RESOURCE ASSESSMENT

CRESCENT CREEK

National Wild and Scenic River

CRESCENT CREEK

RESOURCE ASSESSMENT

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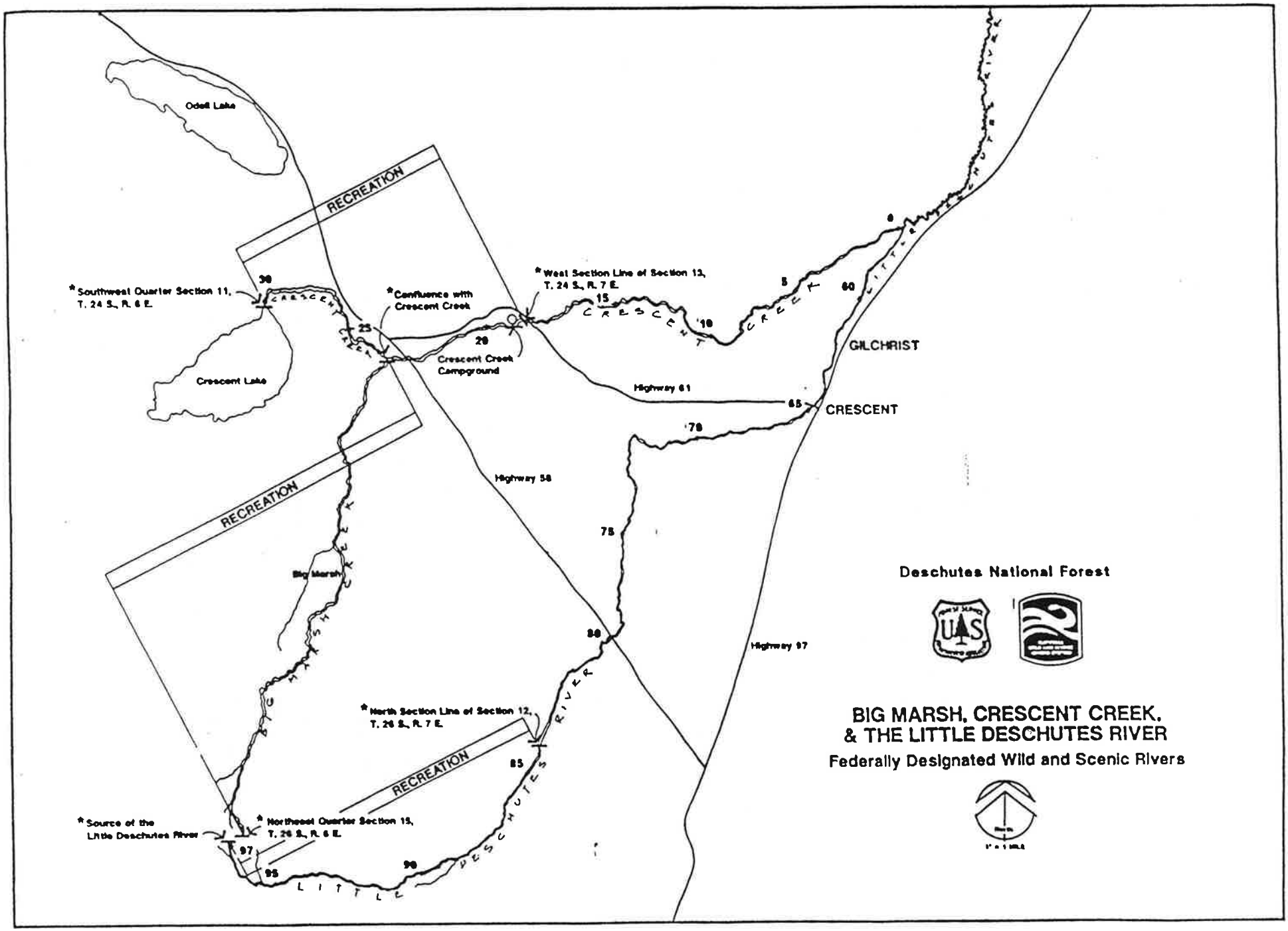
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BIG MARSH, CRESCENT CREEK, & THE LITTLE DESCHUTES RIVER
Federally Designated Wild and Scenic Rivers

I. SUMMARY

As a result of the 1988 Omnibus Oregon Wild and Scenic Rivers Act, a portion of Crescent Creek was designated as a Wild and Scenic River. Under this Act, the Forest Service is mandated to prepare a management plan to provide direction for resource management and to protect or enhance those river related values determined to be significant to the river environs. As a precursor to the management plan, this document, the Resource Assessment is prepared to: support the Congressionally designated outstandingly remarkable resource values and identify and determine the significance of resource values not addressed in the legislative history. The Resource Assessment will serve as the foundation for the river management planning process. It will also provide the basis for interim management within the river corridor by identifying those resource values requiring protection.

II. INTRODUCTION

In 1968, Congress passed the National Wild and Scenic Rivers Act to establish a process for protection of outstanding free-flowing rivers. Crescent Creek was added to the National system with the Omnibus Oregon Wild and Scenic Rivers Act of 1988. The rivers by definition, must be free-flowing and have at least one outstandingly remarkable value to be considered as a Wild and Scenic River. Geology was identified in the Congressional record as the outstandingly remarkable value of Crescent Creek. This value and all other river related values will be protected through the management plan.

Under the Wild and Scenic Rivers Act, the Forest Service is mandated to prepare a comprehensive management plan for the protection of those river related values identified as outstandingly remarkable. The total planning process for the management plan includes:

1) development of the Resource Assessment for determination of outstandingly remarkable values,

2) determination of the issues related to the river and its uses,

3) translation of the issues into management objectives,

4) formulation of alternatives to reflect those management objectives derived from the issues,

5) and an identified preferred alternative fully developed as the management plan for the river.

This plan must include management goals and provisions for monitoring the effectiveness of the plan in meeting resource objectives identified in the plan.

All phases of the above planning process will be accomplished in compliance with the regulations identified in the National Environmental Policy Act (NEPA). One essential element of NEPA is the involvement of the public throughout the planning process to reach a sound management plan.

III. RESOURCE ASSESSMENT

This Resource Assessment serves as the foundation for the completion of the management plan. The Resource Assessment supports which river related values are outstandingly remarkable and contribute substantially to the river setting or the functioning of the river ecosystem.

The Resource Assessment process provides a standardized approach for the evaluation of the river values utilizing criteria developed by the Wild and Scenic Rivers Policy Group in cooperation with the Interagency Task Force (BLM, Forest Service and State Parks). The Resource Assessment will guide interim management, provide a basis for development of the river management plan and aid in the determination of the Wild and Scenic River corridor boundary. The following steps were utilized for the determination of the outstandingly remarkable values for Crescent Creek:

- The use of a Deschutes Interdisciplinary Team. (For a listing of those on the Interdisciplinary Team see Appendix C.)
- Consideration of unique values and the degree of rareness at a regional* or national level.
- Values must be river related in that they owe their existence or contribute to the functioning of the river system and its immediate environs.
- The use of standardized criteria against which river values are compared to for determining outstandingly remarkable values.

* The Interdisciplinary team (IDT) felt that the geographic region described in the 1989 Statewide Comprehensive Outdoor Recreation Plan (SCORP) for Oregon, within which Crescent Creek was located, did not represent river related environmental features that were typically found in Crescent Creek. The region contained rivers located west of the Cascades and environmental features varied significantly from those found in Crescent Creek. The IDT felt it was necessary to compare Crescent Creek with other rivers which displayed the same evolutionary processes, environmental features and climates as Crescent Creek. It was decided that Crescent Creek would be compared with rivers located in the region to the north which includes the Deschutes River of which Crescent Creek is a tributary. (See Appendix A for the location of the regions described in SCORP.)

The list of resource values considered for evaluation include: Fisheries, Scenic / Vegetation, Hydrologic, Wildlife, Geologic, Cultural Resources, and Recreation.

IV. CRESCENT CREEK DESCRIPTION

On October 28, 1988, the United States Congress designated 10 continuous miles of Crescent Creek as a Wild and Scenic River under the Omnibus Oregon Wild and Scenic Rivers Act. The creek is located on the Crescent Ranger District of the Deschutes National Forest.

The State of Oregon did not designate any portion of Crescent Creek as a State Scenic Waterway in 1988 when several other rivers within Oregon were designated under a separate state legislative process.

The 10 mile stretch of Crescent Creek from the dam at the outlet of Crescent Lake to the west section line of Section 13, Township 24 South and Range 7 East was designated.

Within the Federally designated portion, there are approximately 4.0 miles of creek flowing through private land. All other lands within the river corridor are administered by the Deschutes National Forest. The interim boundary of the river corridor is considered to be 1/4 mile on either side of the river and contains approximately 3200 acres. Final boundaries of the river corridor will be determined through the river management planning process.

For descriptive and evaluative purposes, the IDT felt Crescent Creek should be segmented into 2 zones. (See Map in Appendix B). These zones are as follows:

Zone A: That portion of Crescent Creek from the dam at the Crescent Lake outlet to the Highway 58 crossing of the creek and legally described as the Southwest Quarter Section 11, Township 24 South and Range 6 East.

Zone B: That portion of Crescent Creek from the Highway 58 crossing to the end of the Wild and Scenic designation at the west section line of Section 13, Township 24 South and Range 7 East.

V. FORMAT FOR DESCRIPTION OF RIVER VALUES

The following format will be used to discuss each Resource:

RESOURCE NAME

Criteria for Outstandingly Remarkable

The description given is the criteria for which the particular resource would be determined to be Outstandingly Remarkable. These criteria were developed by the Interagency Wild and Scenic Rivers Policy Group, facilitated by R-6 USDA Forest Service, and have been agreed upon for use in all Wild and Scenic River planning in the State of Oregon.

EVALUATION OF THE PRESENT SITUATION

A description of the Resource as it exists today by Zone if appropriate, on Crescent Creek.

FINDING

This finding is the result of the known data and determination by the Interdisciplinary Team with consultation with other specialists.

VI. SPECIFIC DESCRIPTION OF VALUES

FISHERIES

Criteria for Outstandingly Remarkable Rating

Fish values may be judged on the relative merits of either fish populations or habitat or Native Cultural use, or a combinations of these river-related conditions. Consideration shall be given for potential as well as existing values.

Habitat

The river provides or has the potential to provide exceptionally high quality habitat for fish species indigenous to the region. Of particular significance is habitat for wild stocks and/or federal, or state listed or candidate threatened, endangered and sensitive species. Diversity of habitats is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

Populations

The river is internationally, nationally or regionally an important producer of resident and/or anadromous fish species. Of particular significance is the presence of wild stocks and/or federal or state listed threatened, endangered and sensitive species. Diversity of species is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

EVALUATION OF THE PRESENT SITUATION - FISHERIES

During the preparation of this resource assessment in the summer of 1990, data was being collected on the fisheries habitat and populations along the length of the designated portion of Crescent Creek. The data will not be analyzed before completion of this Resource Assessment but the data will be utilized in the final determination of the value of the fisheries resource and in the preparation of the river management plan.

Habitat

Zone A: The upper portion of Crescent Creek from the dam at Crescent Lake to the Highway 58 crossing contains suitable fishery habitat. Riparian vegetation; willows, alders and other species, have been maintained by the private land owners in the subdivisions along the creek and provide cover for fish. On the small portions of private land that are not developed for housing, elk use has impacted the riparian vegetation and stream bank stability. The elk use primarily occurs in the spring during calving season and it is on the migratory route between traditional wintering and summering grounds. There is a reduction in streamside riparian vegetation and some bank displacement is occurring. Grazing has not occurred in this area within the last 2 years. A landowner has informed the Forest Service that grazing will resume on his lands adjacent to Crescent Creek in 1991. The landowner has related that fences in the area are designed to allow passage of both deer and elk and would not hinder herd movement nor would he exclude big game from the cattle grazing area.

Some logs exist within the stream creating hiding areas and deeper pools for resting. Some standing snags are along the river corridor and will provide future instream logs though the majority have been removed by the landowners for safety purposes.

The flow of Crescent Creek is regulated by the Tumulo Irrigation District for agricultural uses downstream. The flow regimes do not follow normal, naturally occurring flow rates and fish populations are affected by these abnormal flows. The flows are significantly less than normal in the winter and early spring and increase throughout the summer until September when the need for irrigation is reduced. It is not known what effect these abnormal flow regimes have on the spawning habitat and resting pools.

Zone B: The lower portion of Crescent Creek is significantly different from the upper portion. Riparian vegetation; willows, birch and rose species, are larger and overhang a larger portion of the stream. There is much downed woody material within the stream channel creating pools for resting and hiding. Snags exist along the stream corridor for future recruitment of woody material into the stream. The streambanks are in good condition with overhanging banks creating quality cover.

The flow regimes within this zone are affected by the release of water at the dam by the Tumulo Irrigation District. They are moderated by the contribution of water from Big Marsh Creek, a tributary of Crescent Creek. The creek has a higher gradient within this portion as it is channeled through the canyon between Odell Butte and Royce Mountain. The channel is relatively straight and large boulders are found in the channel.

Populations

Zone A: From the Crescent Lake dam downstream to its confluence with Big Marsh Creek, the fish populations of Crescent Creek can vary greatly depending on the regulations, snow pack and temperatures. This situation is due to the erratic and at times essentially non-existent flow from Crescent Lake. Tumulo Irrigation District holds water rights and controls the flow out of the lake to meet the agricultural needs of downstream water users.

Zone B: Below where it joins with Big Marsh Creek, Crescent Creek supports good populations of rainbow trout, brown trout and whitefish common to streams in the region. Rainbow are the dominant trout species between Highway 58 and Highway 61. Brown trout become the dominant species below Highway 61. No known populations of federally or state listed or candidate threatened, endangered or sensitive species exist in Crescent Creek.

FINDING

The fisheries resource of Crescent Creek is considered not to be outstandingly remarkable. Crescent Creek is not known nationally or regionally as a main attraction for anglers. Other streams of the region, such as the Metolius River and the Deschutes River, provide far better quality and quantity fishing opportunities.

Additional data is presently being gathered and analyzed but can not be finalized before the completion of the Resource Assessment. Preliminary data indicates the resource value for fisheries is not outstandingly remarkable. However, if the survey reveals new information

that could affect the valuation of the fisheries resource, it will be reevaluated. This information will be utilized in the final determination of resource values and in the development of the river management plan.

SCENIC / VEGETATIVE

Criteria for Outstandingly Remarkable Rating

The landscape elements of landform, vegetation, water, color, and related factors result in notable or exemplary visual features and/or attractions. When analyzing scenic values, additional factors such as seasonal variations in vegetation, scale of cultural modifications, and length of time negative intrusions are viewed may be considered. Scenery and visual attractions may be highly diverse over the majority of the river or river segment.

