river corridor are primarily composed of lodgepole pine, grand fir, Douglas-fir, aspen, and Engelmann spruce. Some ponderosa pine occurs at lower elevations and western larch at lower and mid elevations. Subalpine fir is dominant at upper elevations and is interspersed with whitebark pine, small meadows, and rocky snow chutes.

Mature and old-growth forests with large patches of stands of smaller diameter trees occur throughout the river corridor. The tree canopy is quite dense to the south of the river and more open and interspersed with openings to the north of the river. Most trees are mature and overmature with the largest trees being approximately 300 years old and 34 inches in diameter. There are also several dense 80 year old lodgepole pine stands, with some larger groupings of western larch, grand fir, Douglas-fir, and subalpine fir. The north side of the river above the river corridor has rocky thin soils with sparse stocking of ponderosa pine at lower elevations and subalpine fir and whitebark pine at higher elevations.

Current stand volumes average 12-14 MBF per acre with some stands in the river bottom approaching 40 MBF per acre. The river corridor contains about 26.9 MMBF of timber on 1,920 acres. Only about 200 acres, in the extreme lower end of the corridor, containing 2.8 MMBF is part of the regulated Forest timber base and is available for scheduled harvest. The annual sale quantity from this area is less than 0.1 MBF per acre/year.

The stands within the corridor are being attacked by several damaging insect pests. The mountain pine beetle has killed much of the lodgepole pine in the drainage along the creek. The Douglas-fir tussock moth is a major defoliator of mixed conifer forests, showing equal preference for Douglas-fir, grand fir and subalpine fir. The western spruce budworm in stands of spruce, grand fir, and Douglas-fir is causing significant defoliation and mortality and is showing persistence with year after year defoliation. The repeated defoliation is resulting in some growth reduction, top-killing and tree death.

Opportunities exist to utilize mortality, maintain diameter growth and tree vigor along with meeting VQO values established in the regulated 200 acre portion of the river corridor.

Logging activity in this subwatershed began with the clearing of timber for construction of the primary road. Tree removal from past activities such as mining, timber harvest, grazing, and recreational pursuits has occurred at low levels. Fuelwood cutting is also allowed in the corridor. There have been no recent National Forest timber sales conducted within or adjacent to the corridor.

The private lands just below the river corridor have recently been selectively cut. Past timber management and harvest activities in the river corridor have been minor and have caused little if any impact on the resources in the area.

TRANSPORTATION

The river corridor contains two Forest roads. The North Powder Road (FS #7301) follows an old stage route which parallels the North Powder River for 4.9 miles and then continues 2.9 miles crossing Cracker Saddle as the North Powder Trail (FS #1632). The lower 1.5 miles of the trail has been impassible to four-wheel drive vehicles for many years. In 1989, the Forest Service placed a closure order on the lower 1.5 miles of the trail to prohibit vehicles over 40 inches in width. This ensured public safety and reduced erosion from four-wheel drive vehicles who were unsuccessfully attempting to negotiate the section. The upper 1.4 miles of the trail is still open to four-wheel drive vehicles from Bourne. The existing 4.9 mile North Powder Road is a low standard road suitable for four-wheel drive vehicles only. The North Fork of the North Fork Road (FS #7301-200) is a 1.0 mile long spur off the North Powder Road which accesses a dispersed camping area.

The North Powder Road was constructed in 1864 by the Dealy Wagon Road Company as one of the earliest routes across the Elkhorns to mining camps on the other side. As this was a difficult route it was not heavily used and easier alternate routes were soon constructed elsewhere. Historic references can be found to its early use and even mention its use by Native American travelers. As the road existed prior to National Forest designation and was

used for commerce and public use, it qualifies as an RS 2477 road, which is a public right-of-way road.

Baker County indicates that the road is listed in its RS 2477 inventory, that it is at least a 40 foot right-of-way, and that the County intends to keep the route open. As a RS 2477 route, the County controls the activities and is responsible for this road. Thus, the Forest Service would need to work with the County to seek management of the travelway that would ensure the protection and enhancement of the values for which the river corridor was designated.

Both the North Powder Road and the North Fork roads are on poor grades and lack proper maintenance. The North Powder Road has serious drainage problems and for about 300 feet captures the North Fork and diverts it down the road. The North Fork Road has steep grades, a narrow switchback, and some drainage problems, which are causing soil and water quality problems.

Current road management objectives on the North Powder Road are to encourage high clearance four-wheel drive vehicles and trail bikes, but discourage highway vehicles. The entire North Powder Trail is open to motorized use, the lower 1.5 miles (up to the Lost Lake Trail FS #1621) to vehicles less than 40 inches in width, and the upper 1.4 miles to all motorized use including four-wheel drive vehicles. The upper 1.4 miles of trail is used primarily to access mining claims in the upper part of the drainage.

Open road density in the watershed is very low at .4 miles per square mile. The primary road (FS #7301) is a draw bottom road and runs roughly parallel to the river for its 4.9 mile length. Only an additional 1.0 mile spur road exists in the drainage.

Challenging access to the North Powder River corridor is the primary reason recreational use of the corridor has remained low over time. The upper western end of the corridor is accessed by a very challenging low standard jeep road from the historic mining town of Bourne. The lower eastern end of the corridor is accessed by several low standard roads crossing private land (although discussed with private landowners, legal right-of-way has not been secured to date). Above the National Forest boundary, Forest Road #7301 continues for approximately five miles into the corridor, closely paralleling the river. Spur road #7301-200 proceeds up the North Fork of the North Powder River for a mile. The con-

tinuing use, lack of maintenance, poor condition, and lack of effective drainage structures on these low standard roads is currently impacting resources in the corridor, primarily water quality and to a minor extent foreground scenery.

