Umatilla National Forest
Wild and Scenic River Inventory Summary
Eligible Rivers List
03/23/2010

Bear Creek

Location: This area is entirely in Garfield County Washington. This 3 mile reach of Bear Creek starts at its origin in Township 8 North, Range 42 East, Section 32, Willamette Meridian surveyed, and extends northerly to its terminus in Township 8 North, Range 42 East, Section 16. Elevation ranges from 5,400 feet to 4,000 feet above sea level.

Bear Creek can be found by traveling east on Forest Road 4713 to the Tucannon Trailhead, then traveling by foot or horseback three miles on Trail 3135. Bear Creek flows into the Tucannon River at River Mile 55.

River Mileage:
Studied: 3 miles
Eligible: 3 miles

Eligibility:
Determination of Free-flow: The streambed and bank are affected only by natural processes.

Finding: ***Bear Creek is found to be in free flowing condition.***

SCENERY

Determination of Outstanding Remarkable Values: The Tucannon River flows through some of the most sharply dissected country in the geographic area. Most of the scenery in the Tucannon drainage is inventoried as distinctive variety class. Features of landform, vegetative patterns, and rock formations are of unusual or outstanding visual quality. These scenic qualities are not common in the Blue Mountain character type, although nearby drainages (such as the Touchet, Asotin, Wenatchee, Wenaha) are similar, because the multitude of steep ridges and deep draws typical of the Blue Mountains is intensified and emphasized to a higher degree along portions of this river than most places. The steep slopes have dissected, uneven, sharp exposed ridges. Several basaltic rock form features stand out on the landform. There is a high degree of pattern in vegetation. Hardwoods in the riparian area give good seasonal coloration. The streams have several flow characteristics, riffles, and pools.

Generally, in the Blue Mountains, any foreground and distant views include obvious visual evidence of human activity. This is not the case along the study segments of the Tucannon River. Few campsites exist on Forest Trail 3135. The Wenaha-Tucannon Wilderness borders Bear Creek. Views, along the river corridor, give a sense of the

upslope ruggedness. Road access from the north affords the opportunity to view unmanaged panoramas of outstanding quality from the top of the breaks or higher vistas.

Most views from the river or study corridor are confined to the foreground, with only occasional distant views. Vegetation along the river ranges from coniferous tree stands and stringers to riparian deciduous plants to grass slopes. This range of vegetation, with its seasonal changes in color and texture, greatly adds to the scenic quality of the setting along the Tucannon River.

Finding: This geographic region has several other rivers and streams, which are used and valued by recreationists for their scenic beauty. The adjacency to the Tucannon River and the Wenaha- Tucannon Wilderness and other wild land makes this creek special however. The relatively easy access to this river results in large numbers of recreationists being attracted to the river and appreciating the natural scenic quality in the river corridor.

Although the combination of rugged terrain and range of vegetation is regarded as a special place by many people in the local area, similar attributes occur in other parts of the area of comparison**. *Scenery is judged to not be an outstandingly remarkable value.***

RECREATION

Determination of Outstanding Remarkable Values: Recreational opportunities are limited in this area. The study corridor is accessible by traveling to the end of Forest Road 4712. From the trailhead, travel within this reach is limited to foot trails and cross-country travel. Therefore, the scenic attributes of the river can only be seen from the perspective of the hiker or visitor. Motorized travel does not extend past the road. Wildlife viewing is limited due to terrain. Camping locations are limited. This area can not support more than a few individuals at any onetime. Fishing restrictions do not allow this activity. Loop trails aren't available for cyclists. Camping, hunting, mushroom and berry picking are the major attractions to this location.

Finding: While the area does offer a number of outstanding features, recreational opportunities are too limited to attract visitors from outside the local area. For this reason, ***Recreation is judged to not be an outstandingly remarkable value.***

WILDLIFE

Determination of Outstanding Remarkable Values: Wildlife species that inhabit the Bear Creek drainage are found throughout all of the Blue Mountains of northeast Oregon and southeast Washington. These include Rocky Mountain bighorn sheep, mule deer, whitetail deer, Rocky Mountain elk, black bear, cougar, bobcat, coyote, beaver, otter, blue and ruffed grouse, turkey, lazuli bunting, ring-necked snake, western rattlesnake, rubber boa and other small mammals, birds, reptiles and amphibians. Threatened, endangered, sensitive and unique species that also occur in this area include wolverine.

Habitat- Wildlife habitat in the Bear Creek area varies from high elevation spruce fir, lodgepole pine forests to low elevation riparian and grassland steppe habitats. Mid-elevations are characterized by ponderosa pine, Douglas fir, and grand fir forests on north and east slopes with south and west slopes and ridge tops dominated by

bunchgrasses and forbs. The open, grassy slopes at the lower elevations are used heavily by elk, deer, and bighorn sheep for winter range. Higher elevations are summer range, some of which are important elk calving areas. The elk and deer herds help support a strong population of predators such as cougar and black bear.

Wildlife populations and the diversity of habitats within the Bear Creek drainage is not strictly river related (for example Rocky Mountain Bighorn sheep and elk). Opportunities for consumptive and non-consumptive use of these resources are many and varied. Big game populations attract people statewide as well as out-of-state.

> **Finding:** Wildlife populations, though noteworthy, are not dependent on the river corridor as a critical component of their habitat and are well represented throughout the area of consideration. The evaluation of present conditions finds that populations and habitat ***do not make wildlife an outstandingly remarkable value***.

FISHERIES

Determination of Outstanding Remarkable Values: Bear Creek is the main tributary of the Tucannon River. It represents about 66 percent of the total flow at its confluence with the Tucannon River. Bear Creek fish bearing habitat is limited to just over three miles of spawning and rearing habitat. Within the Bear Creek subwatershed, three primary aquatic species are listed as threatened: steelhead, bull trout, and Spring Chinook salmon. Threatened means that the listed group is likely to become endangered (in danger of extinction) within the foreseeable future throughout all or a significant portion of its range or Evolutionary Significant Unit (ESU). Following is a record of when these species were listed as threatened:

- The Snake River Basin steelhead ESU, which includes Bear Creek summer steelhead, was listed as threatened under the Federal Endangered Species Act (ESA) in 1997.
- The Snake River spring/summer Chinook ESU, which included Bear Creek spring Chinook, was listed under the ESA in 1992.
- Bull Trout in the Columbia Basin, including the Bear Creek, were listed as threatened in 1998.

Riparian and aquatic habitat conditions are good to excellent along the entire Bear Creek riparian corridor. Results of a stream survey conducted in 1992 indicate excellent habitat of cold clean water. Surveys report that spawning gravels, woody debris, pool and glide habitats occur in ample supply. The river exhibits good fish cover habitat, good overall bank stability, abundant riparian shrub growth, large boulders and bedrock-oriented pools adding to bank stability and holding water are plentiful

Spring Chinook (*Oncorhynchus tshawytscha*) do not spawn in Bear Creek. Individual juveniles may rear in this reach but were not noted in significant numbers. Plenty of rearing habitat is available within the mainstem Tucannon River. Spawning Chinook this far up in Tucannon River are rare and they are probably temperature limited, because of cold water optimums.

Summer steelhead (*Oncorhynchus mykiss*) have been known to utilize Bear Creek but in relatively small numbers. Adults rarely spawn in this reach, but juveniles probably do take advantage of the rearing habitat available. The dominant fish in this area is Redband trout.

Resident and migratory forms of Columbia River bull trout (*Salvelinus confluentus*) occur in Tucannon River Subbasin. Bull trout spawning ground surveys have been conducted intermittently since 1990. Bear Creek has been known to support bull trout spawning up to a small falls at Road Mile 1.5. The gradient and step pool nature of the channel supports a very high density of spawning habitat. Surveys found numerous juveniles rearing within the stream channel taking advantage of cold water rich with macro-invertebrates. Both resident and adfluvial forms are present. Fish as large as 18" have been observed. Prior to the listing of bull trout this area was favored by many fishermen.

Other fish populations known to inhabit the river are: mountain whitefish, rainbow trout, and sculpins (including margined).

Other sensitive aquatic species of concern are; Blue Mountain Cryptochian (*Cryptochia neosa* - S), Lynn's clubtail dragonfly (*Gomphus lynnae* - PS), Redband trout (*Oncorhynchus mykiss* - S), West slope Cutthroat Trout (*Salmo clarkii lewisi* S), Margined sculpin (*Cottus marginatus* PS), Columbia Spotted frog (*Rana luteiventris* - PS),Tailed frog (*Ascaphus trucei* - PS), Painted Turtle (*Chrysemys picta* - PS), Northern Leopard Frog (*Rana pipiens* - PS), and Columbia Duskysnail (*Lyogyrus n. sp. 1* - PS). Typically, but not all, of these species life stages and habitats require cold, clean water that the Bear Creek represents.

> **Finding:** Bear Creek contains native Chinook, bull trout and steelhead, which are listed as threatened under the Endangered Species Act. Bull trout populations in the Tucannon River are considered isolated and unique. Habitat is limited but pristine. The findings of this resource assessment are that ***fisheries habitat and populations* are *outstandingly remarkable values.***

HERITAGE

Determination of Outstandingly Remarkable Values: Results of cultural resource surveys conducted in the Bear Creek corridor, as well as ethnographic information, attests to both historic and prehistoric use of this area. Several documented sites are considered eligible for listing on the National Register of Historic Places.

> **Finding:** Identified and documented sites are not rare, unusual, or one-of-a-kind but are similar to others found in the region. Based upon existing knowledge and data, the Bear Creek corridor ***does not exhibit outstandingly remarkable cultural resource values.***

GEOLOGY

Determination of Outstandingly Remarkable Values: Bear Creek is a high gradient stream incised into the basalt ridges of the Tucannon watershed. Bear Creek contributes more than half the flow of the Tucannon River at their confluence. No unusual or remarkable features of geology or channel morphology are present in this drainage.

> **Finding:** Geologic values of Bear Creek ***are not identified as an outstandingly remarkable value.***

BOTANY

Determination of Outstandingly Remarkable Values: Complete species botanical surveys have been conducted in the Bear Creek area, and have documented no rare or sensitive plant species.

Finding: Based upon existing knowledge and data, the Bear Creek corridor ***does not exhibit outstandingly remarkable botanical values.***

WATER QUALITY

Determination of Outstandingly Remarkable Values: Bear Creek is one of the cold headwater tributaries to the Tucannon River. Water temperature and sediment load have not been influenced by human actions and are the result of natural processes. Many examples of this water quality regime exist within the northern Blue Mountains.

Finding: Water quality values of Bear Creek ***are not identified as an outstandingly remarkable value.***

CLASSIFICATION:

Eligibility Determination: Bear Creek does meet the minimum eligibility requirements as specified by the Wild and Scenic Rivers Act. It is found to be free-flowing and current information supports the findings that outstandingly remarkable fisheries values are present in the stream corridor.

This section of river has the following attributes and eligibility:
Water Resources Development: Free of Impoundment.
Shoreline Development: Essentially primitive.
Accessibility: Inaccessible by road.
Water Quality: Water unpolluted.
Wild and Scenic River Eligibility: Wild

Butte–West Fork Creek

Location: This area lies in Columbia County, Washington and Wallowa County Oregon between its origin in Township 7North, Range 40 East, Section 9, Willamette Meridian and the confluence of the mainstem Wenaha River in Township 6 North, Range 41 East, Section 22. The elevation ranges from 4,500 feet to 2,500 feet above sea level.

River Mileage:
Studied: 13.6 miles (miles approximate including West Fork)
Eligible: 13.6 miles

Eligibility:
Determination of free-flow: The stream bed and bank are affected only by natural processes.

Finding: ***The study reach is found to be free-flowing.***

SCENERY

Determination of Outstandingly Remarkable Values: The study corridor exhibits little influence by humans. The undeveloped visual quality features a mosaic of diverse vegetation, seasonal color, a rugged landscape, and an abundant variety of wildlife.

The Wenaha River, including its upper reaches like Butte Creek, is a rare example of an undeveloped Blue Mountain river. There is probably no better example of a clear free-flowing and nearly pristine river in this part of the inland northwest. Visitors can take in the beauty of the canyon without seeing the management activities that take place on the non-wilderness lands to the south and north/northeast.

The study corridor is only accessible by trail and cross-country travel. Therefore, the scenic attributes of the river can only be seen from the perspective of the hiker or horseback visitor. Settled into a deeply eroded canyon, the river displays its geologic history in the cliffs above. The seasons of the year impart distinct and vivid changes as the mosaic of native vegetation varies with seasonal color schemes. Aspen trees, uncommon to the northern Blue Mountains, add to the seasonal color palette. Wildlife viewing is enhanced by the diverse habitat conditions in the corridor, providing an abundant variety of resident species and watch able wildlife opportunities. The headwaters contain an area known as “Happy Valley.” This panoramic view contains spectacular scenery of alder slicks not found anywhere else in the area.

> **Finding:** The Wenaha River and surrounding Wenaha-Tucannon Wilderness, including Butte Creek, is recognized nationally for its scenic qualities. The mosaic of vegetation and stark ruggedness of the landscape contribute to an exceptional scenic quality***. This scenery qualifies as an outstandingly remarkable value.***

RECREATION

Determination of Outstandingly Remarkable Values: Recreation opportunities within the Wenaha River corridor, including Butte Creek, are regionally recognized. Return visitors generate most recreation use. However, a recent trend of increased first-time users from a far has been noticeable. This trend has been seen more recently because of the many publications that include wilderness and wild & scenic river opportunities. These opportunities revolve around remote primitive, self-discovery experiences in an area that requires primitive methods of travel, and encourages minimal contact between visitors. The natural setting of the river is unencumbered by recreation facilities or persistent heavy recreational use. Recreational experiences are centered on experiencing the scenic beauty and solitude available in the river canyon and pursuing the abundant fishery and wildlife resources. The study corridor is located in wilderness. In most cases, the recreational opportunities are associated with the wilderness.

The large Rocky Mountain elk herd of the northern Blue Mountains has been popular with hunters for generations. The Wenaha River drainage is a remote, undeveloped, and non-motorized haven for the elk hunter. The established history of hunting use was considered commensurate with wilderness values and identified as particularly important to the Wenaha-Tucannon area at the time of wilderness designation in 1978. Although hunting pressure is greater on the ridge tops outside of the river corridor, hunters camp along the river and use the trail system associated with the river to access the wilderness.

Horseback riding and hiking in the river corridor is common. It has been found that most visitors participate in more than one activity while visiting the Wenaha River, such as hiking in to a favorite fishing spot. Other activities that attract visitors include: camping, horseback riding, sightseeing, and pursuit of solitude, photography, nature study, swimming and wildlife viewing. The area has a history of being a traditional destination for many generations of visitors.

Outside of hunting season, opportunities for visitors seeking solitude, and physical or mental challenges are common. Signing within the corridor is minimal. Most direct contact with visitors is aimed at the hunter, emphasizing the use of low impact, no trace camping techniques.

Currently, the low trail density provides primitive and semi-primitive recreational opportunities. The primary trail along the river originates near Troy, Oregon and parallels the north side of the Wenaha River, and follows the South Fork to Timothy Springs Trailhead near its headwaters (a total distance of over 31 miles).

> **Finding:** The recreation values of the forks of the Wenaha ***are not identified as an outstanding remarkable value.***

WILDLIFE

Determination of Outstandingly Remarkable Values: Because the area is diverse in habitat types, it is also diverse in wildlife species. Wildlife is represented with variety and abundance. This is reflected in the range of habitat, from high elevation sub-alpine meadows and forests to mid-elevation ponderosa pine forests and ultimately to the lower elevation native grasslands. Wildlife that inhabit and frequent the study portion of the river are influenced by these habitat types. Bunch grass and talus slopes are interspersed with timbered slopes that have deeper soils and more moderate micro-climates. This produces an optimum ratio of cover to forage areas for large mammals. This mix also provides the habitat needs for small animals, reptiles and birds of prey.

The range of wildlife habitat and population diversity in the mainstem Wenaha River corridor were important factors in determining the mainstem river's wild and scenic river status. Few local rivers include more than 30 miles of free-flowing waterway undisturbed from headwaters to confluence with the variety of habitats displayed by the Wenaha's tributaries. Big game present in the study corridor are: Black bear, Rocky Mountain elk, Rocky Mountain bighorn sheep, deer, cougar, bobcat, and coyotes. The consistent abundance of big game is one of the primary features encouraging generations of hunters to return to the Wenaha-Tucannon Wilderness and the Wenaha River corridor.

Non-game species are also present including beaver, river otter, marten, and other small mammals. The changes in flood-plain vegetation and elevation create unique settings for biological diversity. Examples of bird species known to be present are: jays, nutcrackers, flickers, swallows and sparrows. The area also has a large population of blue and ruffed grouse. It is not uncommon to see golden eagles and Lewis, pileated and hairy woodpeckers. The river corridor is considered a critical link in the variety and exceptionally high quality of habitat for wildlife.

Both the abundant hunting opportunities and the ability to view a wide variety of wildlife in the Wenaha River canyon were contributing factors to designation of the Wenaha-Tucannon Wilderness.

