## Lower Deschutes River Management Plan and **Environmental Impact Statement**

A Joint River Management Plan Developed By:

- Bureau of Land Management
- Bureau of Indian Affairs
  Confederated Tribes of The Warm Springs Reservation
  Oregon State Parks & Recreation Department
  Oregon Department of Fish & Wildlife

- Oregon State Marine Board
- Oregon State Police
- Deschutes River Management Committee

Draft

May 1991

- Wasco, Sherman and Jefferson Counties
- City of Maupin



#### Dear Friend of the Deschutes River

The various agencies having management responsibilities within the lower 100 miles of the Deschutes River Canyon, along with the Deschutes River Management Committee, are in the process of developing a comprehensive plan which will guide the management of this area for the next several years. The development of this plan is required by the Oregon Legislature in HB 3019 which was passed in 1987 and the U.S. Congress through its designation of the lower 100 miles of the Deschutes River as a component of the National Wild and Scenic Rivers system in 1988.

The first phase of this planning process began in 1988 and was completed during the winter and spring of 1990 with the specific identification of problems, management opportunities and public concerns (issues) that existed and developed various solutions (alternatives) for resolving them. The purpose of this draft document is to analyze the impacts of implementing each one of the alternatives, including a preferred alternative, which have been developed through the planning process.

We ask that you consider each of the identified alternatives that have been developed and the analysis of impacts of those alternatives. The draft preferred alternative includes those management actions that the Deschutes River Policy Group feels best resolves the identified issues.

We are interested in hearing from you if you feel the preferred alternative is, or is not, the best way to resolve a particular issue. If you feel the preferred alternative should be changed, please tell us specifically how you would change it and why. If you feel that the analysis of impacts is incomplete or inaccurate, we would also appreciate your comments.

You can share your ideas and opinions with us in two ways: 1) write to us at the address on this page; 2) attend one of the public hearings. The public comment period will end September 30, 1991.

Written comments may be sent to:

Deschutes River Coordinator Oregon State Parks & Recreation Dept 525 Trade Street S.E. Salem, OR 97310



#### Public hearings will be held at:

Pendleton Tuesday, June 11, 1991 Information Open House — 2:00 - 4:00 p.m. Public Hearing — 7:00 - 10:00 p.m. Pioneer Theater Blue Mountain Community College 2411 N.W. Carden Avenue Pendleton

The Dalles Wednesday, June 12, 1991 Information Open House — 2:00 - 4:00 p.m. Oregon State Highway Office 3313 N.E. Frontage Rd. The Dalles

Public Hearing — 7:00 - 10:00 p.m. Gymnasium The Dalles Junior High School 1401 I Street The Dalles

Portland Thursday, June 13, 1991 Information Open House — 2:00 - 4:00 p.m. Room 290 Smith Memorial Center Portland State University 1825 S.W. Broadway Portland Public Hearing — 7:00 - 10:00 p.m. Hearing Room Portland Building 1120 S.W. Fifth Portland

Medford Tuesday, June 18, 1991 Information Open House — 2:00 - 4:00 p.m. Oregon Room Bureau of Land Management 3040 Biddle Road Medford Public Hearing — 7:00 - 10:00 p.m. Council Chamber City Hall 411 W. 8th Medford

Eugene Wednesday, June 19, 1991 Information Open House — 2:00 - 4:00 p.m. Public Library 100 W. 13th Eugene

> Public Hearing — 7:00 - 10:00 p.m. Council Chamber City Hall 777 Pearl Eugene

#### Salem

Thursday, June 20, 1991 Information Open House — 2:00 - 4:00 p.m. Public Hearing — 7:00 - 10:00 p.m. Putnam Center, top floor Willamette University 900 State Street Salem

Madras Monday, June 24, 1991 Information Open House — 2:00 - 4:00 p.m. Public Hearing — 7:00 - 10:00 p.m. Jefferson County Fire Station Adams and J Streets Madras

Warm Springs Tuesday, June 25, 1991 Information Open House — 2:00 - 4:00 p.m. Public Hearing — 7:00 - 10:00 p.m. Agency Longhouse 1253 Kot-Num Road Warm Springs

Bend Wednesday, June 26, 1991 Information Open House — 2:00 - 4:00 p.m. Public Hearing — 7:00 - 10:00 p.m. Three Sisters Room Riverhouse Motor Inn 2075 N. Highway 97 Bend

Maupin Thursday, June 27, 1991 Information Open House — 2:00 - 4:00 p.m. Public Hearing — 7:00 - 10:00 p.m. Maupin High School Cafeteria Maupin

A public open house will be held prior to each hearing. The purpose of the open house will be to answer questions. No public testimony will be taken during the open house.

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Bureau of Land Management	
Bureau of Indian Affairs	
Confederated Tribes of the Warm Springs Reservation	
Oregon State Parks & Recreation Department	
Oregon Department of Fish & Wildlife Stephen J. Lewis	
Oregon State Marine Board Paul Dorleffre	
Oregon State Police Ver Men	
Wasco County John Mabay	
Sherman County Rodney P. Rolle	
Lefferreen County D.= N.AL	
Jenerson County	
City of Maupin	
Private Landowner Representative & Committee Chair Ron millernig	
Noncommercial Boater Representative Pansy Noficiaer	
Outfitter Representative Pete Carlson	
Landhand Har Remandation Minil Hlangthy	
Elected Official	
Sportfishing Representative	
Confederated Tribes of the Warm Springs Reservation Representative Louis Pitty	
Legislative Liaison Mary Sona	

## **Executive Summary**

Five alternatives for cooperative management of the natural and recreation resources of the Lower Deschutes River have been developed and analyzed in accordance with State and Federal requirements.

The alternatives respond to 15 major issues identified in the planning process by representatives of the 11 managing agencies, the Governor-appointed Deschutes River Management Committee and the general public. The issues fall into three categories: protection/enhancement of natural and cultural resources, recreational activities and public safety and services. The alternatives present reasonable options for managing the resources of the Lower Deschutes River so as to provide a wide range of compatible outdoor recreation opportunities while minimizing user conflicts. These opportunities would be provided to the extent that they do not impair the natural beauty of the river canyon, diminish its fish and wildlife, scientific and recreational values and take into account the rights and interests of private landowners.

The Preferred Alternative is generally a combination of proposed management actions selected from the other four alternatives by the Deschutes River Policy Group and the Deschutes River Executive Review Board. The management objectives under this alternative would be to allow overall use levels to slightly increase over the base year 1988 levels while reducing both peak recreational use levels and conflicts between user groups. Natural resource conditions would be improved significantly. Facility development to accommodate recreational activities such as camping, boating, fishing and vehicle-oriented activities would occur so long as the natural character of the area is not significantly changed and natural values such as soil, water, vegetation, wildlife habitat and cultural resources are protected and, wherever possible, enhanced. Regimentation and controls would be accomplished through regulations, fees and as a last resort, a limited entry system.

Alternative 1 would increase the levels of recreational use while still protecting the environment. Social interaction with other individuals and groups would often be high. The character of the area would remain in a generally natural-appearing condition, however, facility development to enhance recreational opportunities such as camping, boating, fishing and vehicle-oriented activities would occur. On-site regimentation and controls would be obvious, but limited to those necessary for public safety, to accommodate increased numbers of visitors and to maintain fish populations, soil stability and vegetative cover.

Alternative 2 is the "no action" alternative, describing existing management. The intent would be to continue present management actions. Recreational use levels would not be limited and would continue to increase, causing a moderate to high degree of interaction with other individuals and groups. On-site regimentation and controls would be evident in some areas and lacking in others.



Alternative 3 provides for lower levels of peak use, while maintaining overall use at 1988 levels. Natural resource conditions would be improved. The sights, sounds and level of interaction with other individuals or groups would be moderate. Facility development to accommodate recre-

ational activities would occur so long as the natural character of the area was not affected. Regimentation and controls would be obvious, but would be compatible with the environment and aimed at protecting natural values and visual quality.

Alternative 4 would provide a significantly reduced recreational use level and a less crowded setting. Overall natural resource conditions would be improved and the sights, sounds and overall level of interaction with other individuals or groups would be low to moderate. New facility development would occur away from sensitive areas to disperse recreational use. Regimentation and controls would be accomplished through regulations, fees and limitations. On-site regimentation and controls would fit into the natural landscape to the greatest degree possible.

#### **Environmental Consequences**

Air	None of the alternatives would significantly affect air quality.
Soil	Over the long term, soil stability would be adversely affected by Alternative 2, but improved under all other alternatives.
Water	Water quality would improve to some degree under all alternatives.
Vegetation	Long-range improvements would be expected in vegetative condition under all alternatives except Alterna- tive 2, where there would be a decline in condition.
Fish & Wildlife	Wildlife habitat and populations would benefit under all alternatives except Alternative 2, where adverse effects would be expected.
Cultural Values	Impacts to these resources are expected to be adverse under Alternative 2, but beneficial under all other alternatives.
Threatened & Endangered Species	Alternatives 1 and 2 would adversely affect these plants and animals, while the other alternatives would result in a moderate to high benefit.
Scenery	In the long term, scenery would suffer slightly under Alternative 2, but would benefit under the other alternatives.

Overall Recreation Use (Quantity)	Use levels would be adversely affected by Alternatives 3 and 4, but improved under all the other alternatives.
Overall Recreation Use (Quality)	The quality of recreation experience would be adversely affected by Alternatives 1 and 2, but improved under the other alternatives.
Access	Under Alternative 2, access would be adversely affected. Under the other alternatives, beneficial effect would be expected.
Economic Values	Economic values would be enhanced under the Preferred Alternative and significantly enhanced under Alternatives 1 and 2. Significant adverse short-term impacts would occur under Alternative 3, however these losses would be expected to be regained in the long term. Alternative 4 would cause significant short and long-term adverse impacts to all local economies.
Law Enforcement & Emergency Svs	No change would be expected under Alternative 2. Alternative 1 would adversly affect these services, while the other alternatives would be beneficial.
Fire	Both Alternatives 1 and 2 would adversely affect fire management, but the other alternatives would prove beneficial.
Public Safety	Alternative 2 would be expected to adversely affect public safety. The other alternatives would have a slightly beneficial effect.
Private Land	No change is expected under Alternative 2. Alternative 1 would result in a slightly adverse effect, and the other alternatives would be slightly beneficial



and the set of the set of the set	Alt.	Alt. 1	Alt. 2	Alt. 3	Alt. 4
oil	+M	+L	-L	+M	+H
Vater	+M	+L	+L	+M	+M
/egetation	+M	+L	-L	+M	+M
ish & Wildlife	+M	+L	-L	+M	+M
ivestock Grazing	+L	ana ang italahan ang ang ang ang ang ang ang ang ang a	The party of the party of the	+L	-L
Cultural Values	+M	+M	-L	+M	+H
&E Species	+M	-L	Contrasts -F approxim	+M	+H
cenery	+M	+M	-L and and	+M	+M
Overall Rec. Use					
Quantity of Use	+L	+M	+M	-L	-M
Quality of Experience	+L	-L	-M	+L	+M.
Access	+M	+M	-L	+M	+L
conomic Values	+M	+H	+H	-L	-H
aw Enforcement &					
Emergency Services	+M	-L	NC	+L	+M
ïre	+M	-L	-L	+L	+M
ublic Safety	+L	+L street	-L	+L	+L
vt Land & Property					
Rights	+L	-L	NC	+L	+L

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## I. Introduction

### A. Background and River Corridor Boundaries

#### The Planning Area

In 1970, the lower 100 miles of the Deschutes River were designated by voter initiative as a component of the Oregon State Scenic Waterways System. By law, the boundary for this State Scenic Waterway is 1/4 mile from the bank on each side of the river. In October 1988, this same 100-mile segment from the Pelton Reregulating Dam to its confluence with the Columbia River was designated by the U.S. Congress as a National Wild and Scenic River and classified as a recreational river area. The National Wild and Scenic River boundary has an average 1/4-mile boundary, unlike the uniform 1/4-mile boundary in the State Scenic Waterway. The interim National Wild and Scenic River boundary has been developed with public input to include and protect or enhance the Outstandingly Remarkable values that caused the river to be designated. No alternative boundaries



were proposed during the scoping phase of this plan, however, the boundary may be adjusted during this planning process as a result of public comment and agency analysis. Maps 13 and 14 show, and Appendix A describes, the legal description of the preliminary National Wild and Scenic River boundary. The objective of the irregular boundary is to include as many of the areas as possible that contain or directly support the identified Outstandingly Remarkable values associated with the river. This must be done within acreage constraints imposed by the National Wild and Scenic Rivers Act (average of no more than 320 acres per rivermile).

#### **River Segments**

The river has been divided into four segments based on geographical features, public road access and recreational use patterns as shown on Maps 1 and 2. Segment 1 begins at Pelton Reregulating Dam [Rivermile (RM) 100] and ends at the Deschutes Club Locked Gate (RM 59). This 41-mile stretch is used mostly for two or three-day boat trips, during which fishing, running whitewater and camping are primary activities. Segment 2 is 15 miles of mostly "whitewater" between the Locked Gate and Sherars Falls (RM 44). It is very popular for day use, with running rapids and fishing the most significant activities. Segment 3 is 21 miles in length, extending from Sherars Falls to Macks Canyon campground (RM 23) and receives the lowest level of use, with fishing and scenery being the major attractions. Segment 4 begins at Macks Canyon Campground and runs 23 miles to the mouth. Fishing for steelhead is by far the most popular activity in this segment.



Land Ownership

The planning area contains 41,367 acres of land located in Jefferson, Sherman and Wasco Counties. Land ownership by county is shown in Table 1 and on Maps 1 and 2. Table 2 shows riverbank ownership by segment.

Table 1. Lower Deschutes River Acreage by County and Ownership					
County	BLM	State	Warm Springs Tribe	Private	Total
Jefferson	4,010	137	3,255	922	8,324
Sherman	4,951	3,654	0	1,392	9,997
Wasco	11,680	1,015	2,414	7,937	23,046
Total	20,641	4,806	5,669	10,251	41,367

The planning area includes lands within the State Scenic Waterway and the interim National Wild and Scenic River boundaries. Where these boundaries do not coincide, the wider of the two is used as the planning area boundary (1).

### B. Purpose and Need for the Plan

Passage of Oregon HB 3019 in 1987 initiated an extensive planning effort by the Governor-appointed Deschutes River Management Committee and the various managing agencies which make up the Deschutes River Policy Group. Several groups of volunteers contributed large amounts of time and effort in the initial stages of developing this plan. When the lower 100 miles of the Deschutes River was designated by Congress as a National Wild and Scenic River in October 1988, the planning process was modified to incorporate the Federal requirements.

This river management plan, when completed, will satisfy both Federal and State planning requirements. It will meet the requirements of the National Environmental Policy Act, the Oregon Omnibus Wild and Scenic Rivers Act of 1988 and the Oregon State Scenic Waterways Act.

	Private Land	Public Land	Tota
Service and the	Segment 1: Warm Springs to Locked Ga	te	
East Side	22	19	41
West Side	35	6	41
Totals	57	25	82
	Segment 2: Locked Gate to Sherars Fall	<i>s</i>	
East Side	5	10	15
West Side	7	8	1
Totals	12	18	31
	Segment 3: Sherars Falls to Macks Cany	on	
East Side	5	16	2
West Side	6	15	2
Totals	11	31	4
	Segment 4: Macks Canyon to Columbia R	iver	
East Side	0	23	23
West Side	5	18	2
Totals	5	41	4

### Table 2. Approximate Riverbank Ownership (in miles) Along the Lower Deschutes River\*











## C. The Planning Process

The steps of the planning process and schedule for completion of the management plan are shown below.

### **Planning Process and Schedule**

Phase I — Identification of Issues and Alternatives

Step	Date	Status
Initial Scoping	Dec. 1988	Completed
Goal and objectives for the plan developed.	May 1989	Completed
Issues identified and described in detail.	July 1989	Completed
Range of management alternatives developed.	Oct. 1989	Completed
The alternatives described reasonable possibilities for resolving the issues and managing each segment.		
Public meetings held on the issues and preliminary alternatives as part of the required National Environmental Policy Act scoping process.	Jan./Feb. 1990	Completed
Phase II — Preparation of Draft Management Plan and Envi	ironmental Impact Stateme	ent
Step	Date	Status
Draft Environmental Impact Statement (DEIS) prepared that addresses each alternative.	Summer/Fall 1990	Completed
The DEIS identifies the social, environmental and economic consequences of implementing each alternative.		

Phase II — Preparation of Draft Management Plan and Environmental Impact Statement		
Step	Date	Status
Preferred Alternative for each segment selected.	Fall/Winter 1990	Completed
Draft plan and EIS are completed and distributed for public review and comment.	Spring 1991	Completed
Additional data collected.	Spring/Summer 1991	
Public hearings held on the draft plan.	Spring/Summer 1991	
Draft plan revised into Final Plan/EIS and published for 60-day review. Preliminary Federal Wild and Scenic River boundary finalized.	Fall 1991	
Phase III — Plan Implementation and I	Monitoring	
Step	Date	Status
Plan implemented, including State agency rulemaking as appropriate.	Spring 1992	
Plan monitored, periodically reviewed and updated.	Ongoing	



D. Related Federal, Tribal, State and Local Planning and Management Responsibilities

#### Introduction

Although the Omnibus Oregon Wild and Scenic Rivers Act of 1988 assigned a special river planning and management role to a unique blend of Federal, Tribal, State and local entities and citizen users, it was not the first cooperative planning and resource management effort in the Deschutes River area. The same mix of landownerships and authorities has been applied to a wide variety of resources and joint programs for many years. County and city plans have been developed under State guidelines in close consultation and coordination with Federal agencies and the public since the late 1970s. Federal plans, such as the BLM's Prineville District Two Rivers Resource Management Plan, have been developed with substantial interagency review. Special emphasis programs, such as wildfire control, historic preservation, noxious weed control and wildlife habitat enhancement are routinely coordinated among agencies, landowners and other affected publics. It is expected that most of these resource management relationships will remain unchanged as a result of this river management plan. Most of these programs and resource allocation decisions were not raised as issues during river planning scoping and will remain constant under all alternatives.

#### Federal Planning and Management Responsibilities

#### **Resource Management Planning**

In 1986, the Bureau of Land Management completed the Two Rivers Resource Management Plan, which was a comprehensive land use or Resource Management Plan (RMP) for all BLM lands and minerals in Jefferson, Wasco, Sherman, Hood River, Gilliam and Wheeler counties. The total BLM surface acreage at the time of RMP completion was over 324000 acres, including all BLM lands in the Lower Deschutes River Planning Area. BLM manages almost 50 percent of the lands within the river corridor. The Resource Management Plan included an environmental impact statement which documented the environmental consequences of the plan as well as numerous intergovernmental relationships. The plan established land use goals and objectives for Bureau administered lands, minerals, soils and watershed, rangeland, forest and woodlands, fish and wildlife habitat, recreation, cultural and archaeological resources. It incorporated management direction for roads and access, utility and transportation corridors, fire control, noxious weed control and continued interim management of wilderness study areas. Copies of the approved Two Rivers Resource Management Plan are available from the Bureau's Prineville District Office.

#### National Backcountry Byway Program

Thirty-six miles of public road on the east side of the river were designated a component of the National Back Country Byway system by the BLM in 1989. The designated road extends from 7-1/4 miles upstream from Maupin to 20 miles downstream from State Route 216. The Lower Deschutes River Backcountry Byway is paved for nine miles, with the remainder an all-weather gravel road. The BLM byways program meets some of the national demand for pleasure driving opportunities, enhances recreation experiences and helps inform visitors about the values of public lands.

#### Wilderness Study Area Management

The Steelhead Falls Wilderness Study Area, 3,114 acres of BLM administered public land adjacent to the Deschutes River northwest of Redmond, is being considered for possible wilderness designation. It is being studied jointly by the BLM and Ochoco National Forest. Its suitability for wilderness is addressed in the Forest Service's Ochoco Forest Plan/EIS. Although the potential wilderness is outside the subject planning area, it does contribute to upstream resource values and quality. There are no BLM wilderness study areas or Congressionally-designated wilderness areas within the Lower Deschutes Planning Area.

#### Aquatic and Riparian Habitat Management

The BLM, the U.S. Forest Service, the Oregon Department of Fish and Wildlife and the Confederated Tribes of the Warm Springs Indian Reservation are working to improve aquatic habitat in the Deschutes River watershed. Cooperative work is continuing between BLM, the Oregon Department of Fish and Wildlife, U.S. Forest Service, Confederated Tribes of the Warm Springs Indians, Columbia River Intertribal Fish Commission, National Marine Fisheries Service, Northwest Power Planning Council and U.S. Soil Conservation Service, in implementing riparian improvement projects. The U.S. Soil Conservation Service has cooperated in developing coordinated resource management plans and the collection of resource data.

#### **Endangered** Species Act

The U.S. Fish and Wildlife Service administers the Endangered Species Act of 1973 (as amended). The BLM consults with that agency to obtain a formal biological opinion on appropriate courses of action when it is determined that a threatened or endangered species, or its critical habitat, may be affected by a proposed management action. Resulting decisions could mean the proposed action is modified or abandoned.

#### **Conservation Research Program**

The Soil Conservation Service administers the U.S. Department of Agriculture (USDA) Conservation Reserve Program. This voluntary program pays farmers/ranchers who agree to take highly erodible soils out of cultivation for ten years. The program is limited to no more than 25 percent of the highly erodible soils in each county. Enrolled lands are planted to grasses and not



used for grazing or other commercial purposes. It is assumed that the "reserve" lands make a substantial contribution to reduced erosion and commensurate improvement in downstream water quality. There are approximately 51,000 acres in the reserve program in Wasco County, of

which about 50-60 percent are in the Deschutes tributary area. Sherman County has over 72,000 acres in the program with about 50 percent in the tributary area. All 18,000 acres in the Jefferson County reserve program are tributary to the Deschutes.

In total, an estimated 80,000 (+) acres of SCS conservation reserve lands contribute to the water quality of the Lower Deschutes River. Most of the 10-year enrollments expire in 1996 or 1997. It is uncertain whether the program will continue to be funded or whether current participants will extend their enrollments. Even if the enrolled lands are returned to active cultivation in the mid-90s, the improved soil condition would likely provide residual beneficial effects for another two or more years.

#### Pacific Northwest Electric Power Planning and Conservation Act

The Bonneville Power Administration (BPA) and the BLM coordinate resource management programs through a memoran-

dum of understanding. The memorandum allows regional and district coordination where similar interests exist in water resources and major utility corridors. The BLM, the BPA and the Northwest Power Planning Council (NPPC), through authorization by the Pacific Northwest Electric Power Planning and Conservation Act (P.L. 96-501), are involved in stabilization and improvement of anadromous fish habitat, including riparian zones, through grants provided by the BPA. The BPA also assists the BLM in identifying and evaluating regional utility corridor options.

The Federal Energy Regulatory Commission (FERC) reviews proposals for new powersites, and interstate energy-related pipelines; however, designation of the Lower Deschutes as a Federal Wild and Scenic River precludes future dams or instream diversion structures which might be permitted by FERC. Operation of the existing Pelton Reregulating Dam is conducted by Portland General Electric Company (PGE) through FERC license No. 2030, which expires December 31, 2001.



#### Bureau of Indian Affairs and Tribal Planning and Management Responsibilities

The Bureau of Indian Affairs (BIA) is the Federal agency with primary responsibility for working with Indian Tribal governments and Alaskan Native village communities and does so in a government to government relationship. Under a U.S. policy of Indian self-determination, the BIA is to encourage and support Tribal efforts to govern themselves and to provide needed programs and services on the reservations.

One of the principal programs of the BIA is administering and managing land held in trust by the United States for Indians. Developing forest lands, leasing mineral rights, directing agricultural programs and protecting water and land rights are included in this responsibility. The BIA also approves trust land acquisitions, rights-of-way, leases and permits on Triballyowned and allotted lands. The Tribes themselves, especially the Confederated Tribes of the Warm Springs Reservation, now assume a much greater decision-making role in this matter than in former years. The BIA also works with Tribal governments to help provide a variety of local services. These include road construction and maintenance, social services, police protection, economic development efforts and special assistance to develop governmental and administrative skills.

The entire Lower Deschutes River Planning Area outside the Warm Springs Reservation was ceded to the U.S. Government by the Tribes and Bands of Middle Oregon through ratified treaty. The treaty reserves to the Indians exclusive rights of "taking fish in the streams running through and bordering the reservation". Indians also have the right of "hunting, gathering roots and berries and pasturing their stock on unclaimed lands in common with citizens". The interests of contemporary Native Americans include the protection of Indian burial grounds and other sacred sites and the perpetuation of certain traditional activities, specifically root gathering and fishing.