Various approaches have been suggested to correct these problems including reconstructing and upgrading the road, resloping the road, correcting problem areas only with spot reconstruction and drainage, closing all or part of the road, converting the road to a trail, to changing timing or type of use of the road. Selecting which action to take is made more complex several factors. The road is in a "roadless area" and upgrading the road significantly is considered by some to be inconsistent with maintaining roadless area character. On the other hand, maintaining an open road into the drainage for fire management purposes was a concern raised during public meetings. In addition, the road is considered to be one of the earliest over Elkhorn Ridge, and was used as a wagon route to mining camps high in the Elkhorns. Congress recognized this "historic wheel track" as part of the Recreation OR Value as it "provides opportunities for motorized use in a relatively primitive setting." The road also provides motorized access to miners with claims in adjacent areas.

There is also a system of trails providing access to the upper corridor and several of the high alpine lakes in the drainage. The North Powder River Trail (#1632) is a continuation of the road from it's end to Cracker Saddle at the crest of the Elkhorns. It is the only trail in the drainage currently open to motorized use, restricted to vehicles less than 40" wide and snowmobiles to protect fragile soils. The hiking trails in the drainage (#1621, #1635, #1625) are closed to motorized use, with the exception of snowmobiles. These trails lack maintenance and segments of these trails are contributing to resource damage, primarily impacting water quality and to a minor extent foreground scenery. A variety of options have been considered for correcting resource impacts, from reconstructing trails, to further restrictions on uses.

SCENERY

Starting high on the east flank of the Elkhorn Ridge, the North Powder River begins as a small mountain stream just below the crest of the range, at an eleva-

tion of nearly 8,000 feet. The Elkhorns are characterized by jagged peaks, cirque basins and subalpine lakes, precipitous streams, and deeply incised glaciated valleys. The North Powder River drainage is exemplary of the glaciated valleys found in the range.

From its headwaters, the North Powder River flows northeast out of the mountains, en route to the Powder River Valley below. Mount Ruth, Chloride Ridge, Red Mountain, and Twin Mountain reach above timberline and dominate the surrounding skyline. The North Powder descends quickly through the alpine meadows near timberline, and soon enters the subalpine meadows and scattered stands of spire-shaped subalpine fir. Several lake-fed tributaries join high in the drainage, and the North Powder becomes well-established stream within a mile or two of its headwaters.

Approximately a mile or so below the headwaters of the North Powder, the stream enters a thick mixed-conifer forest typical of the mid-elevations of the Elkhorn Range. The river valley bottom is thickly vegetated, dark, and shady. In this portion of the corridor, views are generally obscured by the thick trees and abundant streamside vegetation. Small wet meadows, occasional aspen stands, and shrub-dominated snow chutes break up the continuity of the forest and provide a few spots where sunlight reaches the valley floor. From these openings views of the surrounding peaks, precipitous tributary streams, and dramatic rock outcrops can be seen. Views of the river itself are few and far between, generally obscured by the dense vegetation. Where openings allow viewing, visitors will see a clear, cold stream splashing over boulders and logs, occasionally settling into quiet pools with granite sand bottoms.

Panoramic views of the entire North Powder River drainage are seen for several miles along the Elkhorn Crest National Recreation Trail, as well as other trails located high in the drainage. Distant views of the drainage are seen from Interstate 84 and Highway 30.

The North Powder River valley displays an overall natural and undeveloped character. Natural patterns created by topography and natural processes such as lightning fires, avalanches, and rock slides, dominate the landscape character. Exceptions to the natural-appearing scene include a primitive

wheel track paralleling the river (remnants of the old stage route over the mountains), and minor evidence of prospecting, mining, recreational use, and fuelwood cutting. A small number of directional signs, two primitive trailheads, and approximately a dozen user-created campsites are the extent of recreational developments in the canyon. In general, cultural modifications are very minor in scale when compared to the entire landscape.

The distance zones in the viewshed are primarily foreground with very little middleground and minimal background. The variety class is A, "Distinctive", due to the variety of the stream character, rock outcroppings and steep canyon walls. The sensitivity level is designated as Level 2, except in the upper river corridor (off FS Trails #1611 and #1621) where it is Level 1. The visual quality objective is Retention in the river corridor and Partial Retention in the middleground and background areas as seen from the river corridor.

The North Powder River drainage is exemplary of the semi-primitive and undeveloped high mountain valleys of the surrounding region. Even though the drainage has attracted some human interest in the past, human-caused changes to the landscape are barely noticeable. The overall lack of visible cultural modifications may be one of the most significant attributes of the river corridor. Due to its exemplary scenic features and lack of visible modifications, scenery was recognized by Congress as an OR Value.

There are several minor impacts on scenery caused by current uses in the river corridor. Some evidence of firewood cutting is seen in the lower portion of the corridor causing modifications to the natural setting. High tree mortality from natural causes has resulted in the removal of some trees for firewood. In addition, off-road motorized use to access more firewood has resulted in some soil and water resource damage. Other minor impacts to scenery have been caused by off-trail motorized use impacting soil and water resources in the upper portions of the river corridor.