EVALUATION OF THE PRESENT SITUATION - SCENIC/VEGETATIVE

Zone A: This portion of Crescent Creek flows through approximately 1 mile of Forest Service managed land and several miles of privately owned land. On the developed private lands, summer and year-round homes, docks and bridges and grazing related structures predominate the visual landscape. Along the majority of the length within the housing developments, the natural character of the river environment has been maintained and the natural riparian vegetation has been preserved by the private landowners. Incidental trash removal and general cleanup activities are part of the landowners maintenance of the river corridor. Small structures, such as sunning decks, are not intrusive on the developed landscape and do not detract from the overall quality of the developed recreational view. The landowners are preserving large standing trees around their homes and lending additional vegetational diversity. to the river corridor. The stream develops small loop meanders in this low gradient section. There are no unique or exemplary visual features within this zone.

In the area of outside the subdivision, the river corridor has a more natural appearance with some grazing related structures. Cattle grazing has not occurred on the property in the last two years however the landowner has said that grazing will resume the summer of 1991.

Zone B: Within Zone B, Crescent Creek flows through lands administered solely by the Forest Service. Just past Highway 58, the stream enters a canyon created by the ancient flows of Crescent Creek downcutting through the soil between Odell Butte and Royce Mountain. The channel is relatively straight and large boulders are present along a 1 mile stretch of the stream creating long views of the cascading stream. Riparian vegetation is limited in this segment by the steepness of the canyon walls and narrowness of the stream corridor.

A variety of conifers, Englemann spruce, lodgepole pine, ponderosa pine and some true firs, are visible from the stream. Large old growth ponderosa pines in excess of 24 inches in diameter exhibiting the characteristic yellow-bellied appearance are found scattered throughout the zone and add to the pristine quality of this segment. Several large rock outcrops found in the lower sections of the zone add variety to the overall visual landscape. As the creek exits the canyon, the valley floor widens and there is an increase in willows and rose species, which have grown to large

sizes. Evidence of human activities and forest management are not seen from the stream corridor adding to the pristine quality of this zone.

Habitat types and ecoclasses are comparable to those found in other riparian related areas on the Crescent Ranger District. Intensive surveys of sensitive, threatened or endangered plant species have not been conducted and are not known to exist within the river corridor although some habitat does exist.

Outside the Wild and Scenic designation: Farther downstream from the section of the stream designated as Wild and Scenic, is an area of scenic and geologic interest that was originally included within the proposed Wild and Scenic designation for Crescent Creek. This area of scenic and geologic interest is the diversion of Crescent Creek approximately 4000 years ago by a lava flow released by volcanic activities. The relatively recent lava flow is clearly evident from the creek and the original streambed can still be observed downstream from the lava flow. Presently, a spring occupies the old streambed where it exits from under the lava flow. This unique feature, though referred to in the Congressional legislation, was not included in the final designation for Wild and Scenic and was not used in the determination of the scenic / vegetative values.

FINDING

The scenic / vegetative resource of Crescent Creek is considered to be outstandingly remarkable in Zone B. Scenic and vegetative diversity is unique with the steepness and narrowness of the canyon and the presence of old growth ponderosa pines. The diversity of tree species in the corridor and the presence of large outcrops and instream boulders add to the visual attraction of the area. The lack of seen human intrusion creates a feeling of pristine wilderness close to a major county highway.

HYDROLOGY

Criteria for Outstandingly Remarkable

A description of the attributes for which a river would be rated outstandingly remarkable for the hydrologic resource has not been written, as have descriptions for other resource values. The interdisciplinary team considered source type, water quantity, and water quality as attributes which should be used to determine the significance of the hydrologic resource.

EVALUATION OF THE PRESENT SITUATION - HYDROLOGY

Zone A: Crescent Creek is the outflow from Crescent Lake. It is a slow moving stream with an average gradient drop of less than 45 feet per mile. It is regulated by the Tumulo Irrigation District for irrigation purposes. Temperatures are influenced by the regulated flows and average 42 degrees F for the summer months. Low flows are common during the months of October through April when the lake is recharged for summer irrigation withdrawal. High flows are usually moderate (averaging 146 CFS) during the months of June through September. Flows for irrigation purposes may exceed 230 CFS during specific times during June through September. There is some degradation of water quality when the initial release of water occurs in the spring.

The sudden flush of water intensifies bank erosion creating siltation and sometimes destruction of private landowners' small docks or other structures. A more gradual release of water for irrigation purposes would reduce turbidity and sedimentation. The soils in the area are generally porous and absorb rainfall therefore the creek experiences very little fluctuation in the flow levels from rainfall.

The activity at and around the boat ramp located directly above the dam may influence the water quality of Crescent Creek. The location of docking and fueling facilities directly above the dam may increase the risk of the accidental release of minor impurities into the creek.

Zone B: This portion of Crescent Creek is below the confluence with Big Marsh Creek. The naturally occurring flow regimes of Big Marsh Creek moderate the effects of the controlled flows from Crescent Creek and the creek experiences fewer fluctuations. The tannic acid from the organic matter decomposition occurring in Big Marsh colors the water a tea color downstream though the clarity of the water is maintained.

FINDING

The hydrologic value of Crescent Creek is considered not to be outstandingly remarkable. The regulation of stream flows by the Tumulo irrigation district directly affects the hydrologic resource and impacts the natural character of the stream especially in the upper portion. The naturally occurring flows of Big Marsh Creek moderate the regulated flows below the confluence with Crescent Creek and the hydrologic resource may not be impacted as significantly as in Zone A.

WILDLIFE

Criteria for Outstandingly Remarkable

Wildlife values shall be judged on the relative merits of either wildlife populations or habitat or Native American cultural use, or a combination of these conditions.

Populations

The river or the area within the river corridor contains nationally or regionally important populations of indigenous wildlife species. Of particular significance are species considered to be unique or population of federal or state listed or candidate threatened, endangered or sensitive species. Diversity of species is an important consideration and could in itself lead to a determination of outstandingly remarkable.

Habitat

The river or the area within the river corridor provides exceptionally high quality habitat for wildlife of national or regional significance, of may provide unique habitat or a critical link in habitat conditions for federal or state listed of candidate threatened, endangered and sensitive species. Contiguous habitat conditions are such that the biological needs of the species are met. Diversity of habitats is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

EVALUATION OF THE PRESENT SITUATION - WILDLIFE

Populations

Zone A: Wildlife populations are limited in the subdivisions to those which are capable of adapting to human development. The riparian vegetation remains in good condition in these developed areas though lesser furbearers normally found in the area would not be present because of the development.

Outside the subdivision, a small herd of elk utilize the river corridor for calving and as a travel route between traditional wintering and summering areas. During this period cattle grazing is usually not occurring. The calving area is considered to be comparable to other riparian areas within the region and is not regionally significant. Cattle grazing may also promote regrowth of grasses and may actually increase the palatable forage available for deer and elk. An increase in the rodent population may benefit hawks in the area by providing a larger prey base.

Zone B: The river corridor in this section has been determined to be primitive and the riparian vegetation is in good condition to support lesser furbearers and other riparian dependent animals. Use of the area by big game species is probable but may serve only as a travel corridor due to the narrowness of the riparian zone and the steepness of the canyon.

Habitat

Zone A: The riparian vegetation within the housing subdivisions has been maintained by the private landowners and is in good condition. It provides habitat for those species with the capability to tolerate human presence and developments. Cattle grazing does occur on portions of the creek and may impact streambanks and associated riparian vegetation.

Zone B: The riparian corridor is extremely narrow in this section of Crescent Creek in the canyon. It is expected that the corridor is too narrow to provide quality habitat. Because the area is not readily accessible due to the topography, human disturbance is minimal providing an area of refuge for local wildlife populations.

FINDING

The wildlife resource of Crescent Creek is considered not to be outstandingly remarkable. The lack of diversity of species in the Crescent Creek corridor precludes the creek from outstandingly remarkable status. The use of the creek by big game animals is comparable to other streams in the region and may even be less and it is not expected to be used as a wintering area.

GEOLOGIC

Criteria for Outstandingly Remarkable

The river or the area within the river corridor contains an example(s) of a geologic feature, process, or phenomena that is rare, unusual, or unique to the geographic region. The feature(s) may be in an unusually active stages of development, represent a "textbook" example and/or represent a unique or rare combination of geologic features (erosional, volcanic, glacial, and other geologic structures).

EVALUATION OF THE PRESENT SITUATION - GEOLOGIC

Zone A: Today, Crescent Creek originates at Crescent Lake, but in glacial times Crescent Creek was a much larger and active river which drained a melting glacier at the site of Crescent Lake.

Crescent Lake formed behind moraines left by glaciers. These are hummocky hills of sand, gravel, and boulders left at the front and sides of the glaciers which last existed about 13,000 years ago. Below the moraines, great fields of sand and gravel were spread by the ancestral Crescent Creek.

At the same time glaciers occupied the site of Crescent Lake, glaciers occupied Big Marsh canyon to the south. The large, ancient rivers from these two glaciers spread large fans of sand and gravel over the land which Crescent Creek and Big Marsh Creek now flow through.

Zone B: After the confluence of Crescent Creek and Big Marsh Creek, the ancient river flowed between Odell Butte and Royce Mountain where it cut a deep canyon. Below the canyon, and outside the current designation of Wild and Scenic, the river spread a nearly flat sheet of sand and fine gravel over several square miles of land. In this area, meanders developed following retreat of the glaciers.

Outside the Wild and Scenic designation: About 4000 years ago, the Black Rock lava flow erupted onto the northern part of the flat plain of sand and gravel. The lava blocked a short segment of the river channel forcing the river to flow around the south end of the lava flow. The original streambed is still visible and a spring presently flows from this area from under the lava flow. ***The river channel in the area of the lava flow, though originally in the suggested portion for inclusion in the wild and scenic river status and referenced, is not presently and will not be used in the consideration of outstandingly remarkable values.***

FINDING

The geologic value of Crescent Creek is considered not to be outstandingly remarkable. The geologic condition of the area, though of considerable educational value, is not dramatic. Other streams in the region display the same geologic features as Crescent Creek such as Odell Creek. They exemplify glacial processes and landforms. For this reason, Crescent Creek by itself is not regionally remarkable. Big Marsh Creek, Crescent Creek and the Little Deschutes River taken together do offer students of geology and geomorphology considera-

ble variety of glacial processes and landforms. Crescent Creek by itself is not known regionally or nationally as a place to study the effects of glaciation and erosional forces.

CULTURAL RESOURCES

Criteria for Outstanding Remarkable

Prehistoric

The river or area within the river corridor contains a site(s) where there is evidence of occupation or use by native Americans. Sites must have unusual characteristics or exceptional human interest value(s). Sites may have national or regional importance for interpreting prehistory; may be rare and represent an area where a culture or cultural period was first identified and described; may have been used concurrently by two or more cultural groups; or may have been used by cultural groups for rare or sacred purposes. Of particular significance are sites or features listed in, or are eligible for inclusion in, the National Register of Historic Places.

Historic

The river or area within the river corridor contains a site(s) or feature(s) associated with a significant event, an important person, or a cultural activity of the past that was rare, or unusual in the region. A historic site(s) and/or feature(s) in most cases is 50 years old or older. Of particular significance are sites or features listed in, or are eligible for inclusion in, the National Register of Historic Places.

Traditional Use, Cultural

The river or area within the river corridor contains regionally unique location(s) of importance to Indian tribes (religious activities, fishing, hunting, and gathering). Locations may have unusual characteristics or exceptional cultural value being integral to continued pursuit of such activities. Locations may have been associated with treaty rights on ceded lands or activities unprotected by treaty on ceded lands or in traditional territories outside ceded lands.

EVALUATION OF THE PRESENT SITUATION - CULTURAL RESOURCES

Prehistoric

Both Zones:

Approximately 10% of Crescent Creek within the Wild and Scenic designated area has been surveyed for prehistoric sites to an extent considered to be "reliable". Approximately 3 lithic scatter sites within and 10 adjacent to the area have been identified through surface component artifacts. Test excavations have been done in the area to identify the existence or absence of a subsurface component. There is a subsurface component having obsidian debitage. The Mazama ash layer, 4-6 feet deep separates these two components over most of the District and differentiates sites before or after 6,800 years BP (1950). Obsidian hydration dating and X-Ray Fluorescense sourcing has not been done at this time. The analysis of these sites indicates

they are typical sites with respect to others found in the region. The number of sites found, within the area surveyed, is similar to other areas.

At this time no rock shelter or rock art sites have been found within the area surveyed. Rock shelters and rock art of significant size and character are found at other sites within the Region along many rivers; i.e. Deschutes, Crooked and Squaw Creek.

The Klamath Trail is a route between the Klamath area and the Columbia River area (Celilo Falls) used by several Native American Tribes such as the Warm Springs, Paiute and the Klamath. The exact location of this trail in relation to the river and its corridor is unknown at this time.

Historic

Both Zones:

The first settlement of the Crescent Creek area began in the mid-1800's with the establishment of several homesteads and early wagon roads. The developments were in relation to; settlement, sheep and cattle grazing, townsites for railroad and highway construction, sawmills and other forest product manufacturing. Most of these developments were along the creek from the outlet at Crescent Lake to the Lava Flow east of the current County Road. Much of the creek within the designated area is in private ownership.

The remains of the original homes and businesses are few and in poor condition. Most of the information has been published about the historic activities in the area.

Traditional Uses

Both Zones:

Data is currently being gathered to verify any traditional use by local tribes. At this time the known data is limited possibly because there is little use of the area by the tribes. The Crescent Creek area is claimed by the Warm Springs Tribes and the Klamath Tribe as an area to which they have rights, i.e. subsistence, water, gathering, ceded lands. Subsistence hunting for elk, deer and bear may occur within the area. The religious rights and uses of the area are unknown.

FINDING

The cultural resources of Crescent Creek are considered not to be outstandingly remarkable. Prehistoric sites have been found in Crescent Creek and Little Deschutes River, but the type of site and number of sites is not regionally unique or outstanding.

The historic development of these areas occurred similar to many other areas within the region and in fact was settled later than some others. No major attraction, such as gold or silver, was found to encourage development of these areas, as occurred in many others. The CCC camp facility at Odell Lake was like others within the region, but nothing remains today. The historic resource of these creeks and river is felt to be significant to the local area, but not outstanding within the region.

The traditional use values of these creeks and river were determined to be of significant value, but not outstanding within the region. Food gathering of greater significance occurs in areas on the Ochoco National Forest. Fishing activities of greater significance occur at

sites such as Shearers Falls on the Lower Deschutes River. Religious use sites are found throughout the region and are similar to those found in the these areas.

A final rating of the cultural value will be made upon completion of an overview with various tribal groups.