The Confederated Tribes of the Warm Springs Indian Reservation are consulted by Federal, State and local governments as required by the Archaeological Resources Protection Act (1979) and as recommended by the Historic Preservation Act (1966). The BLM and State also contact and consult with the appropriate Tribal representatives and BIA agencies in the early stages of any project or activity planning on BLM or State administered lands that may affect Tribal interests, treaty rights, or traditional use areas within ceded Tribally-owned lands.

#### Background of Tribal and Reservation Status

Native Americans inhabited the Pacific Northwest, including the Lower Deschutes River Planning Area for thousands of years prior to European and American contact. They hunted, fished, gathered plant foods, buried their dead, and conducted religious ceremonies in the planning area since time immemorial. Their life was disrupted by European settlement. Large numbers of immigrants seeking land caused increasing friction and during the 1850s a series of treaties were negotiated with the Oregon Tribes in order to acquire Indian lands for homesteading. One of these treaties was the Treaty of June 25, 1855 with the Tribes and Bands of Middle Oregon. These Tribes and Bands composed the present Warm Springs and Wasco Tribes, two of the Indian Tribes now comprising the Warm Springs Confederation. The Tribes ceded ownership of approximately ten million



acres to the United States ("the ceded area") while reserving to themselves the exclusive use of their "Reservation" lands. However, the Tribes retained hunting, fishing, food gathering, and pasturing rights in the ceded area.

In the 1870s, a small band of Paiutes was settled on the Warm Springs Reservation.

In 1937, the three Tribes adopted a constitution and by-laws for Tribal government and organized themselves as the Confederated Tribes of the Warm Springs Reservation. The Tribal government now manages timber, water, salmon and other reservation resources for the benefit of its members. The Tribes own and operate the Kah-Nee-Ta resort, Warm Springs Power Enterprises, Warm Springs Forest Products Industries and several other smaller enterprises.

The easterly boundary of the Reservation is described by a line beginning in the middle of the channel of the Deschutes River at its confluence with the Metolius River, travelling northward along the middle of the channel approximately 30 miles to North Junction. A total of 5,670 acres of Reservation lands are presently within the planning area. However, Tribal lands can only be included within the final planning area with the consent of the Tribal Council. Reservation lands are of two basic types. Most of the lands are held by the United States in trust for the Tribas ("Tribally-owned lands"). Other lands are held in trust by the United States for individual Indians ("allotted lands").

The Tribes also own substantial lands within the planning area off the Reservation. In 1980 the Tribes purchased 888 acres along the Deschutes River downstream from Maupin. These lands encompass the Sherars Bridge fishing site, the White River campground, the Sandy Beach and small parcels across from the Oak Springs fish hatchery. In 1990 the Tribes purchased another parcel just downstream from the Warm Springs Bridge referred to as the Morrison property.

By treaty, the Warm Springs Tribes have specific fishing rights in the Deschutes River. In addition, three other Tribes, the Yakima, Nez Perce and Umatilla, have treaty fishing rights in the Columbia River and are understandably concerned with activities in the Deschutes River which may affect populations and specific runs of anadromous fish.

The reserved right to fish has proven to be one of the most contentious and far-reaching Tribal issues. Tribal fishing rights were established by treaty and these provisions have been interpreted in a series of court decisions. Two cases stand out: *United States v. Winans* (198 U.S. 371 (1905)); and *United States v. Washington Phase I* (384 F.Supp. 312 (W.D. Wash. 1974)) and *Phase II* (506 F. Supp. 187 (W.D. Wash. 1980)).

*U.S. v. Winans* confirmed that the treaty right endured with Washington's and Oregon's entry into the union and further concluded that Tribal fishing rights included the right to cross private lands to access fishing areas. *United States v. Washington* expanded on this. In Phase I (commonly referred to as Boldt I) the court found that access to fishing locations did not, in and of

itself, meet the terms of the 1855 treaty. Treaty Indians also have the right "to take fish in common with the citizens of the territory". The court interpreted this to mean up to 50 percent of the harvestable fish. The Phase II ruling (commonly referred to as Boldt II) went further by recognizing that the "most fundamental prerequisite to exercising the right to take fish is the existence of fish to be taken" which, in turn, implied "...the right to have the fishery habitat protected from human despoliation".

One effect of this ruling was to position the Tribes as active participants in the management of fish and their habitat. Recent Federal legislation reinforces the Tribal role. The Pacific Northwest Power Planning and Conservation Act (16 U.S.C. 839 (1980)) clarified this relationship with regard to fish restoration in the Columbia Basin. The Electric Consumers Protection Act (P.L. No.99-495, 16 U.S.C. 808 (1986) followed this logic regarding licensing of hydropower projects. Today, treaty Tribes, along with State and Federal resource agencies, actively cooperate in Columbia Basin fish management. The Columbia River Fish Management Plan, the U.S.-Canada Pacific Salmon Interception Treaty, and the Columbia Basin Systems Plan were all heavily influenced by Tribal participation. Treaty Tribes also actively participate in land use decisions that may affect anadromous fish, including forest planning and wilderness designation.

Dip-net fishing on the Lower Deschutes at Sherars Falls is regionally and quite possibly nationally significant. Native Americans have used dip-nets as a principal means of catching salmon and steelhead in the Columbia Basin since before recorded history. The method was particularly well suited to areas with falls and rapids where fish are forced to follow a defined route, exposing themselves to the fishermen as they struggle to climb upriver. This fishing method was used at numerous falls along the Columbia and principal tributaries. Most of these have been inundated by dams. Only on the Deschutes, at Sherars Falls, and on the Klickitat, at the gorge near the river's mouth, is the traditional dip-net system of fishing practiced as it was before the construction of the Columbia River dams. The Sherars Falls site is especially valuable because of the number of available fishing locations and the spectacular, readily accessible setting.

The Native Americans of the Columbia plateau attach special religious meaning to certain areas. Of paramount concern are ancestral grave sites and traditional locations for cultural and spiritual ceremonies, including quest sites. The American Indian Religious Freedom Act affirmed the right of all Native Americans under U.S. jurisdiction to practice their religions and to have access to sacred places on Federal lands.

The Warm Springs Comprehensive Land Use Plan was adopted in 1983. Under this plan, most reservation lands adjacent to the river are managed to protect river-related values. Roads, trails, railroads, transmission lines and recreation sites are the only developments permitted. Livestock grazing is the primary use. Secondary, compatible uses include maintaining fish and wildlife habitats and gathering traditional foods. Any uses that would adversely affect cultural values are considered not compatible. Housing is prohibited on Tribally-owned lands in the river corridor.

Tribal members are the main users of recreation lands on much of the reservation adjacent to the river. Non-Tribal anglers may obtain permits to fish along seven miles of Tribally-owned land downstream from the Dry Creek Campground. Recreational



pursuits which preserve the natural and scenic characteristics of the area are primary uses. Secondary, compatible uses are maintaining fish and wildlife habitats and gathering traditional foods. Most types of development and intensive resource uses are excluded as not compatible.

Traditional foods eaten by Native Americans come from plants growing wild on or near the reservation. As shown in Table 3, plants for crafts, as well as foods grow in habitats ranging from forested areas and marshes to dry or rocky sites.

# Table 3. Habitats of Plants Commonly Gathered by Native Americans in or Near the Lower Deschutes Planning Area

Riparian Areas	Forested Areas	Dry Sites	Rocky Sites
Willow	Chokecherry	Biscuit root	Bitter root
Tule	Black moss	Balsam root	Wild onion
Cattail	Bear grass	Wild carrot	Strawberry
Wild celery	Camas		
	Strawberry		
	Onion		
	Huckleberry		

Native Americans hunt deer and elk, which do best where there is a combination of forest for cover and open areas for the growth of grasses and herbs. The most important fish to Native Americans is salmon, and these must have cool, clean water for reproduction and early growth. Riparian areas must be protected for salmon to remain available.

For many Native Americans, practicing their traditional customs may be among the most important qualities in their lives. Some would say the opportunity to gather their traditional foods and materials is beyond price. The other river managing agencies will continue cooperating with the Tribes, enabling them to continue their traditions.

#### State and Local Government Planning and Management Responsibilities

#### Oregon Department of Fish and Wildlife

The Oregon Department of Fish and Wildlife (ODFW) is responsible for the management and wise use of the State's fish and wildlife resources. The Department is charged with maintaining optimum numbers of indigenous fish and wildlife, and to ensure that no species are threatened with extinction. The Department is responsible for developing and administering fish and wildlife regulations. The ODFW and BLM have cooperative management agreements on the White River Wildlife Management Area and on the Lower Deschutes Coordinated Planning Area. The ODFW administers ODFW-owned lands along the Lower Deschutes River, including managing livestock grazing, riparian and upland habitat improvement, fish culture and recreational access. ODFW has undertaken an aggressive program to restore riparian habitat on Department lands and has actively sought and encouraged other agencies and private landowners to follow their lead. ODFW routinely monitors Deschutes River angling effort and harvest, as well as hunter effort and harvest.

#### **Oregon State Parks and Recreation Department**

The Oregon State Parks and Recreation Department is responsible for the acquisition, improvement, maintenance and operation of Oregon's State Park system. The system is directed by the State Parks administrator through a headquarters staff in Salem and five Regional park supervisors stationed throughout the State. In addition to operating State Parks, the division gives technical assistance to local government agencies on park matters, develops and maintains the Statewide Comprehensive Outdoor Recreation Plan (SCORP) and administers the Federal Land and Water Conservation Fund matching grant program in Oregon. The division also administers several special programs, including the Oregon Beach Law, State Historic Preservation Program, Oregon Recreational Trails System, State Scenic Waterways and Willamette Greenway. The 1988-1993 edition of the SCORP is consistent with Statewide Planning Goals and recognizes the 1988 Omnibus Wild and Scenic Rivers Act, BLM planning processes and agency interrelationships. The SCORP shows no designated Federal or State "National Recreational Trails", "Bicycle Route Systems" or components of the "Historic and Scenic Highways" program within the river planning area.

#### **Oregon State Marine Board**

The Oregon State Marine board, established in 1959, issues certificates of number and titles to the approximately 173,600 undocumented vessels of this State. It cooperates with Federal, State and local agencies to promote uniformity of laws and regulations relating to boating and advises and assists county sheriffs and other peace officers in the enforcement of such laws. It publishes brochures, provides boating education courses and otherwise promotes safe boating practices. The Marine Board assists local governments in the development of boating facilities for the benefit of all boaters. The Board also regulates the use



of waterway markers on State waters and the use of sanitary facilities on vessels to prevent pollution. The Board also has the responsibility for registering all commercial outfitters and guides operating in the State. Marine Board revenues received from the registration of boats are used to enforce boating laws, for boating safety programs and for the development and improvement of boating facilities.

#### Advisory Committee on Historic Preservation

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

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

#### Intergovernmental Relations Division

The Intergovernmental Relations Division of the Executive Department of Oregon acts as a clearinghouse for various state agencies. State agency review of Federal planning processes are coordinated through that clearinghouse. Planning is also coordinated with the county commissioners and county planning departments through local area-wide clearinghouses.

#### **Oregon State Police**

The Department of State Police was created to serve as a rural patrol and to assist local law enforcement agencies. This agency is empowered to enforce all Oregon statutes without limitation by county or other political subdivision. The Department totals 894 members strategically located at 46 stations/posts throughout the State.

The Department enforces State laws and rules. These include the river management and use rules adopted and implemented by the State Marine Board, State Parks and Recreation Department and Fish and Wildlife Department. State Police activities are coordinated with local and Federal law enforcement agencies and assisted by the general public. For example, the TIP Program (Turn in Poachers) has been established in cooperation with the Oregon Department of Fish and Wildlife and the Oregon Hunters' Association. This program is designed to involve citizens in reporting wildlife law violations. Responses from citizens throughout the State have resulted in many poaching arrests and convictions.

#### Oregon Department of Environmental Quality

Under a memorandum of understanding, the Oregon Department of Environmental Quality (DEQ) and Federal agencies work together to meet implementation requirements of the Clean Water Act (P.L. 92-500), as amended. The Federal Fish and Wildlife Coordination Act of 1958 requires wildlife conservation be given equal consideration and be coordinated with other features of water developments.

#### Oregon State Department of Agriculture

The State Department of Agriculture cooperates with local soil and water conservation districts to establish mutual goals in coordinating range and watershed management practices and to gather and share natural resources information that has proven beneficial for use on public and private lands. Cooperation with appropriate weed control districts also occurs as needed to deal with infestations of noxious weeds.

#### **Deschutes River Management Committee**

The 1987 Legislature created the Deschutes River Scenic Waterway Recreation Area Management Committee to work with the 11 managing agencies in developing a comprehensive recreation management plan for the lower 100 miles of the Deschutes River. Private citizens representing permitted outfitters, land based users, public-at-large, private landowners, elected officials, noncommercial boaters, sport fishers, the Confederated Tribes and a legislative liaison were appointed by the Governor. The Committee also advises the agencies on matters relating to recreation use of the river including budgets, rules and regulations. The Committee sunsets in 1993.

#### **County Sheriff Departments**

All three county sheriff departments are empowered to enforce all Oregon State Statutes. This generally occurs within their respective counties, however they do have authority to cross county lines. Each of the counties has a marine patrol that can be conducted on the river. County sheriff activities are coordinated with State and Federal law enforcement agencies and assisted by the general public. The sheriff departments also enforce river management laws and rules adopted and implemented by the State Marine Board.

#### County and City Comprehensive Plans

The Omnibus Oregon Wild and Scenic Rivers Act of 1988, the Federal Land Policy and Management Act of 1976 and the National Environmental Protection Act of 1969 (as amended) all encourage or mandate intergovernmental coordination, consultation and, where possible, plan consistency. Since the Omnibus Act envisioned a high reliance on local comprehensive plans to achieve the objectives of the Act, a review and analysis of the adequacy of the existing plans for Jefferson, Wasco and Sherman Counties and the City of Maupin is critical.



The comprehensive plans for Sherman, Wasco and Jefferson Counties and the City of Maupin have been acknowledged by the Oregon Land Conservation and Development Commission and are in conformance with statewide planning goals and objectives. Under Section 202 of the Federal Land Policy and Management Act all BLM plans, including RMPs and site-specific activity plans (such

as the Lower Deschutes River Plan), must be consistent, insofar as possible, with officially approved or adopted State and local agencies' resource related plans, policies and programs. Similarly, State-managed land must conform to Statewide Planning Goals and Objectives and support local comprehensive plans. The management of Tribally-owned land need not conform to State or local land use plans. However, there are no known or potential inconsistencies in management goals or objectives. Virtually all of the BLM and State-managed lands within the planning area are in county-designated "exclusive farm use" or various resource protection zones. Approved land uses compatible with the county plan guidelines for these zones include emphasis on natural values, livestock grazing, cultural, visual and recreation resource protection or enhancement. Consistency of the alternatives with statewide LCDC Goal 3 purposes are summarized in Table 41.

#### Jefferson County

The Jefferson County Comprehensive Plan was acknowledged by the Land Conservation and Development Commission (LCDC) to be consistent with Statewide planning goals in 1981. The required periodic review and amendment process is currently underway. The amended plan will note Federal designation of the Lower Deschutes and continue to provide appropriate protection of State Scenic Waterway resources on the uppermost 14 miles of the Lower Deschutes. Protective measures include setbacks for new construction on floodplains or near riparian areas and for homesites on the river rims. It is expected that structures near the rims will have mandatory setbacks of 100 feet in the future, compared to 30 feet currently, due to natural hazards from seismic events.

In summary, the current Jefferson County plan provides a high degree of specific or implied protection of natural and cultural resources. It supports diverse river-oriented recreational activities without formal policies on motorized river use, types of outfitter services or user fees. It is non-specific to river planning related public safety and service issues or potential solutions. There are no incorporated cities within the river corridor within Jefferson County.

#### Wasco County

The Wasco County comprehensive plan was acknowledged by LCDC in 1983 and amended in 1984. The required periodic review was initiated but is currently "on hold" pending completion of the Columbia River Gorge National Scenic Area Plan, since the Gorge plan is expected to substantially affect the county plan. In contrast, the county plan already reflects State Scenic Waterway rules and objectives for over 86 miles of the Lower Deschutes (one or both banks).

The existing county plan zones most lands in the Lower Deschutes River corridor for exclusive farm use with a pre-empting "natural resource overlay" in areas with significant natural value(s). The plan's intent is to not allow actions which might

permanently destroy the natural value(s). There is also a "sensitive wildlife habitats overlay" with accompanying supplementary development standards to protect riparian corridors and fisheries habitat. The plan prescribes notification and coordination with the BLM and Warm Springs Tribes when considering actions in the Deschutes River Scenic Waterway. Visual resource protection considerations may restrict mineral development and siting of structures. Fish and wildlife habitat are to be considered in approving land use and land management activities. Historical, cultural and archaeological area preservation is promoted. Development in natural hazard areas is restricted. The plan promotes restrictions on recreational open fires, prohibits recreational subdivisions and recommends limiting use of recreational motorboats on the Lower Deschutes. The plan promotes development and maintenance of recreational sites and trail systems for bicycle, pedestrian and equestrian use. Continued appropriate use of agricultural lands is encouraged to maintain the rural economy. Comprehensive planning for Wasco County lands within the City of Maupin are addressed within the City's plan. Maupin is the only incorporated city adjacent to the river within Wasco County.

The Wasco County Emergency Services Plan coordinates available equipment and personnel resources for a wide variety of potential situations. This includes search and rescue, hazardous material spills and support to large organized recreational or competitive events. Examples of emergency events include two Deschutes canyon railroad accidents in the last ten years and vehicular accidents with large quantities of fuels or chemicals.

In summary, the current Wasco County plan provides a very high degree of specific protection of natural and cultural resources in the Deschutes River corridor. It supports diverse nonmotorized river-oriented recreational activities without specific policies on outfitter services or user fees. The Wasco County Emergency Services Plan supports public safety and services, but is not sufficiently specific to relate to river planning issues and potential solutions.

#### City of Maupin

The City of Maupin comprehensive plan was acknowledged by LCDC in 1980. The required periodic review was completed in 1987 with relatively minor amendments. It does not directly incorporate the State Scenic Waterway rules and objectives since lands within the city are not included in the State or interim Federal Wild and Scenic Rivers boundary and therefore are exempt from the Act. The plan provides the day-to-day basis for land use decisions within the city limits and is consistent with the Wasco County Comprehensive Plan. The Federal Wild and Scenic River boundary has been proposed at the mean high waterline through the city limits.

Although approximately 60 percent of the land within the urban growth boundary of the city is within one-quarter mile of the river, a substantial portion of these lands are hidden from view by the steep canyon walls and vegetation. The lands that are visible from the river are planned for open space (the river bed and banks, an island, city parks, riparian areas and unbuildable hillsides), industrial lands (associated with the railroad and related facilities or the sawmill) recreational/commercial lands on the southeast bank and some largely unoccupied low density zoned and medium density residential lands. The flood hazard



area is entirely within the seen area adjacent to the Deschutes River and Bakeoven Creek while the geologic hazard area is concentrated on steep (30 to 60 percent) sloped lands throughout the city. The plan does provide for general preservation of open spaces, scenic and natural resources.

Specific policies provide guidelines for visual, historic, fish habitat and recreational resources. The plan specifically prohibits discharge of effluent into the river or disturbing the flow or negatively affecting "the Deschutes River's environmental, biological or water quality". The plan provides specific details on public safety and services, and encourages economic diversification.

In summary, the City of Maupin plan provides a moderately high degree of specific protection of natural and cultural resources despite being exempt from State Scenic Waterway rules. It supports recreational activities and provision of related services without specific policies on outfitter services or user fees. It provides direction on public safety and emergency services, but does not directly address property trespass or public information and education services.

#### Sherman County

The Sherman County Comprehensive plan was acknowledged by LCDC in 1979. The required periodic review is currently underway. Expected amendments or revisions may include changes in policy statements which have been superseded by Federal or State law. The existing plan acknowledges and protects river-related resource values associated with the east bank of the lower 43 miles of the Deschutes State Scenic Waterway. The existing plan zones all lands in the Lower Deschutes River corridor for exclusive farm use. Conditional land uses are only permitted if both county plan standards and State Scenic Waterway rules are met.

The plan identifies potential natural hazards, sensitive fish, wildlife and plant habitats, significant visual resources and water quality protection needs. The plan constrains potential mineral development, urges the use of low toxicity pesticides and provides for the protection of historical resources. The plan supports recreation site, trail and facility development, provided that adequate protection is offered to adjoining landowners and on-site sensitive resources. Improved and additional recreational access receives limited endorsement. The absence of population growth has resulted in virtually no new structures in the river corridor since the county plan was approved. There are no incorporated cities within the river corridor in Sherman County.

In summary, the Sherman County plan provides a moderate degree of specific protection of natural and cultural resources in the Deschutes River corridor. It supports recreational and economic activities that complement the agricultural lifestyle and economic base of the county. It does not include policy direction for outfitter services or user fees. It identifies existing levels of public safety support and visitor services, but is not sufficiently specific with regard to river related issues and potential solutions.
# Relationships with Individuals and Groups

There are 10,251 acres of private land within the boundaries of the Lower Deschutes River Planning Area. These lands comprise almost 25 percent of the surface ownership. Management coordination is therefore essential if the intermingled tracts are to be managed to protect or enhance river values. Where the BLM or State has primary management responsibility, the livestock grazing allotment management plan will normally be sufficient to assure coordination with adjacent landowners. On allotments with multiple ownership, however, the development of a Coordinated Resource Management Plan (CRMP) could provide a better resolution of livestock management and other resource objectives. A CRMP could involve several agencies and a variety of landowners.

The Lower Deschutes CRMP was developed for the management of the lands adjacent to the river along the lower 24 miles between Macks Canyon and the mouth. The CRMP includes all State and BLM lands within this section of the canyon.



# E. Public Involvement

Extensive public involvement has occurred since the Deschutes River planning process began in 1988. Several groups of volunteers contributed a large amount of time and effort in the initial stages of the process. A series of meetings were held to begin identifying issues for each river segment. Many members of the public participated in these early scoping meetings. All phases of the plan were developed in an open public forum.

A Memorandum of Understanding (MOU) for the Lower Deschutes River Planning Area was signed by the members of the Deschutes River Policy Group in late summer, 1989. Among other things, this MOU outlined the planning and decision-making process to be followed during the development of this plan.

Copies are available upon request from the Oregon State Parks and Recreation Department. The Policy Group then met September 8-9 in The Dalles; October 12 in The Dalles; and November 27 in Salem to finalize the scoping document, "Issues and Alternatives for the Management of the Lower Deschutes River". The document was released in January 1990 and public meetings were held in Eugene (January 30), Portland (January 31), Maupin (February 6), The Dalles (February 7), Madras (February 13) and Bend (February 14) to listen to the public's response.

Attendance at the meetings reflected a high level of interest. In Eugene, ten people testified, out of a total of about 40; in Portland, 39 testified, out of about 150 people; in Maupin, 17 people spoke, out of about 40 people; in The Dalles, 19 testified, out of about 75 people; in Madras, 23 people testified, out of about 100; and in Bend, 21 spoke out of about 100 people. Response cards were included in each document mailed, and were also handed out at each public hearing. Many people returned these cards and a number of people took the time to write detailed letters. The comment period began January 17, and extended to March 28, 1990. An independent consultant analyzed the comments received from a total of 1,087 individuals.

A summary of public comments received thus far in the planning process is included in Appendix B.

Following the public meetings, the Policy Group met to discuss the public response to the identified issues and alternatives and to develop the Preferred Alternative. The Policy Group meetings were well-attended by the public, especially those held in Bend, The Dalles, and Clackamas. The Group allotted time for public comments at these meetings also. The meetings and their dates were:

May 4-5, 1990 - Clackamas May 30, 1990 - Warm Springs Reservation June 27, 1990 - The Dalles July 10-11, 1990 - Bend August 20-21, 1990 - Salem October 4-5, 1990 - Clackamas February 19, 1991 - Salem In addition, the Executive Review Board which is the Policy Group's dispute resolution body created by the MOU, met September 20, 1990 and December 3, 1990 in Salem to develop the Preferred Alternative for use levels, management of motorboats and the use allocation method that would be implemented should a limited entry system become necessary. The meetings were necessary because the Policy Group was unable to reach consensus on these issues. The Executive Review Board comprises the State Director of BLM, the representative of the Governor of Oregon, the representative of the Confederated Tribes and a representative of local government.





# **II.** Major Issues

Issues which have been identified and will be addressed in this plan are described below:

# A. Protection of Natural and Cultural Resources

# Fish Habitat/Water Quality and Quantity

Issue: How should riparian areas be managed to protect water quality?

#### **Issue Description**

A loss of riparian vegetation has resulted from livestock grazing, road and railroad construction and maintenance, riverbank erosion, and increasing recreational use.

Issue: How should water quality and water flows be managed to protect or enhance fish habitat?