RECREATION

The North Powder River drainage offers a diversity of semi-primitive recreational opportunities. The river corridor offers access to the surrounding remote,

semi-primitive setting (Twin Mountain Roadless Area) which receives a relatively low amount of use. The North Powder River provides a unique opportunity among the W&SR corridors in northeast Oregon to access a semi-primitive Scenic River area via a challenging four-wheel drive road. The Congressional Record (October 7, 1988) included this reference to recreation values in the corridor: "... An historic wheel track which follows the stream provides opportunities for motorized use in a relatively primitive setting. There are also opportunities to hike, hunt, and camp." As an OR Value, these recreational opportunities must be protected and enhanced.

Based on field observations, the corridor receives a light to moderate amount of use estimated at 1,000 recreation visitor days. The majority of visitors to the North Powder drainage are from the local area, although some people travel a considerable distance to hunt in this area.

Recreation use in the corridor begins in late spring and continues into the late fall hunting seasons. Visitors come to the area primarily to hunt for big game, fish, camp, ride motorbikes, drive four-wheel drives or ATVs, sightsee, view wildlife, hike, backpack, and horsepack. Mountain bike use of the road and trails is a relatively new use that is increasing. The river is too small for boating. The steepness of the canyon precludes a significant amount of winter recreation activity, but some snowmobiling and cross country skiing does occur.

The area offers high quality big game hunting experience due to its remoteness and challenging access. Use peaks during the elk season with elk camps being set up at the trailheads and road termini.

The river corridor lies near the center of the Twin Mountain Roadless Area, which encompasses most of the Elkhorns. The 60,903 acre Roadless Area provides ample opportunities for solitude and experiencing a sense of self-reliance and adventure. The surrounding area also provides opportunities for a quality hunting experience in a remote setting.

A low standard road suitable for four-wheel drive vehicles parallels the North Powder River to within one mile of its source and provides access to the surrounding roadless area. This road was built by the Dealy Wagon Road Company in 1864 and is one

of the first stage routes crossing Elkhorn Ridge to mining camps on the other side. Historic references can be found to its early use and even mention its use by Native Americans. At present, the road is closed to four-wheel drive vehicles between the Summit Lake Trailhead and the Lost Lake Trail (FS #1621). The route is still open to motorcycles and ATVs. The legislative history accompanying the Omnibus Oregon Wild and Scenic Rivers Act recognized the importance of this road for providing opportunities for motorized use in a relatively primitive setting. This old road (now designated a trail above Summit Lake Trailhead) provides a moderate opportunity for experiencing solitude, tranquility, and closeness to nature, with a very high degree of self reliance, challenge, and risk in using motorized equipment. This road, when combined with the North Powder River Trail and Elkhorn Crest Trail serves as the only motorized trail on the east side of the Elkhorns and one of the best motorized trail routes on the Wallowa-Whitman National Forest.

Recreation developments in the corridor are primitive and minimally developed, limited to trails, directional signs, foot bridges, and two primitive trailheads. Other developments in the area are very primitive and have been developed by forest visitors. These include fire rings, meat poles, and other small developments associated with dispersed camping.

The trailheads at Red Mountain and Summit Lake are very primitive and maintained at level 2 standards or less. Trails from the North Powder Road (FS #7301) and the North Powder Trail (FS #1632) access Red Mountain Lake, Summit Lake, Meadow Lake, Lost Lake, and connect to the Elkhorn Crest National Recreation Trail (FS #1611). This latter trail follows the crest of Elkhorn Range, offering extended views of the drainage. The Summit Lake Trail extends from the lake to intersect the Elkhorn Crest Trail at Cracker Saddle. The following is a list of trails in the river corridor:

North Powder River Trail (FS #1632) - Most difficult, pack, saddle, ATV. Open to motorized vehicles under 40" and over snow vehicles over 12". From Cracker Saddle to the Lost Lake Trail, the North Powder River Trail is designated a motorized trail and is open to four-wheel drive vehicles.

Summit Lake Trail (FS #1635) - Most difficult, pack and saddle, from Road # 7301 to Summit Lake. Easiest, pack and saddle from Summit Lake to Cracker Saddle. Entire trail closed to motorized vehicle use (except for snowmobiles over snow).

Red Mountain Lake Trail (FS # 1625) - Most difficult, pack and saddle. Entire trail closed to motorized vehicle use (except for snowmobiles over snow).

Lost Lake Trail (FS #1621) - More difficult pack and saddle. Entire trail closed to motorized vehicle use (except for snowmobiles over snow).

Other than prohibited motorized use on certain trails there are no motorized off-road or trail closures in the area. Off-road fuelwood cutting in the lower corridor and off-trail ATV and motorcycle use in the upper corridor is causing some soil and water resource damage.

There are no developed campgrounds located along the river, although many dispersed user-created campsites have been established over the years. There are no restrictions on these dispersed site locations and some of them right along the North Powder River are causing some minor soil and water resource damage. Some soil and water resource damage is also occurring on and around the developed trailheads and from inadequate maintenance and lack drainage on forest roads and trails.

The existing Recreation Opportunity Spectrum (ROS) for the river corridor is Semi-Primitive Motorized (SPM). SPM and Semi-Primitive Non-Motorized areas are found adjacent to the river corridor.

Recreational stock use in the corridor is low and currently unregulated. Dispersed use and recreational livestock use has stayed at about the same levels over the past few years. There are no outfitters or special uses in the river corridor.