External influences, including wilderness designation, a roadless character of adjacent lands, and the confines of the topography have combined to shelter existing wildlife populations from frequent human-caused disturbance.

Threatened, sensitive, and endangered species of animals reside in or seasonally use the river corridor. This includes bald eagles and fish species identified in the fisheries values section. Two sightings of the California wolverine were confirmed in the Wenaha-Tucannon Wilderness in early 1970s and 1984. There have been no additional sightings.

Suitable habitat for peregrine falcon exists along the Wenaha River corridor. Peregrine use in the corridor has been observed, but no nesting sites have been verified. Much of the corridor is inaccessible until late May due to heavy snowfall, after critical nesting season for these birds.

The area has not been surveyed for Townsend's Big-eared bat. There is potential for the cave habitat to occur within the corridor, although none has been identified. These animals are most sensitive to disturbance between November and May. During this time the corridor is usually inaccessible.

Potential, suitable habitat for several other threatened or endangered species is found within the Wenaha corridor, although no recent sightings have occurred. These include the gray wolf and Canada lynx. Surveying for these animals is ongoing. The gray wolf is a historic native, although it has not existed in the area since the turn of the century. With the wolf population continuously expanding in Idaho, it is likely for wolves to venture into the Wenaha sometime in the future. Canada Lynx have not been sighted in the Wenaha corridor. Winter track surveys are continuing however, this is a very reclusive animal, difficult to see or locate in the wild.

> **Finding:** The wildlife habitat and population diversity of Butte Creek offers opportunities for sport and viewing. The size and components of the area provide a secure ecosystem for sustainability of many special species. Wildlife values were recognized as one of the key factors for classifying the surrounding Wenaha-Tucannon Wilderness and the mainstem Wenaha Wild and Scenic River.
>
> The wildlife populations, though noteworthy, are not dependent on the river corridor as a critical component of their habitat and are well represented throughout the area of consideration. The evaluation of present conditions, find that populations and habitat ***do not make wildlife an outstandingly remarkable value****.*

FISHERIES

Determination of Outstandingly Remarkable Values: Butte Creek, a tributary of the Wenaha River is located within the Wenaha-Tucannon Wilderness. The river corridor has been further protected from human influence by rugged topography. This has left the river system preserved in a near pristine condition. Stocks of spring Chinook and summer steelhead in the Wenaha River are of native origin and unique; (classified as "wild" by Oregon Department of Fish and Wildlife). Within the Wenaha/Grande Ronde Subbasin four primary aquatic species are listed as threatened: Steelhead, Bull Trout, Spring Chinook and Fall Chinook. Threatened status means that the listed group is likely to become endangered (in danger of extinction) within the foreseeable future throughout all or a significant portion of its range or Evolutionary Significant Unit (ESU). Following is a record of when these species were listed as threatened:

- The Snake River Basin steelhead ESU, which includes Wenaha River summer steelhead, was listed as threatened under the Federal Endangered Species Act (ESA) in 1997.
- The Snake River spring/summer Chinook ESU, which included Wenaha River spring Chinook, was listed under the ESA in 1992.
- The Snake River fall Chinook ESU, which included Wenaha River fall Chinook, was listed under the ESA in 1992.
- Bull Trout in the Columbia Basin, including the Wenaha River, were listed as threatened under ESA in 1998.

Riparian and aquatic habitat conditions are good to excellent along the entire Wenaha River corridor. The results of a stream survey conducted in 1991, and repeated in 1996, indicate that the remote character of the river, and the wilderness designation along most of the corridor, have encouraged the preservation of this river system in a near pristine condition. The survey reports that spawning gravels, woody debris, pool and glide habitats occur in ample supply. The river exhibits good fish cover habitat, good overall bank stability, abundant riparian shrub growth, large boulders and bedrock-oriented pools adding to bank stability and holding water are plentiful.

Spring Chinook, summer steelhead, and bull trout presently utilize the system for spawning and rearing. Spring Chinook in the Wenaha River system are considered unique. The Wenaha River fish are genetically and geographically distinct from all other Grande Ronde samples. The environmental characteristics of the Wenaha also differ from other areas of the Grande Ronde subbasin where Chinook occur. (GRSBP 2004). The Chinook in the Wenaha River represent 15 percent of the Grande Ronde population and are scattered over nearly 45 miles of river spawning and rearing habitat. The South and North Forks represent about 33 percent of that total. Historic estimates of 1800 spring Chinook spawners has been made.

Summer steelhead are also a unique population within the subbasin. However, population numbers and other statistical evidence are hard to determine because of the remoteness of Butte Creek. Winter and early springtime access is difficult. Spring spawning with high flows in the mainstem and its tributaries prevents access and study therefore historic numbers are only estimates.

Resident and migratory forms of Columbia River bull trout occur in Wenaha River basin. Radio-tagging studies have shown that bull trout spawn in headwater areas of the Wenaha River and use the remainder of the river for migration. Bull trout spawning ground surveys have been conducted intermittently since 1990. Headwater areas known to support bull trout spawning include the upper reaches of the Butte Creek, and South and North Forks of the Wenaha River and their upper tributaries including Milk Creek and Cougar Canyon Creek.

Other fish populations known to inhabit the river are: mountain whitefish, rainbow trout, northern pike minnow, white and mountain suckers, several species of minnows, dace and sculpins (including the margined, torrent. and piute). Non-salmonid fish populations are mostly limited to the lower sections of the river and decrease with the elevation and colder stream temperatures.

Other sensitive aquatic species of concern are; Blue Mountain Cryptochian (*Cryptochia neosa* S), Lynn's clubtail dragonfly (*Gomphus lynnae* PS), Redband trout

(*Oncorhynchus mykiss* S), West slope Cutthroat Trout (*Salmo clarkii lewisi* S), Margined sculpin (*Cottus marginatus* PS), Columbia Spotted frog (*Rana luteiventris* PS) and Tailed frog (*Ascaphus trucei* PS), Painted Turtle *Chrysemys picta* PS). Northern Leopard Frog - *Rana pipiens* (PS), Columbia Duskysnail (*Lyogyrus n. sp. 1* (PS). Typically, but not all, these species life stages and habitats require cold, clean water that the North and South Forks of the Wenaha represent.

> **Finding:** The Wenaha River system including Butte Creek contains native Chinook salmon, which has been identified as unique, bull trout and steelhead, which are also listed as threatened. Bull trout populations are considered one of the healthiest in the Grande Ronde subbasin. But due to poor habitat for steelhead and natural barriers, the findings of this resource assessment are that ***fisheries habitat and populations are not outstandingly remarkable values.***

HERITAGE

Determination of Outstandingly Remarkable Values: Results of cultural resource surveys conducted in the Butte Creek corridor, as well as ethnographic information, attests to both historic and prehistoric use of this area.

> **Finding:** Identified and documented sites are not rare, unusual, or one-of-a-kind but are similar to others found in the region. Based upon existing knowledge and data, the Butte Creek corridor ***does not exhibit outstandingly remarkable cultural resource values.***

GEOLOGY

Determination of Outstandingly Remarkable Values: Butte Creek is a high gradient stream incised into the basalt plateau of the northern Blue Mountains. It has carved a narrow, flat-bottom canyon with steep slopes, cliffs, and associated side drainages. The cliff-forming basalt forms a bold dark grey to black outcrop interlayered with red scoria, minor amounts of andesite, and thin interbeds of clay, silt and sandstone. One of these formations is a corridor referred to as 'Box Canyon.' Steep sidewalls prohibit travel for nearly a mile without walking in the water. The headwaters of the West Fork Butte Creek contain a 15-foot waterfall with a large pool that is the end of fish bearing habitat.

> **Finding:** Geologic values of Butte Creek ***are not identified as an outstandingly remarkable value.***

BOTANY

Determination of Outstandingly Remarkable Values: Several portions of Butte Creek and its tributaries have not been surveyed for rare or sensitive plant species. Near the confluence of the creek with the Wenaha River, a population of the sensitive plant species Oregon bolandra (*Bolandra oregana*) has been found. This is a species that grows on moist cliff faces along streams and rivers, and as such is dependent on the humid microclimate of cool riparian areas. It is possible that more habitat exists for the bolandra along the lower elevation mainstem of Butte Creek. No other rare or sensitive species have been found along the surveyed portions of the creek.

Finding: The population of sensitive Bolandra oregana is not unique to the region, as it has been documented in 53 sites on the Umatilla National Forest. Based upon existing knowledge and data, the Butte Creek corridor ***does not exhibit outstandingly remarkable botanical values.***

WATER QUALITY

Determination of Outstandingly Remarkable Values: Butte Creek is one of the cold headwater tributaries to the Wenaha River. Water temperature and sediment load have not been influenced by human actions and are the result of natural processes. Many examples of this water quality regime exist within the northern Blue Mountains.

Finding: Water quality values of Butte Creek ***are not identified as an outstandingly remarkable value.***

Classification:
Eligibility Determination: Butte Creek and West Fork Creek meet the minimum eligibility requirements as specified by the Wild and Scenic Rivers Act. They are found to be free-flowing and current information supports the findings that outstandingly remarkable scenic values are present in the stream corridor.

This section of river has the following attributes and eligibility:
Water Resources Development: Free of Impoundment.
Shoreline Development: Essentially primitive.
Accessibility: Generally Inaccessible.
Water Quality: Water unpolluted.
Wild and Scenic River Eligibility: Wild.

Desolation Creek

Location: Desolation Creek is located near the south end of the Umatilla National Forest boundary in northeastern Oregon. The headwaters lie approximately 40 miles due west of Baker City, Oregon. The river flows in a northwesterly direction for 21.5 miles to its confluence with the North Fork of the John Day River.

Desolation Creek begins at the confluences of South Fork and North Fork Desolation creeks. The upper 8 miles flow through Umatilla National Forest. The Umatilla Land and Resources Management Plan emphasizes visual quality and fisheries management objectives through most of this 8-mile area. The next 11.5 miles of stream are located within private holdings, from approximately Bruin Creek to one mile above Tollbridge Campground. Land uses on private land along the stream have included substantial selective logging and livestock grazing. Some recreational camping/hunting also occurs in this area. The remaining 2 miles of stream, to the mouth of the river, are again part of the Umatilla National Forest though management emphasis is on viewshed attributes and big game winter range. The study boundary used to inventory river related resources for Wild and Scenic River eligibility began at the confluence of South Fork and North Fork Desolation and extended to the mouth at the North Fork John Day River. The general width of the study corridor extended for at least one-half mile on either side of the center of the channel.

River Mileage:

Studied: 21.4 miles
Eligible: 21.4 miles

Eligibility

Determination of Free-flow: A number of fish structures (log weirs and cabled boulders) have been installed on the mainstem waterway through National Forest. These are simple structures, resembling natural instream conditions, and do not significantly obstruct free-flow.

Four road bridges cross Desolation Creek, suspended well above the channel. Evidence of old bridge locations can be seen intermittently along the stream bank, particularly within the private holdings where logging required stream crossing. All of these old structures have been removed to the stream bank and do not obstruct flow. A trail bridge above Welch Creek Campground accommodates both foot traffic and motorized trail bikes. This is a low bridge across a narrow stretch of river. It may encourage temporary debris damming during high water events, but it has not affected free-flow to date.

> **Finding: *Desolation Creek is considered a free flowing stream*** despite the minor structure found through out the study area.

Scenery

Determination of Outstandingly Remarkable Values: The visual quality of the landscape is quite varied along the length of Desolation Creek. The lower two miles of river is captured within a narrow, well defined canyon. Steep canyon walls drop dramatically toward a stream that winds around basaltic rubble and sheltered pockets of soil. The next 11.5 miles occur on private land. The topography begins to change, becoming a modified V with steeper slopes continuing on the north side of the river, but displaying a more undulating topography on the south. Within this section mixed conifer forests often extend into the riparian vegetation at the edge of the river, however intermittent grassy openings are also characteristic. Selective logging and livestock grazing have modified the foreground and middleground views though many casual viewers would not notice substantial change from natural conditions. Another visual transition occurs south of river mile 12 or near the intersection of roads 10 and 1010. In this vicinity the corridor becomes more open, with expansive views. Upstream from Park Creek, where ownership changes back to National Forest, the river channel narrows. A transition from mixed conifer to lodgepole pine forests emerges. Fire dependant ecosystems are displayed across the landscape through a range of recent fire activity to distant past examples. The channel is well defined with the road placed approx. 80 to 100 feet above the stream on the north side.

> **Finding:**
> Desolation Creek possesses diverse scenery, from large panoramic views to restricted, tight visions limited to foreground images. Although diverse and pleasing, the scenery is well matched in other areas of the Region. Most components of the riverine landscape are represented in the adjacent North Fork John Day W&SR Corridor. ***Desolation Creek does not possess outstandingly remarkable scenic values.***

Recreation

Determination of Outstandingly Remarkable Values: The area is popular among many local visitors during the summer months. In addition, the combined amenities of a large big game population, good roaded access to trailhead locations, adjacency to large, remote backcountry areas, and desirable campsite locations make the Desolation Creek area a destination for many non-local hunters in the fall. Though big game hunting is a popular and traditional recreation activity throughout northeastern Oregon, the Desolation Creek corridor is one of the few areas that provide numerous desirable dispersed camp sites, good roaded access to backcountry portals, opportunities to hunt within roaded areas, and a big game population to support the activity. Recreation use on summer weekends is moderate to high. There are several OHV trails within this corridor that receive a moderate amount of use. Outside of fall hunting season, a visitor can expect to encounter very few users on trail systems during weekdays and few on weekends throughout the summer.

The exemplary displays of sub-alpine meadow complexes and fire dependant ecosystems provide outstanding opportunities to interpret these biotic environments. The ability to allow for interpretation of the study area will allow users to connect to the landscape on a much more personal level.

> **Finding:**
> Combined amenities of a large game population, good roaded access to trailhead locations, adjacency to large, remote backcountry areas and desirable campsites within the river corridor make this a desirable destination. ***Desolation Creek provides outstandingly remarkable recreation opportunities.***

Wildlife

Determination of Outstandingly Remarkable Values: Bald eagle (Threatened) has been noted infrequently in the watershed in the past. Spotted frogs (Region 6 sensitive species and Candidate species for listing under the ESA) are known to occur in the area. The presence of these species is not unique to the Desolation Creek watershed. Sightings of wolverines (Sensitive) have been made in the drainage. Goshawks (a species of interest) are known to use this area. Although Threatened species (bald eagles) and Sensitive species (spotted frog and wolverine) are known to frequent the study corridor along Desolation Creek, they do not exclusively use this area nor are they dependent on unique habitat amenities in the study corridor.

> **Finding:** Although the complement of wildlife species and habitat is diverse in the study corridor, it is not a unique feature in the context of the District, Forest, or the Blue Mountains. ***It does not qualify this resource as an outstandingly remarkable value.***

Fisheries

Determination of Outstandingly Remarkable Values: Desolation Creek provides spawning habitat for summer steelhead (threatened), Chinook salmon (sensitive), redband trout (sensitive), and is a migratory corridor for Columbia River bull trout

(threatened). It does not contribute a significant portion of the regional populations of fish stocks.

> **Finding:** The diversity of habitat provided by Desolation Creek is not unique to the region. ***It does not display any outstandingly remarkable fisheries values.***

Heritage

Determination of Outstandingly Remarkable Values: Much of the study corridor within the National Forest has been surveyed for potential cultural resources. The extreme north and south ends of the corridor have not been surveyed. These surveys resulted in documentation of both prehistoric and historic sites. Native Americans were transient occupants of the corridor, particularly during the summer season. Historic and ethnographic sources make clear that the area has been utilized for camping, fishing, hunting and gathering, by both historic and prehistoric peoples.

> **Finding:** Several sites are considered eligible for the National Register of Historic Places. While they are eligible, the cultural resources identified within the Desolation Creek corridor are similar to others found in the region and are not considered rare or unusual. ***Desolation creek does not display any outstandingly remarkable cultural values***.

Geology/Hydrology

Determination of Outstandingly Remarkable Values: The corridor exhibits a diversity of rock types, which contribute to the diversity of vegetation within the corridor. The lower portion of the river is well settled in a V-shaped canyon. Landslide deposits in lower Desolation Creek are old and complex. These features contain a considerable mass of pyroclastic and setasediment.

Typical of the forest south of the North Fork John Day drainage, the terrain of Desolation Creek is more rugged and diverse than terrain in the North Fork, resulting from the interlacing of rock types and structures common to each of the merging zones. The mainstream Desolation Creek follows the roughly east southeast/west northwest trend of a syncline; with a parallel anticline to the southwest. There are several prominent volcanic necks, such as the Coxcomb, which are visible over a large area. Several cutbanks expose welded tuff along the 10 road, and there are a few giant tuff boulders on the private land north east of the creek. A crystalline rock with large tourmaline crystals occurs near the mouth of Peep Creek, and tuff with mafic country rock outcrops in the south east corner of sec. 23 of T7S, R32 E. These are fairly unusual features for geologists.