#### **Issue Description**

Significant quantities of irrigation waste water potentially containing a variety of agricultural chemicals and silt enter the river between the mouth of Trout Creek and Round Butte Dam. Cropland storm runoff into the river from the mouth to Nena Creek carries large quantities of silt and potentially harmful agricultural chemicals. Disturbance of spawning beds by wading anglers, motorboat wakes and jet pump action is also suspected. Silt and fine sediments accumulating in the river channel from bank washing, irrigation return flow, overland flow, tributary input and natural glacial action have degraded important fish spawning and rearing areas. Spawning gravel recruitment immediately downstream from the Pelton-Round Butte Complex ended with the construction of the dams.



# Wildlife Habitat/Vegetation

*Issue:* How should vegetation/wildlife habitat and conflicts between recreational users and wildlife be managed?

## **Issue Description**

Many areas formerly covered with trees, native brush, grass and forbs have succumbed to wildfire, herbicides and irregular livestock distribution. The loss or degradation of wildlife habitat is manifested by the loss of wildlife species, the loss of nesting bird colonies and consistently low deer fawn survival.

Increased camping and boating within the canyon have resulted in increased wildlife disturbance, harassment and displacement, especially in the riparian corridor.

# Historical/Archaeological Resources

Issue: How should historical/archaeological resources be managed in conjunction with other uses?

**Issue Description** 

The existing condition and significance of known historical/archaeological resource sites are not quantified. It is estimated that at least 50 percent of villages, campsites and rockshelters have been vandalized. Most historical/archaeological resource sites along the river have had some degree of disturbance. Those historical/archaeological resource sites further away from the river have not been examined.

The impact on historical/archaeological resources is increasing with the increase in recreational use of the river. This impact stems from a variety of sources including illegal digging and artifact collection, induced erosion, facilities and road construction/maintenance, vegetation manipulation, fire and chemical pollution, as well as visual impacts.

Law enforcement efforts aimed at stopping the vandalism of historical/archaeological sites and materials have been insufficient. Efforts toward public awareness and education of the significance of the resources and of the laws pertaining to their protection have been insufficient and uncoordinated between the managing agencies.

# **B.** Recreational Activities

**Boating:** Nonmotorized

Issue: How should nonmotorized boating be managed?

**Issue Description** 

The growth of float boating has prompted concerns over competition for and damage to camp areas, conflicts between nonmotorized float boaters and motorized boaters, anglers, landowners, etc. The problems are most evident during weekends in the summer and early fall.

# **Boating:** Motorized

Issue: How should motorized boating be managed?

**Issue Description** 

The presence of motorboats on the Deschutes, especially in segment 4, contributes to congestion at launch sites and competition for fishing and camping areas. Many anglers and other users resent the noise, wake and competition from anglers using motorboats to reach their favorite fishing or camping spot. There is a concern for public safety regarding collisions between motorized boats and other floating craft including float tubes.

The issue also includes a concern over streambank erosion as it affects the condition of riparian areas, water quality and fisheries habitat that may result from boat wakes. A study was conducted during the summer of 1989 by the State of Oregon to evaluate the impact of motorized boating on riverbank erosion and turbidity on the lower portion of the Deschutes River. The findings of that study indicated natural causes (strong currents during floods, at channel constrictions and where flows are deflected toward the banks) are responsible for the majority (61 percent) of streambank erosion. It was determined that human nonboating activities (camping, foot traffic and fishing) cause about 24 percent of the erosion with motorboats and livestock grazing causing nine percent and six percent respectively (32).



Fishing

Issue: How should a quality fishing experience be maintained or enhanced?

#### **Issue Description**

The fishing issue centers around: 1) competition for fishing areas; 2) competition for limited camping sites; 3) angler/boater conflicts (i.e. boating across fishing water); 4) noise and safety conflicts between bank anglers and motorboat users; and 5) limited public angling access because of Tribal or private property.

# Camping

Issue: How should camping be managed?

## **Issue Description**

There is a high degree of competition for campsites on the Deschutes. There is limited coordination between managing agencies for campsite facilities, standards and management. Some established campsites are being damaged by heavy use and are in need of rehabilitation or closure. In some areas, there are not enough campsites or basic site protection facilities to accommodate the present level of use.

# Guided and Outfitted Services

*Issue:* How should guided and outfitted services along the Deschutes be managed?

## **Issue Description**

There are no limitations on the number of guided or outfitted services on the river. There are no training or experience requirements to obtain a BLM guide permit. It is relatively easy to meet BLM and State Marine Board permit/license requirements since they do not accurately determine actual performance. In addition, some guides and outfitters do not comply with permit stipulations. They operate on the Deschutes without authorization and attempt to do business without detection by agencies and legal guides.



# Access: Roads, Trails and Launch Sites

Issue: What action should be taken with regard to public access?

**Issue Description** 

Many of the launch and landing sites are not adequately developed. As a result, problems with crowding, dust and rude behavior occur during periods of high use. After gaining access to the river, boaters have limited access to fishing areas and campsites because of private and Tribal ownership of lands along the river as well as the river bed itself. The limited number and primitive quality of roads and trails in the canyon also restrict access by recreationists.

**User Fees** 

Issue: How should user fees be levied for public use of the Deschutes River?

**Issue Description** 

At present the majority of funds for management of the lower 100 miles of the Deschutes River are derived from Federal and State appropriations. Fees paid by boaters represent the next largest funding source. Many boaters resent paying more than what they believe is their fair share of the expense and feel that all users should share more of the cost of the services and facilities provided than they do now.

An adequate and stable funding mechanism is essential for resource protection, visitor services, facility development, operation, maintenance and trash collection, as well as access and easement acquisition.



# C. Public Safety/Services

**Emergency Services** 

Issue: How should emergency services be managed?

#### **Issue Description**

The demand and need for emergency services in the Lower Deschutes Planning Area exceed the capability of local jurisdictions to provide them.

# Law Enforcement

*Issue:* What actions should the managing agencies take to effectively provide law enforcement on BLM, State, Tribally-owned and private land?

## **Issue Description**

Current staffing and funding levels are insufficient to adequately enforce laws in the planning area under the current situation. Lack of definition of boundaries makes it difficult to determine whether State, County, Tribal and/or BLM jurisdiction applies. Each law enforcement officer has authority to enforce some, but not all BLM, State, County and Tribal regulations and statutes. Radio communication by law enforcement officials is difficult in the planning area because of the canyon topography. The distance of the courts from the planning area causes problems in prosecution of crimes because of lengthy travel times for witnesses and officers.

# Trespassing

Issue: How should trespassing on Tribally-owned and private lands be handled?

#### **Issue Description**

Private and Tribally-owned lands make up approximately 39 percent of the land in the Lower Deschutes River Planning Area. As use increases, so do complaints about trespassing. Trespassing is sometimes associated with other illegal acts, including illegal fishing, hunting, vandalism and/or disturbance of historical and archaeological sites. Lack of boundary identification increases the incidence of trespassing and makes prosecution difficult.

No single law enforcement official can enforce trespassing laws on all lands within the canyon area. Because of the distances involved, many private landowners do not want to spend the time necessary to prosecute trespassers. BLM/State and Tribally-owned as well as private lands are difficult to identify on the ground in many areas.

# Information and Education

Issue: How should public information and education be handled?

**Issue Description** 

No comprehensive, coordinated plan for informing and educating the public has been developed. Various information/ education efforts have been carried out, however, no overall program has been developed or implemented.



# **III.** Management Goal and Standards

For many years, the Deschutes River has provided a wide range of recreation opportunities in a generally natural but roaded environment. Continuing this general philosophy of management, a goal has been established and five alternatives have been developed which present reasonable solutions to the issues which have been identified.

#### Goal:

The goal of this plan is to manage the lower 100 miles of the Deschutes River canyon on a segment-by-segment basis to protect and enhance the river's outstandingly remarkable and related values while allowing the continuation of compatible existing uses, including a wide range of public outdoor recreation opportunities and minimizing user conflicts. These recreation opportunities would be provided to the extent that they do not substantially impair the natural beauty of the river canyon, diminish its esthetic, fish and wildlife, scientific and recreational values and take into account the rights and interests of private landowners.

#### **Overall Minimum Standards For the Entire Planning Area**

Management actions will be taken to prevent, stop or reverse the following unacceptable conditions in the planning area under all alternatives:

1. Any riparian and upland area that is in a declining status or is in less than mid-seral (25 percent or less of the plant composition found in the potential natural plant community) ecological status as shown in Appendix C.

2. Any riverbank that is actively eroding at such a rate that water quality and fish habitat are adversely affected.

3. Any significant natural feature or recreational value that is eroding or being irreparably damaged by human use to the point that it is in danger of being lost.

4. Any significant health hazard caused by human use.

5. Any damage to threatened or endangered species or damage to individual plants or animals or the habitat of any candidate species which would cause them to become listed as either threatened or endangered caused by human use.

Any abuse of historical or archaeological sites.



7. Any significant degradation of water quality due to human use, including both point and nonpoint sources within and outside the river corridor.

8. Any fish population decreases below the following levels:

Species	Total Return	Harvest	Spawning Escapement		
Spring chinook	8,500-12,000	5,500- 8,000	3,000-4,000		
Fall chinook	10,000-12,000	4,000-5,000	6,000-7,000		
Summer steelhead	16,000-22,000	6,000-12,000	10,000		
Rainbow trout	managed as wild fish, maintained at a total population indicated by 1,500-2,500 fish per mile larger than eight inches in the Nena Creek area				
Bull trout	maintain existing population				
Sockeye	develop and maintain a self-sustaining run when and if technology is developed to pass juvenile and adult fish successfully over the Pelton-Round Butte Hydroelectric complex				
9. Any significant dama	age to private land or improvements w	ithin or adjacent to the planning	area resulting from public use.		

# *IV. Description of the Alternatives Including the Preferred*

#### Introduction

The planning process views the Deschutes River as a spectrum of resource and recreational opportunities. The alternatives list different ways in which the issues could be resolved. The Draft Preferred Alternative was developed through a combination of: 1) public comment on the Issues and Alternatives for Management of the Lower Deschutes River released for public review in January 1990; 2) deliberations of the Deschutes River Policy Group and 3) decisions made by the Deschutes River Executive Review Board. The consequences of implementing the Preferred Alternative as well as the other alternatives were then analyzed to determine what impacts would result.

Solutions, or alternatives, which would change the Deschutes River Canyon into a high density urban park on one hand, or a wilderness area on the other have been determined to be unreasonable and have been dismissed.

#### **Objectives of the Alternatives**

Objectives have been identified for each of the five alternatives which attempt to describe the type of experience a visitor could expect to have if the Deschutes River were managed under that alternative. The overall objectives of the alternatives considered in this document are as follows:

#### Preferred Alternative

This alternative provides for somewhat higher levels of overall use from 1988 baseline levels while attempting to redistribute use from peak weekends and holidays to weekday periods. Interaction with other individuals or groups would generally be moderate. The management objectives under this alternative would be to allow overall use levels to slightly increase over 1988 levels while reducing both peak recreational use levels and conflicts between user groups. Natural resource condition would be improved significantly. Facility development to accommodate recreational activities such as camping, boating, fishing and vehicle-oriented activities would occur so long as the natural character of the area is not significantly changed and natural values such as soil, water, vegetation, wildlife habitat and cultural resources are protected and wherever possible, enhanced. Regimentation and controls would be obvious, but would be compatible with the environment and aimed at protecting natural values and visual quality.



This alternative provides for a higher level of use. The management objectives under this alternative would be to accommodate increased levels of recreational use, while protecting the environ-

ment where the sights, sounds and interaction with other individuals or groups would often be high. The character of the area would remain in a generally natural-appearing condition; however, facility development to enhance recreational opportunities such as camping, boating, fishing and vehicle-oriented activities would occur. On-site regimentation and controls would be obvious, but limited to those necessary for public safety as well as to accommodate increased numbers of visitors, and to maintain fisheries condition, soil stability and vegetative cover.

#### Alternative 2

This alternative describes existing management. Alternative 2 is the baseline from which the other alternatives can be compared. This is the no-action alternative required by the National Environmental Policy Act and as a result is not consistent with the range of alternatives identified. The intent of this alternative would be to continue present levels of management. Overall recreational use levels would be unregulated and would continue to increase causing a moderate to high degree of interaction with other individuals and groups. On-site regimentation and controls would be evident in some areas and lacking in others.

#### Alternative 3

This alternative provides for lower levels of peak use. The management objectives under this alternative would be to maintain present overall levels of use while reducing peak recreational use levels while natural resource condition would be improved. The sights, sounds and level of interaction with other individuals or groups would be moderate. Facility development to accommodate recreational activities would occur so long as the natural character of the area was not affected. Regimentation and controls would be obvious, but would be compatible with the environment and aimed at protecting natural values and visual quality.

#### Alternative 4

This alternative provides for much less use. The management objectives under this alternative would be to significantly reduce recreational use levels, improve overall natural resource condition and provide recreational opportunities in a less crowded setting. The sights, sounds and overall level of interaction with other individuals or groups would be low to moderate. New facility development would occur away from sensitive areas to disperse recreational use. Regimentation and controls would be handled both on-site and off-site through fees, regulations and limitation. On-site regimentation and controls would fit into the natural landscape to the greatest degree possible.

## Management Actions

#### Introduction

Each alternative identifies specific management actions that would be taken to protect/enhance resource values and resolve particular issues. Management actions under Alternative 1 resolve the issues in ways that would accommodate higher levels of recreational use and significantly increase the amount of recreational facilities while imposing limited regulations in order to protect the environment. At the other end of the spectrum, management actions under Alternative 4 resolve the issues in ways that would significantly reduce recreational use levels, improve overall resource condition and provide more dispersed but highly regulated recreational opportunities. The Preferred Alternative and Alternatives 2 and 3 prescribe management actions which would create a recreational experience and an environment generally in between those created under Alternatives 1 and 4. Alternative 2 describes existing management in the Lower Deschutes River Planning Area.

The following information summarizes the alternative management actions including the Preferred Alternative which could be used to resolve the identified issues:



# A. Protection/Enhancement of Natural and Cultural Resources

# 1. Fish Habitat/Water Quality and Quantity

a. Issue: How should riparian areas be managed to protect water quality?

1) *Problem:* Loss or degradation of vegetation and soil due to livestock grazing has resulted in damage to fish habitat.

## **Preferred** Alternative

Riparian plant communities on BLM, State and Tribally-owned lands would be managed to maintain or achieve full vegetative potential with a minimum of 60 percent of ecological status being achieved within 15 years. All sites would have a mix of shrubs at the 60 percent potential level with the dominant species being alder.

Upland vegetation on BLM, State and Tribally-owned lands would be managed to maintain or achieve ecological status between 51 and 75 percent of the plant composition found in the potential natural plant community (late seral or good ecological condition as shown in Appendix C).

Supplemental vegetative seeding and planting of the best suited plant species in riparian and upland areas would be provided to speed vegetative recovery of degraded areas and increase wildlife habitat diversity.

Artificial structures would be erected and maintained to enhance habitat for cavity nesting birds and other animals.

Prescribed fire would be used as appropriate to maintain or achieve desired ecological condition.

In areas of predominantly public ownership or in areas with substantial interspersion of public and private lands, livestock grazing would continue to be managed under existing systems to meet established standards. Intensive monitoring studies (i.e. utilization, actual use, photo points, ecological condition and trend) would be implemented to measure progress in meeting the riparian and upland standards on public lands. Similar monitoring would be conducted on private and allotted lands where landowners/managers are agreeable. If, after five years, studies do not indicate a positive trend toward meeting vegetative standards, temporary or permanent livestock exclusions would be implemented on BLM, State and Tribally-owned lands and recommended or encouraged on private and allotted lands. Management could include various intensive grazing management systems or temporary or permanent exclusion of livestock from the riparian zones and adjacent uplands as follows: Segment 1:

New livestock fencing would be constructed to exclude livestock from the riparian corridor of the river and tributaries on public land between Trout Creek Campground and Mecca Flat. Livestock watering access to the river and tributaries would be restricted to controlled points and only where upland watering alternatives do not exist or cannot be developed. Livestock riparian fencing would be constructed upstream from Trout Creek Campground above the east bank trail to reduce conflict with recreational access to the river. Segment 2: New livestock fence would be constructed to exclude livestock from public and Tribally-owned lands in the corridor between the east bank access road and the river until vegetative recovery has occurred. Livestock watering access to the river on public and Tribally-owned and private lands would occur at small controlled sites only when alternative upland water sources are unavailable. Segment 3: New livestock fence would be constructed above the Macks Canyon Road to exclude livestock from public and Tribally-owned lands within the river corridor during riparian recovery. New boundary fencing would be constructed between private and public lands at Sinamox, Ferry Canyon and Box Elder Canyon to prevent livestock from entering the riparian corridor on public land. New upland watering sources would be developed to eliminate the need for livestock access to the river. Segment 4: New livestock fencing would be constructed to exclude livestock from sections of riverbank not currently within established riparian livestock exclosures. Livestock access to the river or tributaries for water would be provided at controlled access points if upland watering sites were not available.

In order to minimize conflicts between recreation use and livestock grazing and to provide for accelerated improvement in ecological condition, the season of use for grazing of all public lands in the planning area would be limited to periods between November 1 and May 1.

In areas of extensive blocks of private or allotted lands, the management agencies would encourage implementation of livestock management systems that would result in riparian and upland plant communities reaching the management standards. The management agencies may work cooperatively with individual private landowners to assist in the development of grazing systems and construction of livestock management facilities.

Programs or measures would be implemented which promote cooperation and education in the process of achieving the plan's vegetative standards. This information would be directed at the managing agencies as well as livestock operators and the public.

#### Alternative 1

Livestock grazing would be managed to achieve or maintain riparian and upland vegetative condition between 25 percent and 50 percent of the plant composition found in the potential natural community (mid-seral or fair ecological condition as shown in Appendix C) within 15 years. Areas presently in better condition would continue to be maintained. Grazing periods and/or stocking rates on BLM and Tribal pastures bordering the river and tributaries would be modified to allow the desired vegetative recovery. Existing riparian livestock exclosures would be maintained until the vegetative community reaches the above objective. Following achievement of this objective, livestock grazing would be allowed consistent with management objectives.



Livestock grazing in all riparian areas on BLM land would be managed to reach full vegetative potential with a minimum of 60 percent of potential achieved within 15 years. (See Appendix C for

examples of various stages of ecological succession.) State and Tribally-owned lands would be managed for livestock grazing, wildlife habitat and riparian values. Segment 1: Livestock exclosures at Mecca Flat and between Cove Creek and the Locked Gate would be maintained. Segment 2: Riparian livestock exclosures between the Locked Gate and Maupin, on public and private lands, would be maintained. Segment 3: Exclosures at Beavertail and Macks Canyon would be maintained. Segment 4: Sensitive riparian habitat on State lands would continue to be protected with livestock exclosures and recovery monitored. Sensitive riparian habitat on State and BLM land would be managed with livestock exclosures or grazing management systems. Present grazing systems would continue on upland State lands. Livestock exclosures would be constructed along Deschutes River tributaries on State lands to protect or restore riparian vegetation. Upland seeding and plantings would continue on public lands to improve habitat diversity. Artificial structures would be erected and maintained to enhance habitat for cavity nesting birds and other animals.

#### Alternative 3

Livestock grazing in all riparian areas on public lands would be managed to reach full vegetative potential within 25 years. See Appendix C for examples of various stages of ecological succession. Livestock grazing would be allowed after management objectives are reached and if vegetative condition could be maintained. Segment 1: New livestock fencing would be constructed to exclude livestock from the riparian corridor of the river and tributaries on public land between Trout Creek Campground and Mecca Flat. Livestock watering access to the river and tributaries would be restricted to controlled points and only where upland watering alternatives do not exist or cannot be developed. Livestock riparian fencing would be constructed upstream from Trout Creek Campground above the east bank trail to reduce conflict with recreational access to the river. Segment 2: New livestock fence would be constructed to exclude livestock from public and Tribally-owned lands in the corridor between the east bank access road and the river until vegetative recovery has occurred. Livestock watering access to the river on public and Tribally-owned and private lands would occur at small controlled sites only when alternative upland water sources are unavailable. Segment 3: New livestock fence would be constructed above the Macks Canyon Road to exclude livestock from public and Tribally-owned lands within the river corridor during riparian recovery. New boundary fence would be constructed between private and public lands at Sinamox, Ferry Canyon and Box Elder Canyon to prevent livestock from entering the riparian corridor on public land. New upland watering sources would be developed to eliminate the need for livestock access to the river. Segment 4: New livestock fencing would be constructed to exclude livestock from sections of riverbank not currently within established riparian livestock exclosures. Livestock access to the river or tributaries for water would be provided at controlled access points if upland watering sites were not available.

Livestock would be removed from all BLM, State and Tribal riparian areas on the river and tributaries. Planting of vegetation of native species only would occur to enhance natural succession. Livestock watering in tributaries would be allowed at controlled points if alternative upland watering sites were not available. No livestock watering would be allowed from the river. Segment 1: Planting of vegetation of native species only would occur primarily on upland sites void of trees and shrubs. Segment 2: Livestock fencing adjacent to the east bank access road would be located above the road to reduce conflicts with recreational access to the river. Planting of native species only would occur to enhance natural succession. Segment 3: Fencing adjacent to the Macks Canyon Road would be located above the road to reduce conflicts with recreational access to the river. Segment 4: Livestock would be excluded from the entire riparian corridor by fencing or other means.

2) Problem: Loss or degradation of vegetation and soil due to motor vehicle use has resulted in damage to fish habitat.

#### Preferred Alternative

Motor vehicle routes not designated would be closed and rehabilitated. Supplemental vegetative seeding or planting would be provided to speed vegetative recovery of areas previously degraded by vehicle use.

Additional parking areas would be provided outside of the riparian areas at Mecca, Trout Creek, Buckhollow, Pine Tree, Beavertail, Macks Canyon and Deschutes State Park, as well as other smaller roadside pull off sites.

Barriers of natural material would be installed to prevent unauthorized vehicle access into riparian areas at Devil's Canyon, Oak Springs, Handicap Ramp, Buckhollow, Pine Tree, Jones, Rattlesnake and Ferry Canyons, as well as at Sinamox and other smaller roadside sites.

#### Alternative 1

Motor vehicle routes not designated would be closed and rehabilitated. Additional parking would be provided at existing boat launch sites at Mecca and Trout Creek, Buckhollow, Pine Tree, Beavertail, Macks Canyon and Deschutes State Park. Additional parking areas would be developed at suitable sites outside of riparian areas.

#### Alternative 2

Vehicle routes not designated would be closed and rehabilitated.



Vehicle routes not designated would be closed and rehabilitated.

Supplemental vegetative seeding or planting would be provided to speed vegetative recovery of areas previously degraded by vehicle use.

#### Alternative 4

Supplemental seeding or planting and protection of native species only would be provided to speed the vegetative recovery of degraded riparian areas. Segment 2: Barriers of natural or artificial material would be installed to prevent unauthorized vehicle access into riparian areas such as Devil's Canyon, Oak Springs, Handicap Ramp, Buckhollow, Pine Tree, Jones, Rattlesnake and Ferry Canyons, Sinamox and other unnamed existing vehicle access sites.

3) **Problem:** Loss or degradation of vegetation and soil due to human use associated with parking, camping and boating has resulted in damage to fish habitat.

## **Preferred** Alternative

Camping would be allowed only in suitable sites set aside for camping on BLM, State and some Tribally-owned lands on a first-come, first-served basis. Campsites are shown on Maps 3 and 4 and in Appendix D.

Basic site protection measures would be provided as needed to harden sites and minimize impacts. Unstable riverbanks at heavily-used campsites would be stabilized. Campsites exhibiting heavy or extreme impacts would be actively rehabilitated and if necessary, closed until levels of impacts have been mitigated to at least a moderate level (see Monitoring and Evaluation section, VII.C., for definitions and criteria). No camping would be allowed in the vicinity of Sherars Falls if private land could be acquired and alternative facilities could be provided at White River State Park in Tygh Valley and/or Buckhollow.

No new parking or camping facilities would be constructed in a riparian area. Existing boat launch sites would be managed as described in the Access: Roads, Trails and Launch Sites section.

#### Alternative 1

Existing camping facilities would be evaluated and improved to provide resource protection. No use restrictions would be instituted. Degraded campsites would be closed temporarily to prevent further resource deterioration and allow for vegetative recovery. Campsites in Segment 4 on the east bank between Lockit and Harris Canyon that are most suitable for motorboat camping would be set aside for that use.

No new facilities would be provided. Camping use would continue at all suitable sites unless areas were temporarily closed for rehabilitation. Unstable riverbanks at heavily-used sites would be stabilized.