GEOLOGY AND MINERALS

The North Powder River is located in a steep-sided glacially-carved valley surrounded by the sharp peaks and ridges of the Elkhorn Ridge of the Blue

Mountains. Defined by Twin Mountain to the north and Red Mountain and Chloride Ridge to the south, elevations vary from about 8,173 feet along the ridges to 5,250 feet at the river bottom.

Glacial features such as cirques, cirque lakes, glacially-carved peaks, and ridges are seen in the upper drainage. Granodiorite of the Bald Mountain batholith (the second largest batholith in the state) is the dominant rock type in the area. The lower valley is covered with glacial deposits consisting of unsorted rock debris including large fragments and boulders and a small portion of metamorphic sedimentary rock (argillite). Glaciers piled up glacial drift in the form of moraines and drift sheets farther downstream.

The North Powder River drainage appears to be less mineralized than the west flank of the Elkhorn Ridge. Some remains of prospecting and pre-1930's mining activity, and the stage route to the mining camps on the west flank of the Elkhorns, are still evident. A large block of mining claims controlled by the Manville Sales Corporation are adjacent to and partially within the river corridor in the upper portion of the drainage (less than 25 acres). Between 1977 and 1991, extensive drilling was conducted in the area with heavy equipment for low-grade gold ores, copper, and other minerals. The drilling operation was accessed over the four-wheel drive portion of the North Powder River Trail (FS #1632). The claim was abandoned in 1992, but exploration, by others, still continues with hand equipment driven in over the four-wheel drive portion of the North Powder River Trail.

The Oregon Rose Lode claims are two mining claims belonging to Mr. and Mrs. Harold Hooper which are located about a mile from the river corridor near Nip and Tuck Pass. In accordance with their operating plan, the claimants use the North Powder Road (FS #7301) and the North Fork spur road (FS #7301-200) for motorized access and then walk from the end of the roads. Exploration is currently being conducted for low-grade ores and other minerals.

There is no known oil, gas, or geothermal potential associated with the North Powder River.

FISHERIES AND WATER QUALITY

Populations

The North Powder River supports moderate numbers of native species including mountain whitefish, sculpin, red-band trout, bull trout, and introduced brook trout. The introduced brook trout compete with and diminish bull trout populations.

Both bull trout (*Salvelinus confluentus*) and redband trout (*Oncorhynchus mykiss gibbsi*) are listed on the Regional Foresters Sensitive Species list. On May 10, 1993, the U.S. Fish and Wildlife Service officially announced a 90 day filing petition to list the bull trout under the Endangered Species Act. In 1994, the U.S. Fish and Wildlife Service commenced a formal review of the status of bull trout and decided that listing was warranted but precluded at this time due to other species being a higher priority for listing. Currently bull trout are listed as Category 1. Requirements of the W&SR Act to protect and enhance water quality and OR Values and existing Forest Plan standards and guidelines constrain actions that could negatively effect fish populations or habitat. If the fish become listed in the future as endangered or threatened, management requirements included in the Species Management Plan would be incorporated into the River Management Plan.

In the Fall of 1991, fisheries surveys were conducted for the Red Mountain Resource Analysis which included the North Powder River. Species found included bull trout and redband trout, both native to the Elkhorns. Brook trout, a species the Oregon Department of Fish and Wildlife introduced to the Elkhorns through fish plants in the North Powder River and its headwater lakes were found in abundant numbers widely distributed throughout the North Powder River system. Bull trout were found only in the headwaters of the North Powder River and may have been displaced from the balance of this system by introduced brook trout, though potential habitat for bull trout as well as redband trout still exists.

An estimated one third of salmon and steelhead habitat in the Columbia River Basin has been lost due to impassable dams, and natural anadromous salmonid production is estimated to be at only 4-7% of historical levels. Steelhead stocks have been lost

from an estimated 83 streams in the Columbia River Basin, and chinook have disappeared from an estimated 95 streams in the basin, including the Powder and Burnt River systems on the Wallowa-Whitman National Forest.

Historically, the Powder River Subbasin supported populations of spring and fall chinook salmon, and summer steelhead. The North Powder river was originally an excellent salmon and steelhead stream. Local residents of area reported that chinook salmon spawned from the headwaters to the lower end of the North Powder Valley but early agricultural development of the North Powder Valley resulted in extensive diversion of water for irrigation purposes, and the construction of the impassable Thief Valley Dam on the main Powder River rendered the North Powder River inaccessible to these anadromous species at all times.

Estimates of summer steelhead and chinook salmon runs as well as spawning ground surveys in the North Powder River are not available. Historic references available only state that anadromous species were abundant. The exclusion of anadromous fish runs from this river system is considered to be compounded by passage problems at Columbia and Snake River dams. However, livestock overgrazing, logging, mining, road construction, low stream flows, and unscreened diversion ditches have also contributed to the decline in trout abundance.

Historically, redband trout were the dominant trout species in the Columbia River Basin east of the Cascade Mountains. Both resident and anadromous populations existed. However, many populations have been reduced substantially and many local races are extinct due to dam construction, land use practices, and the introduction of non-native fish species, particularly coastal rainbow and steelhead. The current status of redband trout in the Powder River Subbasin is not known.

Little is known about the life history of resident redband trout. Most populations probably spawn in late winter and spring. Some redband populations in the deserts of southeast Oregon apparently have a high temperature tolerance and inhabit intermittent, stagnant streams with temperatures of 83°F.