> **Finding:** Other than the tourmaline, the individual rock types and structures found in the study are not regionally unusual or rare. ***Desolation creek does not display any outstandingly remarkable geologic or hydrologic features.***

Botany

Determination of Outstandingly Remarkable Values: Desolation Creek displays a broad range of botanic diversity due to its size and the broad change in elevation.

Lodgepole pine, with both wetland and shrub plant community associations, is represented along the mainstem with periodic, isolated pockets of aspen. Further downstream, the drier south slopes of the corridor are dominated by Ponderosa pine/grass communities while opposing north slopes are forested by grand fir or Douglas fir, partnered with a variety of plant associations. The diversity of vegetation displayed within the study corridor is exceptional, ranging from high elevation sub-alpine conditions to the dry site, open pine and grass conditions at the confluence with the North Fork John Day River. Regionally unique and rare species have been identified in Desolation Meadow.

The aftermath of wildfire is visible from any vantage point that offers a background panorama of the southern half of Desolation Creek. Fire scars in various stages of recovery sweep across the landscape. The historic role of recurrent fire in the ecological development of the area is startlingly evident. Changes to vegetation, soils, stream course, and wildlife habitat over time are exemplified.

> **Finding:** ***The ecological diversity of Desolation Creek is exceptional and exhibits outstandingly remarkable botanical values.***

Water Quality

Determination of Outstandingly Remarkable Values: Livestock grazing, timber harvest, and recreational camping has occurred along much of the mainstem of the river. These activities have the potential to degrade water quality, however on Desolation Creek the most significant impacts of these activities have been localized and in the context of the entire stream, have not severely degraded water quality. In addition, past management practices associated with these activities have been adjusted to become more sensitive to water quality concerns.

Desolation Creek discharges a cool supply of water into the John Day River system; however the stream is listed by the State as 303(d) water quality limited for temperature.

> **Finding: While the possible degradation of water quality has been localized to only a few points along the stream corridor,** ***Desolation Creek does not have outstandingly remarkable water quality values.***

CLASSIFICATION:

Eligibility Determination: Desolation Creek meets the minimum eligibility requirements as specified by the Wild and Scenic Rivers Act. It is found to be free-flowing and current information supports the findings that outstandingly remarkable recreational and botanical/ecological values are present in the stream corridor.

This section of creek has the following attributes and eligibility:
Water Resource Development: Free of impoundment.
Shoreline Development: Substantial evidence of human activity.
Accessibility: Readily accessible by road.
Water Quality: Waters unpolluted.
WSR Eligibility: Recreational.

Lookingglass Creek

Location: Lookingglass Creek is located in the Blue Mountains of northeast Oregon, approximately 28 miles north of La Grande. It flows 17.5 miles in a southeasterly direction, entering the Grande Ronde River at Palmer Junction.

The majority of headwater tributaries are located on national forest land. Langdon Lake, a privately owned reservoir, impounds the first mile and a half of headwater flow of main stem Lookingglass and releases the excess over a small spillway at the east end of the lake. The stream passes under Oregon State Highway 204 via concrete culvert several hundred yards below the spillway. Lookingglass Creek is located on national forest land from the highway to the Umatilla National Forest boundary, approximately nine miles. The lower seven miles flow through private land with the exception of a small parcel donated to the State of Oregon for use as a fish hatchery near the mouth of the stream.

The study corridor to determine eligibility extended from the Highway 204 crossing to the stream's confluence with the Grande Ronde River. The study primarily focused on a corridor width ¼ mile from the ordinary high water mark. General, area wide conditions or attributes were also noted.

The creek within the study boundaries can logically be divided into two sections: 1) Oregon State Highway 204 to the national forest boundary; and 2) national forest boundary to the confluence with Grande Ronde River.

Section 1 lies in Union County between the Oregon State Highway 204 culvert in Township 4 North, Range 38 East, Section 32, Willamette Meridian, and the crossing of the Umatilla National Forest boundary at the east edge of Township 3 North, Range 39 East, Section 8, Willamette Meridian. River elevation ranges in from about 4,900 to 3,000 feet.

Section 2 lies in Union County between Township 3 North, Range 39 East, Section 8, Willamette Meridian and the confluence with Grande Ronde River in Township 3 North, Range 40 East Willamette Meridian. River elevation in this section ranges from about 3,000 to 2,400 feet

River Mileage:
Studied: 15.8 miles
Eligible: 15.8 miles

Eligibility:

Determination of Free-flow: The upper end of the study corridor is defined as Highway 204. Above this point the creek is definitely affected by the Langdon Lake impoundment. From Highway 204 to the forest boundary, stream flow is not diverted, impounded, or channeled. A small debris dam is located about 50 feet from the mouth of the culvert at Highway 204. It appears to be a natural structure and will probably be flushed out in the next high water event.

From the national forest boundary to the falls above the fish hatchery, a series of ponds line the floodplain of the stream. These may have been natural ponds at one time;

however, they have been modified for stock watering use in the past. Little water appears to be diverted into these ponds from the main stem during the summer months. The primary water source for the ponds is most likely a combination of main stem flooding during high flow seasons, springs, and tributaries. A bridge on Forest Road 63 crosses Lookingglass Creek about 1½ miles above the falls.

The falls have been incorporated into the weir structure of the fish hatchery to allow hatchery managers to control passage of anadromous fish. Water from the creek is diverted into the hatchery to cycle through the holding ponds and then is released back into the main stem. This process impacts less than ¼ mile of stream. From the hatchery to confluence with the Grande Ronde River at Palmer Junction, a number of log weirs have been installed to improve the migration corridor and fish habitat on the extreme lower end of the creek, in part to compliment the efforts of the fish hatchery. A road bridge and a railroad bridge parallel each other at a crossing just above the mouth of the stream at Palmer Junction.

Finding: Lookingglass Creek is a naturally flowing stream from the east side of Highway 204 to the first in a series of ponds, approximately one mile east of the Umatilla National Forest boundary (about 9.5 miles). At this time, the ponds on private land within the floodplain have a minimal impact on the free-flow of the main stem of the creek; however there is potential for main stem to be further impacted should the landowners wish to modify the current hydrology of the ponds. The impact of these ponds has been softened over time, reducing the depth of diversion channels to shallow depressions and eroding the bank structure created by mechanical scouring. The fish hatchery's use of water from the main stem of Lookingglass Creek is a definite impediment to free-flow over a very short stretch of the stream course.

As a result of the resource inventory, this assessment finds that Lookingglass Creek currently ***meets the criteria of free-flowing*** over the upper 15 miles of the stream. Recommendations regarding the inclusion or exclusion of the stream from the fish hatchery to the confluence with the Grande Ronde River (approximately 2 miles), are left in question pending the results of a suitability study.

SCENERY

Determination of Outstandingly Remarkable Values: The study corridor follows a deep and steep rocky canyon, basaltic in origin, and is a dominant feature of the surrounding landscape. Except for a few reaches with some pastoral settings, the corridor is in a natural or near-natural appearing condition.

Most of the area has a variety class rating of B - Common. This means that the basic land and vegetative forms are generally repeated throughout the area. There are few geographic changes that attract the eye.

The corridor is mostly enclosed by tall timber and is limited to close-up, foreground viewing. Although a pleasant surrounding, it offers no unique or regional attractions. Much of the corridor can be viewed at a distance from the Bald Mountain viewpoint along Forest Road 64. For those willing to make the hike, Lookingglass Springs are visually impressive with the flow of the springs gushing from the bank and streambed

growing forty-fold over a distance of a couple of hundred yards. The lower reaches are more pastoral, with agricultural practices and development being noticeable.

> **Finding:** The scenery is attractive, but typical of other stream corridors in the geographic area. ***Scenery is judged not to be an outstandingly remarkable value.***

RECREATION

Determination of Outstandingly Remarkable Values: The headwaters of Lookingglass Creek are located in a heavily used and developed recreation area. Forest recreation residences line Highway 204 in the Tollgate area as well as several organizational camps and commercial businesses. Both summer and winter recreation activities (including camping; fishing, snowmobiling, and cross-country skiing) are common. From this popular hub of developed recreation opportunities extends the upper end of the Lookingglass study corridor. At Highway 204 the creek drops away from the ridge top developments into a narrow, roadless canyon with steep walls rising 1,600 feet above the rim.

Recreation uses in the Lookingglass corridor are undeveloped. A community area for Forest Service employees is located on the outlet side of the culvert under Highway 204. This site provides a picnic table and volleyball court for Forest Service personnel stationed at the Tollgate Guard Station. A small warehouse facility is also located in the general area.

Below this immediate location, the study corridor travels through a remote, roadless area for the next 8.5 miles. Little recreation activity occurs near the stream in the canyon. It is accessible only to the hardy. Intermittently a road will skim the edge of the steep canyon which places it within the ½-mile width of the corridor; however, no roads directly access the creek until it enters private land.

The closest recreation site is located at Luger Spring where a reduced maintenance campground is located. Picnic tables, an outhouse, and a trailhead are available. The Luger Spring site receives little use outside of the fall hunting season, and only the extremely determined are willing to pack game out of the canyon. Some hunting and fishing occurs downstream, on the private land, though landowners selectively limit the amount of use these parcels receive.

A good trail extends from Luger Spring, crosses the creek connecting up Eagle Ridge toward Forest Road 3725. Upon the upper rim of the canyon, outside of the study corridor, an extensive network of winter use snowmobile and cross-country ski trails has been developed. Many of the snowmobile trails use closed or low maintenance roads. The summer use of off-highway vehicles (motorcycles and other off-highway vehicles) is often superimposed on the winter routes. Though existing access into the canyon is very primitive and difficult, there is potential to improve the existing network of off-highway vehicle and snowmobile trails both within and outside of the study corridor to provide facilities suitable for regional or national events. The additional challenge of a route through the canyon, and the unroaded and riverine qualities of the area would increase the desirability of the trail network.

Finding: Although the periphery of the corridor is a regional attraction for winter activities, the primary corridor is used very little except by a few adventurous hunters and anglers. The riverine setting lacks recreation or interpretive opportunities sufficient to entice people to travel long distances. While the area does offer a number of outstanding features, the recreational opportunities are too limited to attract visitors from outside the local area. For this reason, ***recreation is judged not to be an outstandingly remarkable value.***

WILDLIFE

Determination of Outstandingly Remarkable Values: No threatened, endangered, or sensitive animal species have been identified as residing in the study corridor of Lookingglass Creek. However, California wolverine may inhabit nearby undeveloped area. Bald eagle (recently de-listed) may occasionally be seen moving over the area during spring and fall migrations. There are no known roosts or nests. Canada lynx habitat is available along the upper reaches.

Most of the old growth habitat in the vicinity is found in drainage bottoms and north slopes. Fingers of forest with old growth characteristics can be seen extending down from the ridgeline into the corridor. Larger stands near the forest boundary have been identified by management allocations in the existing forest plan. A healthy riparian ecosystem with lush shrubby vegetation lining the banks (including alder, willow, mock orange, current, and dogwood) and plenty of stream shading lines most of the stream course.

These two wildlife habitat types are important due to their limited supply or availability. Riparian habitats are particularly valuable because of their disparate proportion of use. Comprising about four percent of the forest, riparian areas are heavily used by nearly 75 percent of the wildlife species. In the case of Lookingglass Creek, the riparian area provides an added benefit to wildlife, infrequent disturbance. As found in neighboring wilderness, the remote character of the corridor provides sanctuary for resident wildlife. The result is a healthy and diverse population of wildlife, neither particularly unique in species present or abundant in population.

Raptors add to the ecosystem. Northern goshawk can be expected in the mature and old growth forest areas. Golden eagle, prairie falcon, kestrel, and red-tailed hawk frequent the open slopes.

Black bear, cougar, and many other species of mammalian and avian wildlife inhabit most of the area for at least a portion of the year. A large beaver dam with several large ponds has been established near the lower national forest boundary.

The boxed effect of the narrow canyon floor and the increased level of management activity experienced on each end of the corridor (as compared to the remote and undisturbed setting in the center portion) tend to discourage use of the corridor as a migration route for wildlife. Intensity of use by individual species such as elk, mule deer, and a variety of birds may be influenced by seasonal variations. However, there are no identified migratory routes within the corridor.

Finding: While wildlife populations are stable and habitat is very good, ***wildlife is not an outstandingly remarkable value****.*

FISHERIES

Determination of Outstandingly Remarkable Values: Three species of listed fish use Lookingglass Creek and some of its tributaries. Snake River Chinook salmon spawn and rear in Lookingglass Creek and Little Lookingglass Creek. The native Chinook salmon in the Lookingglass system may have been extirpated coincident with the construction and operation of the Lookingglass Fish Hatchery. Recently, tribal fisheries biologists re-introduced Snake River Chinook to Lookingglass Creek, using a strain native to the Snake River from Catherine Creek. They are considered as listed in Lookingglass Creek. Chinook salmon have been observed holding and spawning in both Little Lookingglass and Lookingglass Creeks inside the forest boundary. They probably also use the lower reaches of most of the tributaries for rearing.

Snake River steelhead spawn in both Lookingglass Creek and Little Lookingglass Creek, and probably occasionally in lower reaches of all major tributaries. They also probably rear throughout the system, except above barrier waterfalls.

Lookingglass Creek hosts a migratory bull trout population. Little Lookingglass Creek also hosts bull trout, but judging from size of fish observed it might be a resident population. They are not known to use any other tributary. Spawning ground surveys indicate that bull trout populations in Lookingglass Creek have remained stable over the period of record (generally 1992 to present). Most other Grande Ronde tributaries in the vicinity of the mouth of Lookingglass Creek do not have the quantity of cold, clean water necessary to support bull trout. The nearest Grande Ronde tributary capable of supporting a stable population of bull trout is probably the Wenaha River, about 35 to 40 miles downstream. Bull trout populations are threatened by brook trout which have been found in the stream.

Bull trout densities are greatest from the springs downstream, and generally decrease above the mouth of Lost Creek. The section of stream between the mouths of Eagle Creek and Lost Creek is important bull trout spawning habitat.

Lookingglass Creek from the springs downstream to at least the forest boundary is excellent quality habitat for bull trout, Chinook salmon, and steelhead, with good cover, adequate spawning gravel, holding pools, rearing habitat, and excellent water quality.

Both Lookingglass and Little Lookingglass Creeks were designated as critical habitat for bull trout on September 21, 2004, as part of the final critical habitat designation for that species. Critical habitat designations for steelhead and Chinook salmon are currently under review by the National Marine Fisheries Service.

> **Finding:** The steelhead population in Lookingglass Creek is considered to be in decent condition. While the stream does support three federally listed species, it not unique or rare in the region due to the fact that many streams in the area hold this distinction. The area is considered critical habitat for bull trout but the presence of brook trout threatens it. The fisheries resource in Lookingglass Creek ***should not be considered an outstandingly remarkable value.***

HERITAGE

Determination of Outstandingly Remarkable Values: A number of heritage resource surveys have been conducted with the Lookingglass Creek corridor. These surveys resulted in documentation of both prehistoric and historic sites within this area. Several of these sites are considered eligible for the National Register of Historic Places. In addition, historic and ethnographic sources make clear that the area has been utilized for camping, fishing, hunting, and gathering by both historic and prehistoric people.

Ethnographic groups that inhabited the region may have utilized this landscape during seasonal subsistence rounds and may have included Umatilla, Cayuse, Walla Walla, and Nez Perce as use of subsistence areas often overlapped. Lookingglass Creek is within the ceded lands of the Confederated Tribes of the Umatilla Indian Reservation. Tribal rights include "the exclusive right of taking fish in all the stream where running through or bordering said reservation is further secured to the said Indians; also the right of taking fish at all usual and accustomed places in common with citizens of the Territory; and of erecting temporary buildings for curing, together with the privilege of hunting, gathering roots and berries, and pasturing their horses and cattle upon open and unclaimed land."

> **Finding:** Documented historic within the corridor are similar to many others in the region. The significance of anadromous fish runs and the importance of usual and accustomed areas apply to various tribes and many drainages and mountain streams in the region. For this reason, the cultural resource values of the forks of Lookingglass Creek ***are not identified as an outstandingly remarkable value.***

GEOLOGY

Determination of Outstandingly Remarkable Values: Lookingglass Creek flows through a very narrow and deeply incised canyon that is striking because of its dramatically steep slopes and contours. Geologic parent materials are typical of the area. It is assumed that the layer of Columbia River basalt, which blankets much of northeastern Oregon, was slightly thinner in this area, allowing the eroding action of Lookingglass Creek to expose more of the Lacrustrine lakebed deposits underneath, and carve a deeper path through the softer material. This exposure reveals some geologic diversity within the study corridor. The amalgam of materials that form the sedimentary lakebed deposits are common to the area, but seldom exposed to the extent visible in the Lookingglass canyon.

Lookingglass Creek is primarily spring fed within the study corridor. Several tributaries flow into the creek; however, the most important source of flow originates from an area of numerous springs between the mouth of Summer Creek and Lost Creek. A stream survey completed in the August 1992 measured stream flow directly above the springs at 1.23 cfs and 54.9 cfs at the forest boundary. It was estimated that 51 cfs could be attributed to the contribution of flow from the springs. Stream data shows a decrease in water temperature of 10 degrees below these springs. These springs are critical to the water quality and volume of flow in Lookingglass Creek, and to the water temperature of the Grande Ronde River.