#### Alternative 3

Camping would be allowed only in sites set aside for camping. Basic site protection measures would be provided to minimize impacts. All existing boat launch areas would be redesigned/reconstructed, as needed, to minimize impacts on riparian areas. No existing boat launching area would be closed. New vehicle parking areas would not be constructed in riparian areas. Unstable riverbanks at heavily-used sites would be stabilized.

#### Alternative 4

Camping would be allowed on public and Tribally-owned lands in sites set aside for camping by reservation only. Basic site protection measures would be provided to minimize impacts. Existing major public boat launching/landing areas would be redesigned/reconstructed as needed to minimize impacts on riparian areas. Primitive and undeveloped launch sites would be closed and rehabilitated. Unstable riverbanks at heavily-used sites would be stabilized. No camping would be allowed on BLM, State or Tribally-owned lands between Maupin and Buckhollow. Camping facilities would be provided at White River State Park in Tygh Valley and private development would be encouraged at Tygh Valley and in Buckhollow Canyon.

b. Issue: How should water quality and water flows be managed to protect or enhance fish habitat?

1) Problem: There is a lack of flow fluctuation to clean spawning gravel.

#### Preferred Alternative

Approximately 250 cubic yards of suitable gravel annually would be replaced mechanically in primary fish spawning beds in the three miles of river immediately downstream from the Pelton Reregulating Dam.

Alternative 1

No gravel replacement would occur.

Alternative 2

No gravel replacement would occur.







LEGEND

X



520

- ▲ Semi-Developed Campground
- 1-60 Undeveloped Campsites
  - Undeveloped Campsites
    Needing Further Review

U.S. DEPARTMENT OF THE INTERIOR Bureau of Land Management

# LOWER DESCHUTES RIVER

CAMPING AREAS

**Prineville District** 

1991









No gravel replacement would occur.

Alternative 4

Same as Preferred Alternative.

# 2. Wildlife Habitat/Vegetation

*a. Issue:* How should wildlife habitat/vegetation and conflicts between recreational users and wildlife be managed?

1) **Problem:** Degradation of wildlife habitat due to livestock grazing has resulted in a reduction of wildlife populations and a loss of certain types of habitat.

#### **Preferred** Alternative

Same as Preferred Alternative under Fish Habitat/Water Quality and Quantity discussion.

Cooperative agreements for wildlife habitat improvements would be sought with private landowners.

#### Alternative 1

The minimum acceptable condition of upland and riparian vegetation would be between 26 percent and 50 percent of the plant composition found in the potential natural community (mid-seral or fair ecological condition as shown in Appendix C). Livestock forage allocation increases could occur in upland areas, based on improving vegetative condition. Livestock grazing where allowed in riparian areas, would continue as long as the vegetation could be maintained in fair ecological condition. Upland water sources would be developed for better livestock and wildlife distribution and forage utilization. Livestock grazing management on private lands would be dependent upon individual livestock operators. Segment 1: Livestock exclosures at Mecca Flat and



between Cove Creek and the Locked Gate would be maintained. Livestock grazing on public lands bordering the river would be managed to obtain 40 percent of vegetative potential. Segment 2: Livestock riparian exclosures between the Locked Gate and Maupin, on public and private lands, would be maintained. Segment 3: Livestock grazing on public lands bordering the river would be managed to obtain 40 percent of vegetative potential. Segment 4: Mid-canyon slope fencing would be constructed to provide better livestock range distribution and forage utilization.

#### Alternative 2

Upland and riparian vegetation would be managed through livestock grazing management and range/wildlife habitat development to provide maximum wildlife habitat diversity with BLM lands reaching full vegetative potential with a minimum of 60 percent (ecological status of high mid-seral to low late seral) being achieved within 15 years. See Appendix C for examples of various stages of ecological succession. Tribally-owned and State lands would be managed for livestock grazing, wildlife habitat and riparian values. Livestock grazing on private lands would continue to vary by operator. Segment 1: Livestock exclosures at Mecca Flat and between Cove Creek and the Locked Gate would be maintained. Segment 2: Riparian livestock exclosures between the Locked Gate and Maupin, on public and private lands, would be maintained. Segment 3: Exclosures at Beavertail and Macks Canyon would be maintained. Segment 4: Sensitive riparian habitat on State lands would continue to be protected with livestock exclosures or grazing management systems. Present grazing systems would continue on upland State lands. Livestock exclosure fencing would be constructed along Deschutes River tributaries on State lands to protect or restore riparian vegetation. Upland seeding and plantings would continue on public lands to improve habitat diversity. Artificial structures would be erected and maintained to enhance habitat for cavity-nesting birds and other animals.

#### Alternative 3

Livestock grazing in all riparian areas on BLM, State and Tribally-owned lands within the Deschutes River Canyon would be managed to achieve or maintain ecological status between 51 percent and 75 percent of the plant composition found in the potential natural plant community (late seral or good ecological condition as shown in Appendix C). Livestock grazing would be allowed consistent with wildlife habitat objectives. Upland water sources would be developed for better livestock and wildlife distribution. Seeding, planting and fertilizing of best-suited species for site rehabilitation would occur. Controlled burning would be done to improve the quality of available livestock and wildlife forage. Artificial structures would be constructed for wildlife species requiring cavities for nesting or hiding. Segment 1: New livestock exclosure fencing would be constructed to control livestock grazing on public lands between Trout Creek and Mecca Flat on the uphill side of the hiking trail to exclude livestock exclosure fencing would be erected on the uphill side of the Deschutes Access Road on public lands to control livestock. Livestock would be controlled along Nena, Wapinitia, Stag and Bakeoven Creeks. Segment 3: New livestock exclosure fencing would be constructed along Oak Brook, Rattlesnake, Jones and Macks Canyons to provide for riparian recovery.



Segment 4: Sensitive riparian habitat on BLM and State lands would be protected from livestock grazing until recovery occurs. Existing watergaps to the river for livestock watering would be restricted in width to provide additional riparian protection. Livestock riparian exclosures would be constructed on perennial Deschutes River tributaries on public land (Ferry Spring, Gordon Canyon, Fall Canyon, Harris Canyon and Sixteen Canyon) to facilitate riparian recovery.

## Alternative 4

Livestock would be removed from all BLM, State and Tribally-owned lands within the riparian areas on the river and tributaries. Planting of native species would occur to enhance natural plant succession. Vegetative condition would be managed to achieve or maintain ecological status between 76 percent and 100 percent of the plant composition found in the potential natural plant community (climax or excellent ecological condition as shown in Appendix C) in both riparian and upland areas. Upland water sources would be developed for better wildlife distribution. These areas would be protected to enhance natural revegetation and species diversity. Upland seeding, planting and fertilizing of native species, plus burning, and/or watering would be done to improve wildlife habitat diversity. Artificial structures would be erected for wildlife species requiring cavities for nesting or hiding. Reintroduction of native wildlife species would occur. Cooperative agreements for wildlife habitat improvements would be sought with private landowners.

2) *Problem:* Human activities including camping, vehicle use and motorboating have damaged vegetation and wildlife habitat and have disturbed, harassed and displaced wildlife.

#### **Preferred** Alternative

Camping would be restricted or if necessary, prohibited in sensitive wildlife areas and areas in need of rehabilitation. No new motor vehicle access would be provided. Supplemental watering would be used to establish new tree and shrub growth of the best-suited species around these sites. All dogs would be required to be kept on a leash except while actually hunting during established hunting seasons. Existing sensitive waterfowl nesting and resting areas, as well as small game and bird habitat, would be enhanced through planting and other vegetative manipulation. Former native species of wildlife such as desert bighorn sheep and sharptailed grouse would be reintroduced.

Campsites within the riparian zone in the vicinity of Devil's Canyon, Handicap Ramp, Oak Springs, Steelie Flat, Homestead Flat and Robertson Flat and other sites would be stabilized, rehabilitated or temporarily closed to allow vegetative recovery. Other undeveloped sites would be set aside for camping as shown in Appendix D.

Wildlife areas in need of rehabilitation would be rehabilitated through plantings and other vegetative manipulation. There would be no new restrictions on camping or boating. New campsites would be developed both inside and outside the riparian zone.

No new motor vehicle access would be provided. New vehicle parking developments would be provided so as to minimize impacts to wildlife habitat. Undeveloped campsites would be set aside for camping or closed as shown in Appendix D.

#### Alternative 2

Camping would continue without additional restriction, however some campsites would be rehabilitated. The planting of trees in heavily-used areas would continue. No new facilities would be provided. No boating restrictions would be implemented. No new motor vehicle access would be provided. Undeveloped campsites would be set aside for camping or closed as shown in Appendix D.

#### Alternative 3

Camping would be restricted in sensitive wildlife areas and areas in need of rehabilitation. No new motor vehicle access would be provided. Camping would be allowed in riparian areas if management objectives could be met. Supplemental watering would be used to establish new tree and shrub growth of the best-suited species around these sites. All dogs would be required to be kept on a leash except while actually hunting during established hunting seasons. Undeveloped campsites as shown in Appendix D would be set aside or closed.

#### Alternative 4

No camping would be allowed in sensitive wildlife habitats. Boating restrictions would be instituted within sensitive wildlife areas during periods when disturbance to these species would be severe. Existing sensitive waterfowl nesting and resting areas, as well as small game and bird habitat, would be enhanced through plantings of native species and other vegetative manipulation. Former native species of wildlife such as desert bighorn sheep and sharptailed grouse would be reintroduced. All dogs would be banned except while actually hunting during established hunting seasons. All campsites within the riparian zone would be closed unless set aside for camping as shown in Appendix D. New campsites would include planting of native species of trees and shrubs which are beneficial to wildlife.



# 3. Historical/Archaeological Resources

*a. Issue:* How should historical/archaeological resources be managed in conjunction with other uses?

1) Problem: Recreational use impacts historical/archaeological resources.

## **Preferred** Alternative

Public information and education efforts through brochures, signs, information stations and visitor contact points would be implemented.

Human use including livestock grazing would be managed, restricted or closed by signing and/or fencing if damage to sites is now occurring or occurs in the future.

The managing agencies would conduct a survey or resurvey of all BLM, State and Tribally-owned lands. Private lands would also be surveyed if permission could be obtained from the landowner. Identified significant cultural resources on private land would be managed and protected through cooperative agreements with the landowner.

Surveillance of sites which are easily accessible and/or in high recreation use areas would be conducted by field personnel, law enforcement people and/or volunteers on a regular basis.

Stabilization of significant sites would be implemented if feasible. If stabilization of a disturbed or threatened site is not feasible, the site would be evaluated and salvaged to the greatest degree possible.

#### Alternative 1

Historical/archaeological resources would be protected, stabilized or excavated in all areas where high levels of recreation use occur.

#### Alternative 2

Impacts to historical/archaeological resources due to ground-disturbing activities would be mitigated prior to implementation on Tribally-owned, State and BLM lands.

Recreational use would be managed to reduce impacts on historical/archaeological resources. Impacts would be mitigated, Impacts to historical/archaeological resources through construction would be considered prior to implementation on private lands (using co-op agreements).

#### Alternative 4

Recreational use would be restricted to protect historical/archaeological resources. Historical/archaeological resource sites would be interpreted. No recreational use would be allowed on historical/archaeological resource sites if damage would occur or could not be mitigated.

#### 2) Problem: Vandalism

#### **Preferred** Alternative

Landowners would be educated concerning existing historical/archaeological resource laws, regulations and law enforcement/investigation procedures. Aerial surveillance and remote sensing devices would be utilized to monitor vandalism at significant sites given cost effectiveness. The existing law enforcement agreements with Jefferson and Wasco Counties would be continued and an agreement with Sherman County would be established.

#### Alternative 1

#### Same as Preferred Alternative.

#### Alternative 2

Existing law enforcement agreements would be continued. Existing interpretive facilities would be continued. Limited historical/archaeological resource site monitoring would occur on BLM lands.

#### Alternative 3

Landowners would be educated concerning existing historical/archaeological resource laws, regulations and law enforcement/investigation procedures. Interpretive programs (on and off the river) would be emphasized. Law enforcement agreements between BLM and Sherman County would be established. Monitoring programs on all lands adjacent to the river would be developed and implemented.



Regular aerial surveillance of the area would be conducted. Remote sensing devices would be utilized to monitor vandalism. Owners of private collections of cultural material from the river area would be encouraged to make the material available for study and public display.

# 3) Problem: Improper Livestock Grazing

**Preferred** Alternative

Livestock grazing would be managed to eliminate impacts to historical/archaeological sites from trampling or other damage. All range development projects would continue to be evaluated for effects to historical/archaeological resources on BLM, State and Tribally-owned lands.

Alternative 1

Livestock grazing would be managed to reduce effects on historical/archaeological resource sites from trampling.

Alternative 2

Range improvement projects would continue to be evaluated for effects to historical/archaeological resources on Triballyowned and BLM lands.

Alternative 3

Livestock grazing would be managed to eliminate impacts to historical/archaeological resource sites from trampling.

Alternative 4

No livestock grazing would occur in areas where historical/archaeological values exist.

# **B.** Recreational Activities

# 1. Use Levels

a. Issue: How should recreation use levels be managed?

1) Problem: Increasing levels of use and congestion.

Levels of use in the planning area have increased significantly during the past 20 years. Most of the data regarding increases in use deals with boating use. The Management Plan will deal with all users within the planning area. However, sufficient data is only available at this time to establish user limits for boaters. Data will be gathered beginning in 1991 to establish appropriate levels of use for non-boating users in the planning area. The levels established for other users will be roughly equivalent on a proportionate basis to those established for boaters.

#### **Preferred** Alternative

Total boating use (motorized and nonmotorized) would be managed to achieve the following numbers of boaters per day on each segment between May 15 and Sept. 15 in Segments 1, 2 and 3 and May 15 to October 15 in Segment 4:

Segment	Segment Length	Weekend Limit	Weekday Limit	Season Limit
1	41 mi.	500	300	47,000
2	15 mi.	1,500	800	71,000
3	21 mi.	200	200	11,000
4	23 mi.	300	300	23,000
Total				152,000

The rationale and process used in the selection of these use levels is discussed in Appendix F.

Indirect or voluntary management actions would be given a 3-year period to achieve these boating use limits. Actions which would be considered are listed below and in the individual sections for nonmotorized and motorized boating.



- Provide basic site protection measures in launch and landing areas.
- Designate launch and landing areas and designate separate areas for motorized and nonmotorized craft.
- Redesign and sign launch and landing areas for more efficient, expedient and safe use.
- Expand weekend uniformed BLM, Parks and volunteer personnel as information and education resources.
- Design a voluntary program of staggered starting time for boats during the high use season.
- Institute a self-regulating use system on the basis of even/odd use on weekends.
- Institute a permit system for weekends only.
- · Further restrict camping length of stay to two nights in undeveloped sites and seven nights in developed sites.
- · Remove some types of use from some areas, i.e. off-highway vehicles, motorized boats.

If the above actions are not successful, a limited entry system would be implemented.

Alternative 1

Boating use levels would not be restricted in any segment.

Alternative 2

Boating use levels would not be restricted in any segment.

Alternative 3

Motorized and nonmotorized daily boater numbers would be limited to a maximum of 450 in Segment 1, 450 in Segment 2 and 50 in Segment 3 from May 15 to September 15. Boater numbers in Segment 4 would be limited to 150 boaters per day from May 15 to October 15.

#### Alternative 4

Nonmotorized daily boater numbers would be limited to a maximum of 300 in Segment 1, 300 in Segment 2 and 30 in Segment 3 from May 15 to September 15. Daily boater numbers in Segment 4 would be limited to 100 from May 15 to October 15. Motorized boats would be banned on all segments of the river on a year-round basis.
# 2. Use Allocation

a. Issue: If a limited entry system is implemented, how should use be allocated?

1) Problem: No allocation system to regulate recreation use has been established.

Three allocation methods are put forth for public consideration. The allocation method determines how permits under a limited entry system would be distributed to members of user groups. The following is a narrative description of each allocation method considered in this document.

The allocation method included in the Preferred Alternative and Alternative 3 is similar except that the Preferred Alternative contains a larger common pool. Rather than 15 percent of the permits being in a common pool, 40 percent of the permits would be in a common pool. The historic split would be applied to the remaining 60 percent of the permits. The end result would be that private boaters would have approximately 45 percent of the permits, guided boaters would have approximately 15 percent of the permits and 40 percent would be in a common pool for which guided and private boaters could compete. The Preferred Alternative also has a built-in adjustment that would take place every five years that could adjust the split between private and guided boaters based on changes in user demand as shown in Figure 1.

The allocation method included in Alternative 3 is based on a historic split between guided and private boaters with a small common pool as shown in Figure 2. Under this alternative the historic proportions of use between guided and private boaters are determined. The best historical information available now indicates that private boaters account for 75 percent of the overall boating use and guided boaters for 25 percent of the overall boating use. Under this alternative, the private boaters would give up ten percent of their historic use to a common pool and guided boaters would give up five percent of their historic use to the common pool. The end result would be 65 percent of the permits going to private boaters, 20 percent to guided boaters, and 15 percent in the common pool available for competitive applications between guided and private boaters.

The allocation method included in Alternative 4 is referred to as the "100% common pool" or sometimes as the "freedom of choice" allocation method as shown in Figure 3. Under this method all members of the public are treated the same, whether they use their own equipment or go with a guide. Each member of the public would have an equal chance of obtaining a permit whether boating in a guided or private group.

Each of the allocation methods also deals with several other issues. They include:

**1.** *Number of Guides.* In 1989 there were 138 permitted guides on the Deschutes River. The Preferred Alternative and Alternative 4 call for a reduction through attrition to 80 guides. Alternative 3 sets the maximum number of guides at 90. Under the Preferred Alternative, a moratorium would be imposed on the issuance of permits to new guides upon completion of the plan.

# ALLOCATION METHOD INCLUDED IN THE PREFERRED ALTERNATIVE.

The overall historic split between guided and private boaters is approximately 25% guided and 75% private. The exact ratio will be determined by river segment prior to implementation.





 Split between guided and private boater pool evaluated every 5 years and adjusted as necessary.

- Limit of 80 guides reached through attrition.
- Individual guides guaranteed a percentage of total starts.
- Individual guides allowed to transfer their allocations subject to agency approval.
- Permits distributed:

Private permits - December 1 of year preceeding launch. Guided permits - March 1 of year preceeding launch.

Common Pool Permits - April 1 of launch year.





2. *Permit distribution dates.* The different alternatives also take into account different planning horizons. Under the Preferred Alternative, the guides would receive an allocation of permits on March 1 of the year preceding the launch. For example, they would receive their allocation on March 1, 1993 for the permits that were to be issued for the 1994 boating season. Private permits would be issued on December 1 of the year preceding launch. Accordingly, on December 1, 1993 permits would be made available for the 1994 season. The common pool permits would be issued on April 1 of the launch year. In Alternative 4, 25 percent of the permits would be distributed on December 1, 25 percent on April 1 and 50 percent two weeks prior to the launch date. Alternative 3 changes these figures slightly with 20 percent of the permits distributed on December 1, 20 percent on April 1 and 60 percent two weeks before the launch date.

3. *Transferability of guide permits.* Each alternative contains provisions governing whether or not guides would be able to transfer their permit allocation through sale of business operations. Alternatives 3 and 4 prohibit such permit transfers while the Preferred Alternative allows these permit transfers.

4. Entry of new guides onto the river. Each of the alternatives limits the total number of guides. Under the Preferred Alternative, guides going out of business would be permitted to transfer their allocation through the sale of business operations. Under Alternative 3, new guides would be selected through a bid and prospectus method. Under Alternative 4, as individual guides went out of business, a lottery method would be used to determine who would get that guide allocation.

5. Guarantee of permits to individual guides. Under Alternative 4, guides would have no guarantee of individual permits. Rather, the customers of the guide would have to obtain the permit, although the guide would be allowed to make application for that customer. Under the Preferred Alternative and Alternative 3, the individual guide would have to establish his or her historic levels of use and then would obtain his or her proportional share of the permits. Historic use levels between guided and private boaters would be based on 1988 use and re-evaluated at the end of five years (1992). The re-evaluation would be based on data collected during those five years. The individual guide could also compete for permits in the common pool.

The rationale and process used in the selection of the allocation method is discussed in Appendix F.



# Criteria to be Used in Evaluating Various Allocation Methods

Where limited entry systems have been established in the past, the allocation system adopted has frequently been one of the most controversial issues addressed. Although allocations could be between a wide variety of user groups, they are typically decided on a guided vs. private boater basis. In order to evaluate the various allocation systems proposed, a set of 11 public policy criteria has been developed by the Deschutes River Policy Group for use in the evaluation. The Deschutes River Policy Group decided that the allocation methods selected for the Deschutes River should, to the extent possible, meet the following criteria:

1. Treat all outfitted and non-outfitted publics equitably.

2. Be designed to minimize disruption to guided/outfitted services.

3. Not create a private property value out of a public resource.

4. Accommodate all types of boaters (long-term planners, as well as short-term and spontaneous users).

5. Foster a high quality of outfitted services.

6. Minimize cost of access to the river by the public.

7. Provide an efficient system (minimize no shows and make unused trips available to others).

8. Make the system as easy to administer as feasible.

9. Penalize cheaters.

10. Provide a system that is as flexible as possible to accommodate individual changes in plans based on weather, water levels, quality of fishing, etc.

11. Be able to be defended to diverse groups.

# 3. Boating: Motorized

a. Issue: How should motorized boating be managed?

1) Problem: Congestion and user conflicts

Preferred Alternative

Motorized boat use would be regulated within the use levels and by the same allocation method described under the Preferred Alternative in the use allocation section.

Motorized boats would be banned year-round on Segments 1 and 2. Motorized boats would be banned on the upper part of Segment 3 from just below Sherars Falls to Beavertail Campground from May 15 to September 30. Motorized boats would be allowed in the upper part of Segment 3 from October 1 to May 14. On the lower part of Segment 3, from Beavertail Campground to Macks Canyon Campground, and on Segment 4, motorized boats would be restricted to alternating weeks during the period from July 15 through Labor Day. Motorized boats on the lower part of Segment 3 and all of Segment 4 would be allowed to operate between the Tuesday after Labor Day and July 14, subject to normal restrictions.

During the periods when motorboats are allowed, they would be allowed to operate from legal sunrise to legal sunset.

Each motorboat would be allowed to make up to two round trips from Heritage Landing, Macks Canyon or Beavertail per day, except for emergencies.

Each motorboat would be allowed to carry a maximum of five people, including the operator.

The bans and restrictions on motorized boats in any segment would not apply to motorized craft used for necessary landowner access, administrative uses and emergency services.

All floating craft would observe a pass-through zone from the no-wake zone at Moody Rapids to the upstream end of Rattlesnake Rapids, and motorized boat users would not be allowed to camp on the west side of the river from Free Bridge to Sharp's Bar.

One coast guard certified tour boat with a maximum of 16 passengers with a permit to be issued on the basis of an annual bid and prospectus would be allowed in Segment 4 during periods when motorboats would be allowed. This use would be for day use sightseeing and picnicking only.

All commercial outfitters and guides would continue to be subject to a Special Recreation Use Permit administered by the BLM.



Public use brochures and a map to inform and educate boaters on how to avoid peak use periods, reduce user impacts and utilize less crowded sections of the river during open periods would be developed.

The rationale and process utilized in the selection of these motorized boat restrictions are discussed in Appendix F.

# Alternative 1

Boating use levels would not be restricted in any segment except that motorboats would not be allowed between Harpham Flat and Maupin City Park at any time.

Group size would be limited to seven people per boat in all segments. There would be no limit on the number of groups per day.

## Alternative 2

Boating use levels would not be restricted in any segment. Existing closures to motorboat use adjacent to the Warm Springs Indian Reservation would continue.

Group size would not be limited except for guides and outfitters where they would be limited to 16 people. There would be no limit on the number of groups.

# Alternative 3

#### Motorboat use would be regulated as follows:

**Segment 1**: Motorboats would be prohibited downstream from the northern boundary of the Warm Springs Reservation, (as well as adjacent to the reservation) between May 15 and September 15. **Segment 2**: Motorboat use would be prohibited between May 15 and September 15. **Segment 3**: Motorboat use between Buckhollow and Macks Canyon Campground would be prohibited between Memorial Day and Labor Day. **Segment 4**: Motorboat use would be prohibited on alternating weekends (Friday a.m. through Sunday p.m.) between July 15 and September 30.

During periods of the year when motorboats are allowed, boating use levels would be regulated to the same level through the same system described under Alternative 3 in the Use Allocation section.



Motorized boat use would be confined to between sunrise and sunset in those segments of the river where motorboat use would be allowed. Motorboat size would be limited to 23 feet in 1991 and further restricted to 20 feet in 1995 in all segments of the river.

Group size would be limited to a maximum of seven people per boat per day in all segments. The present no-wake zone would continue downstream from Moody Rapids and a pass-through zone would be established from the no-wake zone at Moody to the upstream end of Rattlesnake Rapids.