Bull trout have been extirpated from much of their historical range over the last 30 years. Historical records indicate that much of the Powder River Sub-

basin was once used by bull trout, however, very little is known about their current abundance and distribution. Recent surveys have located bull trout in the upper North Powder River above the confluence of the Summit Lake tributary. Bull trout populations in the Powder River Subbasin may have been reduced by uncontrolled harvest, hybridization with brook trout, and increases in stream temperature, and sedimentation.

Bull trout populations are either resident or migratory. Resident populations are typically found in cold headwater streams and individuals are usually small, mature at an early age, and have low fecundity. Migratory populations also utilize cold headwater streams for spawning and juvenile rearing, but reproductive adults usually rear in large mainstem rivers or lakes. Adult migratory bull trout may undergo spawning migrations of up to 124 miles. Spawning usually occurs in August and October. Optimal incubations temperatures for embryo survival range from 35 to 39°F. Bull trout are strongly influenced by stream temperature, and rarely utilize streams that exceed 64°F.

The North Powder River is included in one of the four high priority bull trout watersheds in the inland fisheries study. It is believed that the populations are recoverable in most of the drainage with the elimination of brook trout. Any activities should incorporate design features that will protect or improve water quality specific to bull trout needs.

Habitat

The 6.4 mile designated portion is undeveloped and follows a natural flow regime, unaltered by any permanent cultural changes, dams, or water diversions. Comprehensive stream habitat surveys have not been conducted to date by the Forest Service; however, the Oregon Rivers Information System database (ORIS) provides some general information on this stream reach. Fish habitat is rated as high quality. There is moderate to high diversity of structure, cover, and pool-riffle-glide ratio (6:69:16) which provide spawning, rearing, and holding habitat for native and introduced species. The river is rated as moderately productive. This rating fits well with observed substrate conditions, which indicate significant amounts of coarse, granitic sands occur in the river. Despite minor, localized impacts to riparian habitat from past activities, water quality is extremely good.

In the summer of 1991 the designated section of the North Powder River was surveyed by the La Grande Ranger District using the Hankin-Reeves Method and a supplemental riparian assessment survey developed regionally.

Field reconnaissance supports the determination that there is suitable habitat for both sensitive fish species within the designated area. At this time there is a need for surveys of existing populations, their distribution and viability.

The width to depth ratio for the stream in the designated corridor averaged at 11.5. Stream channels with width to depth ratios rated near or greater than 10 indicate wider shallower stream channels than optimum for the maintenance of low stream temperatures. Numerous accumulations of woody debris may account for the dispersal of flow and although the characteristic flow of this river is relatively wide for its depth. Low stream temperatures are maintained by rapid flow down high gradients and fair levels of stream shade provided by aspect, topography and vegetation for a combined average of >60%.

Effective fish hiding cover ranges from 21-40% and is primarily provided by turbulence and the abundant woody debris found in this system. This woody debris in a high gradient system provides for deeper pool scouring with a residual pool depth of 2.3 feet and increases the formation of side channels which are used much the same as pool habitat by fish populations.

Streambank substrate is composed of sand and cobble throughout the surveyed segment and bank stability averages at 76%, which is below the Forest Plan standard of 80% or greater. Cobble embeddedness averages at 51% and although there is no established Forest Standard, embeddedness greater than 35% is thought to negatively affect salmonid spawning, production and fry survival.

Unstable banks and high levels of substrate embeddedness are of primary concern along the entire designated corridor due to their potential negative impact on resident populations of bull trout and redband trout. The distribution and viability of these fish populations needs to be assessed and monitored and will facilitate monitoring of habitat conditions which appear to be degraded.

An average of 15 pieces of large woody debris (> 12" diameter and 35 feet long) per 1,000 feet were found in the surveyed portion. Generally, 20 pieces per 1,000 feet is considered the minimum amount needed to provide good fish habitat. The North Powder River has abundant large standing timber in the transitional area to provide a future source of woody debris.

There is good available fish hiding cover above the Forest boundary provided by turbulence and woody debris predominantly. Channel width averaged 10 feet in the upper reach, 16 feet in the middle reaches, and 17 feet in the lower reaches. Pools averaged 10 per mile.

The close proximity and poor condition of the North Powder Road (FS #7301) may be a major source of sediment inputs to this system. Poorly maintained trails and their highly degraded condition at high elevations may also be contributors to sediment inputs. Dispersed campsites are found throughout the river corridor. A few of these are immediately adjacent to the river in riparian areas, have large areas of exposed mineral earth and can be considered sediment sources and contributors to streambank degradation. These campsites see regular use during hunting seasons and would be better relocated away from riparian areas. Road and trail improvement, closure and/or relocation might be reasonable considerations towards mitigating erosion and high embeddedness levels. The allowance of fuelwood cutting in the river corridor is apparent. Woodcutters have not adhered to regulations restricting the removal of trees from riparian areas and the exclusion of fuelwood removal from this corridor may be a prudent action towards maintaining riparian areas as well as limiting sediment inputs from this activity.

The overstory and understory of this subwatershed have high levels of defoliation as well as dead and decadent trees caused by the occurrence of mountain pine beetle and spruce budworm infestation coupled with several years of drought. The upper reach has areas of downed green trees apparently caused slide and/or avalanche activity that does occur naturally in this drainage but may have been compounded by increased openings and higher than normal peak-flow events resulting from the effects of the Summit Fire in the headwaters.

Hydrology

The North Powder River begins as a very small, snowmelt-fed stream high on Elkhorn Ridge of the Blue Mountains. A precipitous stream in the upper 6.4 miles, the North Powder drops at an average gradient of 483 feet per mile, descending from the mountains in a series of small waterfalls, rapids, and drops.