RECREATION

Criteria for Outstandingly Remarkable Rating

Recreational opportunities are, or have the potential to be, unique enough to attract visitors from outside of the geographic region. Visitors would be willing to travel long distances to use the river resources for recreational purposes. River-related opportunities could include, but are not limited to sightseeing, wildlife observation, photography, hiking, fishing, hunting, and boating.

Interpretive opportunities may be exceptional and attract or have the potential to attract visitors from outside the geographic region.

The river may provide or have the potential to provide settings for national or regional usage or competitive events.

EVALUATION OF THE PRESENT SITUATION - RECREATION

Zone A: Crescent Creek recreational opportunities for the public are limited by low/ unpredictable flows and access limited by private land ownership. The developed recreation use which is occurring in this zone is predominately associated with the summer cabins and residences on private land. In the housing subdivisions, signs, streamside platforms/patios, fences and some grazing outside the subdivisions are common and present a developed recreational character while still maintaining some natural scenic river attributes.

Zone B: This section of Crescent Creek is relatively inaccessible except at Highway 58, the County road and from the Crescent Creek Campground. Crescent Creek campground is adjacent to the designated portion of Crescent Creek and is a moderately developed camp area. Picnic tables, fire rings and vault toilets are provided. Presently, no trail exists to provide access to the whole segment and the steep topography limits access except to those hikers of a more adventurous nature. Canoeing or floating the length of this zone is difficult to impossible due to the numerous large log jams that cannot be passed except by portaging. Some recreational fishing is occurring on either end of the zone in the more accessible portions.

FINDING

The recreational values of Crescent Creek are considered not to be outstandingly remarkable. The quality and character of the area are not unique to the region and though people outside the region visit the area, the use is not significant and is associated with the use of the Crescent Lake facilities and housing subdivisions and not related only to the creek.

SUMMARY OF FINDINGS

CRESCENT CREEK

RESOURCE ASSESSMENT

RESOURCE VALUE	OUTSTANDINGLY REMARKABLE	
	ZONE A	ZONE B
FISHERIES	NO	NO
SCENIC / VEGETATIVE	NO	YES
HYDROLOGY	NO	NO
WILDLIFE	NO	NO
GEOLOGIC	NO	NO
CULTURAL RESOURCES	NO	NO
RECREATION	NO	NO

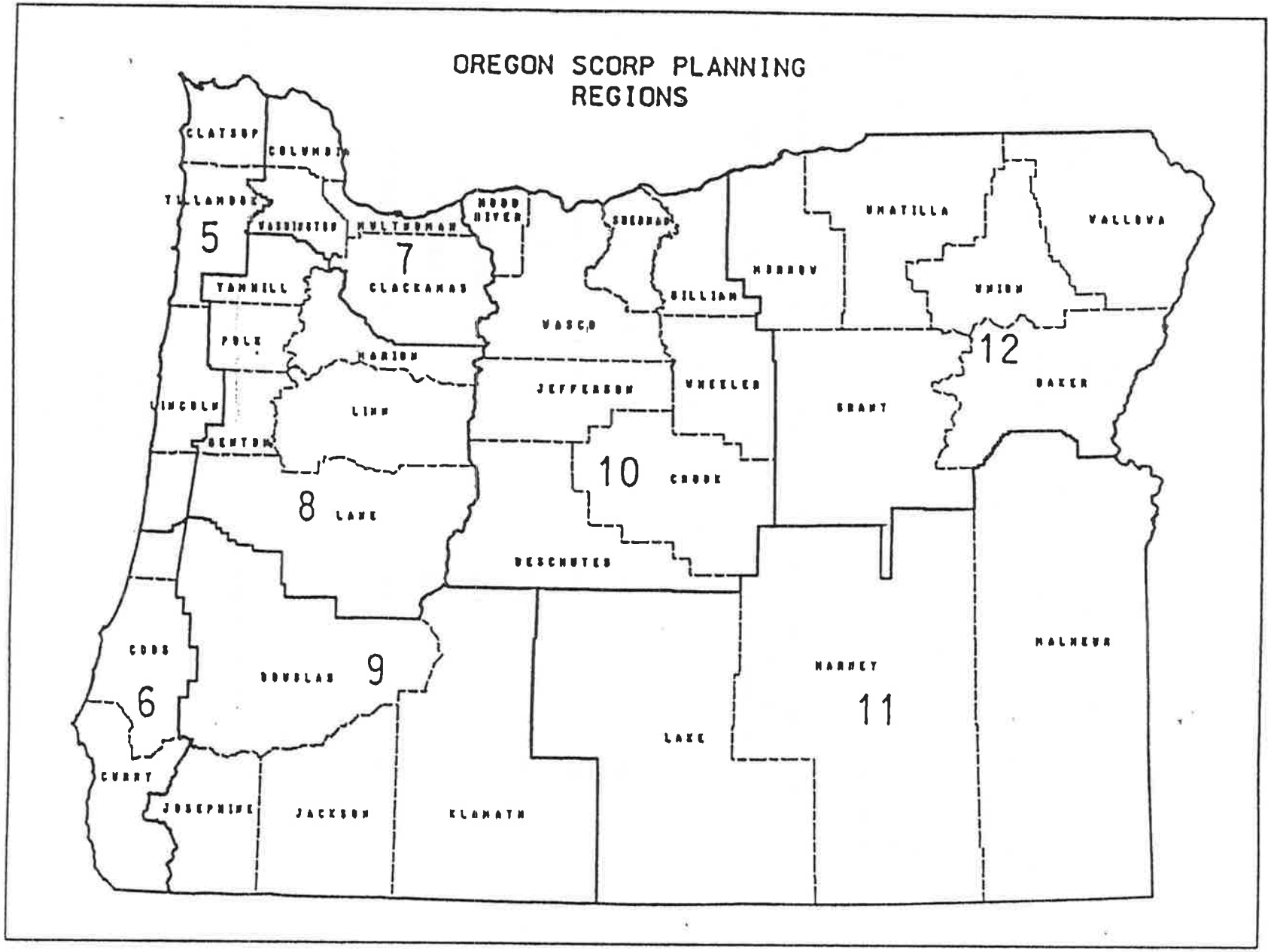
SYNOPSIS OF FINDINGS

The findings of the Outstandingly Remarkable Values for this Resource Assessment for Crescent Creek are not consistant with the findings identified within the Congressional Record. As stated under the geology category, the feature identified as outstandingly remarkable was not included within the Wild and Scenic designated corridor.

The Scenic category was adjusted to include vegetational characteristics of the river corridor. It was identified as outstandingly remarkable because of the uniqueness of the narrow canyon and the presence of old growth ponderosa pines larger than 24 inches in diameter. The visual diversity within this canyon is not common to the area and creates a pristine feeling.

In most cases, existing private land uses are consistent with Wild and Scenic River goals. In the administration of Wild and Scenic Rivers, the federal agencies must make efforts to inform the public about where private lands are located, that private lands are not open to public use, that existing private land uses are legitimate, and that private land owner rights must be respected and protected. The local landowners are managing the land with wildlife species in mind and the continued use of the area by a variety of wildlife species attest to the landowners' management.

APPENDIX A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COLUMBIA
TILLAMOOK
WASHINGTON
MULTNOMAH
HOOD RIVER
SHERMAN
GILLIAM
MORROW
UMATILLA
UNION
WALLOWA
5
7
CLACKAMAS
YAMHILL
POLK
MARION
VASCO
JEFFERSON
WHEELER
GRANT
12
BAKER
LINCOLN
LINN
BENTON
10
CROOK
8
LAKE
DESCHUTES
COOS
DOUGLAS
9
6
CURRY
JOSEPHINE
JACKSON
KLAMATH
LAKE
HARNEY
11
MALHEUR

APPENDIX C

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Other Specialists Consulted

Norm Behrens	Oregon Department of Fish and Wildlife

Others Consulted

Crescent Creek Landowners
Big Marsh Landowners

RESOURCE ASSESSMENT

BIG MARSH CREEK

National Wild and Scenic River

BIG MARSH CREEK

RESOURCE ASSESSMENT

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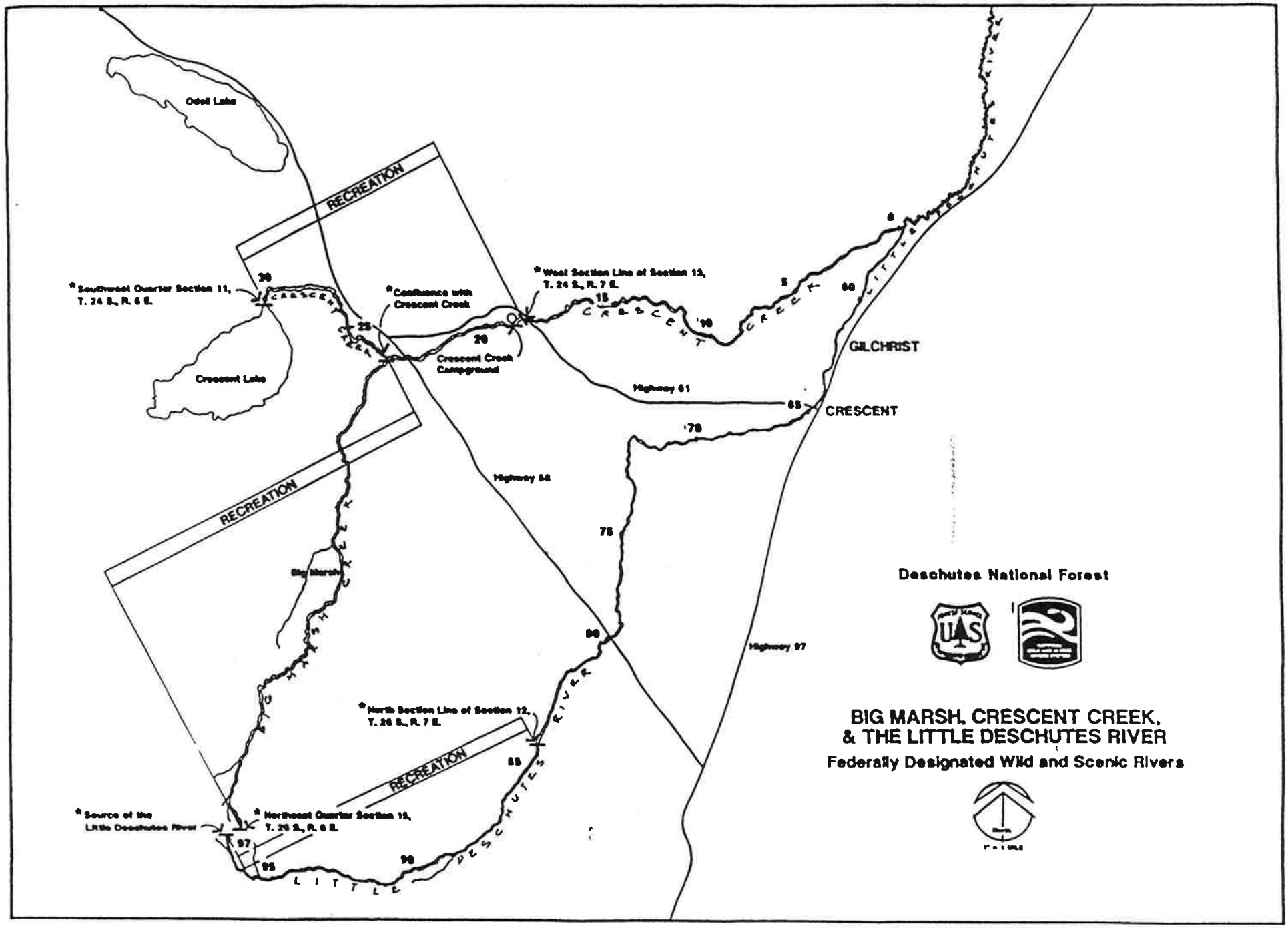

Odell Lake
Crescent Lake
RECREATION
RECREATION
RECREATION
*Southwest Quarter Section 11, T. 24 S., R. 6 E.
*Confluence with Crescent Creek
Crescent Creek Campground
*West Section Line of Section 13, T. 24 S., R. 7 E.
CRESCENT CREEK
Highway 61
Highway 58
Highway 97
GILCHRIST
CRESCENT
Big Marsh
BIG MARSH CREEK
*North Section Line of Section 12, T. 26 S., R. 7 E.
*Source of the Little Deschutes River
*Northeast Quarter Section 15, T. 26 S., R. 6 E.
LITTLE DESCHUTES RIVER
Deschutes National Forest
BIG MARSH, CRESCENT CREEK, & THE LITTLE DESCHUTES RIVER
Federally Designated Wild and Scenic Rivers

I. SUMMARY

As a result of the 1988 Omnibus Oregon Wild and Scenic Rivers Act, a portion of Big Marsh Creek was designated as a Wild and Scenic River. Under this Act, the Forest Service is mandated to prepare a management plan to provide direction for resource management and to protect or enhance those river related values determined to be significant to the river environs. As a precursor to the management plan, this document, the Resource Assessment is prepared to: verify the Congressionally designated outstandingly remarkable resource values and identify and determine the significance of resource values not addressed in the legislative history. The Resource Assessment will serve as the foundation for the river management planning process. It will also provide the basis for interim management within the river corridor by identifying those resource attributes requiring protection.

II. INTRODUCTION

In 1968, Congress passed the National Wild and Scenic Rivers Act to establish a process for protection of outstanding free-flowing rivers. Big Marsh Creek was added to the National system with the Omnibus Oregon Wild and Scenic Rivers Act of 1988. The rivers by definition, must be free-flowing and have at least one outstandingly remarkable resource attribute value to be considered as a Wild and Scenic River. Geology, Fisheries / Wildlife and Scenic attributes were identified in the Congressional record as the outstandingly remarkable value of Big Marsh Creek.

Under the Wild and Scenic Rivers Act, the Forest Service is mandated to prepare a comprehensive management plan for the protection of those river related values identified as outstandingly remarkable. The total planning process for the management plan includes:

1) development of the Resource Assessment for determination of outstandingly remarkable values,

2) determination of the issues related to the river and its uses,

3) translation of the issues into management objectives,

4) formulation of alternatives to reflect those management objectives derived from the issues,

5) and an identified preferred alternative fully developed as the management plan for the river.

This plan must include management goals and provisions for monitoring the effectiveness of the plan in meeting resource objectives identified in the plan.

All phases of the above planning process will be accomplished in compliance with the regulations identified in the National Environmental Policy Act (NEPA). One essential element of NEPA is the involvement of the public throughout the planning process.

III. RESOURCE ASSESSMENT

This Resource Assessment serves as the foundation for the completion of the management plan. The Resource Assessment supports which river related values are outstandingly remarkable and contribute substantially to the river setting or the functioning of the river ecosystem.