Launch facilities at Macks Canyon and Heritage Landing would be redesigned/reconstructed to better accommodate motorboat use.

Alternative 4

Motorboats would be banned on all segments on a year-round basis.

4. Boating: Nonmotorized

a. Issue: How should nonmotorized boating be managed?

1) Problem: Congestion and User Conflicts

Preferred Alternative

Public use brochures and a map would be published to inform and educate boaters on how to avoid peak use periods, reduce user impacts and utilize less-crowded sections of the river.

All floating craft would be required to display a boat identification tag.

Party size would be limited to 16 people in Segments 1, 3 and 4 and 24 people in Segment 2.

All floating craft would be required to observe a pass-through zone from the no-wake zone at Moody Rapids to the upstream end of Rattlesnake Rapids.



Group size would be limited to a maximum of 30 people in Segment 2 and 16 people in Segments 1 and 3 and 24 people per party in Segment 4. There would be no limit on the number of groups per day.

Anglers utilizing float tubes would be required to wear fluorescent clothing to make them more visible to boaters.

Alternative 2

A group size of 16 would be recommended for private boating groups. Group size for guides and outfitters would be limited to 16 people per party with no limitation on the number of groups.

Alternative 3

All floating craft would be required to display an identification number.

Group size would be limited to a maximum of 16 people per party per day in Segments 1, 3 and 4 and 24 people per party per day in Segment 2. The number of starts per party per day would be limited to three in Segment 2 and one in Segments 1, 3 and 4.

A pass-through zone would be established from the no-wake zone at Moody to the upstream end of Rattlesnake Rapids. Float tubes would be banned in Segment 4.

Alternative 4

All floating craft would be required to display an identification number.

Group size would be limited to a maximum of 12 people per party per day. A pass-through zone would be established from Moody Rapids to Colorado Rapids.

# 5. Fishing

a. Issue: How should a quality fishing experience be maintained or enhanced?

1) Problem: Competition for fishing areas.

#### Preferred Alternative

Current angling regulations would only change to assist in meeting fish management objectives. Basic site protection measures would be provided at major fishing areas to better accommodate use. Riparian enhancement measures would be implemented to increase the number of desirable angling sites. Public easements for angling access would be acquired on private lands on a willing seller basis. Additional public access would be provided through land exchanges or other means as opportunities arise. A hiking trail would be developed on the east side of the river from Trout Creek to North Junction to better distribute anglers. Additional public parking would be provided adjacent to the Mecca Road to better distribute anglers. Additional roadside vehicle parking areas would be provided adjacent to the Deschutes Access Road. Additional roadside vehicle parking areas would be installed and maintained in the riparian livestock exclosure fences to facilitate angler access to the river. The Eastside Access Road would connect the Macks Canyon Campground and Deschutes State Park with a hiking, bicycle and horse trail. The river between Moody Rapids and Rattlesnake Rapids would be designated for hike-in anglers only.



#### Alternative 1

Angling regulations would become more restrictive which could include catch and release. Public easements would be acquired on private lands on a willing seller basis. Angling from all islands would be allowed.

Segment 1: A hiking trail would be developed on the east side of the river from Trout Creek to North Junction to better distribute anglers. More boating would be encouraged, except that the existing restriction on motorboats adjacent to the Warm Springs Reservation would remain in effect. Additional public parking would be provided adjacent to the Mecca Road to better distribute anglers. Segment 2: Hiking trails would be developed for better access along the west bank from Sherars Falls to Nena Creek. Improvements to facilities would be made to encourage more boating, hiking and camping. Additional roadside vehicle parking areas would be provided adjacent to the Deschutes Access Road. Segment 3: Hiking trails would be developed at the Twin Tunnels and Beavertail Peninsula to improve angler access to the river. Improvements to facilities would be made to encourage more boating, hiking and camping. Additional roadside vehicle parking areas would be made to encourage more boating, hiking and camping to improve angler access to the river.



Ferry Canyon would be signed and re-opened for public use. Segment 4: Hiking trails along the river would be designated and signed to improve angler access. Walk-overs or walk-throughs would be installed and maintained in the riparian livestock exclosure fences to facilitate angler

access to the river. Motor vehicle access would be limited to Macks Canyon Campground, Kloan, Heritage Landing and Deschutes State Park. The Eastside Access Road would connect the Macks Canyon Campground and Deschutes State Park with a hiking, bicycle and horse trail. Other improvements to facilities would be made to encourage more boating, hiking and camping.

## Alternative 2

Angling regulations would not change unless fish populations fell below the management objective. Additional public access would be provided through land exchanges or other means as opportunities arise. No new facilities would be provided. Existing camping length-of-stay regulations would remain in effect. Segment 1: The only restriction on boating would be for motorboats adjacent to the Warm Springs Reservation. Segment 2: Boating would not be restricted. Segment 3: No new restrictions on boating or vehicle access would be imposed. Segment 4: Motor vehicle access would be limited to Macks Canyon, Kloan, Heritage Landing and Deschutes State Park. Bicycle use would continue on the Eastside Access Road upstream from Deschutes State Park. No additional access restrictions would be imposed on anglers.

#### Alternative 3

Angling regulations would be liberalized so long as fish populations meet management objectives. Changes could include an increased bag limit. Public fishing would be allowed on Tribally-owned lands, however no additional vehicle access for fishing would be provided. Basic site protection measures would be provided at major fishing areas to better accommodate use. Riparian enhancement measures would be implemented to increase the number of desirable angling sites.

Motor vehicle access would be limited to Macks Canyon Campground, Kloan, Heritage Landing and Deschutes State Park in Segment 4.

Bicycle use would be restricted to the Eastside Access Road in Segment 4. Walk-throughs and walk-overs would be installed and maintained to facilitate angler access through riparian livestock exclosure fencing. The river between Moody Rapids and Rattlesnake Rapids would be designated for hike-in anglers only.

#### Alternative 4

Angling regulations would be liberalized so long as fish populations meet management objectives. Changes in regulations could include allowing fishing from a floating device. Basic site protection measures would be provided at high use areas. Riparian enhancement measures would be implemented to increase the number of preferred angling sites. Camping would be

allowed in sites set aside for camping by reservation only, with group size limited to 12. Length of stay would be limited to 14 days for all camping in roaded sections of the canyon and limited to four days in areas accessible only by boat. Segment 2: Vehicle access between Maupin and the Locked Gate would be reduced by 25 percent with the use of a visitor check-in/check-out station at the southern edge of Maupin. Parking would be restricted to designated areas in all of Segment 2.

# 6. Camping

- a. Issue: How should camping be managed?
- 1) Problem: Campsite availability, quality of facilities and environment.

#### Preferred Alternative

Public brochures and maps would be developed to inform and educate campers on how to avoid peak use periods and utilize less crowded sections of the river.

Camping would be allowed in suitable undeveloped and developed sites set aside for camping on BLM, State and some Tribally-owned land as indicated in Appendices D and E and shown on Maps 3 and 4 on a first-come, first-served basis. No overnight use would be allowed in any area or site that was not set aside for camping. Existing undeveloped sites where significant conflicts exist with cultural, riparian and/or wildlife values would be closed and rehabilitated if the conflict cannot be mitigated. Basic site protection measures would be provided as needed to harden sites and minimize impacts to soil and vegetation at the following undeveloped boat-in and drive-in sites:

Segment 1 - 165 sites - 161 undeveloped/primitive non-vehicle access sites and four developed/semi-developed campgrounds with 90 individual campsites (Note - number of sites on Tribally-owned land may be reduced.).

Segment 2 - 26 sites - six undeveloped/primitive non-vehicle access sites and 20 developed/semi-developed campgrounds with 173 individual campsites.

Segment 3 - 43 sites - 32 undeveloped/primitive non-vehicle access sites and 11 developed/semi-developed campgrounds with 67 individual campsites.

Segment 4 - 142 sites - 135 undeveloped/primitive non-vehicle access sites, six drive-in, boat-in sites and one developed campground at Deschutes State Park with 34 individual campsites.

Where sanitation facilities are not provided, human waste would be required to be packed out.



Group size would be determined by the size and capability of the site; however, in no case would group size exceed 16 people per site except in specially designated group sites. Group sites would be limited to 50 people. Camping length of stay would be limited to four nights in undeveloped

sites and 14 nights in developed sites except at Deschutes State Park where the camping limit would be ten days out of 14. Motorized boats would be limited to seven nights between May 15 and Sept. 30 in those areas where they are allowed. All camping equipment and personal property would then be removed from the area and could not be relocated within 1/4-mile of the same site for a period of at least 14 nights. No camping would be allowed in the vicinity of Sherars Falls if private land could be acquired and alternative camping facilities could be provided at White River State Park in Tygh Valley and/or at Buckhollow.

Suitable, undeveloped sites would also be set aside for camping in appropriate upland areas away from the river for hiking, mountain bike and horseback use.

If camping use levels exceed site capacity on a regular basis, the length of stay would be reduced to two nights in undeveloped sites and seven nights in developed/semi-developed campgrounds and if necessary, further reduced to one night and four nights respectively during peak use periods.

As a last resort, if camping use levels exceed site capacity, a campsite reservation system would be implemented during peak use periods.

Additional camping facilities would be constructed on BLM, State and Tribally-owned lands as follows:

**Segment 1:** Four developed/semi-developed campgrounds with approximately 90 sites would be provided on BLM, leased private, State and Tribally-owned lands. The Warm Springs facility would be expanded if adjacent land can be acquired. A medium-sized campground with water, sanitation, day use, launch site, parking area, a group use site and improved access would be developed at Mecca Flat. The existing campground at Trout Creek would be redesigned and expanded to include water and two group sites. South Junction would also be expanded and redesigned to include water and other facilities associated with a medium-sized campground including a group-use site. Dry Creek would be expanded to include designated camping sites, parking and sanitation facilities.

**Segment 2**: Sixteen developed/semi-developed campgrounds and day-use areas with approximately 173 sites would be provided on BLM, City of Maupin, leased private and Tribally-owned lands. A medium-sized campground with water and sanitation facilities, as well as a group use site would be provided in the Bull Pasture area near the Locked Gate. The existing camping areas at Nena Creek, Devil's Canyon, Long Bend and Wapinitia would be hardened and specific camp sites designated. Harpham Flat would be acquired as public land or a long-term lease arranged. A large campground with two group

sites, major launch areas and water would be developed at Harpham Flat. Boxcar Rapids and Wapinitia overflow would become day-use areas. Maupin City Park would continue to be administered by the City of Maupin. It would be expanded and upgraded with separation of day use and overnight camping, including a group site. The City would attempt acquisition of adjacent private land for expansion.

Primitive camping would be allowed in suitable areas from Maupin City Park to Sherars Falls. Some of the areas would be hardened and camping sites designated. Oasis Flat would be hardened and used for two group areas. Grey Eagle would be hardened and used for overnight camping. Moss Hole and Rocky Flat would be closed to overnight camping. The handicap ramp area would be day use only except for handicapped parties. A group site would be designated at Oaksprings on the rocky bluff and the riparian area closed for rehabilitation. Surf City would become a day-use area with additional parking provided across the road. White River would be developed into a primitive campground with sanitation, parking and designated sites. Sandy Beach would be developed into a major landing facility with upland parking, day use, group area and a separate moderate-sized overnight campground with sanitation and water. Sherars Falls would be day-use only with no boat landing. The White River State Park at Tygh Valley and/or Buckhollow would include a small-sized campground with space for recreation vehicles if private land could be acquired.

Segment 3: Ten developed/semi-developed campgrounds and day-use areas with approximately 67 units would be provided on BLM and leased private and Tribally-owned lands. Buckhollow and Pine Tree launch sites would be upgraded and only day use allowed. Boulder Flat would be opened to day-use only. Camping areas at Twin Springs, Oakbrook, Gert and Jones Canyon and Upper and Lower Rattlesnake would be hardened with designated camping sites. Beavertail and Macks Canyon Campgrounds would have only minor upgrading but increased maintenance.

Segment 4: One developed campground at Deschutes State Park with 34 sites would continue to be provided.

#### Alternative 1

Camping would be allowed on BLM, State and Tribally-owned land on a first-come, first-served basis, in sites set aside for camping as shown in Appendices D and E and on Maps 3 and 4. Undeveloped sites suitable for camping would be developed with basic site protection measures taken. Length of stay would be limited to seven days in developed/semi-developed campgrounds and roaded sections and two days in boat-in campsites. Group size would be limited to a maximum of 25 people. Easements or leases for camping on private lands would be acquired on a willing seller basis. Private landowners would be encouraged to develop needed recreation facilities on their land to accommodate overnight and day use by the public. Trees would be planted in campsites lacking shade.

Segment 1: A total of 168 undeveloped campsites and four developed campgrounds would be provided on BLM, leased private and Tribally-owned lands.



A medium-sized campground with water and sanitation facilities, day use, launch site and parking area would be developed at Mecca Flat. A designated road system would be developed for a large campground, day-use area and upgraded boat launch at Trout Creek. Sanitation facilities would be upgraded and water would be provided. A medium-sized campground with water and sanitation facilities, day use, launch site and parking would be developed at Dry Creek and South Junction.

Segment 2: Approximately six undeveloped and 19 developed/semi-developed campgrounds and day-use areas would be provided on BLM, leased private and Tribally-owned lands.

A medium-sized campground with water and sanitation facilities would be developed in the Bull Pasture upland area near the Deschutes Club locked gate.

Rehabilitation of campsites would occur, including development of a small campground with water and sanitation facilities, day use, boat launch and parking at Devil's Canyon, Nena Creek and Long Bend. A designated road system would be developed at Harpham Flat for a large camping, day use and boat launch area if this private land is acquired. Parking and sanitation facilities would be upgraded and water would be provided. At Wapinitia a small campground with water, sanitation facilities and small parking area would be developed. Boxcar Rapids and Wapinitia overflow areas would be hardened for day use and overnight camping.

Administration of Maupin City Park would shift from the City of Maupin to Oregon State Parks Department. The park would then be redesigned and reconstructed to accommodate boat launching/landing, day use activities and an area for information and education. Land near Maupin City Park would be developed with additional river access, camping, day use and vehicle parking. Areas suitable for camping and day use between Maupin and White River would be developed. Water, picnic tables and sanitation facilities would be provided at approximately six sites. Camping and day-use sites near Sherars Falls would be identified and sanitation facilities would be provided.

**Segment 3:** Approximately 32 undeveloped campsites and 11 developed/semi-developed campgrounds and day-use areas would be provided between Buckhollow and Macks Canyon Campground for camping and day use. Water, picnic tables and sanitation facilities would be provided in some locations. The designated road systems at Beavertail and Macks Canyon Campgrounds would be upgraded. These areas would also be expanded and upgraded to accommodate more camping and day use. Launching areas would be improved for more use. Additional sanitation facilities would also be provided.

Segment 4: Approximately 135 undeveloped campsites and two developed campgrounds would be provided on BLM and State lands.

Campsites on the east bank between Lockit and Harris Canyon that are most suitable for motorboat camping would be set aside for that use.

A medium-sized camping and day-use area would be established at Kloan. The access road would also be improved to allow safe 4-wheel drive vehicle travel during the summer and fall months.

At Heritage Landing additional vehicle and boat trailer parking would be provided. Separate, larger boat ramps would be developed for launching and landing. Additional sanitation facilities and more drinking water would be provided. A trailhead on the west bank with public information/interpretive signs would be provided for trail users.

At Deschutes State Park the designated camping and day-use area would be expanded to accommodate more visitors. A boat launch area with parking for vehicles and trailers, sanitation facilities and water would also be provided. A trailhead with public information/interpretive signs and parking would be provided for trail users.

A campground stewardship program would be implemented on BLM land to allow up to 30 days of continuous camping in one undeveloped campsite. The steward would enhance the campground by planting and maintaining suitable vegetation or by other means.

#### Alternative 2.

Camping would not be restricted except on Tribally-owned lands as shown in Appendices D and E and on Maps 3 and 4. There would be no limitation on group size other than for guides. Existing length of stay limits of 14 days in all developed campsites and undeveloped campsites in Segments 2 and 3 would continue. A length of stay limit of four days in the remaining undeveloped campsites would be continued.

Segment 1: Approximately 140 undeveloped campsites and four developed/semi-developed campgrounds would be provided. At Mecca Flat the existing toilet facilities, camping and launching area and access route would be maintained. No water would be provided. A designated road system would be developed for camping, day use and launch areas at the Trout Creek Campground, but sanitation facilities would be maintained in their present condition. No water would be provided.

At South Junction a road system and individual campsites would be designated. The existing launch area would be improved for safer entrance to the river and to minimize disturbance of the railroad grade. No water would be provided. Existing facilities on Tribally-owned land (Dry Creek) would be maintained to present standards and made available to Tribal members only.

Segment 2: Approximately six undeveloped campsites and 17 developed/semi-developed campgrounds would be provided on BLM, leased private and Tribally-owned lands. Devil's Canyon, Nena Creek and Long Bend would continue to be managed for primitive camping with no additional sanitation facilities, picnic tables or water. The existing launch areas would be improved to provide better bank protection. At Harpham Flat a designated road system, launch area and sanitation facilities would continue to be maintained. No water would be provided. Wapinitia would continue to be managed for day use and a



small camping area. The launch area would continue to be used in its present condition. Boxcar Rapids and Wapinitia overflow areas would continue to be used and maintained in their current condition. Maupin City Park would be managed primarily for day use. Approximately six

locations now being used for camping would continue to be maintained between Maupin City Park and White River with limited sanitation facilities and picnic tables. No water would be provided. Camping and day-use sites would be identified near Sherars Falls and sanitation facilities would be provided.

Segment 3: Approximately 32 undeveloped campsites and 11 developed/semi-developed campgrounds would be provided on BLM lands.

The existing road systems at Beavertail and Macks Canyon Campgrounds would be maintained but not upgraded. Launching areas would be improved to provide better bank protection and to enhance watercraft safety. Campsites and water services would be maintained at existing levels.

**Segment 4:** Approximately 141 undeveloped campsites and one developed campground would be provided on BLM and State lands. At Kloan, the existing 4-wheel drive access route to the Deschutes would not be maintained regularly. At Heritage Landing no additional parking areas, sanitation facilities or launch areas would be provided. Facilities at the Deschutes State Park would be expanded into the existing overflow area.

#### Alternative 3

Camping would be limited to sites set aside for camping on BLM, State and Tribally-owned lands as shown in Appendices D and E and on Maps 3 and 4. Group size would be limited to a maximum of 16 people. Length of stay would be limited to 14 days in all developed sites and four days in all undeveloped sites. All camping equipment and personal property would then be removed from the area and could not be relocated within 500 yards of the same site for a period of at least four days. Undeveloped sites suitable for camping but in need of stabilization would be developed with basic site protection measures taken. Other undeveloped sites would be closed and rehabilitated if conflicts with significant riparian and/or wildlife values exist. Campsites smaller than 500 square feet would be closed and rehabilitated. Basic site protection measures would be taken at new sites to better manage camping use and provide more diverse camping opportunities away from the river, such as horseback, hiking and mountain bike use. Existing campsites with a high fire hazard would have some vegetation removed to lessen the risk.

Segment 1: Approximately 54 undeveloped campsites over 500 square feet in size, averaging 1/8 to 1/4-mile apart, and four developed/semi-developed campgrounds would be provided on BLM, leased private and Tribally-owned lands. Campsites having significant conflicts with wildlife, riparian values or other users would be closed and rehabilitated.

At Mecca Flat the existing toilet facilities would be maintained in their present condition. The existing camping and launching area and access route would be stabilized by defining designated campsites and roads and providing more bank protection through railroad tie steps and vegetative plantings. Water would be provided at this site. Camping and launching at Mecca, Trout Creek, South Junction and Dry Creek Campgrounds would be limited to designated areas to minimize conflicts with riparian and wildlife values and other users. The Mecca Flat-Trout Creek Trail would be accessible from this area.

A designated road system would be developed for camping, day use and launch areas at the Trout Creek Campground. Sanitation facilities would be maintained in their present condition. Water would be provided in the campground and day-use areas. The Mecca Flat-Trout Creek Trail would be accessible from this area. A road system and individual campsites would be designated at South Junction. The existing launch area would be improved for safer entrance to the river while minimizing disturbance to the railroad grade. Water would be provided at this area.

Segment 2: Approximately five undeveloped campsites and 13 developed/semi-developed campgrounds and day-use areas would be provided on BLM, leased private and Tribally-owned lands. Camping party size for any one site would be limited to 30 between Locked Gate and Buckhollow.

The existing camping and launching area and access route at Devil's Canyon would be stabilized by designating campsites and roads and providing more bank protection through railroad tie steps and vegetative planting. Water and picnic tables would be provided. This area would continue to be managed for primitive camping with basic sanitation facilities provided. The existing launch area would be improved to provide better bank protection.

Long Bend and Nena Creek would continue to be managed for primitive camping with basic sanitation facilities, picnic tables and water provided. The existing launch area would be improved to provide better bank protection. At Harpham Flat a designated road system, launch area and sanitation facilities would continue to be maintained. Water would be provided. Wapinitia would be designated for day use only. Picnic tables and sanitation facilities would be provided. Water would be provided. Maupin City Park would be managed primarily for day use.

Approximately six locations now being used for camping between Maupin City Park and White River would continue to be managed for camping with basic sanitation facilities, picnic tables and water provided. In addition, one site away from the river would be developed with sanitation facilities, picnic tables and water. Camping and day-use sites would be identified at Sherars Falls. Additional sanitation facilities would be provided.

Segment 3: Approximately 27 undeveloped campsites in stable condition over 500 square feet in size, averaging 1/8 to 1/4 miles apart and two developed sites would be provided on BLM lands. In addition, eight semi-developed campgrounds and day-use areas would be provided. Water would be provided at Upper Rattlesnake, Jones Canyon, Oakbrook and Twin Springs.



The designated road systems at Beavertail and Macks Canyon Campgrounds would be upgraded, but no additional campsites would be developed. Existing campsites and water facilities would be maintained at present levels.

**Segment 4:** Campsites would be available by reservation for use from July 1 to October 1 of each year. No reservation system would be implemented for the remaining months of the year unless use exceeded identified standards. If this occurred, the campsite reservation system could be implemented on a year-round basis. In Segment 4 approximately 78 undeveloped campsites in stable condition over 500 square feet in size, averaging 1/8 to 1/4 mile apart, and one developed campground would be provided on BLM and State lands. Campsites between Macks Canyon and Lockit would be designated for camping no longer than 24 hours from June to October. Access and camp areas for hiking, mountain bike and horseback riding on the trail between Macks Canyon and the Deschutes State Park would be provided.

A day-use area would be established from Heritage Landing to Rattlesnake Rapids. Water would be provided in camping areas near Harris Canyon and Colorado Rapids.

The existing 4-wheel drive access route to the Deschutes at Kloan would not be maintained regularly. Campsites on the west bank of the Deschutes from the old freebridge downstream to the first powerline crossing would be reserved for visitors who drive down the Kloan road to camp and fish.

At Heritage Landing no additional parking areas, sanitation facilities or launch sites would be provided. At Deschutes State Park no additional campsites, parking, sanitation facilities or day-use area would be provided; however, improved upriver access would be provided for hikers, mountain bikers and horseback riders. Overnight facilities for these users also would be provided along the trail.

#### Alternative 4

Camping would be allowed on BLM, State and Tribally-owned lands in sites set aside for camping by reservation only as shown in Appendices D and E and on Maps 3 and 4. All groups would be limited to a maximum of 12 people. Length of stay would be limited to 14 days for all camping in roaded sections of the canyon and limited to four days in areas accessible only by boat. All camping equipment and personal property would then be removed from the area and could not be relocated within 500 yards of the same site for a period of at least 14 days. Campers would not have to camp within sight or sound of other camping parties in unroaded sections of the river. Campsites having a stable site condition and over 700 square feet in size and having a user Campsite Quality rating between Average and Excellent would be assigned a specific campsite number. Camping in areas not designated by specific campsite numbers would be prohibited. Existing undeveloped sites where significant conflicts exist with riparian and wildlife values or having a high fire hazard would be closed and rehabilitated.

**Segment 1:** Approximately 39 undeveloped campsites, averaging 1/4-mile apart, over 700 square feet in size and having a user campsite quality rating between Average and Excellent and four developed sites would be provided on BLM, leased private

and Tribally-owned lands. Camping and launching at Mecca, Trout Creek and South Junction would be limited to designated areas to minimize conflicts with riparian and wildlife values and other users.

**Segment 2:** Two undeveloped campsites and seven developed/semi-developed campgrounds and day-use areas would be provided on BLM, State, leased private and Tribally-owned lands.

No camping would be allowed on BLM, State or Tribally-owned lands between Maupin and Buckhollow. Camping facilities would be provided at White River State Park and private development of camping facilities would be encouraged at Tygh Valley and in Buckhollow Canyon.