Due to the high elevation of the headwaters and abundance of riparian shading, water temperatures remain cold well into the summer months. In 1991 the stream survey measured water temperature maximums of 54°F with minimum temperatures of 47°F. In 1977, the ODF&W recorded an average temperature of 47°F at the Forest boundary. State Water Quality standards state that when stream temperatures are greater than 68°F, no additional temperature increase shall be allowed. The W&SR Act provides a non-degradation standard for water quality which requires that water quality must be protected and enhanced at the level present when the river was designated. Therefore, when a baseline temperature reflecting 1988 conditions is determined it may supersede State Water Quality standards. Average recorded temperatures for the designated portion of this river have consistently ranged in the mid 40-50 degree Fahrenheit range in the late summer months in subsequent survey data available from the 1940's through present day. Temperature data for North Powder River tributaries above the Forest boundary is not available.

The North Powder runs clear during normal flows to mildly turbid during high flows. As is typical for a snowmelt-fed stream, runoff patterns are seasonal. In the spring and early summer, the snowmelt causes the stream to run in torrents. By late summer, stream flows are very low. Peak runoff occurs in spring, generally in late May, and recedes to low flows by late summer. Flows increase again in November in response to fall rains.

There are no active stream gauges near the designated segment. Gauges downstream on the Powder River near Thief Valley Reservoir and Halfway indicate that more than 75 percent of the annual runoff occurs from February through June. Minimum and maximum flow levels for the designated portion of the corridor have not been well documented; however, flows at the lower end of the corridor have been estimated to average at approxi-

mately 19 cubic feet per second (cfs). The following flows have been recorded in the area:

43.9 cfs. July 1991 (USFS, @ Forest boundary)

10.1 cfs. July 1977 (ODFW, @ Forest boundary)

49.0 cfs. July 1942 (OSGC, in valley area, below W&SR corridor)

No known water uses or rights of record for water use within the designated segment. No instream flow protections have been established which would affect the management of the river corridor and there are no known applications for hydro projects. Below the designated river corridor, diversions substantially deplete downstream flows for irrigation during summer months. Other downstream uses of the North Powder River include domestic, municipal, and industrial.

The entire 6.4 mile designated portion of the North Powder River is without permanent human-caused changes, dams, or water diversions. There is an abundance of riparian vegetation, small islands, braided channels, and woody debris dams. Some minor impacts to the river banks and riparian vegetation have occurred in the dispersed camp sites and at trailheads.

Resource damage is occurring in places due to inadequate maintenance of the roads and trails. Most of the drainage problems are associated with stream crossings on the North Powder Road (FS #7301) and its spur FS #7301-200, but other drainage problems are evident on the North Powder River Trail (FS #1632) above the end of the North Powder Road. The areas contain some rill erosion. The rills range from 2 to 6 inches deep and up to 6 inches wide. The major cause of this erosion are streams crossing the road with no directed outflow area. The North Fork of the North Powder is actually captured by the road for about 100 yards until it can find a low point and enter the North Powder River. This happens at several other stream crossings but for only a few feet and results in the rerouting some of the tributary streams and erosion of the roadbed.

The North Powder River Trail also contains some of the same types of rill erosion mentioned above. The improper drainage is a result of both tributary cross-

ings and spring seepage rills in and across the trail in several areas. In addition, the lack of trail maintenance and drainage has caused some off-trail motorized use which has impacted other areas and caused erosion.

Improvement of drainage structures and fords, resloping the North Powder Road, and the reconstruction and rehabilitation of portions of the North Powder Road and North Powder River Trail would reduce the likelihood of sediments reaching the river.

State ownership of the beds of navigable waterbodies was granted to Oregon in 1859 as an incidence of statehood and is an inherent attribute of state sovereignty protected by the U.S. Constitution. The beds of non-navigable waterbodies remained in the ownership of the United States or its grantees. The navigability of the North Powder River in the designated W&SR corridor has not been established. Currently, the Federal government claims ownership of the river's bed and bank. This river plan does not propose to address the issue of navigability. Rather, this river plan is intended to provide a management philosophy for the above segment of the river, as well as the remainder of the river.

The W&SR Act requires that the water quality existing at the time of designation be protected and whenever possible enhanced. The W&SR Act also precludes the construction of any new dams, diversions, or other water projects within the river corridor. Currently there are no private water rights reserved in the designated river corridor. The State of Oregon Water Resources Department approves water appropriation applications. Any future applications that are filed for the designated corridor will need to address W&SR Act provisions and the protection and enhancement of OR Values.

WILDLIFE

Populations

A wide variety of wildlife typical to the region inhabits the area including Rocky Mountain elk, mule deer, black bear, cougar, bobcat, beaver, fisher, marten, mink, muskrat, otter, raccoon, red fox, coyote, and other small mammals, reptiles, and amphibians. A large variety of birds can also be found in the drainage, including goshawks, golden eagles, osprey,

pileated woodpeckers, great horned owls, blue and ruffed grouse, and many species of song birds.

The area is very important and highly productive summer range for Rocky Mountain elk and mule deer. It is also used quite heavily from mid-May to the end of June, for elk calving and deer fawning.

The corridor has not been extensively surveyed for the presence of unique or listed species. There are no documented occurrences of federal or state listed or candidate threatened, endangered, or sensitive animal species inhabiting the North Powder River drainage. However, potential habitat for several species does exist in the corridor.