The Resource Assessment process provides a standardized approach for the evaluation of the river attributes utilizing criteria developed by the Wild and Scenic Rivers Policy Group in cooperation with the Interagency Task Force (BLM, Forest Service and State Parks). The Resource Assessment will guide interim management, provide a basis for development of the river management plan and aid in the determination of the Wild and Scenic River corridor boundary. The following steps were utilized for the determination of the outstandingly remarkable attribute values for Big Marsh Creek:

- The use of a Deschutes Interdisciplinary team approach. (For a listing of those on the Interdisciplinary Team see Appendix C.)

- Consideration of unique values and the degree of rarity at a regional* or national level.

- Values must be river related in that they owe their existence or contribute to the functioning of the river system and its immediate environs.

- The use of standardized criteria against which river attributes are compared to for determining outstandingly remarkable values.

* The Interdisciplinary team (IDT) felt that the geographic region described in the 1989 Statewide Comprehensive Outdoor Recreation Plan (SCORP) for Oregon, within which Big Marsh Creek was located, did not represent river related environmental features that were typically found in Big Marsh Creek. The region contained rivers located west of the Cascades and environmental features varied significantly from those found in Big Marsh Creek. The IDT felt it was necessary to compare Big Marsh Creek with other rivers which displayed the same evolutionary processes, environmental features and climates as Big Marsh Creek. It was decided that Big Marsh Creek would be compared with rivers located in the region to the north which includes the Deschutes River of which Big Marsh Creek is a tributary. (See Appendix A for the location of the regions described in SCORP.)

The list of resource values considered for evaluation include: Fisheries, Scenic / Vegetative, Hydrologic, Wildlife, Geologic, Cultural Resources, and Recreation.

IV. BIG MARSH CREEK DESCRIPTION

On October 28, 1988, the United States Congress designated 15 continuous miles of Big Marsh Creek as a Wild and Scenic River under the Omnibus Oregon Wild and Scenic Rivers Act. The creek is located on the Crescent Ranger District of the Deschutes National Forest.

The State of Oregon did not designate any portion of Big Marsh Creek as a State Scenic Waterway in 1988 when several other rivers within Oregon were designated under a separate state legislative process.

The 15 mile stretch of Big Marsh Creek from the headwaters of the stream to the confluence with Crescent Creek was designated as a recreational river.

Within the Federally designated portion, there are approximately 3.5 miles of creek flowing through private land. All other lands within the river corridor are administered by the Deschutes National Forest. The interim boundary of the river corridor is considered to be 1/4 mile on either side of the river and contains approximately 4800 acres. Final boundaries of the river corridor will be determined through the river management planning process.

For descriptive and evaluative purposes, the IDT felt Big Marsh Creek should be segmented into 3 zones. (See Map in Appendix B). These zones are as follows:

Zone A: That portion of Big Marsh Creek from the headwaters to the outlet at Big Marsh.

Zone B: That portion of Big Marsh Creek from the outlet at Big Marsh to the boundary of private land located where Big Marsh Creek passes into the north half of Section 31, Township 24 South, Range 7 East.

Zone C: That portion of Big Marsh Creek from the boundary of private land described above to the confluence with Crescent Creek. The majority of this land is in private land ownership.

V. FORMAT FOR DESCRIPTION OF RIVER VALUES

The following format will be used to discuss each Resource:

RESOURCE NAME

Criteria for Outstandingly Remarkable

The description given is the criteria for which the particular resource would be determined to be Outstandingly Remarkable. These criteria were developed by the Interagency Wild and Scenic Rivers Policy Group, facilitated by R-6 USDA Forest Service, and have been agreed upon for use in all Wild and Scenic River planning in the State of Oregon.

EVALUATION OF THE PRESENT SITUATION

A description of the Resource as it exists today by Zone if appropriate, on Big Marsh Creek.

FINDING

This finding is the result of the known data and determination by the Interdisciplinary Team with consultation with other specialists.

VI. SPECIFIC DESCRIPTION OF VALUES

FISHERIES

Criteria for Outstandingly Remarkable Rating

Fish values may be judged on the relative merits of either fish populations or habitat or Native Cultural use - or a combinations of these river-related conditions. Consideration shall be given for potential as well as existing values.

Habitat

The river provides or has the potential to provide exceptionally high quality habitat for fish species indigenous to the region. Of particular significance is habitat for wild stocks and/or federal, or state listed or candidate threatened, endangered and sensitive species. Diversity of habitats is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

Populations

The river is internationally, nationally or regionally an important producer of resident and/or anadromous fish species. Of particular significance is the presence of wild stocks and/or federal or state listed threatened, endangered and sensitive species. Diversity of species is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

EVALUATION OF THE PRESENT SITUATION - FISHERIES

During the preparation of this Resource Assessment, fisheries stream data was being collected on that portion of Big Marsh Creek above the marsh to the headwaters. The information gathered will not be analyzed until after the completion of the Resource Assessment. The information gathered will be utilized and a reevaluation of the resource may be required. The information will be used in the preparation of the river management plan.

Habitat

Zone A: Zone A of Big Marsh Creek consists of Big Marsh itself and upstream to the headwaters. In 1946, a diversion of the original stream channel where the stream enters the marsh was created to drain the marsh for cattle grazing. Ditches were dug on either side of the marsh to carry the water from the creek away from the marsh. In 1989, the

Forest Service rediverted the flow of Big Marsh Creek back into its original channel to return the marsh to a more natural condition previous to human intervention.

The stream above the diversion is characterized by a meandering stream channel with relatively stable banks. During spring high flows, water is backed up the stream above the diversion because of the reduced flow capacity of the original channel through the marsh. Fish habitat in the upper section of Big Marsh Creek is good.

Riparian vegetation, though not abundant because of previous grazing by cattle and continued use by elk, provides some overhanging structures for shading and hiding cover for fish. Instream downed woody material is plentiful and creates deeper pools for resting and water temperature moderation.

The west channel along the marsh has limited value for fish because it is straight and shallow with poor cover and the water temperature is too cold (45 degrees F) for quality fish habitat. The potential for enhancement of fish habitat in this channel is limited by these factors. Beaver have returned to the area and are adding to the increased habitat improvement for fisheries by providing larger pools though it is not known if fish species will be able to increase due to the low temperatures.

The east channel contains modest fish populations of brown trout, brook trout and mountain whitefish, with higher populations of small fingerling whitefish. The channel lacked structural diversity but recent placement of rock check dams and downed trees has slowed the flow through the channel, created some deeper pools for hiding areas, and raised the water table in the adjacent marsh area. The east channel does have further potential for habitat enhancement by adding structural diversity to the channel in the form of downed woody material and creation of deeper pools. The substrate of the channel bottom consists mostly of pumice with profuse aquatic vegetative growth on the sides of the channel. Very little rubble or gravels exist for spawning habitat.

The original channel of Big Marsh Creek flowing through the center of the marsh experienced degradation of the banks and streambed during the years of domestic cattle grazing and use of the area by increasing numbers of elk. Streambanks were trampled and leveled and the sediments filled the channel during low flows. Where water still flowed through the channel, aquatic vegetation flourished as the scouring action of high flows was eliminated. Now that the diversion has replaced the flows to the main channel, the higher flows should scour the sides and bottom of the streambed, remove most of the aquatic vegetation and excess sedimentation, create deeper pools and improve the streambank stability over the long term. Rediversion of the flows to the main channel may have doubled the miles of fish bearing stream by increasing the volume of water above the diversion and increasing the habitat effectiveness in the more natural original channel through the marsh.

Zone B: Below the marsh, the stream is of a low gradient nature though tight meanders have not developed possibly due to the coarse, glacial material it is flowing through. Deeper pools have developed and aquatic vegetation provides some hiding cover and moderates the effects of the lack of overhanging riparian vegetation. The streambed

substrate progressively improves proceeding downstream as the gravel component increases providing more spawning habitat.

Zone C: Within this area, the stream widens and tight meanders develop. Riparian vegetation decreases in size and numbers decreasing the hiding and shading cover in this zone of the creek. Cattle in the area may have altered some of the natural undercut banks and hiding cover in the area, though the effects on the fish populations is not as critical as the deepness of the stream and the presence of aquatic vegetation provides some hiding cover in itself. There is a lack of downed woody material within the stream. Streambed substrates show substantial increase in gravels and larger rocks creating quality spawning habitat. The pumice content has disappeared altogether from the substrate.

Populations

Zone A: As already partially discussed under the habitat section for Zone A, brown trout, brook trout and mountain whitefish are found in the fingerling to 16 inch size classes with whitefish making up the bulk of the numbers of fish.

Some larger fish have been observed taking advantage of the increased habitat above the diversion, with some in the 16 inch plus range. Whitefish are the dominant fish species, with brown trout and brook trout being less abundant. Farther upstream, brook trout may increase in numbers. Due to the rediversion, it is expected that fish populations will increase with the increase in available habitat and recovery of the riparian vegetation to form hiding cover.

The habitat enhancement projects done in conjunction with the rediversion such as the rock check dams have added structural diversity to the east ditch and should increase fish numbers in this channel. It is expected that fish will return to the main channel of Big Marsh Creek as the system stabilizes to the new flow regimes and scouring cleans the channel of unwanted aquatic vegetation and sediments. In the lower reaches of this zone, brown trout dominate the fish numbers.

Zones B and C:

Fish populations are comparable to those found in Zone A though there is an increase in numbers and sizes with brook trout being the dominate species. Additionally, there are small populations of rainbow trout in the 7-9 inch size classes. Habitat improvement may help increase the number of fish.

FINDING

The fisheries resource of Big Marsh Creek is considered not to be outstandingly remarkable. The species diversity is comparable to other streams within the region such as the Little Deschutes River, lower Crescent Creek and Odell Creek. The fisheries is not of a national or regional significance and does not draw anglers from outside the region at significant levels. Most people who frequent the area are local residents.

The potential for increase in fish habitat and population in Zone A is high as the marsh reestablishes itself to a saturated condition and slows the flow rate of the creek. Fish populations will be enhanced by moderation of flows and temperature.

The moderation of flows will also decrease bank erosion thereby reducing sedimentation of spawning habitat.

SCENIC / VEGETATIVE

Criteria for Outstandingly Remarkable Rating

The landscape elements of landform, vegetation, water, color, and related factors result in notable or exemplary visual features and/or attractions. When analyzing scenic values, additional factors such as seasonal variations in vegetation, scale of cultural modifications, and length of time negative intrusions are viewed may be considered. Scenery and visual attractions may be highly diverse over the majority of the river or river segment.

EVALUATION OF THE PRESENT SITUATION - SCENIC / VEGETATIVE

Zone A: The main scenic attraction of Big Marsh Creek is Big Marsh itself. Visual diversity of an open meadow/marsh with distant snow-covered peaks or rock outcroppings are visible throughout most of the year. Maiden Peak and Odell Butte are visible from the center of the marsh though not from the rest of the stream. Human activities are evident in fencing and conditions resulting from the past one hundred years of cattle grazing. The diversion structure, a few bridges and range exclosures are obvious when entering the marsh from upstream. Since the elimination of cattle grazing, bridges, fences and exclosures are not necessary and will be removed, returning the marsh to more natural conditions. Along the hills to the east adjacent to the marsh, past cultural modifications are evident. Clearcuts are the most obvious infringement on visual quality in the middleground. The light colored pumice soils of the area and slow regeneration and brush recruitment increases the visibility of the cleared areas. From viewing points above the marsh on the hills to the east, looking west,unique elements of landform can be seen with a panorama of the marsh in the foreground, a hillside of continuous tree stands in the middleground and snow-capped Diamond Peak in the background resulting in an exemplary visual attraction.

The riparian areas above the marsh provide the viewer with examples of the interface of drylands with wetlands. Hardwood and herbaceous vegetation lend orange color in the fall and variety of greens in the summer. Most of the creek flows through stands of mixed conifers including spruce and true firs. Deep pools and the pristine character of the upper stream allow the viewer a feeling of removal and remoteness from the effects of human intervention. Very little evidences of human activities are observable from the upper reaches of the stream, which starts in the Oregon Cascades Recreation Area, and access is limited. The land allocations adjacent to the river are for various levels of recreation management with the restriction of timber harvesting. This lack of development planned in the area would continue the present condition of pristine and remote character. The excellent water clarity allows colors in the streambed to be easily seen. Streamside vegetation is dense in some places and inhibits long distance viewing except directly up and down the stream corridor.

Plant communities within the marsh are expected to return to wetter habitat types with the sedge communities increasing. The drier communities typified by the tufted hairgrass will decrease though the areas that were heavily impacted by cattle grazing and are presently predominately Kentucky bluegrass will remain as such for a longer period of time. The depth of the accumulation of spagnum moss affects the presence or absence of species. In the more shallow depths, shrub communities of bog birch and huckleberry occupy the sight. In depths of 16 inches or more, lodgepole pine is able to invade and take over the sight. Adjacent to the marsh, Englemann spruce and queencup bead lily communities predominate. Populations of Jepson's monkey-flower, *Mimulus jepsonii*, were observed in this community, a species presently on the State of Oregon's threatened and Regional Forester's sensitive species list.

Zone B: The main visual infringement within this zone is the railroad bridge over the stream. A large expanse of bare pumice soil was created when a section of fill material was required to level the grade for the railroad. A large culvert was placed in the fill section to allow the stream to pass under the railroad. It is an abrupt and disruptive example of human modification though it is not within view for a long period of time as the viewer is traveling down the river corridor.

The streamcourse itself is relatively straight, with little riparian vegetation along the banks. The trees along the riparian area are exclusively lodgepole pine with a large percentage of the trees suffering mortality from the mountain pine beetle epidemic. The predominant riparian vegetation are willows and these have suffered from both domestic and wildlife grazing and browsing. There is very little visual diversity along this section of the creek.

Zone C: The stream in this segment develops tight meanders and the meadows ajacent to the stream widen. Cattle grazing has been occurring within this zone and is compatible with the management of the river corridor. The private landowners grazing cattle have managed the area to allow useage by wildlife and do not exclude wildlife with their fences or structures. Fences and other structural improvements necessary for cattle grazing are evident from the corridor. Public access would not be required or desired in this zone as the visual attractions are centered around the Big Marsh area.

Past activities occurring within this zone have been some logging and the use of portable mills for production of railroad ties by Shevlin-Hixson. Later, the Hoey ranch was used as a hunting lodge after railroad tie production in the area decreased.

FINDING

The scenic / vegetative resource of Big Marsh Creek is considered to be outstandingly remarkable for Zone A. The unique combination of an extensive, high-elevation marsh with diverse vegetation and landforms is found nowhere else within the geographic region. The pristine nature of the upper reaches of the stream and the marsh itself leave the viewer with examples of environmental features the way they existed prior to human intervention. The rediversion of the creek back to its original channel will change the vegetation to wetter habitats. The presence of a sensitive species is not related solely to the river environment as populations of the species have been found outside the corridor.