The water quality of Lookingglass Creek is excellent. After reviewing potential sites throughout northeast Oregon, the Oregon State Department of Fish and Wildlife and the

U.S. Fish and Wildlife Service jointly chose a site on the lower end of Lookingglass Creek to build a Chinook fish hatchery, specifically because of the outstanding quality of water issuing from this stream.

The remote unroaded character of the area has reduced management impacts to water quality along the majority of the creek, between Highway 204 and the forest boundary. A road adjacent to the stream receives minimal use. A road adjacent to lower Little Lookingglass has the potential to affect water quality in the Lookingglass system. A landing strip has been recently constructed on an old road bed parallel to the river. Review of the airstrip construction site by fisheries specialists from the Umatilla Tribes did not identify fisheries or water quality concerns.

The existing quality of water in Lookingglass Creek is outstanding. The creek consistently provides a valuable and regionally exemplary source of cool, clear, unpolluted water, and supports efforts to increase threatened spring Chinook populations. The outstanding value of this water has been identified by specialists from a variety of natural resource agencies including; the Confederated Tribes of the Umatilla Indian Reservation, Oregon Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and the Forest Service.

Finding: The ***geology that formed Lookingglass Creek is not outstandingly remarkable****;* it is typical of the same geologic history and parent materials that formed the Wild and Scenic Wenaha River Canyon on a much smaller scale. The canyon provides some dramatic geologic scenery because of the visibly steep topography and the depth of the canyon; however the Blue Mountains are typified by deeply incised canyons and steep topography. Lookingglass Creek does not display unique or unusual geologic features, or regionally outstanding examples of geologic features or processes.

The ***hydrology of Lookingglass is an outstandingly remarkable value****.* The impact that the springs near Summer Creek have on the water quantity and quality is rare in the Blue Mountains. The stream survey indicates that approximately 96 percent of the stream flow in the area immediately below the springs, and a 10-degree reduction in stream temperature can be directly attributable to these springs. The temperature and condition of the water that enters the stream course from this source provides the foundation for fisheries resources in the creek.

For those willing to make the hike, the Lookingglass Springs are visually impressive with the flow of the springs gushing from the bank and streambed growing forty-fold over a distance of a couple of hundred yards.

BOTANY

Determination of Outstandingly Remarkable Values: The aspects of the drainage are composed of mostly north and south with an easterly main stem flow.

Grand fir and mixed fir plant associations dominate the lower elevations. Sub-alpine fir, Engelmann spruce, and western larch are common within the corridor or near the corridor periphery. There are many springs and seeps with alder thickets, mountain ash, and mountain maple. South aspect bunch grass slopes encroach on the corridor.

The northern end of the Blue Mountains has not been subject to the full extent of the forest health problems so destructive in the central and southern portions of the ecosystem. There has been very little tree mortality to date from the 1992 western spruce budworm epidemic.

Habitats such as rocky outcrops, talus slopes, hardwood patches, alder thickets, wallows, and springs are inherently unique as wildlife habitat and contribute to the biodiversity of the area. The corridor has a number of such habitats, usually found in small localized areas.

Headwater regions of the drainage are rich in populations of several regionally sensitive moonworts (*Botrychium hesperium, B. lanceolatum, and B. pinnatum*). The formerly-listed male fern (*Dryopteris filix-mas*) also is present on upper Lookingglass and upper Little Lookingglass creeks.

The riparian vegetation is valuable not only to the nearby aquatic environs; it also plays a very important role as elk habitat. During the mid-summer and fall the riparian areas provide water, thermal cover, and succulent forage. Additionally, may of the riparian habitats are used by elk in the breeding season. The habitat within and adjacent to these riparian areas is considered the most critical habitat, especially in late summer. The existing high-quality water within the area reflects stable and healthy riparian habitats.

Petitioned, threatened, endangered, and sensitive species include:

Aquatic

- Bull Trout - The bull trout is listed as threatened under the Endangered Species Act (ESA) and sensitive by the Pacific Northwest Region of the Forest Service. The bull trout has been documented in the study reach.
- Redband Trout - The redband trout is regionally listed as sensitive. Redband trout are genetically distinct interior subspecies of oncorhmychus mykiss.
- Snake River Steelhead Trout - The Snake River steel head trout is listed as threatened under ESA and sensitive by the Pacific Northwest Region of the Forest The steelhead trout has been documented within the study reach.
- Snake River Spring/Summer Chinook salmon - The Snake River Spring/Summer Chinook salmon is listed as threatened under the ESA and sensitive by the Pacific Northwest Region of the Forest Service. The Spring/Summer Chinook salmon has been documented within the study reach.
- Snake River Fall Chinook salmon - The Snake River fall Chinook salmon is listed as endangered under the ESA. Fall Chinook salmon are not found within the study reach, but have been documented in the Grande Ronde River downstream from its confluence with the Wallowa River.

Wildlife

- Rare furbearers - Because of the reclusive nature of these species (wolverine, lynx, and wolf) and their sensitivity to disturbance by human activities, it is doubtful that the study reach is prime habitat for these species. There is some potential for use to occur during the spring and after hunting season when use by humans is low.
- Riparian-dependent species - Preble's Shrew is listed as sensitive by the Pacific Northwest Region of the Forest Service.
- Townsend's big-eared bat - There are no known maternity colonies, hibernacula, or roosting sites for this species in the study reach.

Plants

- Past plant surveys located one sensitive plant species, male fern, in the upper reaches.

  Finding: The Lookingglass Creek study corridor does not exhibit any unusual vegetative variation or species that have regional significance. Male fern, though listed as a sensitive plant species in Oregon, is relatively common in Washington. The study corridor lies approximately 16 miles from the Oregon and Washington stateline. Other larger and more significant populations of this plant are located in the same regional area of Tiger Creek and the Wenaha-Tucannon Wilderness.

  Maintaining an adequate supply of thriving riparian and old growth ecosystems is very important to overall forest health and these systems have been reduced from historic levels, however, the presence of the these ecosystems within the Lookingglass study corridor is duplicated in most of the unroaded river corridors on the Umatilla National Forest. Larger, more exemplary riparian and old growth communities can be found on the Wenaha Wild and Scenic River to the north of Lookingglass Creek, on Desolation Creek near the south end of the forest, and the North Fork of the John Day River (also designated Wild and Scenic). The population does ***not exhibit outstandingly remarkable botanical values.***

CLASSIFICATION:

Eligibility Determination: Lookingglass Creek meets the minimum eligibility requirements as specified by the Wild and Scenic Rivers Act. It is found to be free-flowing and current information supports the findings that outstandingly remarkable hydrologic values are present in the river corridor

River Section 1 (Oregon State Highway 204 to the national forest boundary) has the following attributes and eligibility:

Water Resources Development: Free of Impoundment.
Shoreline Development: Essentially primitive.
Accessibility: Inaccessible except by trail.
Water Quality: Water unpolluted.
Wild and Scenic River Eligibility: Wild.

River Section 2 (the national forest boundary to the confluence with Grande Ronde River) has the following attributes and eligibility:

Water Resources Development: Free of Impoundment.
Shoreline Development: Largely primitive and undeveloped.
Accessibility: Accessible in places by road.
Water Quality: Water unpolluted.
Wild and Scenic River Eligibility: Scenic.

North Fork Desolation Creek

Location: North Fork Desolation Creek flows 6.8 miles north and then west to its mouth and parallels Road 10. The general width of the study corridor extended for at least one-half mile on either side of the center of the channel. Attributes common to the general area were also noted.
This area lies in Grant County between the stream origin in 21, T.9S., R.34E., W.M. to its confluence with the North Fork Desolation Creek in Section 1, T.9S., R.33E., W.M.

River Mileage:
Studied: 6.8 miles
Eligible: 6.8 miles

Eligibility:
Determination of Free-flow: The culverts on Road 45 were replaced with an arch, removing the restriction to free flow. There have been multiple restoration efforts in the Desolation Meadow area. Dozens of brush dams, instream log structures, rock weirs, cobble aprons, and introduced spawning beds have been constructed since the 1960s. Hydrologically, they attempt to mimic natural processes. While many of these structures have failed, some are still functioning and affecting flow in North Fork Desolation.

> **Finding:** While there are some minor structures affecting the flow of North Fork Desolation Creek, they do not attract attention nor do farm to the flow in general. ***North Fork Desolation Creek is in a free flowing state.***

SCENERY

Determination of Outstandingly Remarkable Values: The North Fork is dominated by subalpine vegetation interspersed with several small meadows and Desolation Meadow. Surrounding vegetation is generally closed canopy subalpine fir and lodgepole forest with an open understory. There is a panoramic vista, which may be viewed from Road 10 and from the view point in T8S, R33E, section 36. Panoramic vistas may also be viewed from Desolation Meadow and from the private meadow near Starveout Creek. The size of Desolation Meadow is unique in its large size.

> **Finding:** While impressive, ***the scenery of North Fork Desolation Creek is not considered to possess any outstandingly remarkable values***

RECREATION

Determination of Outstandingly Remarkable Values: Typical recreation activities within the corridor include camping, hiking, fishing, and big game hunting. The creek is not suitable for boating, floating, or similar water-oriented activities. The corridor contains three trailheads (one of which permits OHVs) accessing trail networks outside of the study corridor. Recreation use on summer weekends is moderate. Outside of fall hunting season, a visitor can expect to encounter almost no other users on trail systems in the area during weekdays and very few on weekends throughout the summer.

Dispersed camping in sites with minimal development describes the typical pattern of use.

> **Finding:** While recreation activities are found within the study corridor, a better representation of recreation opportunities exist further down stream on the mainstem of Desolation Creek. ***This area does not display any outstandingly remarkable recreational values***

WILDLIFE

Determination of Outstandingly Remarkable Values: Potential lynx denning and foraging habitat is present along the corridor. The Columbia spotted frog (R6 sensitive species, candidate for listing under the ESA) is present within the corridor. North Fork Desolation Creek does not provide exceptionally high quality of unique habitat or a critical link in habitat conditions for wildlife found in the area. This is due to the vegetation type and human presence found within the stream corridor.

> **Finding:** ***The study area is found to have no outstandingly remarkable wildlife values.*** The habitat and species found in the North Fork Desolation Creek corridor are found in other areas of the Blue Mountains such as Granite Creek and Hidaway Creek

FISHERIES

Determination of Outstandingly Remarkable Values: North Fork Desolation Creek provides spawning habitat for summer steelhead (threatened), Chinook salmon (sensitive), and redband trout (sensitive). The stream does not meet the strict temperature requirements necessary for active populations of Bull trout.

> **Finding:** While North Fork Desolation Creek does provide spawning habitat for threatened and sensitive species, ***it is not considered to contain outstandingly remarkable fisheries values.***

HERITAGE

Determination of Outstandingly Remarkable Values: Historic and ethnographic sources make clear that the area has been utilized for camping, fishing, hunting and gathering, by both historic and prehistoric peoples. Ethnographic groups that inhabited the region most likely utilized this landscape during seasonal subsistence rounds. The significance of anadromous fish runs and the importance of usual and accustomed areas apply to various tribes and many drainages and mountain streams in the region. Several sites are considered eligible for the National Register of Historic Places. Documented historic sites within the corridor are similar to many others in the region.

> **Finding:** While there study corridor does contain many historical sites, such as the Civilian Conservation Corps built Desolation Guard Station, many examples of similar sites are found in the area. ***North Fork Desolation Creek does not contain any outstandingly remarkable historic or pre-historic features.***

GEOLOGY/HYDROLOGY

Determination of Outstandingly Remarkable Values: There is a rare boulder flow off Road 4500-030. This unique remainder of the ice age is easily accessible. With the exception of the boulder flow landforms and geologic features are typical of the general area. The corridor exhibits a diversity of rock types, contributing to the diversity of vegetation within the corridor; however, the individual rock types and structures are not regionally unusual or rare.

> **Finding:** ***North Fork Desolation Creek does not exhibit any outstandingly remarkable geological or hydrologic resource values.***

BOTANY

Determination of Outstandingly Remarkable Values: There are remarkable examples of sub-alpine meadow complexes along this stream, particularly the 300-acre Desolation Meadow. Sub-alpine vegetation associations typical of the Blue Mountains of the Umatilla Forest (subalpine fir/huckleberry, subalpine fir/whortleberry, and subalpine fir/forb mesic) can be found throughout the area. Near Desolation Meadow, a complex of large spruce trees, with deep duff and a mushroom/fungal floor can be found. Small, wet, sedge meadows occur between the lodgepole pine and sub-alpine sites, and the large meadow area.

Regionally unique and rare plant species have been identified in Desolation Meadow. Three major populations of 'botrychium' are located in Desolation Meadow. These populations include 8 different species, 5 of which are 'sensitive' plants and an additional is a unique and unnamed species.

Desolation Meadows experienced extensive livestock grazing until the 1980s. Some introduced grass species are present in combination with native grasses. The meadow had been ditched to dry out the meadow for grazing, which likely changed plant compositions. More recently, mud bogging has resulted in disturbance to the wet meadow and associated plant communities.

> **Finding:** Regionally unique and rare plant species have been identified in the meadows along the stream corridor which displays a broad range of botanic diversity due to its size and broad range of elevation. ***The ecological diversity is exceptional and exhibits outstandingly remarkable values for botany and plant ecology.***

WATER QUALITY

Determination of Outstandingly Remarkable Values: The water quality of North Fork Desolation Creek is good. The creek discharges a cool, clear supply of water into Desolation Creek. However, North Fork Desolation does not meet the strict temperature requirements for bull trout, and is included on the state's list of water quality impaired streams.

Livestock grazing, timber harvest, and recreational camping has occurred along much of the North Fork Desolation Creek. These activities have the potential to degrade water

quality, however, the most significant impacts of these activities have been localized and in the context of the entire stream and have not severely degraded water quality. In addition, past management practices associated with these activities have been adjusted to become more sensitive to water quality concerns.

> **Finding:** While the stream does discharge cool, clear water into a major stream in the area, ***it is not considered to have outstandingly remarkable water quality values.***

Classification:
Eligibility Determination: North Fork Desolation Creek does meet the minimum eligibility requirements as specified by the Wild and Scenic Rivers Act. It is found to be free-flowing and current information supports the findings that outstandingly remarkable botanical/ecological values are present in the stream corridor.

This section of river has the following attributes and eligibility:
Water Resource Development: Free of Impoundment.
Shoreline Development: Evidence of human activity, but largely undeveloped.
Accessibility: Accessible In places by road.
Water Quality: Waters unpolluted.
WSR Eligibility: Recreational.

North and South Fork of Wenaha River

Location:
The part of the river which lies within the boundaries of the Umatilla National Forest can logically be divided into the following two segments: (1) North Fork Wenaha from headwaters to confluence with mainstem Wenaha River, and (2) South Fork Wenaha from headwaters to confluence with mainstem Wenaha River

Segment 1 consists of the North Fork Wenaha River from its origin to its confluence with the mainstem of the Wenaha River, roughly 14.1 miles of river, This area lies in Columbia County, Washington and Wallowa County Oregon between its origin in Section 35, T.7N., R.39E., W.M., and the confluence with the mainstem Wenaha River in Section 34
T.6N., R.40E., W.M.

Segment 2 consists of the South Fork Wenaha River from its origin to its confluence with the mainstem of the Wenaha River, roughly 12.2 miles of river. This area lies in Wallowa County, Oregon between its origin in Section 33, T.5N., R.39E., W.M., and the confluence with the mainstem Wenaha River in Section 34 T.6N., R.40E., W.M. Elevation ranges from 5,800 feet to 2,800 feet above sea level.

River Mileage:
Studied: 26.3 miles
Eligible: 26.3 miles

Eligibility

Determination of Free-flow: The North and South forks of the Wenaha River has principally only been affected by the forces of nature since its origin. Human activities/disturbances have not shown significant or long lasting impacts in the riparian zone. There are no dams, diversions water resource developments or culverts on the Wenaha River.

Finding: The study segments are ***found to be free-flowing.***

SCENERY

Determination of Outstandingly Remarkable Values: The study corridor exhibits little influence by humans. The undeveloped visual quality features a mosaic of diverse vegetation, seasonal color, a rugged landscape, and an abundant variety of wildlife.

The Wenaha River, including its upper reaches, is a rare example of an undeveloped Blue Mountain river. There is probably no better example of a clear free-flowing and nearly pristine river in this part of the inland northwest. Visitors can take in the beauty of the canyon without seeing the management activities that take place on the non-wilderness lands to the south and north/northeast. The study corridor is only accessible by trail and cross-country travel. Therefore, the scenic attributes of the river can only be seen from the perspective of the hiker or horseback visitor. Settled into a deeply eroded canyon, the river displays its geologic history in the cliffs above. The seasons of the year impart distinct and vivid changes as the mosaic of native vegetation varies with seasonal color schemes. Aspen trees, not common to the northern Blue Mountains, add to the seasonal color palette. Wildlife viewing is enhanced by the diverse habitat conditions in the corridor, providing an abundant variety of resident species and watchable wildlife opportunities.