**Segment 3:** Approximately 17 undeveloped campsites over 700 square feet in size averaging 1/4 mile apart, and having a user campsite quality rating between Average and Excellent and seven developed/semi-developed campgrounds would be provided on BLM lands. Access and camp areas for hiking, mountain bike and horseback riding on the trail between Macks Canyon and the Deschutes State Park would be provided. The designated road and water systems at Beavertail and Macks Canyon Campgrounds would continue to be maintained at their present standards. Additional campsites would be provided at Macks Canyon Campground for trail users. Launching areas at both campgrounds would be improved to provide better bank protection and to enhance safety. Existing campsites in Lower Rattlesnake, Gert and Jones Canyons, Oakbrook and Twin Springs would continue to be maintained. Water would be provided in three of these areas.

**Segment 4**: Approximately 50 undeveloped campsites over 700 square feet in size averaging 1/4-mile apart, and having a user campsite quality rating between Average and Excellent, and one developed campground would be provided on BLM and State lands. At Kloan, the existing 4-wheel drive access route to the Deschutes would not be maintained regularly. However, campsites on the west bank of the Deschutes from the old freebridge downstream to the first powerline would be reserved for visitors who drive into this area from the Kloan road. At Heritage Landing no additional parking areas, sanitation facilities or launch areas would be provided.

# 7. Guided and Outfitted Services

a. Issue: How should guided and outfitted services be managed?

1) Problem: Congestion

## **Preferred** Alternative

All commercial outfitters and guides would be required to obtain a Special Recreation Use Permit. The system would be administered by BLM.



A moratorium would be imposed on the issuance of permits to new guides upon completion of the plan.

If a limited entry system is implemented, only guides with a Special Recreation Use Permit could establish a historical use for the purpose of receiving an allocation of permits.

Group size for nonmotorized guides would be limited to 16 people per party per day in Segments 1, 3 and 4 and 24 in Segment 2. Motorized guides would be limited to five people per boat per day, including operator, with no more than two round trips per day from either Beavertail, Macks Canyon or Heritage Landing.

#### Alternative 1

The number of guides and outfitters would not be limited. All guides and outfitters utilizing BLM land would be required to obtain a permit.

Group size for nonmotorized guides would be limited to 16 people per party in Segments 1 and 3; 30 people per party in Segment 2 and 24 people per party in Segment 4. Motorized guides would be limited to seven people per boat in all segments. There would be no limit on the number of groups or trips per day.

#### Alternative 2

The number of guides and outfitters would not be limited. All guides and outfitters utilizing BLM land would be required to obtain a permit.

Group size would be limited to 16 people for all guides and outfitters. There would be no limit on the number of groups or the number of trips.

## Alternative 3

The number of guided and outfitted services would be controlled through the allocation method described in the Use Allocation section.

Group size for nonmotorized guides would be limited to 16 people per party per day in Segments 1, 3 and 4 and 24 people per party per day in Segment 2. Motorized guides would be limited to seven people per boat per day in all segments.

A portion of the sites set aside for camping in Segment 4 would be available to guides only.

Guides with motorboats would be banned on all segments on a year-round basis. The number of nonmotorized guided and outfitted services would be controlled through the allocation method discussed in the Use Allocation section.

Group size for nonmotorized guides would be limited to 12 people per party per day in all segments. No motorized boat use would be allowed in any segment.

2) Problem: Guide Certification



## **Preferred Alternative**

Guides and outfitters would be required to be certified for operation on the Deschutes River. Certification requirements would be developed and administered by a committee made up of representatives from BLM, State Parks, Oregon State Police, Oregon Department of Fish and Wildlife, Oregon State Marine Board and the guiding industry.

Alternative 1

Guides and outfitters would be required to meet minimum requirements to qualify for a permit.

Alternative 2

Guides and outfitters would be required to meet minimum requirements to qualify for a permit.

Alternative 3

Guides and outfitters would be required to be certified for operation on the Deschutes River.

Alternative 4

Guides and outfitters as well as their equipment would be required to be certified for operation on the Deschutes River.



# 8. Access: Roads, Trails and Launch Sites

a. Issue: What actions should be taken with regard to public access?

# 1) Problem: Safety and traffic volume on roads.

# Preferred Alternative

The access road from Maupin to Harpham Flat and from Buckhollow to Macks Canyon would be upgraded to meet safety standards based on regulated traffic volumes resulting from implementation of this plan. This would include acquisition of public easements from willing sellers where needed, widening of the roadbed in unsafe sections and oil surfacing on a gravel base. The road from Harpham Flat to the Deschutes Club locked gate would be gravelled. Guardrails would also be installed along narrow sections. Existing roads into Mecca Flat and Trout Creek would also be upgraded to meet safety standards. The primitive public road into Ferry Canyon would be signed and reopened for public use. The primitive county road into Kloan would be maintained as needed to retain its present condition.

Designated roads would be defined at Mecca Flat, Trout Creek and South Junction in Segment 1, at Devil's Canyon and Harpham Flat in Segment 2 and at Beavertail and Macks Canyon Campground in Segment 3. Motor vehicle parking along the Deschutes Access Road would be limited to designated areas in Segment 2.

Vehicle traffic would be limited to vehicles designed to carry 25 passengers or less.

# Alternative 1

Roads at Mecca Flat and Trout Creek, between Maupin and Locked Gate, Buckhollow and Macks Canyon and at Kloan would be upgraded to design and safety standards adequate to accommodate existing traffic volumes. This would include acquisition of public easements where needed, widening of roadbed in unsafe sections and oil or gravel surfacing. Guard rails would be installed along narrow road sections of the Maupin to Locked Gate, Maupin to Sherars Falls and the Buckhollow to Macks Canyon Roads in Segments 2 and 3.

# Alternative 2

Existing roads would be maintained to present standards. Designated road systems would be developed at Trout Creek Campground and South Junction in Segment 1 and at Harpham Flat in Segment 2. In Segment 4 the existing primitive county road into Kloan would remain in its present condition.

Existing access roads would be upgraded to meet safety standards adequate to accommodate existing traffic volumes.

Designated roads would be defined at Mecca Flat, Trout Creek and South Junction in Segment 1, at Devil's Canyon and Harpham Flat in Segment 2 and at Beavertail and Macks Canyon Campground in Segment 3. Motor vehicle parking along the Deschutes Access Road would be limited to designated areas in Segment 2.

#### Alternative 4

The access road from Maupin to Locked Gate would be upgraded with a gravel surface to meet minimum safety standards and management objectives.

Designated roads would be defined at Mecca Flat, Trout Creek and South Junction in Segment 1 and at Devil's Canyon and Rainbow Bend in Segment 2. In Segment 4 the existing 4-wheel drive access route to the Deschutes at Kloan would remain in its present condition.

Vehicle traffic would be limited to vehicles designed to carry 25 passengers or less.

2) Problem: Inadequate and unsafe parking areas and pullouts.

## **Preferred** Alternative

Existing parking and roadside pullouts outside of riparian areas or other sensitive wildlife habitats would be redesigned/ reconstructed, if needed and where feasible, to better accommodate vehicle parking, reduce congestion, protect resources, disperse recreation use and improve public safety.

Other parking areas and unsafe roadside pullouts would be closed and rehabilitated.

Parking areas would be developed along with campgrounds at Mecca Flat, Trout Creek and South Junction.

Parking areas would be developed or improved upstream from Warm Springs as well as at Devil's Canyon, Long Bend, Harpham Flat, Wapinitia, Boxcar Rapids, Maupin City Park, Sandy Beach and suitable areas between Maupin and Sherars Falls.



Parking areas would be enlarged in conjunction with expansion of Beavertail and Macks Canyon campgrounds and included with development of suitable areas for camping and day use between Buckhollow and Macks Canyon campground.

Parking areas may be enlarged at Deschutes State Park and developed at Kloan and other suitable camping and day-use areas.

# Alternative 1

Existing parking and roadside pullouts would be redesigned/reconstructed, if needed, to better accommodate vehicle parking, reduce congestion and improve public safety.

New parking and pullouts in upland areas would be constructed if conflicts with other users and resources could be mitigated. Parking areas would be developed along with campgrounds at Mecca Flat and South Junction. Parking areas would be developed or improved upstream from Warm Springs as well as at Devil's Canyon, Rainbow Bend, Harpham Flat, Wapinitia, Box-

car Rapids, Maupin City Park, Sandy Beach and suitable areas between Maupin and Sherars Falls. Parking areas would be enlarged in conjunction with expansion of Beavertail and Macks Canyon campgrounds and included with development of suitable areas for camping and day use between Buckhollow and Macks Canyon campground. Parking areas would be enlarged at Heritage Landing and Deschutes State Park and developed at Kloan and other suitable camping and day-use areas.

## Alternative 2

Existing parking areas would be maintained to present standards. No additional development would occur.

## Alternative 3

Parking areas and roadside pullouts outside of riparian areas or other sensitive wildlife habitats would be maintained or improved to disperse recreational use and improve public safety. Other parking areas and unsafe roadside pullouts would be closed and rehabilitated.



Existing parking areas outside riparian and other sensitive areas would be "hardened" to better accommodate vehicle parking and to protect resources.

Alternative 4

Same as Alternative 3.

3) Problem: Safety, congestion and resource damage at launch and landing sites.

**Preferred** Alternative

Boat launching and landing facilities would be developed or maintained in their present condition as shown in Appendix G.

The launch site at Warm Springs would be redesigned to provide a larger staging area. A launch facility would be constructed at Mecca Flat and the launch facility at Trout Creek would be upgraded with separate launch and landing areas.

The launch site at South Junction would be stabilized and protected in order to provide safer entrance to the river and minimize disturbance of the railroad grade. No vehicle access would be provided over the railroad grade.

The launch sites at Harpham Flat and Wapinitia would be upgraded for better access to the river as well as bank protection. Improvements would also be made for the landing on Tribally-owned land at Sandy Beach. Boaters in the lower end of this segment would be required to land there since the Sherars Falls landing would be closed.

The launch sites at Buckhollow, Pine Tree, Beavertail and Macks Canyon Campground would be improved to provide better bank protection and to enhance watercraft safety.

Heritage Landing would be redesigned to better accommodate boat use which would include separate landing sites for motorized and nonmotorized boats.

Alternative 1

Launch and landing sites at Mecca Flat, Trout Creek and South Junction, Nena Creek, Devil's Canyon, Long Bend, Harpham Flat, Wapinitia, Sandy Beach, Little Sandy Beach, Pine Tree, Beavertail and Macks Canyon Campground, Heritage Landing and Deschutes State Park would be redesigned or reconstructed to better accommodate use. This would include a separate landing site for motorized and nonmotorized boats at Heritage Landing. Sherars Falls landing would be closed.



Existing launch sites would be maintained to present standards. No new launch sites would be constructed.

# Alternative 3

A launch facility would be constructed at Mecca Flat. The launch site at South Junction would be stabilized to minimize disturbance of the railroad grade. The launch sites at Devil's Canyon, Long Bend, Harpham Flat, Wapinitia and Sandy Beach would be improved for better access to the river as well as bank protection. Improvements would also be made for landings at Sandy Beach and all boaters would be required to land there. The Sherars Falls landing would be closed. The launch sites at Little Sandy Beach, the Pine Tree, Beavertail and Macks Canyon Campground would be improved to provide better bank protection and to enhance watercraft safety. The launch/landing site at Heritage Landing would be maintained in its present condition. Nonmotorized boat landing facilities would be provided at Deschutes State Park.

## Alternative 4

Boat launching and landing would only be allowed at Warm Springs, Trout Creek, Harpham Flat, Maupin City Park, Sandy Beach, Pine Tree, Beavertail, Macks Canyon and Heritage Landing. No new launching facilities would be constructed. All remaining primitive/undeveloped launch sites would be closed and rehabilitated.

## 4) Problem: Inadequate foot access.

# **Preferred** Alternative

Foot access trails within riparian areas would be stabilized if necessary, but would be allowed as traffic dictated. Trails would, however, be closed if stabilization efforts were not effective. Trails and facilities would be improved and/or developed from Mecca Flat to North Junction on the east side of the river and from Macks Canyon to Deschutes State Park with consideration for safety, wildlife and riparian habitat, as well as historical and archaeological resources. Access through or over exclosure fences would be provided. Necessary easements across private land would be acquired from willing sellers. Trail and fishing access facilities for the handicapped would be provided in the vicinity of Heritage Landing. Hiking, horseback riding and mountain bike trails would be designated. Horseback use would be allowed on a day-use basis only on the abandoned railroad grade between Deschutes State Park and Harris Canyon from March 1 to June 30. The number of horses would be limited to a maximum of ten per day. A fee would be charged horseback users to construct, improve and maintain loading, watering and resting facilities.

The use of existing foot access trails would not be restricted. Trails along the river would be reinforced on steep or unstable areas if needed. Access through or over exclosure fences would be provided. Hiking, horseback riding and mountain bike trails and facilities would be developed or expanded where feasible and unlikely to damage sensitive wildlife habitat or significant historical or archaeological values. A trail would be developed on the east side of the river from Trout Creek to North Junction to better distribute anglers. Trails would be developed for better access along the west bank from White River to Nena Creek. Trails would be developed at the Twin Tunnels and Beavertail Peninsula to improve angler access to the river. Trails along the river would be designated and signed to improve angler access. The Eastside Access Road would be connected to the Macks Canyon Campground with a hiking, bicycle and horse trail.

Trail and fishing access facilities for the handicapped would be provided in the vicinity of Heritage Landing.

#### Alternative 2

Foot trail access to the shoreline would not be restricted, except in high use areas where trails would be hardened to minimize resource damage. Bicycle use would continue on the Eastside Access Road upstream from Deschutes State Park. No access restrictions would be imposed on walk-in or boating anglers.

#### Alternative 3

Foot access trails within riparian areas would be stabilized if necessary, but would be allowed as traffic dictated. Trails would be closed if hardening efforts were not effective. Trails and facilities would be improved and/or developed from Mecca Flat to North Junction and from Macks Canyon to Deschutes State Park with consideration for safety, wildlife and riparian habitat and historical and archaeological resources. Necessary easements across private land would be acquired from willing sellers.

Hiking, horseback riding and mountain bike trails would be designated in segment 4 on a seasonal basis.

#### Alternative 4

Foot trails which parallel the river within riparian habitat would be limited to existing locations and rehabilitated through plantings and by other means. Natural-appearing point access trails would be provided if there would be no damage to the riparian area.



# 9. User Fees

a. Issue: How should user fees be levied for public use of the Deschutes River?

# 1) Problem: Inequitable and inadequate funding.

# Preferred Alternative

Deschutes Boater Pass system would continue until the managing agencies could implement a dedicated fund supported by an all-user fee. The boater pass fee would be increased to \$2 per person per day or \$15 per person for an annual pass. An annual family pass would be available for \$25. Receipts would be dedicated to use on the Deschutes.

A minimal all user fee would be established based on management plan implementation costs and other available revenue sources. The range of user fee would be expected to be between \$2 and \$5 per person per day.

BLM and State Parks would continue to collect camping fees in developed camping areas. The BLM would collect three percent of guide and outfitters' adjusted gross revenue.

# Alternative 1

No user fees except the BLM's and State Parks' camping fees and the BLM three percent of guides and outfitters' adjusted gross revenue would be charged.

# Alternative 2

The fee structure would remain as is with boaters paying \$1.75 per day or \$12 per annual pass per person. The BLM's, Tribes' and State Parks' camping fees and the BLM three percent of guides' and outfitters' adjusted gross revenue would continue. The boater pass fees would continue to be dedicated to use on the Deschutes.

# Alternative 3

All users would pay a \$1.75 user fee per day or \$12 per annual pass per person. This fee would be dedicated to use on the Deschutes. BLM and State Parks would continue to collect camping fees in major developed campgrounds, i.e. Macks Canyon and Deschutes State Park. The BLM would also collect three percent of guide' and outfitters' adjusted gross revenue plus a permit administrative fee. On-site vending machines, point access sales, etc. would be emphasized for fee collection.

All users would pay a user fee of \$3.00 per day or \$15 per year. An annual family pass would be available for \$25. This fee would be dedicated to use on the Deschutes. The fee amount would be adjusted on a regular basis to offset funding shortfalls in operating expenses. BLM and State Parks would continue to collect camping fees in major developed campgrounds i.e. Macks Canyon and Deschutes State Park. The BLM would collect three percent of guide and outfitters' adjusted gross revenue plus a permit administrative fee. Offsite fee collection through designated vendors, fishing license stamps, camping reservations receipts, etc. would be emphasized.

# C. Public Safety and Services

1. Emergency Services

a. Issue: How should emergency services be managed?

1) Problem: Inadequate services.

#### Preferred Alternative

The Bureau of Land Management would increase fire suppression capabilities and assume lead responsibility for coordinating all fire suppression within the canyon. BLM would assume fire suppression responsibilities in presently unprotected areas within and adjacent to the National Wild and Scenic River area. Open fires would be prohibited from June 1 to September 30 with increased surveillance and enforcement on the entire river.

User fees would contribute to the funding of emergency services. Consideration would be given to State financial aid for emergency services when the South Wasco County Ambulance Service demonstrates significant costs in excess of revenues.



The Bureau of Land Management would increase fire suppression capabilities and assume lead responsibility for coordinating all fire suppression within the canyon. BLM would assume fire suppression responsibilities in presently unprotected areas within and adjacent to the National Wild and Scenic River area.

Wasco, Sherman and Jefferson Counties would assume responsibility for ambulance service within the planning area. User fees would fund emergency services.

Alternative 2

Present levels of emergency services would continue.

Alternative 3

Site specific safety regulations would be developed in areas experiencing high accident rates. This would include an open-fire prohibition from June 1 to September 30 and increased surveillance and enforcement on the entire river.

Alternative 4

User fees would fund emergency services.

# 2. Law Enforcement

*a. Issue:* What actions should the managing agencies take to effectively provide law enforcement on BLM, State, Tribally-owned and private land?

1) Problem: Inadequate law enforcement

Preferred Alternative

Funding for increased law enforcement would be provided through a user fee. A full-time officer would be provided for the entire river with special emphasis on Segment 2 during the primary use season. Aircraft and motorboat use for law enforcement would be increased.

A uniform communication network available to all law enforcement officials would be established.

All floating devices would be required to display an identification tag.

Alternative 1

Funding for increased law enforcement would be provided. A full-time officer would be provided for Segment 2.

Aircraft and motorboat use for law enforcement would be increased.

Alternative 2

Present BLM, State, Tribal and local law enforcement efforts would continue.

Alternative 3

A local court would be established to prosecute violations on the river.

A uniform communication network available to all law enforcement officials would be established.

All floating devices would be required to display an identification tag.

Alternative 4

Consumption of alcoholic beverages would be prohibited on the river or on public lands within the Deschutes River Scenic Waterway boundary.

Aircraft and motorboat use would be for administrative purposes only.

A visitor contact/monitoring system would be established for all users in Segments 2 and 3.



# 3. Information and Education

a. Issue: How should public information and education be handled?

# 1) Problem: Lack of public information and education.

# Preferred Alternative

Signs and bulletin boards displaying information and a brochure dispenser would be placed at boat launch and landing sites and at the beginning of the road to the Deschutes Club locked gate.

Deschutes State Park, Sherars/Buckhollow, Trout Creek, Maupin City Park, Warm Springs and Harpham Flat would have information stations staffed by volunteers or seasonal agency employees during peak use periods. The stations would be self-service in the absence of personnel.

Certain wildlife viewing areas and suitable historical and archaeological features would be identified by informational/interpretive signs. A Deschutes River Visitor Center would be built in Maupin at the historic railroad station. The railroad station would be restored and additional facilities built to house educational and informational displays.

Guides and outfitters would be required to distribute brochures to their clients about points of interest, good outdoor ethics and no trace camping, as well as laws and regulations on the Deschutes. User passes would include similar brief summaries.

# Alternative 1

Deschutes State Park, Macks Canyon, Trout Creek, Maupin City Park, Warm Springs and Harpham Flat would have information stations staffed by volunteer public contact persons or agency employees (in uniform). The stations would be self-service in the absence of personnel.

Interpretive areas such as wildlife viewing areas, historical, cultural or archaeological areas would be provided at places such as Mecca Flat. They would be staffed or contain an information station.



A Deschutes River Visitor Center would be located at the City Park in Maupin. The park would be transferred to the Oregon State Parks Department.

#### Alternative 2

Developed campgrounds at Deschutes State Park, Macks Canyon, Trout Creek and major launch sites would continue to have public information stations.

Managing agencies would continue to use volunteers occasionally in tree planting, clean-up, camp host positions and as part of policy formation and review committees.

#### Alternative 3

User passes would include brief laws, regulations, guidelines for emergencies and no-trace camping as well as other information.

Certain interpretive areas such as wildlife viewing areas would be identified by signs.

A Deschutes River Visitor Center would be built in Maupin at the historic railroad station. The railroad station would be restored and additional facilities built to house educational and informational displays.

Signs and bulletin board displays of information and a brochure dispenser would be placed at boat launch and landing sites and at the beginning of the road to the locked gate. A public contact person in uniform would staff these areas during high use periods.

#### Alternative 4

Guides and outfitters would be given brochures and required to hand them out to their clients about points of interest, good outdoor ethics, no trace camping, as well as laws and regulations on the Deschutes.

User passes would include similar brief summaries.

Unstaffed information display boards would be placed at developed campgrounds, boat launching sites and the beginning of primary access roads.

A Deschutes River curriculum would be developed for elementary, secondary and adult education. This curriculum package would contain brochures, physical displays and audio visual information about the Deschutes Canyon ecological, historical and cultural systems and good outdoor camping and user ethics.

A Deschutes River User Report would be available to all users to fill out on a voluntary basis.



# Management Common to All Alternatives

Some management actions have already been taken, or are in the process of being implemented by one or more of the managing agencies as a result of previous planning decisions or interagency agreements. Other actions believed to lack public controversy or which do not significantly impact the environment are described as "Management Common to All Alternatives". They are considered decisions that will be carried forward under all alternatives. They include the following:

# Fish Habitat/Water Quality and Quantity

1. BLM, State and Tribally-owned lands east of the railroad right-of-way fence would continue to be utilized as livestock exclosures.

2. Existing livestock riparian exclosures at Mecca, Davidson Flat, from Cove Creek to the Deschutes Club Locked Gate, at Beavertail and Macks Canyon Campground will be maintained.

3. Livestock operators with grazing on interspersed private land will be encouraged to adjust their grazing management to coincide with the grazing schedule on adjacent public lands.

4. Areas of riparian vegetation presently in good or excellent vegetative condition will be maintained.

5. Managing agencies will seek cooperative agreements with private landowners to enhance riparian habitat.

6. Motor vehicles will be restricted to designated roads, parking and launching areas.

7. The managing agencies will discontinue sidecasting material that could enter the river or cover riparian vegetation during road maintenance activities. The managing agencies will recommend to other agencies and private landowners that road maintenance activities adjacent to the river not result in sidecasting material into the river or onto riparian vegetation. The managing agencies will require the railroad to limit maintenance and construction activities involving the sidecasting of material, vegetation cutting and herbicide spraying in riparian areas within railroad easements or rights-of-way to the minimum necessary to meet maintenance and/or construction needs.

8. The BLM will continue to implement decisions relating to off-road vehicle management in the Two Rivers Resource Management Plan. This includes closure or limitation of vehicle use in riparian areas to protect vegetation. The State of Oregon and the Confederated Tribes of the Warm Springs Indian Reservation will continue to limit or restrict off-road vehicle travel on lands under their administration.
9. The managing agencies will agree to develop a consistent and well coordinated inventory, management plan implementation, funding and monitoring program for riparian areas along the Deschutes River and its tributaries to ensure that management objectives are met.

10. The managing agencies will recommend to the Oregon Department of Environmental Quality, Soil Conservation Service and North Unit Irrigation District, that irrigation water returns to the Deschutes River be reduced through better management of water flows within the canal system and/or the construction of settling ponds or other devices to reduce or eliminate the transport of silt and agricultural chemicals into the Deschutes River.

11. The managing agencies in cooperation with the Oregon Department of Environmental Quality will establish water quality standards in the Deschutes Basin and agree to monitor water quality in the area. Management objectives will also include



reducing siltation and agricultural chemical introductions into the Deschutes River.

12. As part of the periodic power project relicensing procedures, the managing agencies will recommend to the Federal Energy Regulatory Commission to periodically increase releases of water through Pelton Dam, especially in the early spring months, to provide for natural cleaning of silt from spawning gravel beds. Releases will be monitored to determine the effect on spawning beds.

13. The Oregon Department of Fish and Wildlife, State Parks and Recreation Department, Department of Environmental Quality and the Water Resources Department will establish an instream water right for the lower 100 miles of the Deschutes River for fish, recreation and pollution abatement. The Confederated Tribes of the Warm Springs Indian Reservation have an existing unquantified water right in the Deschutes River.