Habitat

The vegetation mosaic within the corridor provides a diverse range of habitats for wildlife species, from the rather large block of mature and old growth forest in the lower elevations south of the river to increasing natural edge to the north of the river and in higher elevations and with vegetation types ranging from heavily forested types at the lower elevations to near tree line in the upper elevations. The river corridor also includes rock outcrops and cliffs, sub-alpine meadows and forests, mid-elevation mixed conifer forests, shrublands, and wet and dry meadow communities. Snags are abundant in the drainage. The area is very important for its highly productive summer range and for its spring calving and fawning for Rocky Mountain elk and mule deer.

Stands of old growth trees and largely intact riparian plant communities occurring within the corridor provide important wildlife habitat. There is considerable riparian habitat within the river corridor, along the river and tributary stream, around numerous seeps, springs and wet meadows and around lakes. For the most part the riparian habitat is in excellent condition except where roads and trails cross these habitats or where recreation users have chose to camp on or near the riparian areas. Riparian zones are considered to be the most critical wildlife habitats in the Blue Mountains, utilized by nearly 300 species of wildlife.

Another key wildlife habitat feature is the ecological corridor of which the North Powder Wild and Scenic River is only a link. The corridor is a relatively undisturbed corridor that stretches from the Forest boundary at the lower elevation (5,250 feet) of the

North Powder River, over the relatively low saddle on Elkhorn Ridge (7,400 feet), down the North Fork of the John Day drainage through two portions of the North Fork John Day Wilderness, and along the Wild and Scenic North Fork John Day River for 54 miles to its confluence with Camas Creek. The proximity of the two corridors potentially provides a continuous 61 mile long, 1/2 mile wide corridor from the town of Dale to the Powder River Valley, linking a low elevation wildlife area, three Wilderness units, two rivers, and crossing over the Blue Mountains.

Current conditions in the corridor are quite good for elk, the natural openings and riparian areas provide forage dispersed throughout security and thermal cover. If the population was not a hunted population providing for more forage openings in the larger areas of continuous timbered areas could increase overall habitat quality. Because this is a hunted population the security provided during the hunting season likely outweighs any benefit that could be gained by providing forage through openings in the forest canopy. Abundance of upland forage areas and adjacent private land that provides forage on forest types through partial logging lend further support to the desirability of security over forage in this instance.

Wildlife habitat has been impacted to a minor extent by past activities, including mining, grazing, timber harvest, fuelwood cutting, and recreational pursuits.

As mentioned under the Populations section above, inventories have not yet been conducted to determine whether state or federal listed or candidate species are known to inhabit the drainage. However, potential habitat for several species exists.

Although suitable habitat exists for the federally-listed endangered American peregrine falcon (*Falco peregrinus anatum*) and threatened northern bald eagle (*Haliaeetus leucocephalus*), and for candidate threatened and endangered species (Category 2) including the Preble's shrew (*Sorex preblei*) and Blue Mountain cryptochian (*Cryptochia neosa*), no threatened or endangered animal species are known to inhabit the drainage.

VEGETATION

The river corridor ranges in elevation from 5,250 feet at the Forest boundary to 8,173 feet on Elkhorn

Ridge. An interesting variety of plant communities typical of the Blue Mountains are found in the North Powder drainage. This is due in part to the elevational change of nearly 3,000 feet from headwaters to the lower boundary of the corridor. In the high subalpine areas, subalpine fir dominates the scattered forested stands, mixed with some whitebark pine, lodgepole pine, and Engelmann spruce. These stands are interspersed with natural openings of mountain big sagebrush, Idaho fescue, and alpine fleecflower on dry slopes, and small meadows on moist sites.

The lower five miles of the corridor are covered with nearly continuous stands of mixed conifers. The southern slopes of the valley are densely forested with primarily lodgepole pine, and scattered groupings of western larch, Engelmann spruce, grand fir, Douglas-fir, ponderosa pine, and subalpine fir. Huckleberry and squawberry are also found on the higher south slopes of the drainage. Sparse stands of mixed conifers are established in the more stable areas on the north slopes, interrupted by numerous avalanche chutes. In these unstable areas, meadows and shrubland communities dominated by snowberry, ninebark, mountain ash, mountain willow, and thinleaf alder are present. Quaking aspen is also found growing in the unstable areas and meadow openings.

In the lower 1/2 mile of the corridor, stands of large-diameter lodgepole pine, western larch, grand fir, Englemann spruce, Douglas-fir, ponderosa pine, and subalpine fir can be found. Some trees are thought to be nearly 300 years old. Riparian types associated with the river, other drainages, springs, lakes, seeps and wet meadows are present.

Vegetation is largely unimpacted from logging or other timber management practices. Natural forces have primarily shaped the patterns and diversity of plant communities in the drainage. Recent fire activity is limited to the Summit Fire of 1989. This fire was ignited by lightning in August of that year and burned approximately 200 acres. Other lightning-caused fires have created openings and replaced stands, adding diversity to the forest. There have been periodic outbreaks of forest insects and diseases in the corridor, typical to the region. Mountain pine beetle has eliminated some of the lodgepole pine along the river. Spruce budworm infestations have been active in some of the stands of spruce, grand fir, and Douglas-fir.