Finding: The Wenaha River and surrounding Wenaha - Tucannon Wilderness is recognized nationally for its scenic qualities. The mosaic of vegetation and stark ruggedness of the landscape contribute to an exceptional scenic ***quality qualifies scenery to be an outstandingly remarkable value.***

RECREATION

Determination of Outstandingly Remarkable Values: Recreation opportunities within the study corridor are regionally recognized. Most recreation use is generated by return visitors. However a recent trend of increased first-time users from the I-5 corridor has been noticeable. Opportunities revolve around remote primitive, self-discovery experiences in an area that requires primitive methods of travel, and encourages minimal contact between visitors. The natural setting of the river is unencumbered by recreation facilities or persistent heavy recreational use. Recreational experiences are centered around experiencing the scenic beauty and solitude available in the river canyon and pursuing the abundant fishery and wildlife resources. The study corridor is located in wilderness. In most cases, the recreational opportunities are associated with the wilderness resource.

The large Rocky Mountain Elk herd of the northern Blue Mountains has been popular with hunters for generations. The Wenaha River drainage is a remote, undeveloped and non-motorized haven for the elk hunter. The established history of hunting use was

considered commensurate with wilderness values and identified as particularly important to the Wenaha-Tucannon area at the time of wilderness designation in 1978. Although hunting pressure is greater on the ridge tops outside of the river corridor, hunters camp along the river and use the trail system associated with the river to access the Wilderness.

Horseback riding and hiking in the river corridor is common. It has been found that most visitors participate in more than one activity while visiting the Wenaha River drainage, such as hiking in to a favorite fishing spot. Other activities that attract visitors include: camping, horseback riding, sightseeing, pursuit of solitude, photography, nature study, swimming and wildlife viewing. It has a history of being a traditional destination for many generations of vacationers.

Outside of hunting season, opportunities for visitors seeking solitude, and physical or mental challenges are common. Signing within the corridor is minimal. Most direct contact with visitors is aimed at the hunter, emphasizing the use of low impact, no trace camping techniques.

Currently, the low trail density provides primitive and semi-primitive recreational opportunities. The primary trail along the river originates near Troy, parallels the north side of the Wenaha River, and follows the South Fork to Timothy Springs Trailhead near its headwaters (a total distance exceeding 31 miles).

> **Finding:** While recreation activities are found within the study corridor, a better representation of recreation opportunities exist further down stream. ***This area does not display any outstandingly remarkable recreational values.***

WILDLIFE

Determination of Outstandingly Remarkable Values: Because the area is diverse in habitat types, it is also diverse in wildlife species. Wildlife is represented with variety and abundance. This is reflected in the range of habitat, from high elevation sub-alpine meadows and forests to mid-elevation ponderosa pine forests and ultimately to the lower elevation native grasslands. The wildlife that inhabits and frequents the study portion of the river is influenced by these habitat types. Bunch grass and talus slopes are interspersed with timbered slopes that have deeper soils and more moderate micro-climates. This produces an optimum ratio of cover to forage areas for large mammals. This mix also provides the habitat needs for small animals, reptiles and birds of prey. The range of wildlife habitat and population diversity in the mainstem Wenaha River corridor were important factors in determining the mainstem river's Wild and Scenic River status. Few local rivers include more than 30 miles of free-flowing river, almost undisturbed from headwaters to confluence, and course the variety of habitats displayed by the Wenaha. Big game present in the study corridor are: Black bear, Rocky Mountain elk, Rocky Mountain Bighorn Sheep, deer, cougar, bobcat, and coyotes. The consistent abundance of big game is one of the primary features encouraging generations of hunters to return to the Wenaha- Tucannon Wilderness and the Wenaha River drainage. Non-game species are also present such as: beaver, river otter, marten. and other small mammals. The changes in flood-plain vegetation and elevation create unique settings for biological diversity. Examples of bird species known to be present are: jays, nutcrackers, flickers, swallows and sparrows. The area also has a large population of blue and ruffed grouse. It is not uncommon to see golden eagles, Lewis' pileated and

hairy woodpeckers. The river corridor is considered a critical link in the variety and exceptionally high quality of habitat for wildlife.

Both the abundant hunting opportunities and the ability to view a wide variety of wildlife in the Wenaha River canyon were contributing factors to the Wenaha-Tucannon Wilderness designation.

External influences, including Wilderness designation, a road less character of adjacent lands, and the confines of the topography have combined to shelter existing wildlife populations from frequent human-caused disturbance.

Threatened, Sensitive, and Endangered species of animals reside in or seasonally use the river corridor. To date, this includes the threatened Bald Eagle and the fish species previously identified in the fisheries values section. Two sightings of the California wolverine were confirmed in the Wenaha- Tucannon Wilderness in early 1970's and 1984. There have been no additional sightings.

Suitable habitat for peregrine falcon exists along the Wenaha River corridor. Peregrine use in the corridor has been observed, but no nesting sites have been verified. Much of the Wenaha corridor is inaccessible until late May due to heavy snowfall, after critical nesting season for these birds.

The Wenaha area has not been surveyed for Townsend's Big-eared bat. There is potential for the cave habitat to occur within the corridor, although none has been identified. These animals are most sensitive to disturbance between November and May. During this time the corridor is usually inaccessible.

Potential, suitable habitat for several other threatened or endangered species is found within the Wenaha corridor, although no recent sightings have occurred. These include the gray wolf and Canada lynx. Surveying for these animals is ongoing. The gray wolf is an historic native, although it has not existed in the area since the turn of the century. With the wolf population continuously expanding in Idaho, it is likely for wolves to venture into the Wenaha sometime in the future. Canada Lynx have not been sighted in the Wenaha corridor. Winter track surveys are continuing, however, this is a very reclusive animal, difficult to see or locate in the wild.

> **Finding:** The wildlife habitat and population diversity of the two forks of the Wenaha River canyons offer opportunities for sport and viewing. The size and components of the area provide a secure ecosystem for sustainability of many special species. Wildlife values were recognized as one of the key factors for classifying the surrounding Wenaha- Tucannon Wilderness and the mainstem Wenaha National Wild and Scenic River. The wildlife populations, though noteworthy, are not dependent on the river corridor as a critical component of their habitat and are well represented throughout the area of consideration. The evaluations of present conditions find that populations and habitat ***do not show wildlife as an outstandingly remarkable value****.*

FISHERIES

Determination of Outstandingly Remarkable Values: The North and South Forks of the Wenaha River have been protected from human influence by rugged topography.

This has left the river system preserved in a near pristine condition. The stocks of spring Chinook and summer steelhead in the Wenaha river are of native Wenaha origin and unique; i.e. classified as "wild" by Oregon Department of Fish and Wildlife (ODWF). Within the Wenaha/Grande Ronde Subbasin four primary aquatic species are listed as threatened: Steelhead, Bull Trout, Spring Chinook and Fall Chinook.

- The Snake River Basin steelhead Evolutionary Significant Unit (ESU), which includes Wenaha River summer steelhead, was listed as threatened under the Federal Endangered Species Act (ESA) by NOAA Fisheries in August of 1997 (62 FR 43937).
- The Snake River spring/summer Chinook ESU, which included Wenaha River spring Chinook, was listed under the ESA in 1992 (57 FR 14653).
- The Snake River fall Chinook ESU, which included Wenaha River fall Chinook, was listed under the ESA in 1992. NMFS 1992)
- Bull Trout in the Columbia Basin, including the Wenaha River, were listed as threatened under ESA in 1998.

Riparian and aquatic habitat conditions are good to excellent along the entire Wenaha River corridor. The results of a stream surveys conducted in 1991 and repeated in 1996, indicate that the remote character of the river, and the wilderness designation along most of the corridor, have encouraged the preservation of this river system in a near pristine condition. The survey reports that spawning gravels, woody debris, pool and glide habitats occur in ample supply. The river exhibits good fish cover habitat, good overall bank stability, abundant riparian shrub growth, large boulders and bedrock oriented pools adding to bank stability and holding water is plentiful.

Spring Chinook, summer steel head and bull trout presently utilize the system for spawning and rearing. Spring Chinook in the Wenaha River system are considered unique. The Wenaha River fish are genetically and geographically distinct from all other Grande Ronde samples. The environmental characteristics of the Wenaha also differ from other areas of the Grande Ronde subbasin where Chinook occur (Grande Ronde Subbasin Plan 2004). Chinook in the Wenaha River represent 15% of the Grande Ronde population and are scattered over nearly 45 miles of river spawning and rearing habitat. The South and North Forks represent about 1/3 of that total. Historic estimates of 1800 spring spawners have been made.

Summer steelheads are a unique population within the Wenaha River subbasin. However, population numbers and other statistical evidence is hard to come by because of the remoteness of the South and North Fork. Winter and early springtime access is very difficult. Spring spawning with high flows in the mainstem and its tributaries prevents access and study. Historic numbers are only guesses for the same reason.

Columbia River bull trout; Resident and migratory forms of bull trout occur in the Wenaha River basin. Radio-tagging studies have shown that bull trout spawn in headwater areas of the Wenaha River and use the remainder of the river for migration. Bull trout spawning ground surveys have been conducted intermittently since 1990. The headwater areas known to support bull trout spawning include the upper reaches of the South and North Forks of Wenaha and upper tributaries including Milk Creek and Cougar Canyon Creek.

Other fish populations known to inhabit the river are: mountain whitefish, rainbow trout, northern pike minnow, white and mountain suckers, several species of minnows, dace and sculpins (including the margined, torrent and piute). Non-salmonid fish populations are mostly limited to the lower sections of the river and decrease with the elevation and colder stream temperatures.

Other sensitive aquatic species of concern are; Blue Mountain Cryptochian - *Cryptochia neosa* (S), Lynn's clubtail dragonfly - *Gomphus lynnae* (PS), Redband trout - *Oncorhynchus mykiss* (S), West slope Cutthroat Trout - *Salmo clarkii lewisi* (S), Margined sculpin - *Cottus marginatus* (PS), Columbia Spotted frog - *Rana luteiventris* (PS) and Tailed frog - *Ascaphus trucei* (PS), Painted Turtle - *Chrysemys picta* (PS). Northern Leopard Frog - *Rana pipiens* (PS), Columbia Duskysnail - *Lyogyrus n. sp. 1* (PS). Typically, but not all, these species life stages and habitats require cold, clean water that the North and South Forks of the Wenaha represent.

> **Finding:** The Wenaha River system contains native Chinook, Bulltrout, and Steelhead which are listed as threatened under the Threatened and Endangered Species Act. Bull trout populations are considered as one of the healthiest in the Grande Ronde subbasin. The habitat is pristine. The findings of this resource assessment are that ***fisheries habitat and populations* are *outstandingly remarkable values.***

HERITAGE

Determination of Outstandingly Remarkable Values: No intensive heritage resource surveys have been conducted within wilderness or within the study river corridor. To date, two recorded sites potentially eligible for the National Register have been located in the forks of the Wenaha drainage. However, historic and ethnographic sources make clear that the area has long been utilized for camping, fishing, hunting and gathering and as an avenue of travel through the mountains for both historic and prehistoric peoples.

Ethnographic groups that inhabited the region would have utilized this landscape during seasonal subsistence rounds and may have included Umatilla, Cayuse, Walla Walla, and Nez Perce as use of subsistence areas often overlapped. The Wenaha River is on the periphery of the ceded lands of both the Nez Perce and Umatilla tribes. Tribal rights include "the exclusive right of taking fish in all the streams where running through or bordering said reservation is further secured to the said Indians; also the right of taking fish at all usual and accustomed places in common with citizens of the Territory; and of erecting temporary buildings for curing, together with the privilege of hunting, gathering roots and berries, and pasturing their horses and cattle upon open and unclaimed land".

> **Finding:** The significance of anadromous fish runs and the importance of usual and accustomed areas apply to various tribes and to many drainages and mountain streams in the region. For this reason, ***the cultural resource values of the forks of the Wenaha are not identified as an outstandingly remarkable value.***

GEOLOGY/HYDROLOGY

Determination of Outstandingly Remarkable Values: The Wenaha River is located in a deeply eroded canyon on the south flank of the Blue Mountain Uplift. It has carved a narrow, flat-bottom canyon with steep slopes, cliffs and associated side drainages. The cliff-forming basalt forms a bold dark grey to black outcrop interlayered with red scoria, minor amounts of andesite, and thin interbeds of clay, silt and sandstone. The streams are located in the basalt andesite geologic formation, dropping in elevation from 6000 feet in their headwaters to 2500 feet at the confluence of the North and South forks. Rugged basaltic ridges and outcroppings separated by deep canyons with steep sideslopes rise about 2000 feet above the stream in the forks area In several places the canyon is close to 1000 feet deep, Most of the canyon wall is composed of slopes greater than 60% with an occasional bench, described as bench/cliff topography.

The study area is located within the Wenaha River canyon and its associated flood plain. Wetlands have been identified within the corridor, consisting of small wet seeps, bogs and marshy areas, as well as the river itself. Overall water quality has remained high within the wilderness.

The Wenaha's annual stream flow is 90,579 acre feet, measured at the mouth of the river. The seasonal flow, measured in cubic feet per second, ranges between summer low average of 174 and spring runoff high of 1,312.

According to a Wenaha River Stream Survey, on file and completed in the fall of 1991, "The Wenaha River is a wild river that has principally only been affected by the forces of nature since its origin. Human activities/disturbances have not shown significant or long lasting impacts in the riparian zone." This survey used the Hankin and Reeves stream survey method (version 5.0). The large floods of 1996 and 1997 caused substantial movement of the channel on its floodplain. Recovery from these disturbances has proceeded at a natural pace, undisturbed by human activities.

> **Finding:** The ***geologic and hydrological values of the forks of the Wenaha are not identified as an outstandingly remarkable value.***

BOTANY

Determination of Outstandingly Remarkable Values: Relatively open bunch grass slopes border the lower stretches of the river, above the confluence of the Wenaha and the Grande Ronde Rivers. As the river climbs in elevation, a typical north slope timber complex can be seen extending into adjoining draws, gradually changing to a forested landscape in the upper reaches of the drainage. In the forested portions of the corridor Douglas-fir and ponderosa pine dominate the overstory. Cottonwoods are quite common within the floodplain. The dominant understory is white fir. Common snowberry, mountain alder, willow, serviceberry, oceans pray and red-osier dogwoods are common understory shrubs, characteristic of streamside vegetation.

In general there is little disturbance of bank vegetation despite a history of traditional use by hunters, pack-stock grazing and use.

There are several inventoried Old Growth stands within and adjacent to the study corridor.

For more than 70 years, the exclusion of natural fire within the Wenaha-Tucannon Wilderness was considered beneficial. However, fire exclusion caused ecological change. The lack of periodic, low intensity fire has caused the ecosystems that were maintained by fire to exhibit increases in the accumulation of forest fuel, increased stand density, and species changes to shade tolerant varieties growing in multi-layered stands. Many of these changes have predisposed portions of the wilderness to catastrophic fires. Pockets of dead, standing trees or stands weakened by insects and disease also increase the forest's susceptibility to fire. The Wenaha river corridor, particularly the more densely forested upper reaches, characterize these ecological changes. A prescribed natural fire plan will allow fire to resume its natural role.

Endemic levels of insects that damage or stress individual trees have always existed. Occasionally high incidence of these insects, within a relatively small area, is a natural occurrence. Douglas-fir tussock moth, larch case bearer, Douglas-fir beetle, and western spruce budworm are insects that have caused the most concern in recent years. Western spruce budworm populations have reached epidemic proportions on the south end of the Umatilla National Forest, particularly effecting Douglas-fir and white fir host species. Portions of the Wenaha- Tucannon Wilderness have experienced peripheral effects of this epidemic, which causes defoliation, stress and mortality in host species. Western spruce budworm has no predictable pattern or trend that can be reliably used to gauge future epidemics; therefore, predicting the impact of this epidemic on the study corridor is only speculative.

Plant surveys are generally not completed for T&E species in wilderness, unless historic reports have identified "hot spots" or there is knowledge of a direct threat to the species survival. Justified by known historic occurrence of TES species, or by inventoried of noxious weeds along trail and river corridor, plant surveys were conducted in several portions of the Wenaha River corridor in 1988, 1994, and 1998. Several populations of the formerly-listed sensitive fern Dryopteris filixmas occur along both the North and South Forks. A large population of the regionally sensitive sedge Carex backii grows along the lower North Fork, just above Wenaha Forks. In addition, the corridor exhibits high potential habitat for the Clustered Lady Slipper Orchid (Cypripedium fasciculatum). Based on observed impact to known populations, current and past use has not appeared to negatively influence these populations.

> **Finding:** The Wenaha study area ***contains outstandingly remarkable botanical/ecological values.*** The large elevational range, little disturbance to bank vegetation, and presence of old growth habitat are the main special attributes. There is a high likelihood that sensitive or threatened species are located within the corridor.

WATER QUALITY

Determination of Outstandingly Remarkable Values:
Water quality is considered to be good to excellent for both the North Fork and South Fork of the Wenaha River.