HYDROLOGY

Criteria for Outstandingly Remarkable

A description of the attributes for which a river would be rated outstandingly remarkable for the hydrologic resource has not been written, as have descriptions for other resource values. The interdisciplinary team considered source type, water quantity, and water quality as attributes which should be used to determine the significance of the hydrologic resource.

EVALUATION OF THE PRESENT SITUATION - HYDROLOGY

Zone A: Big Marsh Creek originates from spring snow melt and rains in the upper reaches of the divide between the Deschutes and Umpqua river basins. The stream flows through undeveloped land with little or no impact from human activities until it reaches the beginning of Big Marsh. In 1946, the stream was diverted from its natural course through Big Marsh to a diversion ditch dug on the east side of the marsh. A similar ditch on the opposite margin of the marsh diverted flow from a number of springs around the west side of the marsh. The objective was to drain the marsh to favor grasses and improve cattle grazing opportunities. In 1989, the stream was rediverted back to its original streamcourse. Additional rock was added in 1990 to minimize erosion created from the increased flows in the main channel. Cattle grazing has been discontinued and it is expected that bank stability and riparian vegetative growth will improve.

With the diversion rechanneling flows to the original channel, sheet flooding will occur over a large percentage of the marsh in the spring as the channel is not capable of carrying all the spring runoff. The main channel is designed by nature to carry mid to late summer flows with the increased spring flows being forced into side channels into the marsh. As water moves through the marsh, the velocity slows and solar radiation will raise stream temperature. Temperatures changes will not be extreme and the slight warming which will occur may enhance fish growth.

The marsh will also act as a filter and remove sediments from the stream before it exits the marsh. The natural process of lakes being transformed into meadows and in turn to forested lands due to the forces of erosion and sedimentation provide opportunities for interpretation. The decomposition of vegetative material in the marsh increases the tannic acid content of the water and the water becomes brownish in color but still maintains excellent clarity.

Implementation of the rediversion project includes measurement of stream temperature and flow at designated locations above and below Big Marsh and at the confluence with Crescent Creek. These stations will be permanent monitoring stations to record temperature and flow. Baseline data was gathered the summer before the diversion was implemented to allow comparisons of data collected before, during and after project implementation. Flushing over the next several years should reduce the level of tannic acid in the water though it will always be present to some extent. No significant change in water chemistry is expected to occur over the long term.

Zones B and C:

The water quality remains good as the stream passes through these zones. The coloration of the water below the marsh becomes tea colored because of the presence of the tannic acid from the decompostion of organic material in the marsh. Some degradation of the water quality may occur from impacts of elk and cattle on streambanks and riparian vegetation, however the extent is not known and it seems to have little impact as the overall water quality is maintained downstream.

FINDING

The hydrologic value of Big Marsh Creek is considered not to be outstandingly remarkable. Though the water quality is excellent and flow is consistent, neither of these attributes are of regional or national importance. Other streams within the region exhibit similar hydrologic values.

WILDLIFE

Criteria for Outstandingly Remarkable

Wildlife values shall be judged on the relative merits of either wildlife populations or habitat or Native American cultural use - or a combination of these conditions.

Populations

The river or the area within the river corridor contains nationally or regionally important populations of indigenous wildlife species. Of particular significance are species considered to be unique or population of federal or state listed or candidate threatened, endangered or sensitive species. Diversity of species is an important consideration and could in itself lead to a determination of outstandingly remarkable.

Habitat

The river or the area within the river corridor provides exceptionally high quality habitat for wildlife of national or regional significance, or may provide unique habitat or a critical link in habitat conditions for federal or state listed of candidate threatened, endangered and sensitive species. Contiguous habitat conditions are such that the biological needs of the species are met. Diversity of habitats is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

EVALUATION OF THE PRESENT SITUATION - WILDLIFE

Populations

Zone A: It is estimated from survey and telemetry data that approximately 75-100 head of elk utilize the upper reaches of Big Marsh Creek including Big Marsh. The majority of the herd uses the area during the spring, summer and early fall months and also

use significant portions of the other zones for travel routes. The herd winters on the west side of the Cascades. It is expected that during years of low snow accumulation, some elk may winter in the Big Marsh area.

Cougar, bobcat, bear, pine martin, beavers and other furbearers frequent the more remote areas in the upper reaches of Big Marsh Creek. A survey located a pair of spotted owls in the upper reaches of the drainage in 1982. It is not known what the status of this pair is presently as no further surveys have been completed in the area. It is possible the birds may have crossed over from the more suitable habitat in the Umpqua river drainage while traveling to other feeding or nesting areas.

Great gray owls have been called and located along the edges of the marsh. Other avian species using the marsh are mallards, blue-winged teal, Wilson's phalarope and Canada geese of several varieties. Six breeding pairs of sandhill cranes were observed in recent years though their reproductive success has been critically low.

Zone B: It is expected that small furbearers would be found within this zone in the contiguous lodgepole stands. Elk are found to be in the area in the summer and spring months, though they are probably utilizing the Zone A as a travel corridor to other areas with more forage.

Zone C: Local landowners have reported the use of wildlife species within this zone to be extensive. Two pairs of otters have been observed along with lesser furbearers such as weasles and mink. Several beaver ponds exist along the corridor with the beaver increasing with the reduction of trapping in the area. The landowners have seen an increase in the coyote population which could possibly be related to an increase in the rodent populations of golden mantled ground squirrels and pocket gophers. A few pairs of sandhill cranes are using the area for nesting though their success is not known. The landowners have seen a decrease in the goshawk and red-tailed hawk populations. Other bird species present in the zone include ospreys, mergansers and blue herons.

The use of the zone in the spring by the local elk population is substantial and is compatible with the cattle grazing as the use has been observed for several years. The elk are probably using the area for calving and are moving on to traditional summering areas around Davis Lake. There are some elk that remain in the area for the summer and enough forage exists for them. Cattle grazing can be beneficial as the grazing promotes new growth of the grasses and sedges which is more palatable. The grazing is occurring later in the summer allowing the elk to use the area and then move on to traditional areas for summering.

Historical use of the area by beavers was related by some of the local land owners but the populations were reduced substantially by trapping.

Habitat

Zone A: The unroaded and remote upper reaches of Big Marsh Creek are critical for deer and elk during the summer months, providing escape areas from human harassment. Because they are free of snow earlier in the the spring, riparian areas and meadows

provide critical habitat for calving and fawning. Suitable habitat for spotted owls may occur in the upper reaches of the drainage though no recent surveys have been completed.

With the return of the water to the marsh, food species more suitable to a wider range of birds and mammals will increase. The drier edges and higher ground within the marsh will continue to support grasses and provide high quality forage for elk. Prescribed fire may promote more palatable grasses and forbs for forage during the spring after burning.

Elk telemetry data has shown that the elk move up the Big Marsh drainage in the fall and over the divide to the Umpqua River basin for wintering. It is anticipated that the elk follow similar routes for the return in the spring though no data exists as the migration occurs within a short period of time.

Lodgepole stands along the western and eastern edges of the marsh provide habitat for pine martin, mule deer, bobcat and other small furbearers.

As the marsh absorbs more water due to the rediversion, waterfowl and shorebird use will increase to levels which preexisted the 1946 diversion. Sandhill crane nesting habitat may improve as the water level rises and provides better protection from predation.

Zone B: Below the marsh, the creek takes on attributes of creeks within the region and provides no distinctive habitat. The creek flows through small diameter lodgepole stands which provide some hiding and thermal cover for deer and elk. The area has not been extensively roaded however and may provide a refuge from harassment.

Zone C: This area is typified by wide meadows adjacent to the stream with little riparian vegetation. Cattle grazing promotes regrowth of grasses and sedges and actually increase the palatable forage available for deer and elk. Rodent populations may increase in the disturbed sites and may enhance hawk populations though the coyote population seems to be responding the fastest with an increase. The local residents value the presence of the diversity of wildlife species and promote the continued use of their land by wildlife. The roads on the private land are closed to public traffic and reduce the amount of human intrusions on the wildlife populations.

FINDING

The wildlife resource of Big Marsh Creek is considered to be outstandingly remarkable in Zone A. The diversity of species present in the corridor of Big Marsh Creek is important regionally and locally. Habitat diversity along the length of Zone A of Big Marsh Creek is unique within the region. The marsh provides quality habitat and is being returned to conditions which existed prior to human influence and in the future will provide increasingly diverse habitats. The riparian areas above the marsh provide excellent fawning and calving areas for deer and elk. The drainage itself provides a travel route for the elk in spring and fall to their traditional wintering grounds in the Umpqua River drainage.

The marsh provides nesting habitat for shore birds and waterfowl and as the marsh returns to a more saturated and natural state, conditions will only improve. Long-term

local residents have related the previous abundance of waterfowl and it is anticipated the waterfowl will return in numbers as the marsh water level stabilizes.

The other zones of Big Marsh Creek do not vary significantly from the habitats and species populations found in other streams within the region and do not contribute to the outstandingly remarkable value determination.

GEOLOGIC

Criteria for Outstandingly Remarkable

The river or the area within the river corridor contains an example(s) of a geologic feature, process, or phenomena that is rare, unusual, one-of-a-kind or unique to the geographic region. The feature(s) may be in an unusually active stages of development, represent a "textbook" example and/or represent a unique or rare combination of geologic features (erosional, volcanic, glacial, and other geologic structures).

EVALUATION OF THE PRESENT SITUATION - GEOLOGIC

Zone A: Big Marsh Creek and the canyon in which it flows was created by glacial erosion during several major glaciations of the Cascades. Glaciers carved a deep canyon about 8 miles long and up to 2000 feet deep into a variety of volcanic rocks that make up the Cascades in this area. The last major glacier melted about 13,000 years ago but before it did, it left a hummocky group of moraines (piles of sand and gravel) at the mouth of the canyon. (The outlet of Big Marsh.)

A large, shallow lake about a mile wide and at least 4 miles long formed behind the moraines in the bottom of the canyon. Subsequently, sediments derived from the last shrinking glacier and from later erosion filled the lake to create a marshy wetland and what is now presently Big Marsh. In the distant future as the marsh slowly accumulates more sediments, it will transform into an increasingly dry meadow and eventually become forested land.

Zones B and C:

When a glacier last filled the canyon, Big Marsh Creek spread large fans of sand and gravel beyond the mouth of the canyon leaving hummucky areas of deep gravels. The farther from the outlet of Big Marsh, the smaller the sands and gravels become. The creek was much larger at that time allowing for wide distribution area of sands and gravels. Presently, the creek flows in a relatively narrow channel through the alluvial fan of sand and gravel. As the channel widens in Zone C, tight meanders and oxbows develop.

All Zones:

About 7000 years ago, the catastrophic eruption of Mt. Mazama left a sheet of ash covering the entire Pacific Northwest. The whole length of Big Marsh Creek was covered with about 5 feet of ash and pumice. Deposition of material from Mount Mazama is not unique to the geographic region.

FINDING

The geologic values of Big Marsh Creek in Zone A are considered to be outstandingly remarkable. Big Marsh is a glacially formed lake that filled with sediment to form a large, high elevation marsh. Big Marsh is part of large glacially created complex including a steep headwater area, a deep glacial valley, and a sediment-filled lake. The marsh is the only high elevation marsh within the geographic region. It provides unique opportunities for students of geology and geomorphology to study important aspects of glaciation.

Moraines, fans of glacial outwash, and a stream flowing through its own outwash are geologic features found in other streams within the geographic region. The deposition of pumice and ash from Mt. Mazama is indicative of the volcanic forces recently active in the area and are not related to the river environs.

Other streams within the region display differing consequences of glacial and erosional forces. The complex of Big Marsh Creek, Little Deschutes River and Crescent Creek provide students of geology and geomorphology an opportunity to study a wide variety of features and processes within a small geographic area.

CULTURAL RESOURCES

Criteria for Outstanding Remarkable

Prehistoric

The river or the area within the river corridor contains a site(s) where there is evidence of occupation or use by native Americans. Sites must have unusual characteristics or exceptional human interest value(s). Sites may have national or regional importance for interpreting prehistory; may be rare and represent an area where a culture or cultural period was first identified and described; may have been used concurrently by two or more cultural groups; or may have been used by cultural groups for rare or sacred purposes. Of particular significance are sites or features listed in, or are eligible for inclusion in, the National Register of Historic Places.

Historic

The river or the area within the river corridor contains a site(s) or feature(s) associated with a significant event, an important person, or a cultural activity of the past that was rare, unusual or one-of-a-kind in the region. A historic site(s) and/or feature(s) in most cases is 50 years old or older. Of particular significance are sites or features listed in, or are eligible for inclusion in, the National Register of Historic Places.

Traditional Use, Cultural

The river or the area within the river corridor contains regionally unique location(s) of importance to Indian tribes (religious activities, fishing, hunting, and gathering). Locations may have unusual characteristics or exceptional

cultural value being integral to continued pursuit of such activities. Locations may have been associated with treaty rights on ceded lands or activities unprotected by treaty on ceded lands or in traditional territories outside ceded lands.

EVALUATION OF THE PRESENT SITUATION - CULTURAL RESOURCES

Prehistoric

All Zones:

Approximately 25% of Big Marsh Creek has been surveyed for prehistoric sites to an extent considered to be "reliable". Approximately 15 lithic scatter sites have been located from identification of surface component artifacts. No test excavations have been done to date to identify the existence or absence of a subsurface component. The Mazama ash layer, 4-6 feet deep separates these two components over most of the District and differentiates the sites to before or after 6,800 years BP (1950). The analysis of these sites indicates they are typical of others found in the region. The number of sites found does not indicate a site density above or below the norm.

To date no rock shelter or rock art sites have been found within the area surveyed. Rock shelters and rock art of significant size and character are found at other sites within the Region along many rivers; i.e. Deschutes, Crooked and Squaw Creek.

The Klamath Trail is a route between the Klamath area and the Columbia River area (Celilo Falls) used by several Native American Tribes such as the Warm Springs, Paiute and the Klamath. The exact location of this trail in relation to the river and its corridor is unknown.

Historic

All Zones:

The first settlement of the Big Marsh Creek area began in the mid-1800's with the establishment of several homesteads and early wagon roads. Early settlers grazed cattle and sheep, mined pumice and trapped. Settlements were located in Big Marsh itself and along lower Big Marsh Creek.

The remains of the homes and improvements related to grazing are present but, in poor condition. Most of the information is known and much has been published. Several examples exist and are written by local historians such as Leah Menefee and Edward Gray and can be found in the Literature Searched or Referenced section located in Appendix C of this document.