Riparian vegetation is generally intact in the corridor. There has been only a minor amount of soil compaction, vegetation disturbance, and tree removal from past activities such as mining, timber harvest, grazing, and recreational pursuits. Most of the drainage is considered not suitable for grazing due to erodible soils, lack of forage, and rugged terrain, and has not been part of a livestock allotment for some time.

The corridor has not been extensively surveyed for the presence of unique plants, and at this time, there are no documented occurrences of federal or state listed or candidate threatened, endangered, or sensitive species within the corridor. A species listed on the Wallowa-Whitman Watch and Review List, *Corydalis caseana* var. *cusickii*, is fairly abundant in riparian areas in the corridor.

The North Powder drainage is relatively undisturbed corridor providing for species travel, genetic transfer, and linkage between old-growth islands and other critical habitats. The potential corridor value increases in significance when considered in conjunction with the North Fork John Day W&SR corridor, which begins on the west side of the Elkhorn Ridge one mile from the headwaters of the North Powder River. The proximity of the two corridors potentially provides a continuous 61 mile long, 1/2 mile wide corridor from the town of Dale to the Powder River Valley, linking a low elevation wildlife area, three Wilderness units, two rivers, and crossing over the Blue Mountains.

Prior to any potential ground disturbing activities within the corridor surveys for threatened, endangered, or sensitive plant species will be conducted consistent with Forest Service policies.

The vegetation that this area supports is highly variable, in direct relation to the wide elevation zone the area covers. The most notable plant community is the undisturbed riparian zone along the river and several moist meadows in the tributaries to the river. The area has not been grazed for at least twenty years and is no longer in a grazing allotment.

SOCIO-ECONOMICS

The Wild and Scenic River corridor flows through Baker County and is about a 30 minute drive from the county seat. The population of Baker County is

approximately 15,700 people. Because the area has had only limited success in attracting diversified employment opportunities, the population has shown very little change for the last five decades.

The counties is sparsely populated and rural in character encompassing 3,089 square miles (5 people per square mile). Automobile travel times from the nearest metropolitan areas, Boise, Idaho, is approximately 2 hours by Interstate Highway. Mass transit includes bus and Amtrack rail service. Baker City has a population of 9,140 people and is Baker County's largest city.

Major employment comes from Federal, State, and local government, ranching, timber harvest and processing, tourism, and trade. Servicing the needs of the growing population of retirees is an emerging sector of the local economy. Per capita income is below the State average and unemployment rates are typically above the State average. There is a marked ambivalence toward growth in the area. People want gainful employment for themselves and for their families, but are uncertain of the benefits of an increasing population.

Many people in the area rely upon the wood products and agricultural industries for their livelihood. In 1993, this included about 15 percent of the total annual employment for the county. The reliance upon these two sectors of the local economy has its roots in the settlement of the area by Euro-Americans. Thus, reliance upon the wood products and agricultural industries has social as well as economic significance. This is rapidly changing however, as employment from tourism is beginning to replace that of wood products in some areas of the county.

LAND USE CONTROLS

There are a wide variety of local, State, and Federal programs that have either an indirect or direct effect upon land uses within the river corridor. The most significant programs, as well as those that have generated discussion during the scoping process, are discussed in this section.

Oregon Department of Fish and Wildlife. The Oregon Department of Fish and Wildlife (ODFW) is charged with maintaining optimum numbers of indigenous fish and wildlife and to ensure that no

species are threatened with extinction (They co-manage fish and coordinate wildlife management with the Confederated Tribes of the Umatilla Indian Reservation). The Department is also responsible for developing and administering fish and wildlife regulations. The ODFW has undertaken an aggressive program to restore riparian habitat on Department lands and has actively sought and encouraged other agencies and private landowners to follow their lead. ODFW routinely monitors angling effort and harvest, as well as hunter effort and harvest in the river corridor.

Advisory Committee on Historic Preservation. The Oregon Advisory Committee on Historic Preservation consists of nine members recognized professionally in the fields of history, architectural history, architecture, archaeology and/or other disciplines. One member represents the public at large and one represents Native Americans. The members are appointed by the Governor.

The Committee is charged with reviewing nominations to the National Register of Historic Places within Oregon and recommending approved nominations to the State Historic Preservation Office pursuant to the National Historic Preservation Act of 1966. The committee also reviews Statewide Plans for Historic Preservation.

Oregon State Land Board. The Division of State Lands is the administrative arm of the State Land Board (composed of the Governor, Secretary of State, and State Treasurer). Under constitutional and statutory guidelines, the Board is responsible

for managing the assets of the Common School Fund as well as for administering the Oregon Removal-Fill Law. These assets include the beds and banks of Oregon's navigable waterways and are to be managed for the "greatest benefit for the people of this State, consistent with the conservation of this resource under sound techniques of land management."

The Division of State Lands also administers the State's removal-fill law, which protects Oregon's waterways from uncontrolled alteration. The law requires a permit for fill or removal of more than 50 cubic yards of material within the State's streams and rivers. The permit-review process involves coordination with the natural-resource and land-use agencies from the local through the Federal levels.

Oregon Water Resources Department. The Department administers State laws and policies relating to the diversion and appropriation of surface and ground water, establishes instream water rights for recreation, protection of fish and wildlife, to reduce pollution, and determines critical groundwater areas.

Endangered Species Act. The U.S. Fish and Wildlife Service and the National Marine Fisheries Service administer the Endangered Species Act of 1973 (as amended). Government agencies and private landowners may find their range of management strategies limited by the Act when it is determined that a threatened or endangered species, or its critical habitat, may be affected by a proposed management action.