Finding: ***Water quality is not considered to be an outstandingly remarkable value.***

CLASSIFICATION:
Eligibility Determination:
The North and South Fork Wenaha River meets the minimum eligibility requirements as specified by the Wild and Scenic Rivers Act. It is found to be free-flowing and current information supports the findings that outstandingly remarkable scenic, fisheries, and botanical/ecological values are present in the river corridor.

SEGMENT 1 North Fork Wenaha River Origin To Confluence With Mainstem Wenaha River.

This section of river has the following attributes and eligibility:
Water Resources Development: Free of impoundments.
Shoreline Development: Essentially primitive.
Accessibility: Generally inaccessible.
Water Quality: Good to excellent
WSR Eligibility: Wild

SEGMENT 2 South Fork Wenaha River Origin To Confluence With Mainstem Wenaha River.

This section of river has the following attributes and eligibility:
Water Resources Development: Free of impoundments
Shoreline Development: Essentially primitive
Accessibility: Generally inaccessible.
Water Quality: Good to excellent
WSR Eligibility: Wild

Sheep Creek

Location: This area is entirely in Columbia County, Washington. This ½ mile reach of Sheep Creek starts at it's terminus in Township 8 North, Range 41 East, Section 12, Willamette Meridian and extends southward ¼ mile past Sheep Creek Falls in Township 8 North, Range 41 East, Section 1. Elevation ranges from 4,000 feet to 3,700 feet above sea level.

Sheep Creek can be found by traveling east on Forest Road 4713 to the Tucannon Trailhead. Sheep Creek flows into the Tucannon River at River Mile 52.

River Mileage:
Studied: 0.5 miles
Eligible: 0.5 miles

Eligibility:
Determination of Free-flow: The streambed and bank are affected only by natural processes.

Finding: ***The study reach is found to be free flowing.***

SCENERY

Determination of Outstanding Remarkable Values: Sheep Creek Falls is a scenic location that specifically attracts visitors to this area. This 15 - 20 foot water fall tumbles to a large pool at its base. It has been long noted for its unusual vegetation. Flora accompanied by rock walls of overhanging moss and spring water creates an aesthetic environment that has been shared by many local travelers. Observing scenery outside this reach is difficult because of steep terrain, shaded by large conifers and confinement to the bottom of the canyon. Scenery within the corridor is special and unique. It has been designated as a botanical area because of rare plant species only viewable in this reach.

> **Finding:** This geographic region has several other rivers, which are used and valued by recreationists for their scenic beauty. ***Scenery is judged to be an outstandingly remarkable value.***

RECREATION

Determination of Outstanding Remarkable Values: Recreational opportunities are limited in this area. The study corridor is accessible by traveling to the end of Forest Road 4712. From the trailhead, travel within this reach is limited to trails and cross-country travel. Therefore, the scenic attributes of the river can only be seen from the perspective of the hiker or visitor. Motorized travel does not extend past the road. Camping locations are limited. This area can't support more than a few individuals at any one time. Fishing restrictions are in place. Loop trails aren't available for cyclists. Hunting, mushroom, berry picking, and viewing of the Sheep Creek Falls are the major attractions to this location.

> **Finding:** While the area does offer a number of outstanding features, the recreational opportunities are too limited to attract visitors from outside the local area. For this reason, ***Recreation is judged not to be an outstandingly remarkable value.***

WILDLIFE

Determination of Outstanding Remarkable Values: The wildlife species that inhabit Sheep Creek are found throughout all of the Blue Mountains of northeast Oregon and southeast Washington. These include Rocky Mountain bighorn sheep, mule deer, whitetail deer, Rocky Mountain elk, black bear, cougar, bobcat, coyote, beaver, otter, blue and ruffed grouse, turkey, lazuli bunting, ring-necked snake, western rattlesnake, rubber boa and other small mammals, birds, reptiles and amphibians. Threatened, endangered, sensitive and unique species that also occur in this area include wolverine.

Wildlife habitat in the Sheep Creek area varies from high elevation spruce, fir, and lodgepole pine forests to low elevation riparian and grassland steppe habitats. Mid-elevations are characterized by ponderosa pine, Douglas fir, and grand fir forests on north and east slopes with south and west slopes and ridge tops dominated by bunchgrasses and forbs. The open, grassy slopes at the lower elevations are used heavily by elk, deer, and bighorn sheep for winter range. Higher elevations are summer range, some of which are important elk calving areas. The elk and deer herds help support a strong population of predators such as cougar and black bear.

Wildlife populations and diversity of habitats within Sheep Creek drainage are not strictly river related (Rocky Mountain elk and bighorn sheep). Opportunities for consumptive and non-consumptive use of these resources are many and varied. Big game populations attract people statewide as well as out of state.

Finding: Wildlife populations, though noteworthy, are not dependent on the river corridor as a critical component of their habitat and are well represented throughout the area of consideration. The evaluation of present conditions finds that populations and habitat do not make wildlife an outstandingly remarkable value. Sheep Creek ***has no outstandingly remarkable wildlife value.***

FISHERIES

Determination of Outstanding Remarkable Values: Sheep Creek is one of the main tributaries of the Tucannon River. It represents about ¼ of total flow at that point of the Tucannon River. Fish bearing habitat in Sheep Creek is limited to just over ¼ miles of spawning and rearing habitat. Within the Sheep Creek subbasin, three primary aquatic species are listed as threatened: Steelhead, Bull Trout, and Spring Chinook. Threatened status means that the listed group is likely to become endangered (in danger of extinction) within the foreseeable future throughout all or a significant portion of its range or Evolutionary Significant Unit (ESU). Following is a record of when these species were listed as threatened:

- The Snake River Basin steelhead ESU, which includes Sheep Creek summer steelhead, was listed as threatened under the Endangered Species Act (ESA) in 1997.
- The Snake River spring/summer Chinook ESU, which included Sheep Creek spring Chinook, was listed under the ESA in 1992.
- Bull Trout in the Columbia Basin, including the Sheep Creek, were listed as threatened in 1998.

Riparian and aquatic habitat conditions are good to excellent along the entire Sheep Creek riparian corridor. Results of a stream survey conducted in 1992 indicate excellent habitat of cold clean water. The survey reports that spawning gravels, woody debris, pool and glide habitats occur in ample supply. The river exhibits good fish cover habitat, good overall bank stability, abundant riparian shrub growth, large boulders and bedrock-oriented pools adding to bank stability and holding water are plentiful. The survey indicated a passage problem and channel restriction that was the result of Forest Road 4712. Culvert and road structures were removed in 2000.

Spring Chinook (*Oncorhynchus tshawytscha*) do not spawn in Sheep Creek. Individual juveniles may occupy this reach but were not noted in significant numbers. Plenty of rearing habitat is available within the mainstem Tucannon River. Spawning Chinook this far up in the Tucannon are rare and are probably temperature limited, because of cold water optimums.

Summer steelhead (*Oncorhynchus mykiss*) have been known to utilize Sheep Creek but in relatively small numbers. Adults are not known to spawn in this reach but juveniles probably do take advantage of the rearing habitat available. The dominant fish in this area is Redband trout. They too seem limited to the base of the falls. Fish have not been observed above the falls.

Resident and migratory forms of Columbia River bull trout (*Salvelinus confluentus*) occur in Tucannon River subbasin. Bull trout spawning ground surveys have been conducted intermittently since 1990. Sheep Creek has been known to support bull trout spawning up to the falls. The gradient of the channel does not support a very high density of spawning habitat but surveys found numerous juveniles rearing within the stream channel taking advantage of the cold water rich with macro-invertebrates. Both resident and adfluvial forms are present. Fish as large as 18 inches have been observed at the base of the falls.

Other fish populations known to inhabit the river are: mountain whitefish, rainbow trout, and sculpins (including the margined). This stream is also noted for several species of caddis fly. One of those species yet to be specifically identified builds it casing from organics which include very small snails and clams. These snails and clams too may be rare and have not been identified as to species. Identification is pending, but does indicate the nature of cold, clean water habitat present.

Other sensitive aquatic species of concern are; Blue Mountain Cryptochian (*Cryptochia neosa* S), Lynn's clubtail dragonfly (*Gomphus lynnae* PS), Redband trout (*Oncorhynchus mykiss* S), West slope Cutthroat Trout (*Salmo clarkii lewisi* S), Margined sculpin (*Cottus marginatus* PS), Columbia Spotted frog (*Rana luteiventris* PS), Tailed frog (*Ascaphus trucei* (PS), Painted Turtle (*Chrysemys picta* PS), Northern Leopard Frog (*Rana pipiens* PS), Columbia Duskysnail (*Lyogyrus n. sp. 1* (PS). Typically, but not all, these species life stages and habitats require cold, clean water that the Sheep Creek represents.

> **Finding:** Sheep Creek contains native Chinook salmon, bull trout and steelhead, which are listed as threatened under the ESA. Bull trout populations in Tucannon River are considered isolated and unique. Habitat is attributed to Tucannon River mainly due to natural barriers that make this section of Sheep Creek studied only ½ mile. The findings of this resource assessment are that ***fisheries habitat and populations are not outstandingly remarkable values.***

HERITAGE

Determination of Outstandingly Remarkable Values: Results of cultural resource surveys conducted in the Sheep Creek corridor, as well as ethnographic information, attests to both historic and prehistoric use of this area. Several documented sites are considered eligible for listing on the National Register of Historic Places.

> **Finding:** Identified and documented sites are not rare, unusual, or one-of-a-kind but are similar to others found in the region. Based upon existing knowledge and data, ***Sheep Creek corridor does not exhibit outstandingly remarkable cultural resource values***.

GEOLOGY

Determination of Outstandingly Remarkable Values: Sheep Creek is a high gradient stream incised into the basalt ridges of the Tucannon watershed. A waterfall about ¼ miles from the mouth provides scenic interest. No unusual or remarkable features of geology or channel morphology are present in this drainage.

Finding: Geologic values of Sheep Creek ***are not identified as an outstandingly remarkable value***.

BOTANY

Determination of Outstandingly Remarkable Values: Complete species botanical surveys have been conducted in the Sheep Creek area, including some preliminary surveys for non-vascular species. While no rare or sensitive species have been documented, the plant communities within the riparian corridor are unique on the Umatilla National Forest. Sheep Creek Falls area is especially rich in Cascadian "refugium" species.

The microhabitat created around Sheep Creek Falls supports Devil's Club, Male Fern, Maidenhair Fern, and the formerly-listed sensitive Pine Broomrape. The Devil's Club is a significant population. The Sheep Creek Falls area also provides outstanding habitat potential for several newly listed non-vascular plant species (mosses and lichens). Comprehensive surveys have not yet been conducted, but initial visits have yielded two formerly-sensitive species of the moss genus *Buxbaumia*.

Finding: The plant communities are unusually diverse and represent some uncommon species. The Sheep Creek Falls refugium is the basis for a specially designated botanical area and is a recreation attraction. The evaluation of present conditions finds that ***the botanical/ecological communities do have outstandingly remarkable values.***

WATER QUALITY

Sheep Creek is one of the cold headwater tributaries to the Tucannon River. Water temperature and sediment load have not been influenced by human actions and are the result of natural processes. Many examples of this water quality regime exist within the northern Blue Mountains.

Finding: Water quality values of Sheep Creek ***are not identified as an outstandingly remarkable value.***

Classification:
Eligibility Determination: Sheep Creek meets the minimum eligibility requirements as specified by the Wild and Scenic Rivers Act. It is found to be free-flowing and current information supports the findings that outstandingly remarkable scenic and botanical/ecological values are present in the river corridor

This section of river has the following attributes and eligibility:
Water Resources Development: Free of Impoundment.
Shoreline Development: Evidence of human activity.
Accessibility: Accessible by road.
Water Quality: Water unpolluted.
Wild and Scenic River Eligibility: Recreational

South Fork Desolation Creek

Location: South Fork Desolation Creek headwaters are located within the Vinegar Hill Indian Rock Scenic Area. The stream flows 8.7 miles northwest to its confluence with Desolation Creek. The general width of the study corridor extended for at least one-half mile on either side of the center of the channel. Attributes common to the general area were also noted. This area lies in Grant County between the stream origin in Section 9, T.1OS., R.34E., W.M., and its confluence with the North Fork Desolation Creek in Section 1, T.9S., R.33E., W.M.

River Mileage:

Studied: 8.7 miles
Eligible: 8.7 miles

Eligibility

Determination of Free-flow: A number of fish structures (log weirs and cabled boulders) have been installed on the mainstem waterway through national forest, the upper most occurring just above the confluence of the North and South forks of the creek. These are simple structures, resembling natural instream conditions, and do not significantly obstruct free-flow. Previously there were three culverts were installed in a series to allow the creek to flow under a roadway (road 45). Those three culverts have since been replaced with an arch, thus allowing the stream to remain in a free-flowing condition.

Finding: ***South Fork Desolation Creek is found to be free flowing.***

SCENERY

Determination of Outstandingly Remarkable Values: At the mouth of the South Fork, subalpine conditions begin to dominate. The stream channel becomes more defined above the South Fork trailhead, though not deeply entrenched. Stream gradient increases, small falls and chutes are common, and three larger falls (10-15 feet tall) occur at about river mile 3. Surrounding vegetation is generally closed canopy mixed conifer or lodgepole forest with an open understory. Occasionally an intrusion of exposed granitic or basaltic rock adds diversity to the landscape. Near the headwaters, a well defined basin arcs around a large alpine meadow complex. An expansive panorama is available here and wildlife viewing opportunities increase.

Finding: South Fork Desolation Creek possesses diverse scenery, from large panoramic views to dense forests to subalpine meadows. Although diverse and pleasing, the scenery is well matched in other areas of the Blue Mountains Region. It does not posses any outstandingly remarkable scenic values.

RECREATION

Determination of Outstandingly Remarkable Values: Typical recreation activities within the corridor include camping, hiking, fishing, and big game hunting. The corridor contains a roadless trailhead accessing trail networks outside of the study corridor. The creek is not suitable for boating, floating, swimming or similar water-oriented activities.

Recreation use on summer weekends is moderate within the roaded portion of the corridor, but light in the unroaded portion. Outside of fall hunting season, a visitor can

expect to encounter almost no other users on trail systems in the area during weekdays and very few on weekends throughout the summer. The combined amenities of a large big game population, good roaded access to the trailhead, adjacency to large, remote backcountry areas, and desirable campsite locations make the South Fork Desolation Creek area a destination for many non-local hunters in the fall.

> **Finding:** While offering good opportunities for solitude and big game hunting, these experiences are not rare or unique to the region. ***South Fork Desolation does not contain any outstandingly remarkable recreational values.***

WILDLIFE

Determination of Outstandingly Remarkable Values: The wildlife populations found within the study are diverse and thought to be generally stable. Some species found within the area include black bear and bobcat. No threatened, endangered, or sensitive species are known to be dependent on the amenities found within the study corridor.

> **Finding:** ***South Fork Desolation Creek is found to posses no outstandingly remarkable wildlife values.*** The study area is representative of much of the Blue Mountain range.

FISHERIES

Determination of Outstandingly Remarkable Values: The lower three miles of South Fork Desolation Creek provides spawning habitat for: summer steelhead (threatened), Chinook salmon (sensitive), redband trout (sensitive), and Columbia River bull trout (threatened). The upper six miles above the barrier falls is occupied by an isolated population of bull trout and westslope cutthroat trout (a sensitive species). These isolated fish populations may have significance as a genetic resource and downstream barriers increase the stream's value for bull trout by isolating them from introduced brook trout. Limited numbers of Chinook have been found in the area. The area produces a moderate run of steelhead. Habitat found in the study area is considered good.

> **Finding:** While the area is found to produce good spawning habitat and isolated fish populations are considered to be a significant genetic resource, better fisheries values have been observed in the area in such places as the Wenaha River. ***South Fork Desolation Creek does not possess any outstandingly remarkable fisheries resource values.***

HERITAGE

Determination of Outstandingly Remarkable Values: Historic and ethnographic sources make clear that the area has been utilized for camping, fishing, hunting and gathering, by both historic and prehistoric peoples. Ethnographic groups that inhabited the region most likely utilized this landscape during seasonal subsistence rounds. Very few heritage resource surveys have been conducted in the stream corridor.

> **Finding:** ***South Fork Desolation Creek is not found to possess any outstandingly remarkable historic or pre-historic features.*** The study area is representative of many streams and drainages found in the Blue Mountain area.

GEOLOGY/HYDROLOGY

Determination of Outstandingly Remarkable Values: The headwaters of South Fork Desolation Creek are located in an ancient seafloor complex, with dioritic intrusions and relatively recent glacial activity. The green colored serpentine in the seafloor complex gives the Greenhorn Mountains their name. These unusual rocks combine to form the northwest corner of the Vinegar Hill Indian Rock Scenic Area. Mapped geologic structure consists of two normal faults and an anticline, all trending ESE to WNW.