Traditional Uses

All Zones:

The Big Marsh Creek area is within the area claimed by the Warm Springs Tribes and the Klamath Tribe as an area to which they have rights, i.e. subsistence, water, gathering, ceded lands. Subsistence hunting for elk, deer and bear may occur within the area. The religious rights and uses of the area

are unknown. An area at the outlet of the marsh may be currently used for sweatlodges. Data is being gathered the summer of 1990 to better assess the local tribes traditional use of Big Marsh Creek. The data will be used in the development of the river management plan.

FINDING

The cultural resources of Big Marsh Creek are considered not to be outstandingly remarkable based on the current information available. Traditional use data is being gathered at this writing and if new information is received, the finding will be reevaluated. Prehistoric sites have been found in Little Deschutes and Big Marsh Creek, but the type of site and number of sites is not regionally unique or outstanding.

The historic development of these creeks and river occurred similar to many other areas within the region and in fact was settled later than some others. The major development occurred in conjunction with the development of the railroad and use of the area for grazing. No major attraction, such as gold or silver, was found to encourage development of these areas, as occurred in many others. The CCC camp facility at Odell Lake was like others within the region, but nothing remains today. The Historic resource of these creeks and river is felt to be significant to the local area, but not outstanding within the region.

It is anticipated that the traditional uses of Big Marsh Creek are not outstandingly remarkable if no new information is revealed. The traditional use values of these creeks and river were determined to be of significant value, but not outstanding within the region. Food gathering of greater significance occurs in areas on the Ochoco National Forest. Fishing activities of greater significance occur at sites such as Shearers Falls on the Lower Deschutes River. Religious use sites are found throughout the region and are similar to those found in the these areas.

A final rating of the cultural value will be made upon completion of an overview and contacts with various tribal groups.

RECREATION

Criteria for Outstandingly Remarkable Rating

Recreational opportunities are, or have the potential to be, unique enough to attract visitors from outside of the geographic region. Visitors would be willing to travel long distances to use the river resources for recreational purposes. River-related opportunities could include, but are not limited to sightseeing, wildlife observation, photography, hiking, fishing, hunting, and boating.

Interpretive opportunities may be exceptional and attract or have the potential to attract visitors from outside the geographic region.

The river may provide or have the potential to provide settings for national or regional usage or competitive events.

EVALUATION OF THE PRESENT SITUATION - RECREATION

Zone A: The main recreational features of Big Marsh Creek are the water related opportunities within and adjacent to the marsh itself. The pristine character of the upper reaches of the creek and marsh impress visitors to the area along with the diversity of wildlife and viewing opportunities. Big Marsh receives use by wildlife viewers for both big game and avian species. A primitive trail system is developed along the eastern edge of the marsh. Other popular activities within two miles above the marsh include dispersed camping, canoeing and fishing. The majority of the user groups are local residents. Members of regional conservation organizations have taken an interest in the marsh and spend time recreating there. Some members are from outside the region such as Eugene and Klamath Falls.

Some snowmobiling occurs during the winter on the roads above the marsh. A snowmobile bridge is located at the outlet of the marsh and crosses the creek.

The clearcuts below the roads adjacent to the marsh provide excellent overlooks for viewing the entire marsh complex with Diamond Peak dominating the distant view.

Big Marsh and the areas above the marsh are popular deer and elk hunting areas.

Zone B and C:

The two mile stretch of stream below the marsh is used annually by Boy Scouts for canoe training. Locals use the areas for recreational fishing and hunting.

FINDING

The recreational values associated with Big Marsh Creek are considered not to be outstandingly remarkable. The potential for the recreational features of Big Marsh Creek to become a regional attraction is high. The quality and character of the area is unique to the region and although people from outside the region visit the area, Big Marsh remains little known. The creek is not visible from major transportation routes and casual visitors are not drawn to it.

SUMMARY OF FINDINGS

BIG MARSH CREEK

DRAFT

RESOURCE ASSESSMENT

RESOURCE VALUE	OUTSTANDINGLY REMARKABLE		
	ZONE A	ZONE B	ZONE
FISHERIES	NO	NO	NO
SCENIC / VEGETATIVE	**YES**	NO	NO
HYDROLOGY	NO	NO	NO
WILDLIFE	**YES**	NO	NO
GEOLOGIC	**YES**	NO	NO
CULTURAL RESOURCES	NO	NO	NO
RECREATION	NO	NO	NO

SYNOPSIS OF FINDINGS

The findings of the Outstandingly Remarkable Values of this Resource Assessment for Big Marsh Creek are consistant with the findings identified in the Congressional Record. No additional information was found that added to the conclusions.

The Scenic category was adjusted to include vegetational characteristics of the river corridor. It was identified as outstandingly remarkable because of the remoteness and pristine character of the marsh and the upper reaches and the lack of major human intrusions in these areas. The diversity of plant species within the marsh itself added to the findings.

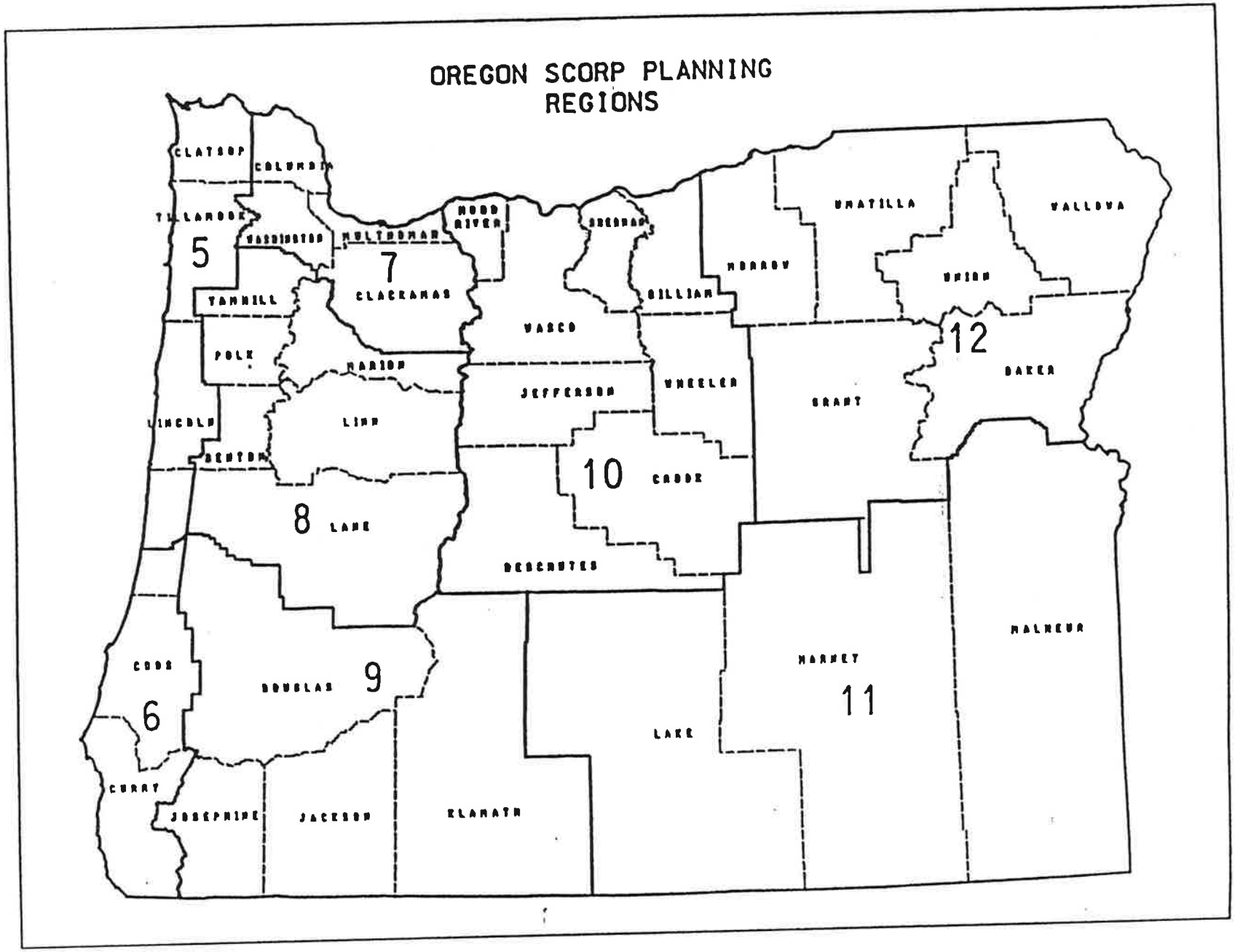
Geology was identified as outstandingly remarkable because of the uniqueness of the marsh and the processes by which it was formed. It is the only high elevation marsh within the region that was formed from glacial processes.

Wildlife was identified as outstandingly remarkable because of the uniqueness of the marsh and the variety of species that utilize the area. The remoteness and lack of human intrusions add to the value of the marsh.

In most cases, existing private land uses are consistent with Wild and Scenic River goals. In the administration of Wild and Scenic Rivers, the federal agencies must make efforts to inform the public about where private lands are located, that private lands are not open to public use, that existing private land uses are legitimate, and that private land owner rights must be respected

and protected. The local landowners are managing the land with wildlife species in mind and the continued use of the area by a variety of wildlife species attest to the landowners' management.

APPENDIX A


OREGON SCORP PLANNING
REGIONS
CLATSOP
COLUMBIA
TILLAMOOK
WASHINGTON
MULTNOMAH
HOOD RIVER
SHERMAN
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WALLOWA
MORROW
UNION
GILLIAM
TAMHILL
CLACKAMAS
WASCO
POLK
MARION
JEFFERSON
WHEELER
GRANT
BAKER
LINCOLN
LINN
BENTON
CROOK
LANE
DESCHUTES
MALHEUR
COOS
DOUGLAS
HARNEY
LAKE
CURRY
JOSEPHINE
JACKSON
KLAMATH
5
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APPENDIX C

Deschutes National Forest Interdisciplinary Team

Carrie Sammons	Team Leader	USFS
Tom Felando	Fisheries	USFS
Kathleen Woodlte-Johnson	Wildlife	USFS
Jim Scott	Scenic	USFS
Jim Scott	Recreation	USFS
Tom Felando	Hydrology	USFS
LeRoy Steece	Cultural	USFS
Larry Chitwood	Geology	USFS
Gery Ferguson	Writer/Editor	USFS

Others Consulted

Norm Behrens	Oregon Department of Fish and Wildlife
Big Marsh Creek Landowners:	Don Menefee Tim Wakefield Glen L. Rollins John Collins and Family Bert Davis

Literature Searched or Referenced

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RESOURCE ASSESSMENT

LITTLE DESCHUTES RIVER

National Wild and Scenic River

LITTLE DESCHUTES RIVER

RESOURCE ASSESSMENT

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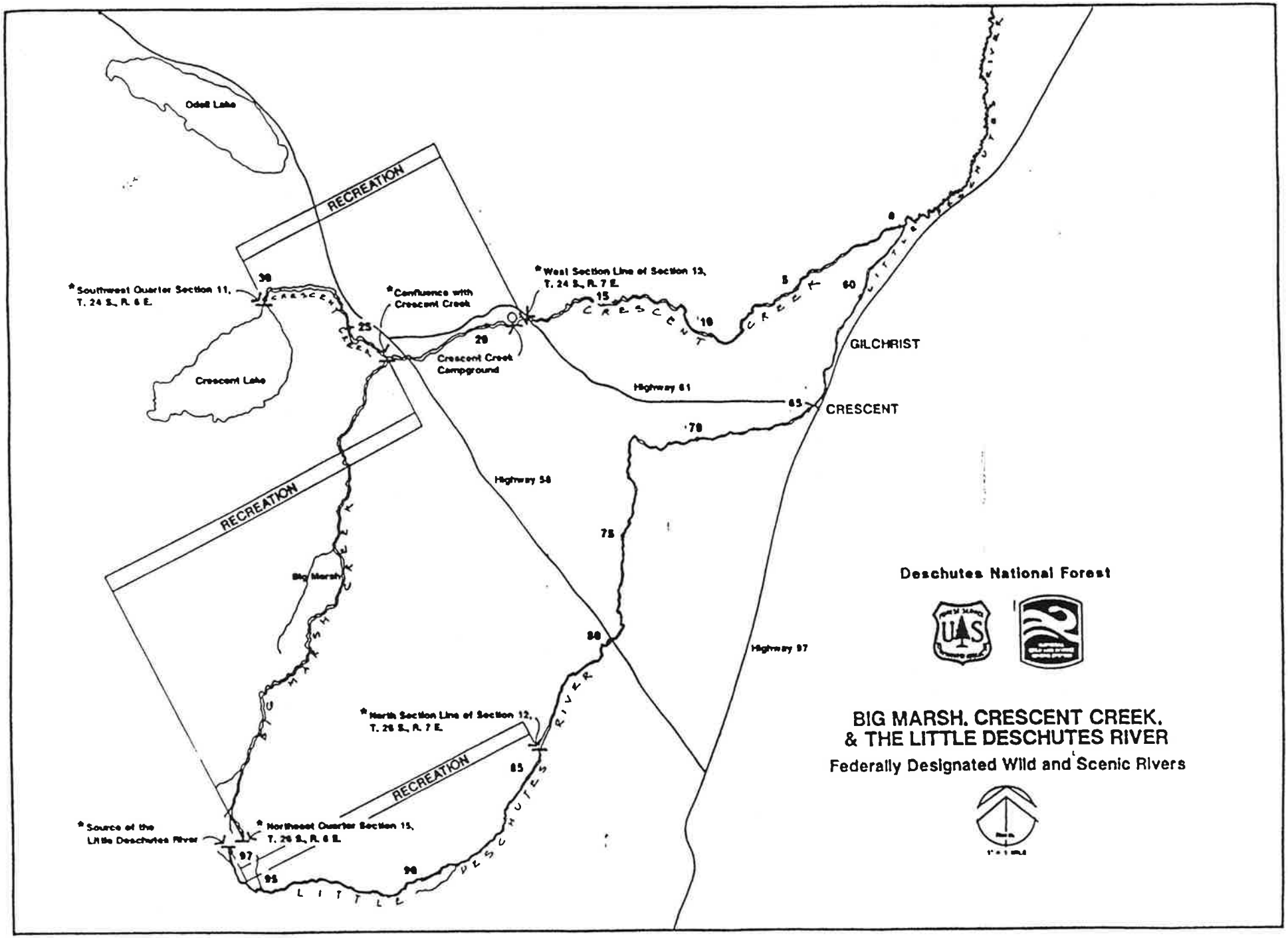

Odell Lake
Crescent Lake
RECREATION
RECREATION
RECREATION
*Southwest Quarter Section 11, T. 24 S., R. 6 E.
*Confluence with Crescent Creek
*West Section Line of Section 13, T. 24 S., R. 7 E.
Crescent Creek Campground
CRESCENT CREEK
Highway 61
Highway 58
Highway 97
GILCHRIST
CRESCENT
BIG MARSH CREEK
Big Marsh
*North Section Line of Section 12, T. 26 S., R. 7 E.
*Northeast Quarter Section 15, T. 26 S., R. 6 E.
*Source of the Little Deschutes River
LITTLE DESCHUTES RIVER
Deschutes National Forest
BIG MARSH, CRESCENT CREEK, & THE LITTLE DESCHUTES RIVER
Federally Designated Wild and Scenic Rivers

I. SUMMARY

As a result of the 1988 Omnibus Oregon Wild and Scenic Rivers Act, a portion of the Little Deschutes River was designated as a Wild and Scenic River. Under this Act, the Forest Service is mandated to prepare a management plan to provide direction for resource management and to protect or enhance those river related values determined to be significant to the river environs. As a precursor to the management plan, this document, the Resource Assessment, is prepared to support the Congressionally designated outstandingly remarkable resource values and identify and determine the significance of resource attributes not addressed in the legislative history. The Resource Assessment will serve as the foundation for the river management planning process. It will also provide the basis for interim management within the river corridor by identifying those resource values requiring protection.