# Wildlife Habitat/Vegetation

1. BLM will continue to implement decisions in the Two Rivers Resource Management Plan regarding increasing public land holdings in the Deschutes River Canyon through exchange or other means to increase/improve overall wildlife habitat. The State of Oregon will also participate in public land acquisition.

2. The managing agencies will emphasize the development of a coordinated public information and education program which utilizes interpretive signs, brochures, maps and other material to gain public understanding of wildlife and other natural resources in the Deschutes River Canyon.



3. The managing agencies will improve overall coordination of wildlife habitat inventories and management efforts to ensure that management objectives are met.

4. The BLM will continue to implement decisions relating to off-road vehicle management in the Two Rivers Resource Management Plan. This includes total closure or limiting vehicle travel to existing or designated roads to protect or enhance wildlife habitat and other values.

5. The managing agencies will coordinate and cooperate with county weed control officers on a regular basis in the control of noxious weeds. Control methods will be proposed consistent with the Record of Decision on BLM's Northwest Area Noxious Weed Control Program EIS. Control methods will then be subjected to site specific environmental analyses consistent with that EIS. Control will be considered by the managing agencies on public and Tribally-owned lands where efforts are coordinated with owners of adjoining infested, non-public lands. Proper grazing management will be emphasized after control to minimize possible reinfestation.

6. Off-reservation treaty rights related to plants and animals with traditional significance to the Tribes will be recognized by the managing agencies. No management actions which would adversely affect identified root digging areas, medicine gathering areas or animal species such as otter, eagles and sensitive waterfowl nesting will occur.

7. The managing agencies will initiate informal and formal consultation with the U.S. Fish and Wildlife Service (USFWS) on all proposed actions which may affect any Federally listed or candidate threatened or endangered species. Consultation will be done in accordance with Section 7 of the Endangered Species Act, as amended.

8. Degraded campsites needing rehabilitation will be closed until vegetative recovery has occurred. Once rehabilitation is complete, human activities such as camping and vehicle use may be allowed if the areas are capable of sustaining use and that use is consistent with management objectives.

9. New camping areas/facilities will be located outside of riparian areas and away from sensitive wildlife habitats.

# Historical/Archaeological Resources

1. The managing agencies will manage the historical/archaeological resources within the Deschutes River canyon through a coordinated plan of goals and objectives common to BLM, Tribally-owned and State land. Private landowners will be encouraged to participate in this process.

2. The managing agencies will compile and maintain a historical/archaeological resource database/atlas, incorporating known and/or recorded historical/archaeological resource sites (including information gleaned from ethnographic and historic

sources and oral histories). The Tribes will contribute information on significant traditional use sites/materials. In addition, overlay maps documenting all historical/archaeological resource inventory information will be maintained.

3. The managing agencies will continue to inventory lands under their jurisdictions for historical/archaeological resources and evaluate the significance of known historical/archaeological resource sites.

4. The managing agencies will routinely consult with, and invite the participation of, the Tribes in the early planning stages of proposed surface disturbing activities.

5. The managing agencies will coordinate fire control plans with historical/archaeological resource concerns (e.g., aggressively fighting fire to protect historic structures).

6. The managing agencies will stabilize and protect historical/archaeological resource sites from human-caused or natural sources of erosion or deterioration.

7. The managing agencies will increase emphasis on enforcement of established laws, regulations and policies related to the protection and preservation of historical/archaeological resource values. A monitoring plan will be developed and implemented to ensure adequate protection.

8. The managing agencies will develop and implement a public information/education program aimed at increasing public awareness of and appreciation for the significance of historical/archaeological resources.

9. The managing agencies will conduct an appropriate level of inventory to identify historic and prehistoric sites or features in areas proposed for surface-disturbing projects (e.g. range developments, road or trail construction, land sales [if any] and land exchanges). Sites discovered will be evaluated using criteria for placement on the National Register of Historic Places in consultation with the State Historic Preservation Officer. The BLM considers the effect of any proposed undertaking on sites which meet the National Register criteria by following regulations of the Advisory Council on Historic Preservation or a memoranda of agreement negotiated with the Council.

In most cases, proposals would include a no adverse effect or an adverse effect finding to National Register quality sites. These sites are avoided by relocating ground-disturbing activities. Where relocating a planned project is not feasible, the project will either not be allowed or mitigation of adverse effects to significant cultural properties may be necessary. Mitigation will usually be an attempt to extract and preserve those attributes of a site which qualify it for the National Register. For example, many prehistoric sites are significant for the information they may provide about ancient Indian lifestyles and cultural adaptations. Various levels of site recording, excavation and analysis can often retrieve the important information, preserving it in records and reports.



Sites with socio-cultural values or recreational values suitable for public interpretation may be more difficult to mitigate by data recovery. Decisions about the treatment of such sites will be made on a case-by-case basis in consultation with the State Historic Preservation Officer and Advisory Council on Historic Preservation and Warm Springs Tribes, as appropriate.

# Nonmotorized Boating

1. The managing agencies will emphasize the development of a coordinated public information and education program which utilizes signs, brochures, maps and other material to gain public understanding of boating use regulations, availability of campsites and access to the river so as to disperse use, promote good outdoor manners and public safety.

2. The managing agencies will increase and better coordinate enforcement efforts regarding laws and administrative rules.

3. The managing agencies will develop a cooperative system for gathering and analyzing nonmotorized boating data to maintain accurate monitoring information to ensure that management objectives are met.

# Motorized Boating

1. The managing agencies will emphasize the development of a coordinated public information and education program which utilizes signs, brochures, maps and other material to gain public understanding of motorboating use regulations, campsite availability and access to the river so as to disperse use, promote good outdoor manners, respect for other users while operating a motorboat and public safety.

2. The existing motorboat deadline at the northeast edge of the Confederated Tribes of the Warm Springs Indian Reservation which extends upstream to Pelton Dam will not be modified.

3. The managing agencies will increase and better coordinate enforcement efforts regarding laws and administrative rules.

4. The managing agencies will ensure that State noise standards for motorboats are enforced.

5. The managing agencies will develop a cooperative system for gathering and analyzing motorized boating data to maintain accurate monitoring information to ensure that management objectives are met.

# Fishing

1. The BLM will continue to implement decisions in the Two Rivers Resource Management Plan regarding increasing public land ownership in the Deschutes River Canyon through exchange or other means to increase public fishing access to the river. No new public access roads will be constructed.

2. The managing agencies will emphasize the development of a coordinated public information and education program which utilizes interpretive signs, brochures, maps and other material to gain public understanding of the Deschutes River fishery, good outdoor manners, public safety, angling rules and regulations as well as to better disperse angling and non-angling uses along the river.

3. The managing agencies will continue to coordinate enforcement of regulations and administrative rules. Level of enforcement will be increased on a cooperative basis.

4. On-the-ground identification of BLM, State, Tribally-owned and private lands along the river will be completed by the managing agencies to reduce trespass.

Species	Total Return	Harvest	Spawning Escapement	
Spring chinook	8,500 - 12,000	5,500 - 8,000	3,000 - 4,000	
Fall chinook	10,000 - 12,000	4,000 - 5,000	6,000 - 7,000	
Summer steelhead	16,000 - 22,000	6,000 - 12,000	10,000	
Rainbow trout	managed as wild fish, maintained at a total population indicated by 1,500 - 2,500 fish per mile larger than eight inches in the Nena Creek area			
Bull trout	maintain existing population			
Sockeye	develop and maintain a self-sustaining run when and if technology is developed to successfull pass juvenile and adult fish over the Pelton-Round Butte Hydroelectric Complex			
	pass juvenile and adult fish o	over the Pelton-Round Bu	itte Hydroelectric Complex	

5. The fishery in the Deschutes River will be managed by ODFW with the following major objectives:

6. The managing agencies involved with fisheries management will develop a cooperative system for gathering and analyzing angling data to maintain accurate monitoring information to ensure that management objectives are met.



Camping

1. The managing agencies will develop a cooperative system for gathering and analyzing camping data to maintain accurate monitoring information to ensure that management objectives are met.

2. Camping will continue to be prohibited on all islands.

3. Campsites and other developed facilities in roaded segments of the river will be designed for access and use by the handicapped.

4. Campers will be required to pack out all human waste and garbage from sites with no sanitation or garbage facilities.

5. Degraded campsites needing rehabilitation will be closed until vegetative recovery has occurred. Once rehabilitation is complete, camping may be allowed if the campsites are capable of sustaining use and that use is consistent with management objectives.

6. New camping areas/facilities will be located outside of the riparian areas and away from sensitive wildlife habitats.

7. Those areas where a water system exists or will be provided, will also have waste water disposal facilities for "gray water".

# Guided and Outfitted Services

1. The managing agencies will continue to coordinate permit requirements and regulatory controls.

2. The managing agencies will develop and implement a more uniform and consolidated system for the issuance, administration and enforcement of permits in the entire planning area.

3. The managing agencies will emphasize the development of a coordinated public information and education program utilizing guided and outfitted services as dispensers of brochures, maps and/or other material to gain better public understanding of individual stewardship responsibilities while using the Deschutes River.

4. The managing agencies will ensure that shuttle services are in compliance with PUC rules and regulations. A permit will be required for all commercial services utilizing BLM roads and/or facilities.

# Access: Roads, Trails and Launch Sites

1. Motor vehicles will be restricted to designated roads, parking and camping areas. Routes not designated will be closed and rehabilitated.

2. The managing agencies will pursue opportunities to acquire new legal access through donation, land exchange, purchases in fee title or easements from willing sellers.

3. The managing agencies will pursue acquisition and/or development of safe vehicle access to Whiskey Dick, Jersey Flat, Whitehorse, Frog Springs and North Junction for administrative, maintenance and emergency use only. No new public vehicle access roads will be constructed.

4. The managing agencies will develop a coordinated transportation and road classification system with designated speed limits for all existing access roads and trails. Speed limits will be enforced.

5. The BLM will increase emphasis on implementation and enforcement of decisions in the Two Rivers Resource Management Plan regarding areas which are open, limited or closed to motorized vehicles.

6. The managing agencies will take action to prohibit the landing of aircraft on existing primitive strips or on the river within the Deschutes River Canyon except for emergency and administrative purposes.

7. Brochures, maps, campsite reservation forms and/or boater passes will contain information on access roads, parking, launching sites and trails.

# **Emergency Services**

1. The BLM will continue to implement decisions in the Two Rivers Resource Management Plan regarding the prevention and suppression of wildfire to protect public values, such as vegetation, visual resources and adjacent private property.

2. The managing agencies will resolve overlapping jurisdictions and increase enforcement of fire regulations and enhance fire prevention and suppression efforts. The managing agencies will also increase individual accountability for all river users in areas with high economic values at risk during periods of high and extreme fire hazard.

3. The managing agencies will require the railroad company to improve fire prevention measures such as better maintenance of a vegetation-free zone along the tracks. All trains will be required to carry basic fire suppression equipment during the summer months. Efforts to better coordinate fire suppression resources with the railroad will also be carried out.



4. The managing agencies will coordinate with the railroad in the development of an emergency plan for responding to potential chemical or other hazardous material spills in the Deschutes River canyon.

5. The managing agencies will improve coordination efforts in dispatch and carrying out search and rescue efforts and response to potential natural and human-caused emergencies in the Deschutes River canyon.

6. The managing agencies will ensure that the railroad company complies with the City of Maupin, County, State and Federal environmental regulations, and that joint efforts are made between the railroad and the agencies to reduce the conflicts with other users.

7. The managing agencies and the railroad company will develop a coordinated and effective communication system with

common radio frequencies. A communication line and call boxes on the railroad communication system available to the public and law enforcement officials will also be established.

8. The managing agencies will continue to prohibit the discharge of firearms within the planning area from the third Saturday in May through August 31.

9. The cutting or burning of any living, dead or down vegetation within the planning area will not be allowed. This does not include prescribed burning carried out to achieve vegetation management objectives.

10. The managing agencies will encourage cooperation between and establish joint annual training exercises for agencies, fire districts, the railroad and private individuals.

11. The managing agencies will develop a coordinated public information and education program which explains fire regulations, individual liability and fire hazard within the planning area.

# Law Enforcement

1. The managing agencies will improve coordination of law enforcement efforts by establishing uniform regulations throughout the river area to enforce Federal, State, Tribal and local laws.



2. The managing agencies will develop uniform and efficient operating methods for dealing with various enforcement and court situations in Federal, State and Tribal jurisdiction areas.

3. The managing agencies will develop a coordinated public information and education program which emphasizes the laws and regulations in effect in the Deschutes River canyon and the rationale and penalties behind them.

4. The managing agencies will work with the courts to establish innovative penalties for violations that would serve as a greater deterrent than the present low fine level. This could include community service, improvement work along the Deschutes, forfeiture of equipment and/or increased penalties.

5. The managing agencies will develop an information sharing mechanism to identify repeat offenders.

6. The managing agencies will establish uniform and effective traffic regulations in the Deschutes River canyon. Enforcement of all laws and regulations will be increased through additional Federal, State, County, Tribal and local law enforcement personnel.

# Trespassing

1. The BLM will continue to implement decisions in the Two Rivers Resource Management Plan regarding increasing public land ownerships in the Deschutes river canyon through exchange or other means to reduce the potential for trespass onto private lands.

2. The managing agencies will emphasize the development of a coordinated public information and education program which utilizes large scale map signs in key locations and detailed user maps that show public/private land ownership. The managing agencies will also install on-the-ground ownership identification markers between BLM, State and Tribally-owned and private lands adjacent to the river as well as in the upland areas, in order to reduce the potential for trespass. An on-the-ground rivermile marking system will also be developed and implemented. This system may incorporate the existing railroad mile post markers.

3. The managing agencies will work closely with adjacent private landowners to enforce trespass laws within the Deschutes River canyon.

# Information and Education

1. The managing agencies will emphasize the development of a coordinated public information and education program which utilizes interpretive signs, brochures, maps and other material to gain public understanding of the following elements in the Deschutes River canyon.



a. Fish and wildlife habitat b. Water quality c. Riparian and upland ecosystems

d. Land, water and air use practices

e. Off-reservation treaty rights related to plants and animals of traditional significance to the Tribes

f. Threatened and endangered species

g. Historical, archaeological and cultural sites

h. Enforcement of established laws, regulations and policies

i. Boating use regulations

j. Availability, location and quality of campsites

k. Access to the river

1. Good outdoor manners including no-trace camping and stewardship responsibilities

m. Public safety and emergency services, including fire regulations

n. Courtesy toward other users

o. Deschutes River fishery

p. Angling rules and regulations

q. Identification of land ownership, public, private and Tribal

r. Volunteers and campground hosts

s. User fees, passes and guided and outfitted services permits and fees

t. Road and trail identification and use guidelines

u. Noxious weeds

The managing agencies will publish a comprehensive map with all points of interest, land ownership, major campsites, toilet facilities, access roads and trails, launches and landings, major plant and animal species identified. Where helpful, descriptive information about facilities and standards of access roads, launches and campsites will be provided. The map will also have no-trace camping requirements, riparian and upland protection practices for recreational users, emergency communication network outlined and laws and regulations.

2. The managing agencies will sign all public, Tribally-owned and private lands within 1/4 mile of the river. Signs will be visible from the river except for signs in upland areas. All signs will be of the same color, material, size and type of print or symbols and placed in somewhat predictable places. Old signs will be replaced as needed.

3. The managing agencies will develop a coordinated sign plan and design for the Deschutes River canyon. All signs including those at boat launching, landing and camping sites used for identification or information will be of the same sign standards, color, type of print and placement, etc., as above so that all signs in the canyon are identified with the recreation area. Major campsites, launch sites and parking areas will be signed with uniform signs to direct users to specific areas for specific activities. For example: Launch sites would have clearly signed staging areas, parking areas and launch areas as well as places set aside for camping.

4. The managing agencies will actively recruit volunteers to assist in public information/education programs as well as clean-up, resource rehabilitation work and campground hosts.

5. A Deschutes newsletter will continue to be sent at least once a year to Deschutes users. It will contain articles about laws and regulations, preservation and protection of the Deschutes River Recreation Area, how volunteers can become involved, new personnel and user statistics.

# Soil, Water and Air

The inventory and evaluation of soil, water and air resources on public lands will continue. Soils will be managed to maintain productivity and to minimize erosion. Corrective actions will take place, where practicable, to resolve erosive conditions. Water sources necessary to meet program objectives will be developed and filed on according to applicable State and Federal laws and regulations. Water quality of perennial streams will continue to be monitored, and climatological data will continue to be gathered.

#### Fire Management

The main emphasis of the fire management program in the Lower Deschutes River Planning Area will continue to be prevention and suppression of wildfire to protect public values such as vegetation, visual resources and adjacent private property. Prescribed fire may be used to reach multiple use objectives. When prescribed fire is considered under various programs it will be coordinated with the Oregon Department of Forestry and adjacent landowners and carried out in accordance with approved fire management plans and appropriate smoke management goals and objectives.

## Noxious Weed Control

Infestations of noxious weeds are known to occur on some public and private lands in the planning area. The most common noxious weeds are diffuse, spotted and Russian knapweed, yellow star thistle, dalmation toadflax and poison hemlock. Control methods on BLM-managed lands will be proposed consistent with the Record of Decision on BLM's Northwest Area Noxious Weed Control Program EIS. Control methods will then be subjected to site specific environmental analyses tiered to that EIS. Control will be considered on BLM lands where efforts are coordinated with owners of adjoining infested, non-public lands. Proper grazing management will be emphasized after control to minimize possible reinfestation. Coordination and cooperation with and between county weed control officers will continue on a regular basis.



Utility and Transportation Corridors

All utility/transportation corridors identified by the Western Regional Corridor Study of May 1986 prepared by the Ad Hoc Western Utility Group are currently occupied and have been designated on BLM lands. Corridor widths vary, but are a minimum of 2,000 feet. No additional crossing sites on the BLMmanaged portions of the Deschutes River will be permitted. No facilities will be allowed parallel to the railroad right-of-way in the Deschutes Canyon. Applicants will be encouraged to locate new facilities (including communication sites) adjacent to existing facilities to the extent possible. All rights-of-way applications to BLM will be reviewed using the criteria of following existing corridors wherever practical and avoiding proliferation of separate rights-of-way. Recommendations made to applicants and actions approved will be consistent with the objectives of BLM's Two Rivers Resource Management Plan (RMP). BLM lands will continue to be available for local rights-of-way, including multiple use and single use utility/transportation corridors following existing routes, communication sites and roads. Issuance of leases and/or patents under the Recreation and Public Purposes Act and other permits or leases to public entities for development of public lands will also continue. Applications will be reviewed on an individual basis for conformance with the Two Rivers RMP to minimize conflicts with other resources or users.





When Congress designated the Deschutes River as a National Wild and Scenic River, they formally recognized several unique river values. They were recreational, fisheries, wildlife, cultural, geologic, scenic and botanical. Outstandingly remarkable values are what the managing agencies are mandated to "protect and enhance". Therefore, these and any other river values determined to be outstanding become the standards against which river management actions would be judged. The following is an assessment of those resource values:

# **Recreational Values**

#### 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 not be limited to, sightseeing, wildlife observation, photography, hiking, fishing, hunting and boating.

Interpretative 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 Present Situation**

The Deschutes offers diverse opportunities for recreation which attract visitors from many states and a few foreign countries. The fishery for native redside (rainbow) trout, steelhead and salmon has been internationally known for many years. Whitewater boating participation has grown rapidly in the last ten years. The river provides a stable, high-volume flow, available for recreation all year long. Within its 100-mile length, there are distinct segments favored for relaxed, overnight

<sup>\*</sup>The criteria for the outstandingly remarkable rating was developed and agreed upon by the Statewide Wild and Scenic Rivers Policy Group which is comprised of representatives from BLM, Forest Service, various State agencies and local governments, as well as private industry, landowners and the environmental community.



camping and fishing floats, one-day whitewater adventures and guided fishing trips. The climate cooperates by offering generally sunny weather during the high-use season. For more specific information see the Recreation section.

#### Conclusion

The Lower Deschutes River provides opportunities for recreation which are determined to be outstandingly remarkable. This finding confirms the Congressional record relating to the recreational value of the Lower Deschutes River.

# **Fishery Values**

# Criteria for Outstandingly Remarkable Rating

Fishery values may be judged on the relative merits of either fish populations or habitat—or a combination of these riverrelated conditions.

**Populations.** The river must be a nationally or regionally important producer of resident and/or anadromous fish species. Of particular significance is the presence of wild stocks and/or threatened and endangered species.

Habitat. The river must provide an exceptionally high quality habitat for fish species indigenous to the region. Of particular significance is habitat for wild stocks or Candidate Threatened and Endangered Species.

#### **Evaluation of the Present Situation**

The Lower Deschutes River has an internationally-known fishery for resident rainbow trout, anadromous steelhead trout and anadromous chinook salmon. Also, the runs of anadromous fish are large enough to sustain an important subsistence fishery for the local Native Americans. The river provides extensive spawning and rearing areas for both resident and anadromous species. The high water quality also contributes significantly to the condition of the fishery. Hatcheries also are utilized to supplement the runs of wild fish. For more specific information, see the Water and Fish Habitat sections.

#### Conclusion

The quality, quantity and aesthetic and economic importance of the fish habitat and its resulting resident and anadromous fish populations qualify this resource as an outstandingly remarkable value. This finding confirms the Congressional record relating to fisheries values of the Lower Deschutes River.

# Wildlife Values

#### Criteria for Outstandingly Remarkable Rating

Wildlife values may be judged on the relative merits of either wildlife populations or habitat—or a combination of these conditions.

**Populations.** The river or area within the river corridor must contain nationally or regionally important populations of indigenous wildlife species. Of particular significance are species considered to be unique or populations of Federally listed or Candidate Threatened and Endangered Species.

Habitat. The river or area within the river corridor must provide exceptionally high quality habitat of national or regional significance, or may provide unique habitat or a critical link in habitat conditions for Federally listed or candidate threatened and endangered species. Contiguous habitat conditions are such that the biological needs of the species are met.

#### **Evaluation of the Present Situation**

The Deschutes River Canyon provides habitat for approximately 300 different species of wildlife. Most of these utilize riparian habitats adjacent to the river. This provides outstanding opportunities for viewing many species of wildlife including songbirds, waterfowl, mink, heron, mule deer and many reptiles, amphibians and other small and large mammals.

Two birds found in the canyon have been listed by Federal and State agencies as Threatened or Endangered. They are the bald eagle, *Haliaetus leucocephalus* and the American peregrine falcon, *Falco peregrinus anatum*. The falcon currently passes through the area and is expected to begin nesting in the canyon as populations continue to increase in the Columbia basin in the future. The Osprey, *Pandion haliaetus*, which is listed as sensitive in Oregon, is also known to nest in the canyon.

Two species of molluscs (snails) are found in the planning area that are Federal candidates for listing as Threatened. They are The Dalles sideboard snail, *Monadenia fidelis minor* and the shortface lanx *Fisherola nuttalli nuttalli*. For more specific information, see the Wildlife Habitat and Threatened, Endangered or Sensitive Species sections.

#### Conclusion

Viewing wildlife is a significant opportunity in the Deschutes River Canyon. The quality and quantity of wildlife, together with the presence of Threatened and Endangered Species, assures the outstandingly remarkable designation of the wildlife resource. This confirms the Congressional record relating to the wildlife values of the Lower Deschutes River.



Cultural, Archaeological Values

# Criteria for Outstandingly Remarkable Rating

The river or area within the river corridor must contain a site(s) where there is evidence of occupation or use by Native Americans. Sites must be rare, one-of-a-kind, 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 value will be pristine sites that have not been disturbed.

#### **Evaluation of the Present Situation**

Humans have occupied the Deschutes Canyon area for at least 10,000 years. One hundred thirty-five archaeological sites have been recorded in the canyon, and it is believed that many others will yet be found. Most common are village sites. One of these at Macks Canyon Campground was partially excavated by University of Oregon archaeologists in the late 1960s and is now listed on the National Register of Historic Places. Sherars Falls, a point of difficult passage for anadromous fishes, is an important, long-standing fishing station for Native Americans. For more specific information, see the Cultural Resources - Archaeological section.

#### Conclusion

Evidence of human occupation for at least 10,000 years, with one site listed on the National Register of Historic Places, indicates that the prehistoric cultural resources of the Deschutes Canyon are of outstandingly remarkable value. This finding confirms the Congressional record relating to the cultural values of the Lower Deschutes River.

# Cultural, Historic Values

# Criteria for Outstandingly Remarkable Rating

The river or area within the river corridor must contain 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.