> **Finding:** While considered to be unusual, the geological formations are not considered to be regionally unique or rare. ***The study area does not contain any outstandingly remarkable geological or hydrologic values.***

BOTANY

Determination of Outstandingly Remarkable Values: Examples of sub-alpine vegetation generally display associations typical of the Blue Mountains of the Umatilla Forest (subalpine fir/huckleberry, subalpine fir/whortleberry, and subalpine fir/forb mesic). However, the sub-alpine meadow complex (particularly South Fork Desolation Meadow near the headwaters) is exemplary of large sub-alpine wet meadow complexes, encompassing roughly 80 acres. In addition, the aftermath of wildfire is visible from many vantage points and various stages of recovery are visible across the landscape. The exemplary displays of sub-alpine meadow complexes and fire dependant ecosystems are not only valuable for their contribution to the areas diversity; they also provide outstanding opportunities to interpret these biotic environments. Non-sensitive moonworts have been found in headwater meadows, and a biscuitroot that may be "new to science" has been documented near Dupratt Springs.

There was extensive sheep grazing in the early 1900s that resulted in conversion of many drier grassland plant communities to domination by fleeceflower and other "increaser" forbs with a decrease in grass cover and diversity.

> **Finding:** Regionally unique and rare plants have been identified in the high elevation meadows along the stream corridor. The stream corridor displays a broad range of botanic diversity due to the fire dependent ecosystems. ***The ecological diversity is exceptional and exhibits outstandingly remarkable values for botany and plant ecology.***

WATER QUALITY

Determination of Outstandingly Remarkable Values: The water quality of South Fork Desolation Creek is good. The creek discharges a cold, clear supply of water into Desolation Creek. Stream sediment and temperatures are well within the state standards for water quality. Even so, the water quality of South Fork Desolation Creek is not unique to the area

> **Finding:** ***The water quality of South Fork Desolation creek does not exhibit any outstandingly remarkable values.***

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CLASSIFICATION

Eligibility Determination: South Fork Desolation Creek meets the minimum eligibility

requirements as specified by the Wild and Scenic Rivers Act. It is found to be free-flowing and current information supports the findings that outstandingly remarkable botanical/ecological values are present in the stream corridor.

This section of river has the following attributes and eligibility:
Water Resources Development: Free of Impoundment.
Shoreline Development: Essentially primitive.
Accessibility: Generally Inaccessible except by trail.
Water Quality: Water unpolluted.
WSR Eligibility: Wild.

Tucannon River

Location: That reach or part of the river which lies within the boundaries of the Forest can logically be divided into the following four segments: (1) Origin near Mt. Misery to mouth of Sheep Creek, (2) Mouth of Sheep Creek to Panjab Creek, (3) Panjab Creek to Tucannon Guard Station (property boundary), and (4) Tucannon Guard Station to the Forest Boundary.

Segment 1 is located in Columbia and Garfield Counties between its origin in Section 36, T.8N., R.42E., W.M., and mouth of Sheep Creek in Section 1, T.8N., R.41E., W.M. This section of river has an average gradient of 5.4 percent, an average width upstream from Bear Creek of 13 feet and downstream of 20 feet, and is about 3,500 feet in elevation at the mouth of Sheep Creek.

Segment 2 is located in Columbia County between the mouth of Sheep Creek on the west edge of Section 1, T.8N., R.41E., W.M., and the junction of Panjab Creek in Section 5, T.8N., R.41 E., W.M. This section of river has an average gradient of 2.1 percent, an average width of 26 feet, and is about 3,000 feet in elevation at Panjab Creek. The north shore of the river, through this segment, is a part of the north boundary of the Wenaha- Tucannon Wilderness. All of this section of river is within the Wenaha-Tucannon Wilderness.

Segment 3 is in Columbia County between the junction with Panjab Creek in Section 5, T.8N., R.41 E., W.M., and property boundary near the old Tucannon Guard Station at the north edge of Section 21, T.9N., R.41 E., W.M. This section of river has an average gradient of 1.6 percent, an average width of 37 feet, and is about 2,650 feet in elevation at the Tucannon Guard Station.

Segment 4 is in Columbia County between the junction with Panjab Creek in Section 5, T.8N., R.41 E., W.M., and the Forest Boundary on the north edge of Section 2, T.9N., R.41E., W.M. This section of river has an average gradient of 1.6 percent, an average width of 37 feet, and is about 2,300 feet in elevation at the Forest Boundary.

River Mileage: Indicate the entire miles of river studied and portion determined eligible.
Studied: 22.3 miles
Eligible: 22.3 miles

Eligibility

Determination of Free-flow: The stream bed and bank from headwaters to Camp Wooten are undisturbed except for one trail and two bridged road crossings. Substantial diking and channelization has occurred downstream from Camp Wooten (segments 3 and 4). The diking and channelization is not readily apparent to the casual observer because streambank vegetation is largely recovered. Enough natural recovery has occurred to retain the natural and riverine appearance. A few small diversions of water into fishing ponds occur in segment 4. A low dam and appurtenant structures near Rainbow Lake dominates the stream and disqualifies the river as a free-flowing river at that point (approximately 1 1/2 miles downstream below the study segment).

Finding: ***The study segments are found to be free-flowing.***

SCENERY

Determination of Outstandingly Remarkable Values: The Tucannon River flows through some of the most sharply dissected country in the geographic area. Most of the scenery in the Tucannon drainage is inventoried as 'distinctive' variety class. The features of landform, vegetative patterns, and rock formations are of unusual or outstanding visual quality. These scenic qualities are not common in the Blue Mountain character type, although nearby drainages (e.g., Touchet, Asotin, Wenatchee, and Wenaha) are similar, because the multitude of steep ridges and deep draws typical of the Blue Mountain landscape character is intensified and emphasized to a higher degree along portions of this river than most places in the Blues. The steep slopes have dissected, uneven, sharp exposed ridges. Several basaltic rock form features stand out on the landform. There is a high degree of patterns in vegetation. Hardwoods in the riparian area give good seasonal coloration. The streams have several flow characteristics, riffles and pools.

Generally, in the Blue Mountains, any foreground and distant views include obvious visual evidence of human activity. This is not the case along the study segments of the Tucannon River. The upper portion (segment 2) of the Tucannon River is bordered by the Wenaha- Tucannon Wilderness for over four miles upstream from the confluence with Panjab Creek. The slopes beyond the end of the road (#2712) are essentially natural appearing and unroaded (Segment 1). Occasional views upward from the river corridor gives a sense of the upslope ruggedness. Road access from the north affords the opportunity to view unmanaged panoramas of outstanding quality from the top of the breaks or higher vistas.

The vast majority of viewing scenery associated with the Tucannon is done from the road and trail (the river is not floatable). Downstream from the Little Tucannon River junction, the Tucannon River flows through non-National Forest system lands. Road 47 is visible from the river in places and evidence of recreation developments is more often encountered. The topography, however, remains steep and sharply dissected.

Most views from the river or study corridor is confined to the foreground, with only occasional distant views. Road 47 and 4712 follows the river course from the Forest boundary to approximately 1/2 mile above Sheep Creek. Although the road is sometimes close to the river, it is generally not visible from the river, nor is the water often seen from the road. The Tucannon River Trail 3135 continues near the stream from the road-end

for another 3.6 miles; Trail 3110 climbs to the top of the ridge, both directions from its intersection with 3135.

Vegetation along the river ranges from coniferous tree stands and stringers to riparian deciduous plants to grass slopes. This range of vegetation, with its seasonal changes in color and texture, greatly adds to the scenic quality of the setting along the Tucannon River.

> **Finding:** This geographic region has several other rivers which are used and valued by recreationists for their scenic beauty. The adjacency of the Tucannon River to the Wenaha- Tucannon Wilderness and other wild land makes this river special however; the relatively easy access to this river results in large numbers of recreationists being attracted to the river and appreciating the natural scenic quality in the river corridor.
>
> Although the combination of rugged terrain and range of vegetation is regarded as a special place by many people in the local area, similar attributes occur in other parts of the area of comparison**. *Scenery is judged not to be an outstandingly remarkable value.***

RECREATION

Determination of Outstandingly Remarkable Values:
Visitors to the Tucannon River canyon pursue a wide variety of activities: fishing, hunting, photography, nature study, wildlife observation, mushroom picking, and camping. Camping and picnicking (often associated with hunting and fishing) is by far the heaviest use. The river is not suitable for floating. Numerous undeveloped campsites dispersed within the river canyon provide opportunities for visitors who are seeking a more unconfined and informal form of recreation. However, several of the campsites have recently been closed or restricted to allow recovery of riparian conditions near the streambanks. Use is being displaced to other sites within the drainage, and is likely to be unsettled for a few years until visitors become attuned with sharing salmon habitat.

The Tucannon drainage receives quite heavy recreation use from anglers and hunters from March thru November. Trout fishing is popular, mostly for hatchery-stocked rainbow trout in the river and adjacent man-made impoundments along the river. Hunting elk and whitetail deer draws people from throughout the state, and some nonresidents. Turkey hunting is gaining interest. In addition the heavy use during the big game hunting season, hunters come to the area during the summer for scouting purposes, and also return the following summer for a family outing after discovering the area during the hunting season.

In addition to being its own attraction, the Tucannon serves as a very important access route and jump-off point to the Wenaha- Tucannon Wilderness. The Panjab-Little Turkey-Rattlesnake-Dunlap Spring trail network is the most used portion of the wilderness. The Panjab Trailhead serves the most wilderness visitors, on a season-long basis, of any entry point. The Tucannon is also an important access to Godman-Teepee and Meadow Creek areas for recreation activities. The setting of the study corridor is an integral and complimentary component of the adjacent wilderness and recreation opportunities.

A paved road extends from the confluence of the Tucannon River with the Snake River near the townsite of Starbuck to the Tucannon Campground. A well maintained, wide gravel road extends to the Panjab Creek confluence. The last five miles is a nice single-lane, gravel road with turnouts. A small, confined trailhead facility is located at the end of Road 4712.

The portion of the corridor adjacent to the road lacks remoteness; seldom' are people removed from the sights and sounds of human activity. Individuals can find remoteness by hiking the trail. A moderate to high contact between people when on roads and while in campgrounds is the norm. Fewer than six parties are met per day along the trail. The corridor has traditionally had very little regulation and control on visitors.

Information facilities and services, and camping facilities and site development is at a relatively low level. Basic camp and picnic facilities are provided at the Tucannon Campground. Vault toilets are available at three additional sites. Other campsites have very little development. Camp Wooten is a group camp operated as one of Washington's environmental learning centers, especially for youth groups.

The geographic area for local participation is basically the Washington Counties of Asotin, Columbia, Garfield, and Walla Walla. Traffic counters indicate more than 140,000 visits to use the corridor each year. The area is considered to be a regional destination attraction. The Tucannon is one of the most convenient mountain-stream setting to the Tri-Cities area; much of the use from Tri-Cities (and local towns) is on a day-use basis. The river is also a popular destination for Spokane residents, and increasingly from the Vancouver and I-5 corridor area.

About 35 percent of the use originates in Tri-Cities and Spokane. Another 15 percent comes from elsewhere in Washington and Oregon. About ten percent of the users find there way from other states.

Use is heavy on weekends and extremely heavy during special events (e.g., free fishing days). Moderate levels of use occur during weekdays. Use by many local residents has been displaced because use levels are now higher than they prefer.

Several undeveloped interpretive opportunities are present: Tucannon Guard Station, Salmon/Steelhead fisheries, Civilian Conservation Corps, Wilderness, riparian ecology, Sheep Creek refugium, winter range, fish hatcheries, Wooten Nature Trail, etc.

> **Finding:** Because of this river setting, a substantial portion of the use originates outside the local area. The river-related environment is the focal attraction, particularly attractive to visitors from the more-arid parts of the State seeking sightseeing, camping, fishing, wildlife viewing, photography, hiking and other outdoor activities in a natural appearing landscape. Interpretive, though presently untapped, are varied and have potential to reach a wide audience.
>
> The evaluation of present conditions finds that the river-related settings make ***recreation an outstandingly remarkable value***

WILDLIFE

Determination of Outstandingly Remarkable Values:
Populations The wildlife species that inhabit the Tucannon River drainage are found throughout all of the Blue Mountains of northeast Oregon and southeast Washington. These include Rocky Mountain bighorn sheep, California bighorn sheep, mule deer, whitetail deer, Rocky Mountain elk, black bear, cougar, bobcat, coyote, beaver, otter, blue and ruffed grouse, valley quail, chucker, turkey, lazuli bunting, ring-necked snake, western rattlesnake, rubber boa, and other small mammals, birds, reptiles and amphibians. The cyclical Whitetail deer population density is now among the highest in the U.S. Threatened, endangered, sensitive and unique species that also occur in this area include bald eagle and wolverine

Habitat Wildlife habitat in the Tucannon River watershed varies from high elevation spruce/fir/lodgepole pine forests to low elevation riparian and grassland steppe habitats. Mid elevations are characterized by ponderosa pine/Douglas fir/grand fir forests on north and east slopes with south and west slopes and ridgetops dominated by bunchgrasses and forbs. The open, grassy slopes at the lower elevations are used heavily by elk, deer and bighorn sheep for winter range. Higher elevations are summer range, some of which are important elk calving areas. The elk and deer herds help support a strong population of predators such as cougar and black bear.

The old growth stands of fir and spruce along the Tucannon River are rich in both wildlife and plant species. The wide and diverse riparian zone is rich in habitat for small birds, amphibians, reptiles and small mammals.

The wildlife populations and diversity of habitats within the Tucannon River drainage are regarded by many as being among the most unique and spectacular in the state of Washington, but are not strictly river related (e.g.. elk, Rocky Mountain Bighorn sheep). Opportunities for consumptive and non-consumptive use of these resources are many and varied. Big game populations, especially whitetail deer attract people statewide as well as out of state.

> **Finding:** The wildlife populations, though noteworthy, are not dependent on the river corridor as a critical component of their habitat and are well represented throughout the area of consideration. The evaluation of present conditions found that populations and habitat ***do not make wildlife an outstandingly remarkable value****.* The Tucannon River has no outstandingly remarkable wildlife value.

FISHERIES

Determination of Outstandingly Remarkable Values:
Populations The Tucannon River supports fish populations which are of regional and national importance. Within the Tucannon Subbasin four primary aquatic species are listed as threatened: Steelhead, Bull Trout, Spring Chinook and Fall Chinook.

- Snake River Basin steelhead Evolutionary Significant Unit (ESU), which includes Tucannon River summer steelhead, was listed as threatened under the Federal Endangered Species Act (ESA) by NOAA Fisheries in August of 1997 (62 FR 43937).

- Snake River spring/summer Chinook ESU, which included Tucannon River spring Chinook, was listed under the ESA in 1992 (57 FR 14653).
- Snake River fall Chinook ESU, which included Tucannon River fall Chinook, was listed under ESA in 1992. NMFS 1992)
- Bull Trout in Columbia Basin, including the Tucannon River, were listed as threatened under ESA in 1998.

Information on the historical distribution and abundance of Tucannon spring/summer Chinook is not available; however, Washington Department of Fish and Wildlife (WDFW) 2004, estimates Tucannon River spring/summer Chinook abundance at 30,000 adult spawners prior to 1916. The run averaged 316 wild fish annually between 1985 and 2002. A spawning index area monitored by WDFW since 1954 shows a long-term decline in spring/summer Chinook redds. Spring/summer Chinook use of the area above Panjab Creek also has decreased substantially since the mid-1980s (WDFW 2004) (Tucannon River Subbasin Summary Draft 2004).

Releases of non-native, hatchery-reared spring/summer Chinook have occurred in the Tucannon River since the early 1980s and returning hatchery-origin adults have contributed to its spawning population. The Tucannon River spring/summer Chinook population is likely sustained by hatchery production (WDFW 2004).

Tucannon River spring/summer Chinook salmon population declined significantly in 1994 and 1995, reducing the population to only 54 adult fish. In response to this decline, WDFW collected the majority of the run in 1995 for hatchery broodstock in an effort to maximize survival and maintain the population. It should be noted that non-native, hatchery-reared spring/summer Chinook have never been released in Tucannon River

Tucannon River steelhead populations are distributed throughout the Tucannon River and its tributaries. StreamNet (2004) and WDFW (2004) report steelhead spawning and rearing activity in the Tucannon River and several of its tributaries, including Tumalum and Cummings creeks. Redd densities are highest in the mainstem Tucannon from its confluence with Pataha Creek upstream to Marengo (RM 12.0 to 26.0), while the lowest densities were found in the Tucannon River from its confluence with the Little Tucannon River upstream to its confluence with Bear Creek (RM 46.2 to 56.5). Juvenile densities (age 1+ steelhead/redband trout) exhibit different distributions; they are highest in Cummings Creek, a Tucannon River tributary that enters at RM 36.5, and to a lesser extent in a river segment a few miles downstream (Marengo to the confluence with Tumalum Creek - RM 26.0 to 34.3).

Columbia River bull trout; Resident and migratory forms of bull trout occur in the Tucannon River basin. Radio-tagging studies have shown that bull trout spawn in headwater areas of the Tucannon River and use the remainder of the river for migration. Bull trout spawning ground surveys have been conducted intermittently since 1990. The headwater areas known to support bull trout spawning include the upper reaches of the mainstem Tucannon (from Panjab Creek to a point above Bear Creek) and upper Tucannon tributaries including Cummings Creek, Sheep Creek, Cold Creek, Bear Creek, Panjab Creek, and several tributaries of Panjab Creek, including Turkey Creek, Meadow Creek, and Turkey Tail Creek.