II. INTRODUCTION

In 1968, Congress passed the National Wild and Scenic Rivers Act to establish a process for protection of outstanding free-flowing rivers. The Little Deschutes River was added to the National system with the Omnibus Oregon Wild and Scenic Rivers Act of 1988. The rivers by definition, must be free-flowing and have at least one outstandingly remarkable resource value to be considered as a Wild and Scenic River. Geology, Fisheries / Wildlife and Scenic attributes were identified in the Congressional record as the outstandingly remarkable values of the Little Deschutes River. These values and all other river related values will be protected through the management plan.

Under the Wild and Scenic Rivers Act, the Forest Service is mandated to prepare a comprehensive management plan for the protection of those river related values identified as outstandingly remarkable. The total planning process for the management plan includes:

1) development of the Resource Assessment for determination of outstandingly remarkable values,

2) determination of the issues related to the river and its uses,

3) translation of the issues into management objectives,

4) formulation of alternatives to reflect those management objectives derived from the issues,

5) and an identified preferred alternative fully developed as the management plan for the river.

This plan must include management goals and provisions for monitoring the effectiveness of the plan in meeting resource objectives identified in the plan.

All phases of the above planning process will be accomplished in compliance with the regulations identified in the National Environmental Policy Act (NEPA). One essential element of NEPA is the involvement of the public throughout the planning process.

III. RESOURCE ASSESSMENT

This Resource Assessment serves as the foundation for the completion of the management plan. The Resource Assessment supports which river related values are outstandingly remarkable and contribute substantially to the river setting or the functioning of the river ecosystem.

The Resource Assessment process provides a standardized approach for the evaluation of the river values utilizing criteria developed by the Wild and Scenic Rivers Policy Group in cooperation with the Interagency Task Force (BLM, Forest Service and State Parks). The Resource Assessment will guide interim management, provide a basis for development of the river management plan and aid in the determination of the Wild and Scenic River corridor boundary. The following steps were utilized for the determination of the outstandingly remarkable values for the Little Deschutes River:

- The use of a Deschutes Interdisciplinary Team . (For a listing of those on the Interdisciplinary Team see Appendix C.)
- Consideration of unique values and the degree of rareness at a regional* or national level.
- Values must be river related in that they owe their existence or contribute to the functioning of the river system and its immediate environs.
- The use of standardized criteria against which river attributes are compared to for determining outstandingly remarkable values.

* The Interdisciplinary team (IDT) felt that the geographic region described in the 1989 Statewide Comprehensive Outdoor Recreation Plan (SCORP) for Oregon, within which the Little Deschutes River was located, did not represent river related environmental features that were typically found in the Little Deschutes River. The region contained rivers located west of the Cascades and environmental features varied significantly from those found in the Little Deschutes River. The IDT felt it was necessary to compare the Little Deschutes River with other rivers which displayed the same evolutionary processes, environmental features and climates as the Little Deschutes River. It was decided that the Little Deschutes River would be compared with rivers located in the region to the north which includes the Deschutes River of which the Little Deschutes River is a tributary. (See Appendix A for the location of the regions described in SCORP.)

The list of resource values considered for evaluation include: Fisheries, Scenic / Vegetative, Hydrologic, Wildlife, Geologic, Cultural Resources, and Recreation.

IV. LITTLE DESCHUTES RIVER DESCRIPTION

On October 28, 1988, the United States Congress designated 12 continuous miles of the Little Deschutes River as a Wild and Scenic River under the Omnibus Oregon Wild and Scenic Rivers Act. The creek is located on the Crescent Ranger District of the Deschutes National Forest.

The State of Oregon did not designate any portion of the Little Deschutes River as a State Scenic Waterway in 1988 when several other rivers within Oregon were designated under a separate state legislative process.

The 12 mile stretch of the Little Deschutes River from the headwaters of the stream to the north section line of Section 12, Township 26 South and Range 7 East was designated.

Within the Federally designated portion, there is no private land. All lands within the river corridor are administered by the Deschutes National Forest. The interim boundary of the river corridor is considered to be 1/4 mile on either side of the river and contains approximately 3840 acres. Final boundaries of the river corridor will be determined through the river management planning process.

For a map of the Little Deschutes River, see Appendix B.

V. FORMAT FOR DESCRIPTION OF RIVER VALUES

The following format will be used to discuss each Resource:

RESOURCE NAME

Criteria for Outstandingly Remarkable

The description given is the criteria for which the particular resource would be determined to be Outstandingly Remarkable. These criteria were developed by the Interagency Wild and Scenic Rivers Policy Group, facilitated by R-6 USDA Forest Service, and have been agreed upon for use in all Wild and Scenic River planning in the State of Oregon.

EVALUATION OF THE PRESENT SITUATION

A description of the Resource as it exists today on the Little Deschutes River.

FINDING

This finding is the result of the known data and determination by the Interdisciplinary Team with consultation with other specialists.

VI. SPECIFIC DESCRIPTION OF VALUES

FISHERIES

Criteria for Outstandingly Remarkable Rating

Fish values may be judged on the relative merits of either fish populations or habitat or Native Cultural use - or a combinations of these river-related conditions. Consideration shall be given for potential as well as existing values.

Populations

The river is internationally, nationally or regionally an important producer of resident and/or anadromous fish species. Of particular significance is the presence of wild stocks and/or federal or state listed threatened, endangered and sensitive species. Diversity of species is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

Habitat

The river provides or has the potential to provide exceptionally high quality habitat for fish species indigenous to the region. Of particular significance is habitat for wild stocks and/or federal, or state listed or candidate threatened, endangered and sensitive species. Diversity of habitats is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

EVALUATION OF THE PRESENT SITUATION - FISHERIES

Populations

The Little Deschutes River contains species usually found in streams and rivers located within the geographic region. Populations of rainbow trout and whitefish occur naturally in the river. Populations of the introduced brown trout and brook trout are found in the Little Deschutes. The brook trout occur in greater numbers in the upper portions of the drainage and brown trout are abundant throughout the drainage. All species occurring within the stream are presently successfully reproducing. Sizes of fish range from 2 to 12 inches. A good population of 6-9" fish are present with lesser numbers of larger fish. The species and sizes of fish occurring in the LittLe Deschutes River are comparable to those found in other areas. The species are not unique nor do they occur in numbers substantial enough to draw numerous anglers from outside the region.

There is no evidence of current fishing or documentation of a significant past use of the fisheries by Native Americans.

Habitat

The water quality, temperature and clarity of the Little Deschutes River are excellent. This standard of water quality contributes to the overall good water quality of the Deschutes River; a major recreational and fishery stream within the region. There is an adequate amount of downed woody material within the stream which provides cover. The energy of the water flowing over these logs creates deep pools for resting and cooler temperatures in the bottom of the pools during the summer months. The upper reaches are within a federally designated wilderness which provides a source of water with little human disturbance within the watershed.

The existing condition of the lower Little Deschutes River appears to be impacted by domestic cattle grazing. Riparian vegetation is grazed throughout the summer months though it appears that the water temperature is not adversely affected. The cattle concentrate in the riparian zone and do cause some streambank displacement, but sedimentation of the spawning habitat does not seem to be occurring. An environmen-

tal analysis is being prepared to analyze the effects of grazing on the river corridor. The analysiswill determine if detrimental impacts are occurring. Comments concerning the grazing of cattle within the stream corridor and the degradation of riparian values have been received from the public outside the region.

FINDING

The fisheries resource of the Little Deschutes River is considered not to be outstandingly remarkable. The species diversity is comparable to other streams within the region such as Big Marsh Creek, Crescent Creek and Odell Creek. The fisheries is not of national or regional significance and does not draw anglers from outside the region at significant levels. Most people who frequent the area are local residents. No sensitive, threatened or endangered species or suitable habitat for these species are known to exist in the Little Deschutes. Water quality and fish habitat are excellent but may be affected by cattle grazing within the corridor. Fish populations of rainbow and brown trout may increase if hiding cover was improved.

SCENIC / VEGETATIVE

Criteria for Outstandingly Remarkable Rating

The landscape elements of landform, vegetation, water, color, and related factors result in notable or exemplary visual features and/or attractions. When analyzing scenic values, additional factors such as seasonal variations in vegetation, scale of cultural modifications, and length of time negative intrusions are viewed may be considered. Scenery and visual attractions may be highly diverse over the majority of the river or river segment.

EVALUATION OF THE PRESENT SITUATION - SCENIC/VEGETATIVE

The Little Deschutes River originates at the divide between the Umpqua and Deschutes River drainages. For the first few miles it flows through a pristine canyon with steep walls and a flat valley floor unlike any found on the Deschutes National Forest. Prior to the recent activity related to the search for the lost Madsen child, evidence of human intrusion was limited to an abandoned road, trail and occasional primitive horse bridge. The search for the lost child increased activities within the corridor. Residual effects of horse and foot travel, campfire rings and vegetation trampling exist but do not significantly detract from the overall beauty and solitude offered by the canyon.

Steep walls confine views within the canyon. The narrow, tree-lined stream corridor further restricts the views in most places and focuses attention on the stream itself. The character of the stream is somewhat unique because it is bound in its banks by tight sod. The extreme sinuosity of the stream channel is caused by the flatness of the canyon floor and the light pumice material through which it flows. The focus on and the attractions of the stream itself tend to make the occasional views of the canyon rim and cliffs more impressive than might be the case of a more open drainage. Willows and other shrub species provide color to the landscape in winter, spring and fall.

Further down the stream, evidence of human activities become noticeable from the stream corridor. Timber stand manipulations and cattle grazing improvements occur within the

stream corridor and change the character of the stream from the more pristine nature of the upper reaches to one of a managed forest.

FINDING

The scenic value of the Little Deschutes River is considered to be outstandingly remarkable. The scenic variety associated with the stream is found along its length rather than in its surroundings. In the upper portion, the deepness of the canyon and steep walls provide opportunities to view the craggy rock outcrops in the middleground. This same physical character and topography which limits views also focuses attention on a stream with unique features and diversity along its length such as loop meanders, meander scars and oxbows. The evidences of human intrusions such as bridges, a stream monitoring station and fences are limited and of short duration and do not detract from the overall pristine quality of the majority of the river corridor.

HYDROLOGY

Criteria for Outstandingly Remarkable

A description of the attributes for which a river would be rated outstandingly remarkable for the hydrologic resource has not been written, as have descriptions for other resource values. The interdisciplinary team considered source type, water quantity, and water quality as attributes which should be used to determine the significance of the hydrologic resource.

EVALUATION OF THE PRESENT SITUATION - HYDROLOGY

The headwaters of the Little Deschutes River is located in the divide between the Umpqua and Deschutes River basins. The stream is predominately fed from snow melt and rainfall during the winter and spring when much of the precipitation occurs in the area. Small springs contribute to the total flow of the stream but not in substantial volume.

Due to the lack of human intervention in the upper Little Deschutes, water quality is excellent. The stream provides quality water to the Deschutes watershed and contributes to the fisheries and recreational values of that river. Cattle grazing occurs in the middle portions of the Little Deschutes and may affect the water quality locally but does not seem to affect overall water quality downstream. The intensive use of the riparian zone by the cattle has reduced the shrub and herbaceous component adjacent to the stream and may have an impact on stream bank stability.

Some sedimentation is occurring from a source on the south face of Cappy Mountain. At times the effects of this disturbance on stream turbidity can be observed far from its source. This sediment source is known to have been growing in size for several years.

FINDING

The hydrologic value of the Little Deschutes River is considered not to be outstandingly remarkable. The water quality is of high value, however other streams within the region provide the same level of quality water. The source is not of a significant nature and is comparable to other streams.

WILDLIFE

Criteria for Outstandingly Remarkable

Wildlife values shall be judged on the relative merits of either wildlife populations or habitat or Native American cultural use - or a combination of these conditions.

Populations

The river or the area within the river corridor contains nationally or regionally important populations of indigenous wildlife species. Of particular significance are species considered to be unique or population of federal or state listed or candidate threatened, endangered or sensitive species. Diversity of species is an important consideration and could in itself lead to a determination of outstandingly remarkable.

Habitat

The river or the area within the river corridor provides exceptionally high quality habitat for wildlife of national or regional significance, or may provide unique habitat or a critical link in habitat conditions for federal or state listed of candidate threatened, endangered and sensitive species. Contiguous habitat conditions are such that the biological needs of the species are met. Diversity of habitats is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

EVALUATION OF THE PRESENT SITUATION - WILDLIFE

Populations

The wildlife populations that are known to exist within the Little Deschutes River consist of Roosevelt elk, mule deer, cougar, black bear, and furbearers. The remoteness and inaccessibility of the upper reaches of the drainage provide solitude and areas free from harassment from people. A wolverine sighting was recorded several years ago and attests to the remoteness of the areas as these are solitary and shy animals. The extent of the wolverine population is not known, however the habitat and large area could support small numbers of the animals.

It is anticipated that the great gray owl would utilize the riparian edges along the stream corridor though no surveys have been completed for substantiation of presence.

Habitat

The Little Deschutes River provides remoteness and solitude for those species requiring this type of habitat. Human activities have been limited in the upper portions of the stream and few evidences of human intrusions exist. The lack of large open water decreases the availability for waterfowl habitat. The flats of lodgepole pine adjacent to the riparian zone do not provide extensive habitat diversity but pine martin and other small furbearers would utilize this habitat.

The forested edges along the meadows and riparian zones provide suitable habitat for great gray owls.

Cattle grazing within the Little Deschutes corridor may reduce the forage available for wildlife. The cattle concentrate in the riparian zones and moderate to heavy grazing of riparian grasses and palatable shrubs occurs in all cattle-accessible locations during the mid-July to mid-October grazing season. The environmental analysis being prepared the summer of 1990 and 1991 will analyze the effects of cattle grazing in the Little Deschutes River corridor.