Some historical records would suggest that runs of pink salmon used to utilize the mid and lower reaches. This run was thought to be completely extinct. However, a couple of

carcasses were recovered during spawning surveys on the lower section of river. A few unsubstantiated reports indicate others may be present including more recent carcasses of Coho salmon. Fall Chinook also use the lower river reaches near the mouth. These fish were thought to be strays from the Lyons Ferry Fish Hatchery and Umatilla River. However, stream surveys before hatchery construction also found fall Chinook in the same areas.

An extensive hatchery program exists on the Tucannon River. Two hatcheries exist for the Tucannon stock, the Tucannon Hatchery and the Lyons Ferry Hatchery. Both hatcheries are an integral part of the Snake River Compensation Plan facilitated by State and Federal agencies. It is believed that the hatchery program has maintained steelhead and Chinook salmon's survival in the Tucannon River.

Salmon play an important role with the local American Indian tribes. These fish are considered sacred to both the Nez Perce and Umatilla Confederated tribes. The Tucannon River is considered the transition area between tribal fishing areas. Both tribes take salmon from the river for ceremonial purposes.

Habitat The uppermost 15 miles of river offer mostly pristine, high quality water and natural conditions with several miles bordering the Wenaha- Tucannon Wilderness of the Umatilla National Forest. The remainder is located in a road less managed viewshed. This area is noted for its beauty and natural existence. Pools and woody debris are more prominent in the reach beyond the road. In Tucannon subbasin, spring/summer Chinook are restricted to portions of the mainstem Tucannon River, with little or no use of its tributaries (WDFW 2004c). Spawning occurs in Tucannon River from the mouth of Sheep Creek downstream to King Grade. Spawning has not been observed in any Tucannon River tributaries (WDFW 2004c).

In the late sixties and early seventies, a major channelization program began to increase flood control. This project destroyed fish habitat, changing the river character from meandering condition of deep pools and side channels to a diked embankment system. The stream was completely channelized from Wooten Bridge downstream. Pools were filled in and woody vegetation removed from the river.

A fish weir exists at the outlet of the Tucannon fish hatchery. This weir does prohibit fish migration and is operated to retrieve hatchery Chinook for smolt production purposes. This fish trap is a permanent structure, but is left open during non-use periods to allow free passage of fish. A small, metal dam impounds water and diverts it for use in Rainbow Lake and the Tucannon fish hatchery. The dam is designed so that its height and fish ladder provide good passage for salmon and steelhead. However, the dam (in conjunction with the adjacent utility building) dramatically changes the riverine characteristics and disqualifies the river as being free-flowing at this point (approximately 1.4 miles downstream from the study segments).

In discussing the lower Tucannon mainstem, it is appropriate to mention the impact of two dams, which severely restricted adult access and reduced the survival of outmigrating smolts and fluvial bull trout in the past. Starbuck Dam was constructed at RM 5.5 in 1907 and De Ruwe Dam was constructed in 1900 at RM 16. Both dams were originally hydropower projects and both diverted all or most of the flow in the river during the summer months (Bryant and Parkhurst 1950). Starbuck Dam was equipped with a ladder, but entrance was immediately below the dam and fish were unable to find it. De

Ruwe Dam also had a ladder which was apparently not properly maintained. By 1935, the ladder was choked with mud and gravel, overgrown with willows, and was probably impassable.

Besides blocking adult salmonid passage, both dams represented major smolt entrainment hazards. An unscreened irrigation diversion withdrawing 11 cfs was operated in the pool above Starbuck Dam. Though the penstock at Starbuck Dam was screened, the mesh size was probably too wide to exclude smaller juveniles and impingement was almost certainly a problem for juveniles of all sizes. In 1935, De Ruwe Dam had been converted to an irrigation diversion (Bryant and Parkhurst 1950). At that time, virtually all stream flow and any migrating fish were diverted into an unscreened ditch during the summer months.

De Ruwe Dam was washed out by the 1964 flood, but Starbuck Dam is still in place. In 1992, WDFW built a new fish ladder at Starbuck Dam. The ladder is opened only from October through December to allow fall Chinook to pass. A notch cut in the center of the structure allows water to cascade through during the spring and summer. The intent of the notch and ladder is to allow upstream passage of adult salmon and steelhead in the spring and summer, but to block the passage of nongame fish. Adult salmon, steelhead, and bull trout are believed to be able to pass the dam effectively, but there is concern that juvenile or subadult bull trout may not be able to pass.

Although habitat from Wooten downstream has been highly modified by channelization, diversions, and a small dam, exceptionally high quality fish habitat is present in the upper reaches.

The mean annual flow at the mouth is 177 cfs, minimum observed was 15 cfs, and the maximum was 6,000 cfs (flood).

> **Finding:** Other than each drainage population having some distinct genetic traits, the fish populations may not be regionally or nationally unique or unusual; i.e., similar to other streams in the region. The upper portion of the river supports a large Bull Trout population. The complex habitat is an exemplary example of the finest the region has to offer. The evaluation of present conditions find that although fish populations alone may not make fisheries an outstandingly remarkable value, the populations along with the habitat ***does make the Tucannon River an outstandingly remarkable fisheries value.***

HERITAGE: CULTURAL/HISTORIC

Determination of Outstandingly Remarkable Values:
Homesteading in the Tucannon River valley began about 1880, however, a stage route was established which crossed the river as early as 1862. At least two schools and three sawmills were located in the river corridor between the headwaters and the confluence with Cummings Creek, along with several homesteads. The area of the river corridor now within the National Forest boundary served as a base encampment for cattle and sheep runs into the upper reaches of the river; e.g., a large cow camp was once located about one mile upstream from the Little Tucannon.

Beginning around 1880 and continuing through the 1930's, Tucannon area being considered supported a large agricultural community, and connected the cattle and

sheep ranges, as well as the rich timber resources of the Blue Mountains with a well established transportation route.

The granite area (e.g., Cummings Creek) of the Tucannon was home to several mining concerns dating from the late 1890's. Evidence of the old lode mines is very scarce within the river corridor. Occasional prospect holes are noticed. Few people still remember the old 'Blue Granite' mine.

Several historic structures/sites exist within the Tucannon River corridor. Several other potentially eligible sites on state and private land exist within the corridor; however a systematic cultural resource inventory has not been performed.

The Tucannon Ranger Station (reputed to be the first on what is now the Umatilla National Forest), built on National Forest land in 1908, has been evaluated and determined eligible for listing in the National Register of Historic Places. A rehabilitation plan was submitted to the State Historic Preservation Office (SHPO) in 1999. Restoration work is ongoing.
Two of the Ranger Station outbuildings, built by the Civilian Conservation Corps, are eligible for the National Register, and several CCC recreation structures have yet to be evaluated.

An historic CCC camp, now Camp Wooten, on land owned by the State of Washington, is adjacent to the river. No formal evaluation has been done on this complex.

Homesteading and other activities of the past have resulted in a culturally modified landscape in the valley bottom. Several plant species which would not occur naturally have been introduced and now grow and reproduce; e.g., Paper birch, Siberian Cotoneaster, American Elm, apple, Dutchman's Breeches, Licorice Fern, Pacific Ninebark, orange impatiens, and Henderson's Sedge (from west side of the Cascades) are present.

The heritage resource is not readily apparent to the casual observer, but could benefit immeasurably by enhancement and interpretation.

> **Finding:** Some historic evidence, or documentation, representative of most resource- oriented settlement or use of lands in southeast Washington occurs within the corridor. Early maps show homesteads, a saw mill, schoolhouse, trail system, roads, telephone lines, camps, ranger station as being present within the corridor. The Tucannon River corridor has a long history of settlement, resource use, and recreation. The Tucannon is an exemplary example of cultural uses and settlement for the northern Blue Mountains. Future interpretation may enhance the value of recognized heritage resources. The presence of old structures, along with the likelihood of other historic finds, ***make the historic heritage resource an outstandingly remarkable value.***

HERITAGE: CULTURAL/PRE-HISTORIC

Determination of Outstandingly Remarkable Values:
The Tucannon River Corridor has been extensively utilized by Native Americans for several thousand years. A large village site, now inundated, is reported to exist at the confluence with the Snake River. The majority of the 60 mile river corridor, with the

exception of its extreme upper reaches (segments 1 thru 3 of the study corridor) is located on private land. Naturally, the lower river private lands are the most likely to have had prehistoric occupation. There have been no systematic cultural resource inventories completed for the entire river corridor. Ethnographic accounts, along with the presence of migratory fish, suggest that the river was utilized prehistorically along its length, and there may be evidence of pit houses, lithic scatters, and sites associated with resource exploitation, such as fish weirs. No prehistoric sites are currently recorded within National Forest boundaries.

Although no cultural resource inventories have been completed for the Tucannon River corridor, there are indications that it may have been extensively utilized. Its significance is yet to be determined. A cultural overview to identity high probability, river related sites, will be completed with a determination of resource significance. During the interim, discovered sites are protected under existing statutes, regulations and policy.

> **Finding:** There is a high probability of prehistoric activity. In addition to subsistence use, the Native Americans likely used it as a travel corridor between the Snake and Grande Ronde. No information is available suggesting any occurrences different than elsewhere. Sites similar to what has been inventoried and under protection elsewhere in the region can be expected.
>
> It is undetermined what level of significance pre-historic use has had in the corridor. All significant drainages in southeastern Washington and northeastern Oregon were utilized by Native Americans. In the absence of known rare, one-of-a-kind, or sites with unusual characteristics or exceptional human interest values, the ***prehistoric heritage values are not determined to meet the criteria for outstandingly remarkable.***

GEOLOGY

Determination of Outstandingly Remarkable Values: The Tucannon River cuts a deep canyon through the Columbia River basalt flows. The basalt outcrops, gravel and cobble floodplains, and the river bed are similar to the Touchet River, Meadow Creek, Asotin Creek, Menatchee Creek, and Crooked Creek. The Tucannon River canyon and floodplain are larger than, but similar to these.

The rock formations, though striking and not common, are well represented in other parts of the area of comparison (e.g., Grande Ronde or Weneha Wild and Scenic Rivers).

> **Finding:** There are no unique or unusual features. The Tucannon River has ***no outstandingly remarkable geologic features.***

BOTANY

Determination of Outstandingly Remarkable Values: From its headwaters high on the slopes of Mt. Misery and Diamond Peak to its confluence with Cummings Creek near the Forest Boundary, the Tucannon River flows through one of the most floristically-rich portions of the Blue Mountains. Approximately ninety-five percent of the 680 plant species known to occur on the Pomeroy Ranger District are found within the Tucannon River Watershed; the riverine corridor contains approximately 80% of those found in the

drainage. Eleven plant species occur in the corridor which-are not found elsewhere on the Pomeroy Ranger District-and, in some cases--would not be found elsewhere on the Umatilla National Forest. Each tributary (the lower reaches which are included in the Tucannon corridor) has its own floristically-unique signature.

- The headwaters zone (especially Bear Creek) supports subalpine fir and fool's huckleberry associations. Here an abundance of formerly-listed sensitive plant species occur (Wenaha Currant, Dusty Maiden, and Utah Thistle). No unique species occur in the headwater to County Line segment.
- The Sheep Creek Falls area is especially rich in Cascadian "refugium" species. The microhabitat created around Sheep Creek Falls supports Devil's Club, Male Fern, Maidenhair Fern, and the formerly-listed sensitive Pine Broomrape. The Devil's Club is a significant population. White alder also grows along the mainstem stream segment.
- Further downstream the Panjab-Meadow Creek riparian complex supports luxuriant thickets of Pacific Yew. Large populations of the formerly-listed sensitive Umatilla Gooseberry are found within this complex.

Most of the Tucannon River corridor within the Forest boundary, especially at lower elevations provides outstanding habitat potential for several newly listed non-vascular plant species (mosses and lichens). Comprehensive surveys have not yet been conducted, but initial visits have yielded two formerly-sensitive species of the moss genus *Burbaumia.*

- Below the confluence of the Little Tucannon River the riparian zone has been historically and significantly altered by fisheries developments (diversions, rearing ponds, etc). From the Little Tucannon to the Forest Boundary, the River drops through Grand Fir and Ponderosa Pine plant associations. Along this portion of the Tucannon are found populations of the formerly-listed sensitive Pine Broomrape, Regionally-sensitive Clustered Lady's Slipper Orchid, and *formerly-listed* Orange Balsam.
- Several introduced species have become naturalized in the corridor downstream of Panjab Creek (see historical resource). Paper birch, Siberian Cotoneaster, American Elm, apple, Dutchman's Breeches, Licorice Fern, Pacific Ninebark, orange impatiens, and Henderson's Sedge (from west side of the Cascades) are present.

The complex riparian habitat is an exemplary example of the finest the region has to offer. The general condition, health and stability of the riparian vegetation are among the highest of any in the Blue Mountains.

> **Finding:** The plant community is unusually diverse and represents some uncommon species. The Sheep Creek Falls refugium is the basis for a botanical special interest area in the Forest Plan and is a recreation attraction. The complex riparian habitat is critical for survival of endangered and sensitive fish species. The evaluation of present conditions finds that ***botanical/ecological values are outstandingly remarkable.***

TRADITIONAL USES/CULTURAL VALUES

Determination of Outstandingly Remarkable Values: The Tucannon River drainage is in the proximity of the 1reaty lands of the Walla Walla, Cayuse and Umatilla Tribes, and the Nez Perce Tribe. Although a systematic cultural resource survey has not been completed for the river corridor; it is likely that the area was utilized by all these tribes. Certainly extensive fishing activities, centered on the movements of anadramous fish, would have occurred at the Tucannon's confluence with the Snake River and possibly elsewhere near spawning beds. Hunting and gather activities would also have occurred into the upper reaches of the Tucannon River. The area is still reportedly visited by Nez Perce, Umatilla and Walla Walla as well as individuals from other Plateau cultures.

Since the Tucannon River borders on the aboriginal territory of several Plateau cultures, its cultural significance remains unclear.

> **Finding:** Although a strong presence of villages is probable along the Snake River near the confluence with the Tucannon, there does not appear to be a strong claim for the upper portion of the Tucannon by any particular tribe. Perhaps its uniqueness is that the area is a shared or transition land for the surrounding tribes.
>
> Traditional use and cultural values are important in the Tucannon River drainage. However, these values were ***not found to be outstandingly remarkable*** because they are fairly typical of other rivers in the region.

WATER QUALITY

Determination of Outstandingly Remarkable Values: Several years of water quality monitoring data is available. Water temperatures are well within State standards, except for a handful of days when natural conditions have resulted in higher temperatures. Indications are that water quality is exceptionally good until it arrives at the reach previously affected by channelization and diversions into the fish ponds. Water temperature becomes less than desirable for salmon and trout habitat in this reach, while turbidity levels and other water quality parameters remain very good.

A proposal to put a major dam across the Tucannon Valley in the Little Tucannon vicinity was made 15-20 years ago. The proposal was not pursued in depth and has not surfaced since that time. However, concern for agricultural water in the area is likely to continue to be of very high interest.

> **Finding:** Water quality is considered good ***but not an outstandingly remarkable value.***

CLASSIFICATION

Eligibility Determination: The Tucannon River meets the minimum eligibility requirements as specified by the Wild and Scenic Rivers Act. It is found to be free-flowing and current information supports the findings that recreational, fisheries, botanical/ecological, and historic heritage outstandingly remarkable values are present in the river corridor.

SEGMENT 1 RIVER ORIGIN TO MOUTH OF SHEEP CREEK (9.07 miles)

This section of river has the following attributes and eligibility
Water Resources Development: Free of Impoundment.
Shoreline Development: Essentially primitive.
Accessibility: Generally Inaccessible except by trail.
Water Quality: Water unpolluted.
WSR Eligibility: Wild.

SEGMENT 2 MOUTH OF SHEEP CREEK TO PANJAB CREEK (4.61 miles)

This section of the river has the following attributes and eligibility
Water Resource Development: Free of Impoundment.
Shoreline Development: Some development.
Accessibility: Accessible In places by road.
Water Quality: Waters unpolluted.
WSR Eligibility: Scenic.

SEGMENT 3 PANJAB CREEK TO TUCANNON G.S. (4.9 miles)

This section of river has the following attributes and eligibility
Water Resources Development: Some Impoundment or diversion in the past.
Shoreline Development: Some development.
Accessibility: Readily accessible by road.
Water Quality: Waters unpolluted.
WSR Eligibility: Recreation.

SEGMENT 4 TUCANNON G.S. TO FOREST BOUNDARY (3.7 miles)

This section of river has the following attributes and eligibility
Water Resources Development: Some Impoundment or diversion in the past.
Shoreline Development: Some development.
Accessibility: Readily accessible by road.
Water Quality: Waters unpolluted.
WSR Eligibility: Recreation.

REFERENCES:

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