FINDING

The wildlife resource for the Little Deschutes River is considered not to be outstandingly remarkable. The populations and habitat are found in other river corridors within the region. The remoteness and low impact of human intrusions in the area can be found on the upper reaches of the Little Deschutes River, Hemlock Creek and Moore Creek which are all located on the Crescent Ranger District.

GEOLOGIC

Criteria for Outstandingly Remarkable

The river or the area within the river corridor contains an example(s) of a geologic feature, process, or phenomena that is rare, unusual, one-of-a-kind or unique to the geographic region. The feature(s) may be in an unusually active stages of development, represent a "textbook" example and/or represent a unique or rare combination of geologic features (erosional, volcanic, glacial, and other geologic structures).

EVALUATION OF THE PRESENT SITUATION - GEOLOGIC

The upper 12 miles of the Little Deschutes River is part of a major glacial landscape. Most of the river flows in a deep and impressive canyon eroded by glaciers that occupied the canyon during several ice ages. Important primary features related to the river include a glacier-carved canyon, terminal moraines at the mouth of the canyon, and an outwash plain of sand and gravel beyond the canyon mouth.

The Little Deschutes canyon is the longest (8 miles) and deepest (2200 feet) glacial canyon on the east flank of the Oregon Cascades. This canyon was successively eroded and deepened after repeated glacial advances during several ices ages. Glaciers cut into the volcanic rocks of the Cascades which erupted in this area during the period 1 to 5 million years ago. Rocks eroded by the glaciers were piled up in moraines at the mouth of the canyon and spread in a large fan beyond the canyon. By far the greatest amount of glacially derived sediment was carried by rivers to the Pacific Ocean. The last glacier melted about 13,000 years ago.

After the last glacier completely melted, the Little Deschutes River changed from one that deposited sediment to one that eroded previously deposited sediment. Today, the river occupies a channel that it eroded in the canyon floor, the moraines, and the outwash plain. In the canyon, it meanders lazily across the flat floor of the canyon, flowing across its own sediment (silt, sand, and gravel). The flat, very low gradient floor, and the meanders are rare in the deep glacial canyons of the Oregon Cascades.

The cataclysmic eruption of Mt. Mazama (Crater Lake) 6800 years ago left a layer of pumice and ash 5 to 6 feet deep over the entire Little Deschutes canyon. The river has subsequently eroded a new channel through the pumice exposing the glacial deposits beneath.

Erosion by the river also exposes evidence of mineralization in the upper reaches of the canyon. Minerals containing copper and silver can be seen in the riverbed far up in the canyon. The Cappy Mountain area has been the focus of mineral interest for at least 70 years. However, no production of minerals has been reported. Mining claims were recently (1987) approved for an area adjacent to the west side of Cappy Mountain.

FINDING

The geologic values of the Little Deschutes River are considered to be outstandingly remarkable. The Little Deschutes River represents a classic glacial canyon with moraines and an outwash plain. The canyon is the longest and deepest on the east flank of the Oregon Cascades. The Little Deschutes River drains the entire area and is an integral part of this remarkable glacial landscape. The meanders of the river across the canyon floor are unique to rivers in other glacial canyons of the Oregon Cascades. The interaction of present day erosional processes with pumice and ash from Mt. Mazama provides a major opportunity for geomorphic studies. Glacial features surrounding the upper Little Deschutes River are part of a much larger complex of nearby glacial landforms which, taken together, provide excellent opportunities for comparative studies of glacial processes by students of geology and geomorphology. Universities, including the University of Oregon, have done research projects in this extraordinary and diverse glacial landscape.

CULTURAL RESOURCES

Criteria for Outstanding Remarkable

Prehistoric

The river or area within the river corridor contains a site(s) where there is evidence of occupation or use by native Americans. Sites must have unusual characteristics or exceptional human interest value(s). Sites may have national or regional importance for interpreting prehistory; may be rare and represent an area where a culture or cultural period was first identified and described; may have been used concurrently by two or more cultural groups; or may have been used by cultural groups for rare or sacred purposes. Of particular significance are sites or features listed in, or are eligible for inclusion in, the National Register of Historic Places.

Historic

The river or area within the river corridor contains a site(s) or feature(s) associated with a significant event, an important person, or a cultural activity of the past that was rare, unusual or one-of-a-kind in the region. A historic site(s) and/or feature(s) in most cases is 50 years old or older. Of particular significance are sites or features listed in, or are eligible for inclusion in, the National Register of Historic Places.

Traditional Use, Cultural

The river or area within the river corridor contains regionally unique location(s) of importance to Indian tribes (religious activities, fishing, hunting, and gathering). Locations may have unusual characteristics or exceptional cultural value being integral to continued pursuit of such activities. Locations may have been associated with treaty rights on ceded lands or activities unprotected by treaty on ceded lands or in traditional territories outside ceded lands.

EVALUATION OF THE PRESENT SITUATION - CULTURAL RESOURCES

Prehistoric

Approximately 20% of the Little Deschutes River within the Wild and Scenic designated area has been surveyed for prehistoric sites to an extent considered to be "reliable". Approximately 13 lithic scatter sites have been located from identification of surface component artifacts. No test excavations have been done to identify the presence or absence of a subsurface component. The Mazama ash layer, 4-6 feet deep separates these two components over most of the District and differentiates sites before or after 6,800 years BP (1950). The analysis of these sites indicates they are typical sites with respect to others found in the region. The number of sites found, within the area surveyed, is similar in number to other areas.

At this time no rock shelter or rock art sites have been found within the area surveyed. Rock shelters and rock art of significant size and character are found at other sites within the Region along many rivers; i.e. Deschutes, Crooked and Squaw Creek.

The Klamath Trail is a route between the Klamath area and the Columbia River area (Celilo Falls) used by several Native American Tribes such as the Warm Springs, Paiute and the Klamath. The exact location of this trail in relation to the river and its corridor is unknown at this time, see note below under Traditional Uses.

Historic

Settlement of the Little Deschutes River area began in the mid-1800's with the establishment of several homesteads and early wagon roads. These developments were related to; settlement, sheep and cattle grazing, townsites for railroad and highway construction, sawmills and other forest product manufacturing. Most of these developments were north of the portion of the river included in the Wild and Scenic Rivers designation. Two Rivers North Subdivision, adjoins the northeast boundary of the river cooridor and is in private ownership.

The remains of the homes and businesses are few and in poor condition. Much information has been published about the historic activities in the area.

Traditional Uses

The Little Deschutes River area is within the area claimed by the Warm Springs Tribes and the Klamath Tribe to which they have rights i.e. subsistence, water, gathering, ceded lands. Subsistence hunting for elk, deer and bear may occur within the area. The religious rights and uses of the area are unknown. Meetings with the

various tribes took place in the fall of 1990 and additional information will be incorporated in the final Resource Assessment if available in time or in the preparation of the River Management Plan.

FINDING

The cultural resource of the Little Deschutes River is considered not to be outstandingly remarkable. At this time, prehistoric sites have been found in Crescent Creek and Big Marsh Creek, but the type of site and number of sites is not regionally unique or outstanding.

The historic development of these creeks and the river progressed similarly to many other areas within the region and the area was settled later than some others. No major attraction, such as gold or silver, was found to encourage development of these areas, as occurred in many others. The CCC camp facility at Odell Lake was like others within the region, but nothing remains today. The Historic resource of these creeks and river is felt to be significant to the local area, but not outstanding within the region.

The traditional use values of these creeks and river were determined to be of significant value, but not outstanding within the region. Food gathering of greater significance occurs in areas on the Ochoco National Forest. Fishing activities of greater significance occur at sites such as Shearers Falls on the Lower Deschutes River. Religious use sites are found throughout the region and are similar to those found in the these areas.

A final rating of the cultural value will be made upon completion of an overview and contacts with various tribal groups.

RECREATION

Criteria for Outstandingly Remarkable Rating

Recreational opportunities are, or have the potential to be, unique enough to attract visitors from outside of the geographic region. Visitors would be willing to travel long distances to use the river resources for recreational purposes. River-related opportunities could include, but are not limited to sightseeing, wildlife observation, photography, hiking, fishing, hunting, and boating.

Interpretive opportunities may be exceptional and attract or have the potential to attract visitors from outside the geographic region.

The river may provide or have the potential to provide settings for national or regional usage or competitive events.

EVALUATION OF THE PRESENT SITUATION - RECREATION

The Little Deschutes River receives very little recreational use. The users are limited to local residents who are familiar with the remoteness of the upper stream. Occasional use by anglers from outside the region occurs but is not significant. Most users from outside the region are not familiar with the area and are brought by friends who have previously visited the vicinity. Grazing by domestic livestock may have reduced the recreational fishing values by increasing disturbance to riparian vegetation and stream bank stability. It has

been recommended that increased monitoring occur for range utilization and water quality. During the summer of 1991, a range assessment will be completed to determine the effects of the cattle grazing and a water monitoring station has been placed for this and other purposes.

The search for the missing child in the Little Deschutes canyon has increased the awareness of the qualities of the stream corridor to many people outside the region. It is anticipated that many people will return to the area to experience the pristine qualities existing in the upper drainage.

FINDING

The recreational values of the Little Deschutes River are considered not to be outstandingly remarkable. Visitors to the area are predominately local with a few from outside the region. The pristine character of the upper drainage draws a unique visitor valuing the absence or near absence of human intrusions and impacts. It is anticipated that visitor use will increase in the future as people involved in the search return to recreate within the corridor.

SUMMARY OF FINDINGS

RESOURCE ASSESSMENT

LITTLE DESCHUTES RIVER

RESOURCE VALUE	OUTSTANDINGLY REMARKABLE
FISHERIES	NO
SCENIC / VEGETATIVE	YES
HYDROLOGY	NO
WILDLIFE	NO
GEOLOGIC	YES
CULTURAL RESOURCES	NO
RECREATION	NO

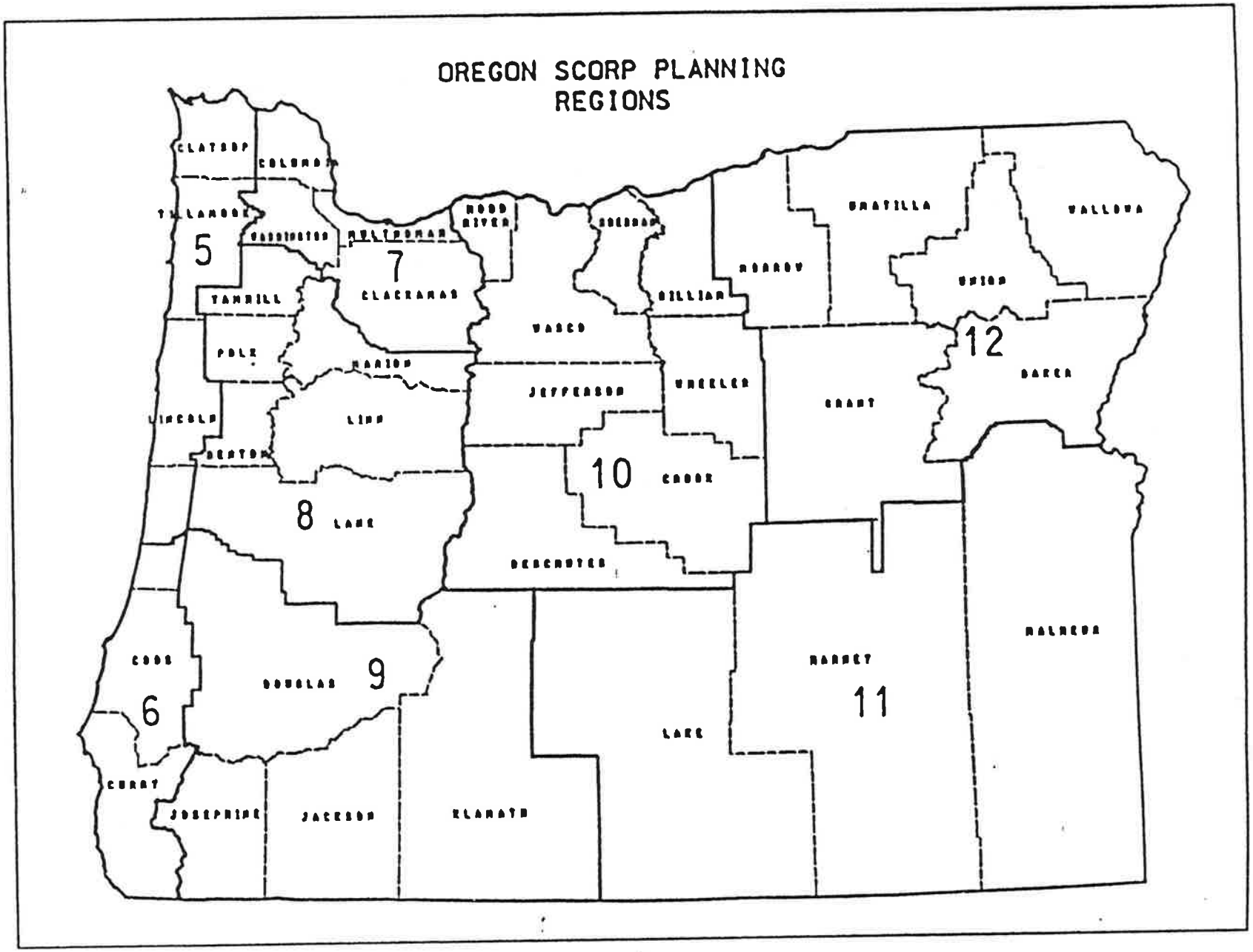
SYNOPSIS OF FINDINGS

The findings of the Outstandingly Remarkable Values of this Resource Assessment for the Little Deschutes River are consistant with the findings identified in the Congressional Record. No additional information was found to alter the conclusions.

The Scenic category was adjusted to include Vegetational characteristics of the river corridor. It was identified as outstandingly remarkable because of the remoteness and pristine character of the canyon and the lack of major human intrusions in the upper portion of the drainage.

Geology was identified as outstandingly remarkable because of the uniqueness of the canyon and the processes by which it was formed. It is the only narrow canyon within the eastern Cascades that was formed by glacial processes.

APPENDIX A


OREGON SCORP PLANNING
REGIONS
5
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CLATSOP
COLUMBIA
TILLAMOOK
WASHINGTON
MULTNOMAH
HOOD RIVER
SHERMAN
GILLIAM
MORROW
UMATILLA
WALLOWA
UNION
TAMHILL
CLACKAMAS
WASCO
POLK
MARION
JEFFERSON
WHEELER
GRANT
BAKER
LINCOLN
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BENTON
CROOK
LANE
DESCHUTES
COOS
DOUGLAS
HARNEY
MALHEUR
CURRY
JOSEPHINE
JACKSON
KLAMATH
LAKE

APPENDIX C

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