# **Evaluation of Present Situation**

Exploration and fur trapping by white men began in the Deschutes Canyon in the early 19th century. Historic activities have been documented, including use of the Oregon Trail, settlement, road and railroad construction and mining. In the Deschutes Canyon 38 historic sites have been documented, most of them associated with the railroad. For more specific information, see the Cultural Resources - Historic section.

#### Conclusion

The Deschutes River Canyon has a fascinating history of documented human activities, beginning with explorers and trappers and continuing with trail, road and railroad developers and agricultural settlers. In total, the historic features of the Deschutes River add up to an outstandingly remarkable value. This finding confirms the Congressional record relating to the cultural values of the Lower Deschutes River.

# Geologic Values

#### Criteria for Outstandingly Remarkable Rating

The river or the area within the river corridor must contain 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 stage 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**

The Deschutes River flows through the geomorphic unit called the Deschutes-Umatilla Plateau, the main part of which slopes northward from 4,000-foot levels in the mountains of Central Oregon to the 400-foot elevation along the Columbia River. The rocks are mostly Columbia River basalt, nearly 2,000 feet thick. The lava flows that make up the plateau occurred over millions of years and formed in distinct layers of various thickness. For more specific information, see the Geology, Minerals and Energy section.

#### Conclusion

The Deschutes River has worn its way through nearly 2,000 feet of dense Columbia River basalt, recording in its canyon outstandingly remarkable geologic events. This finding confirms the Congressional record relating to the geologic values of the Lower Deschutes River.



Scenic Values

# Criteria for Outstandingly Remarkable Rating

The landscape elements of landform, vegetation, water, color and related factors must result in notable or exemplary visual features and/or attractions within the geographic region. When analyzing scenic values, additional factors such as seasonal variations in vegetation, scale of cultural modifications, and the 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 length and not common to other rivers in the geographic region.

# **Evaluation of the Present Situation**

The Lower Deschutes River Canyon contains a diversity of landforms, vegetation and color. The river, having carved a canyon nearly 2,000 feet deep in many locations out of rugged Columbia River basalt flows, provides a dramatic and diverse land-scape. The clear water of the river framed by the green riparian vegetative fringe creates a stark contrast to the often barren and broken reddish and brown cliffs and hillsides of the canyon. The river provides a boater with a moving platform for viewing the ever-changing scene. While transportation corridors exist (roads and railroads) and occupational and rural development have occurred in several areas, they are over-shadowed by the magnitude and beauty of the river and canyon character. For more specific information, see the Scenery section.

# Conclusion

The combination of slow moving water and crashing whitewater stretches, green riparian ribbons, high desert landscape and steep basalt cliffs results in outstandingly remarkable scenic values. This finding confirms the Congressional record relating to the scenic values of the Lower Deschutes River.

# **Botanical Values**

# Criteria for Outstandingly Remarkable Rating

The river or area near the river must contain nationally or regionally important populations of indigenous plant species. Of particular importance are species considered to be unique or populations of Federally listed or Candidate Threatened and Endangered Species. When analyzing vegetation, additional factors such as diversity of species, number of plant communities and cultural importance of plants may be considered.

#### **Evaluation of the Present Situation**

Plant communities in the Deschutes River Canyon fall into four broad categories. In the high-desert uplands there are big sagebrush, juniper-big sagebrush and bunchgrass types. Along the river there is a thin band of riparian vegetation dominated by alders. Within the canyon there are also six special status plant species (known or suspected to occur). These are: *Astragalus howellii v. howellii, Astragalus tyghensis, Cyperus rivularis, Lomatium farinosum v. hambleniae, Mimulus jungermannioides* and *Talinum spinescens. Astragalus tyghensis* is the only species which is presently a Federal candidate species for listing as threatened and endangered. For more specific information, see the Vegetation and Threatened, Endangered or Sensitive Species sections.



#### Conclusion

The unique contrast between riparian and high-desert upland vegetation, coupled with the presence of special status plant species, results in an outstandingly remarkable botanical value. This finding confirms the Congressional record relating to the botanical values of the Lower Deschutes River.

#### Summary

The preliminary National Wild and Scenic River boundary includes the above outstandingly remarkable values to the greatest degree possible within acreage constraints imposed by the National Wild and Scenic Rivers Act (average of no more than 320 acres per rivermile). No adjustment in the preliminary boundary as shown on Maps 13 and 14 and described in Appendix A is recommended.

# **B.** Resource Values

# Climate

The climate of the Lower Deschutes River Canyon is semi-arid, falling within the rain shadow of the Cascade Mountains to the west. Predominant westerly winds, carrying moisture from the Pacific Ocean, drop most of their moisture as rain and snow on the west slope and peaks. As a result, precipitation along the Deschutes averages from nine to 14 inches per year, falling mostly during the winter. This "high desert" climate is ideal for outdoor recreation. Average temperatures at Pelton Reregulating Dam (elevation



1410 feet, southern end of planning area) were as follows in the summer of 1988: June, 65.7° F, July 72.6°, August 71.0°, and September, 63.6°. Extremes during that period were 109° in July and 32° in September. Total precipitation was 1.53 inches in June, zero in July and August and 0.06 inches in September (3).

# Air

Air quality in the planning area is excellent, with visibility limited only by the terrain. There are minor, localized sources of air pollution in the canyon from automobile, motorboat and railroad engine exhausts, blowing road dust and smoke from field burning and wood-burning stoves. Campfires are prohibited during most of the high use season, so are not a threat to air quality. Winds along the river are frequently strong, and on summer afternoons, usually are upriver.

# Soil

Soils along the Deschutes are derived from geologically recent volcanic and sedimentary formations. Much of the original deposits of loess and ash have been removed from the uplands and redeposited along the streams. Soil surveys by the U.S Department of Agriculture, Soil Conservation Service, for Sherman County and the Trout Creek-Shaniko area, show the soil associations near the river to be rocky silt loams, extremely stony silt loams, extremely stony loams, deep silt loams, very stony loams, cobbly silty clay loams, gravelly clay loams and silt loams (19). Erosion potentials due to water or wind range from slight (less than 2.5 tons/acre/year) to severe (5-15 tons/acre/year) (10) (11).

A study was conducted during the summer of 1989 by the State of Oregon to evaluate the impact of motorized boating on riverbank erosion and turbidity on the lower portion of the Deschutes River. The findings of that study indicated natural causes (strong currents during floods, at channel constrictions and where flows are deflected toward the banks) are responsible for the majority (61 percent) of streambank erosion. It was determined that human nonboating activities (camping, foot traffic and fishing) cause about 24 percent of the erosion with motorboats and livestock grazing causing nine percent and six percent respectively (32).

#### Water

The watershed for the Lower Deschutes includes approximately 2,700 square miles and contains 760 miles of perennial streams and 1,440 miles of intermittent streams. Major tributaries include White and Warm Springs Rivers and Shitike Creek entering the river from the west, and Buck Hollow, Bakeoven and Trout Creeks to the east. Historically the Deschutes River has been renowned for its high water quality and stable flow. Maintenance or enhancement of river water quality and quantity is a prerequisite to maintaining fishery resources and recreational values. Water quality in the river has been impacted by a number

of factors including hydroelectric development, irrigation, industrial and municipal water withdrawal, irrigation waste water return flows, as well as riverbank washing and watershed alterations.

The first major hydroelectric project on the Deschutes was Portland General Electric's Pelton Dam, completed in 1958. Major upstream irrigation storage and water withdrawal dates back to 1921 and the start-up of the Bureau of Reclamation's Deschutes Project. The upstream water storage and irrigation diversion projects altered the natural river flow patterns. The Lower Deschutes flow has been profoundly affected by regulation at the Pelton-Round Butte Complex. The Federal Energy Regulatory Commission has dictated that the discharge from this hydroelectric complex be at least 3,500 cubic feet per second (cfs) from March to June and 3,000 cfs for the remainder of the year, except when river inflow upstream from the reservoirs is less.

Construction of the Pelton-Round Butte Hydroelectric Complex restricted gravel recruitment, regulated the river flow, and generally reduced the magnitude and frequency of high flow events. The river is no longer able to periodically flush itself of fine sediments and silt. Areas of formerly high quality gravel and cobble substrate have been inundated by silt and cemented, thus limiting their value as fish habitat. In other areas riparian vegetation which was maintained by fluctuating flow levels and the resulting water recharge of adjacent alluvial plains has been reduced by more evenly regulated river flow levels. Also, aquatic vegetation has become established on once-important spawning areas, subsequently accelerating silt deposition.

The Confederated Tribes of the Warm Springs Indian Reservation have an unquantified implied treaty right for consumptive and non-consumptive uses of Deschutes River water.

Protection or restoration of fish habitat has been affected by various land use practices within the watershed, including farming, livestock grazing, timber harvesting, road and railroad construction and maintenance and hydroelectric power production. Recreational use has also resulted in the loss of riparian vegetation and resulting unnatural riverbank washing.

Protection of river water quality and flow is affected by Federal regulations specifically dictating hydroelectric discharge, unquantified Tribal water rights, the lack of adequate established minimum instream flows, limited funding of State and Federal environmental agencies responsible for monitoring and enforcing water quality standards, the inability to prevent accidental industrial or transportation spills and the inability to control the volume or chemical characteristics of irrigation return flows and cropland runoff.

The Deschutes has always had an unusually uniform flow. Seasonal variations are slight, due mainly to its spring-fed nature and generally arid watershed. Flows downstream from Pelton Reregulating Dam have been regulated since 1958 by Portland General Electric Company, which is licensed by the Federal Energy Regulatory Commission. The terms of that license require maintenance of at least 3,500 cubic feet per second (cfs) from March through June and 3,000 cfs for the rest of the year, unless



inflow to the upstream reservoirs falls below those amounts. Changes in river elevation due to dam discharges also are regulated to a rate calculated to be safe for downstream fishermen. Mean monthly discharges for 1965-1985, near Madras, ranged from a high of 5,809 cfs in January to a low

of 4,020 in August. Seasonal streamflow patterns for the mainstem Deschutes below Pelton Reregulating Dam have been substantially different from those recorded prior to completion. Figure 4 contrasts the mean monthly flows at Pelton and Moody before and after completion. Before construction the greatest sustained flows were in the spring. Since construction, mean flows have generally been highest during the winter months (5).



Figure 4 - Mean monthly flows at Pelton and Moody.

The uniformity of flows changes as the river nears its confluence with the Columbia, due to the influence of tributary streams which are more seasonal.

Average discharges at the mouth of the river ranged from a high of 7,844 cfs in January to a low of 4,477 in August (1965-85). For details of river flow, see Appendix H.

Existing water rights for the main river and tributaries (except for White River and Trout Creek) total about 90 cfs. Most of this (71.48 cfs) is for fish, with smaller amounts for irrigation (12.68 cfs) and municipal supply (5.06 cfs). Water rights of the Confederated Tribes of the Warm Springs Indians have not been quantified and are not subject to determination under State law. Their rights to instream and consumptive uses of water from streams in or bordering the reservation are Federally protected.

The quality of Deschutes River water is high, providing ideal temperatures, dissolved oxygen and other characteristics required by salmonid fishes. Median values for water temperatures at the mouth were 49° F. in the fall, 43° in winter, 55° in spring and 64° in summer for the period October, 1982 to January, 1988 (5). More details of water quality can be seen in Appendix I.

# Vegetation

Plant communities in the Deschutes River Canyon fall into four broad categories. In the uplands there are big sagebrush, juniper-big sagebrush and bunchgrass types. Along the river there is a thin band of riparian vegetation, dominated by alders. Other trees in the riparian zone include willow, hackberry, hawthorne, sumac and Russian olive. The understory is composed of shrubs, sedges and grasses. For a list of the main plant species found in the Deschutes River riparian areas, see Appendix J. Figure 5 shows a typical cross-section of the Deschutes Canyon ecosystem.

Riparian vegetation provides shading, vegetative litter important for aquatic insect production, in-river large woody debris, wildlife habitat, sediment filtering and riverbank stability. The emergent aquatic vegetation of the riparian corridor also provides important rearing and hiding cover for juvenile fish. The Deschutes River fish production potential has been reduced because of past riparian habitat degradation.

Attempts at restoring or protecting the riparian vegetation and the riverbank, including the Bureau of Land Management— Two Rivers Resource Management Plan and the Oregon Department of Fish and Wildlife—Lower Deschutes Coordinated Resource Management Plan, have had mixed results and are still in the process of being implemented. Several large scale cooperative volunteer efforts to plant trees in areas needing rehabilitation have been successful to varying degrees. Other factors limiting restoration or protection of riparian habitat include: State, Federal and Tribal livestock grazing agreements, generally unrestricted livestock grazing and agricultural practices on private land and unforeseen natural occurrences (i.e. flood and wildfire) and increasing levels of recreation use.

The majority of the riparian vegetation adjacent to the Deschutes is in mid-seral (fair) to late seral (good) ecological condition. Some areas such as the islands are in near climax condition. Areas with generally poor riparian vegetation include: most of the Warm Springs Reservation bordering the river, portions of the east bank from North Junction to the mouth, the Mecca to Trout Creek area, and the west bank from Fall Canyon to Freebridge. Figure 5 - Typical cross-section of Deschutes canyon ecosystem.



Tables 4 and 5 summarize the condition and trend of riparian vegetation on BLM and State land. Vegetative ecological conditions and trend on Tribally-owned and private land is not known. (1) (5).

In upland areas the vegetation has been altered significantly by grazing, but remnants of native bunchgrasses can be found under the sagebrush. Introduced species like cheatgrass, Kentucky bluegrass and medusahead wild rye dominate some of the uplands.

# Threatened, Endangered or Sensitive Species

Within the planning area six plant species are known to occur, or are suspected to occur, that are listed as threatened, endangered or sensitive by the Oregon Natural Heritage Data Base(6). These are Astragalus *howellii* v. *howellii*, *Astragalus tyghensis*, *Cyperus rivularis*, *Lomatium farinosum* v. *hambleniae*, *Mimulus jungermannioides* and *Talinum spinescens*. For information on habitat and status, see Appendix K.

	Climax (Excellent)	Late Seral (Good)	Mid-Seral (Fair)	Early Seral (Poor)	Total
BLM Land	207	174	116	92	589
State Land	18	8	29	37	92
Totals	225	182	145	12	6

Table 5. Summary	ı of Ecological Trend of I	Riparian Vegetation	(Acres)	
	Improving	Stable	Declining	Total
BLM Land	201	375	14	590
State Land	67	19	5	91
Totals	268	394	19	681

Threatened or endangered animal species are shown in Table 6, vertebrates listed as candidates for Threatened or Endangered status are shown in Table 7 and vertebrates listed as Sensitive Species by the Oregon Dept. of Fish and Wildlife are shown in Table 8 (5).

There are also two species of molluscs (snails) known to occur within the planning area that are Federal candidates for listing as Threatened. They are the shortface lanx, *Fisherola nuttalli nuttalli* and The Dalles sideboard snail, *Monadenia fidelis minor*. For information on habitat and status, see Appendix L.



Table 6. Lower Desci	hutes River Animals Listed a	as Threatened or Endange	red
Common Name	Scientific Name	Federal Status	State Status
American peregrine falcon	Falco peregrinus anatum	Endangered	Endangered
Bald eagle	Haliaetus leucocephalus	Threatened	Threatened



# Table 7. Lower Deschutes River Vertebrates Listed as Candidates (C2) for Threatened or Endangered Status

# Common NameScientific NameBull trout<br/>Ferruginous hawk<br/>Townsend's big-eared batSalvelinus confluentes<br/>Buteo regalis<br/>Plecotus townsendii townsendii<br/>Euderma maculatum

# Table 8. Lower Deschutes River Vertebrates Listed as Sensitive Species by ODFW

Common Name	Scientific Name
Bull trout	Salvelinus confluentes
Tailed frog	Ascaphus truei
Sharptail snake	Contia tenuis
Northern goshawk	Accipiter gentilis
Ferruginous hawk	Buteo regalis
Swainson's hawk	Buteo swainsoni
Sage grouse	Centrocercus urophasianus
Northern pygmy owl	Glaucidium gnoma
Lewis woodpecker	Melanerpes Lewis
Flammulated owl	Otus flammeolus
Bank swallow	Riparia riparia
Mountain bluebird	Sialia currucoides
Western bluebird	Sialia mexicana
Columbian sharptailed grouse	Tympanuchus phasianellus columbianus
Common barn owl	Tyto alba
Whitetailed jackrabbit	Lepus townsendii
Washington ground squirrel	Spermophilus washingtoni



Fish and Wildlife

Fish Habitat

The Deschutes River offers a generally good environment for coldwater fishes. The historically stable flows and cold temperatures have provided the proper conditions for anadromous salmon and trout (steelhead) and resident trout. Since construction of the hydroelectric projects upstream from Warm Springs, control of the downstream river flow has been delegated to Portland General Electric Company at Pelton Reregulating Dam. In addition to the alteration of seasonal streamflow patterns, as discussed in the water section, water temperatures also have been altered by the presence of hydroelectric facilities. Prior to completion of the dams, river temperatures in the lower 100 miles dropped 2-4° in winter and gained 6-8° in summer. Following completion, temperatures have been depressed until mid-May and elevated during the summer months (5).

Spawning distribution of trout, steelhead and fall chinook salmon was recorded in 1967 by ODFW. Trout and steelhead spawning was generally concentrated from the Pelton Reregulating Dam to the Warm Springs River, while fall chinook spawning was most heavily concentrated between the Warm Springs River and White River. Appendix M shows the details of spawning distribution.

There is concern that the amount of spawning gravel available has decreased since the dams cut off the recruitment of gravel from upstream sources. A recent (1983-85) study of spawning gravel concluded that:

a. There has been a substantial reduction in the quantity of spawning gravel between Pelton Dam and Shitike Creek.

b. The quantity of spawning gravel in all the river sections below Shitike Creek declined substantially during the 1964 flood.

c. The quantity of spawning gravel suitable for salmon, steelhead and trout declines in a downstream direction (7).

The quality of river gravel sampled during this study was found to be good, except below the confluence of White River, which discharges large quantities of glacial sand and silt into the Deschutes.

The condition of fish rearing habitat is directly related to the condition of the river's margin and associated riparian habitat as well as the temperature and flow. During the past century there has been a general downward trend in the vegetative and soil stability conditions of the riverbanks. This deterioration has resulted from road and railroad construction, livestock grazing, wild fires and most recently, recreational use. Conditions in some of the riparian areas have improved in the past ten years where livestock exclosures have been constructed and where grazing management has been implemented. For example, 31 miles of riverbank in Segment 4 have been protected with livestock exclosures during the last five years; grazing management has been improved on 8-1/2 miles of river bank in Segment 2, and 14 miles of livestock exclosure have been constructed in Segment 1.

#### **Fish Populations**

The following species of fish occur in the Lower Deschutes(5):

Mountain whitefish	Prosopium williamsoni
Rainbow and steelhead trout	Oncorhynchus mykiss
Bull trout	Salvelinus confluentus
Coho salmon	Oncorhynchus kisutch
Chinook salmon	Oncorhynchus tshawytscha
Sockeye salmon	Oncorhynchus nerka
Carp	Cyprinus carpio
Chiselmouth	Acrocheilus alutaceus
Redside shiner	Richardsonius balteatus
Longnose dace	Rhinichthys cataractae
Northern squawfish	Ptychocheilus oregonensis
Peamouth	Mylocheilus caurinus
Speckled dace	Rhinichthys osculus
Largescale sucker	Catostomus machrocheilus
Mountain sucker	Catostomus platyrhynchos
Smallmouth bass	Micropterus dolomieui
Largemouth bass	Micropterus salmoides
Sculpin	Cottus sp
Pacific lamprey	Entosphenus tridentatus

Fish species of concern include resident trout, summer steelhead trout and chinook salmon.

The ODFW has monitored trout populations for a number of years. Intensive sampling between 1985 and 1988 at North Junction (RM 71.8-68.6) and Nena Creek (RM 58.5-55.5) has determined that resident trout populations average from 1400 to 1800 trout (over eight inches in length) per mile. Limited sampling below Sherars Falls (Jones Canyon area) has shown the trout population (fish over eight inches) to be over 800 per mile. Trout populations decrease substantially below Macks Canyon. ODFW estimated the summer steelhead run in 1987 amounted to 28,560 (22,943 escapement above Sherars Falls; 5,617 harvest below Sherars Falls). Appendix N provides further details on catch, harvest and escapement of summer run steelhead (5).

Estimating the numbers of fall chinook salmon is more difficult than for summer steelhead because there is a significant amount of spawning below Sherars Falls. The estimate for the 1988 fall chinook run was 7,500, composed of 3,782 passing Sherars Falls, 2,562 harvested at Sherars Falls and 1,200 spawning below the falls.



Most spring chinook salmon spawning occurs in the Warm Springs River above the National fish hatchery. The total run of spring chinook (both wild and hatchery fish) for 1988 was estimated at 6,525 (5).

# Wildlife Habitat

Historical records indicate the Deschutes River Canyon, at the time of Lewis and Clark, was populated by a variety of wildlife species, including antelope, bighorn sheep, whitetail deer, elk and sharptail grouse. A variety of human-related factors subsequently led to the loss of these species. A major factor responsible for limited wildlife production in the canyon today has been habitat degradation from decades of livestock grazing, frequent wildfires and artificial manipulation of vegetation (i.e. spraying, burning and cultivation). Riparian vegetation is an important habitat component for big game, upland game birds and non-game wildlife. Upland brush patches, consisting of big sage, can also provide important wildlife hiding and thermal cover.

Wildlife seeking water and cover in the riparian corridor during the hot summer months are often disturbed by large numbers of recreational users and free-ranging dogs. Wintering waterfowl, raptors (including bald eagles) and big game are receiving increasing disturbance from motorboat operation, particularly from December through February. Recreational litter, including monofilament line and plastic beverage packing has caused some direct wildlife loss as a result of ingestion or tangling.

Attempts at restoring or protecting wildlife habitat, including Bureau of Land Management—Two Rivers Resource Management Plan and the Oregon Department of Fish and Wildlife—Lower Deschutes Coordinated Resource Management Plan, have had mixed results and are still in the process of being implemented. Other management constraints limiting restoration or protection of wildlife habitat include: State, Federal and Tribal grazing agreements; livestock grazing and agricultural practices on private lands; and other budgetary and policy limitations imposed on State, Federal and Tribal resource managers. Several large scale volunteer efforts to plant trees in areas needing rehabilitation overall have had mixed results. Wildfires and recreational use on public lands have also changed wildlife and wildlife habitat. Recreational use, in the past a seasonal activity, now is occurring throughout the year.

The condition of wildlife habitat in Segments 1, 2 and 3 is fair and improving. The improvement is most evident within the approximately ten miles of riparian fencing constructed over the past ten years on BLM, Deschutes Club and The Dalles Rod and Gun Club lands. Uplands are poor to fair for most wildlife species due to past land use practices. Segment 4 generally has fair wildlife habitat in both riparian and upland areas. The riparian fencing, riparian protection provided by the railroad, and initiation of new grazing systems are moving some of this habitat towards good condition. Heavy recreational use from July through October has reduced the habitat effectiveness for wildlife, primarily in the riparian area. Trees have been cut, campsites and banks have been trampled, campfires have escaped, and bank erosion has occurred, all of which cause significant deterioration in habitat condition. Trespassing livestock have also hampered range and riparian recovery. Improved fencing and coordination with landowners is helping to correct this problem (5).

A list of wildlife species found in the Lower Deschutes River Canyon is included as Appendix O (5).

# Geology, Minerals and Energy

The Deschutes River flows through the geomorphic unit called the Deschutes-Umatilla Plateau, the main part of which slopes generally northward from 4,000-foot levels in the mountains of Central Oregon to the 400-foot elevation along the Columbia River. The rocks are mostly Columbia River basalt, 2,000 to 3,000 feet in thickness and generally dense, black and fine-grained. The lava flows that make up the plateau occurred over millions of years, and formed in distinct layers of various thickness. The Deschutes-Umatilla Plateau contains very little in the way of known metallic minerals or carbonaceous fuels. It does have large areas of wind-deposited soil and minor amounts of other useable mineral materials. One of the most challenging whitewater stretches in the river, Whitehorse Rapids, was formed in the late Pleistocene by landslide deposits from the nearby Mutton Mountains. On the Mineral Resources Map of Oregon the only mineral resource shown in Deschutes Canyon is the inactive mine near Dant, where perlite mining was attempted on a large scale between 1945 and 1950. One mining claim has been filed near the month of Trout Creek for gold and related minerals. A portion of the claim borders the Deschutes River. The area will remain open for locatable mineral development even though potential is low. Approximately 1,930 acres within the planning area are leased for oil and gas exploration and development. As a result of decisions made in BLM's land use plan, BLM land along the Deschutes River will remain open for leasable mineral and energy development; however, no surface occupancy will be allowed because of the high scenic and recreational values. Exceptions may be granted by BLM if it can be shown that no significant impact to visual and recreational values would occur (1) (9) (10) (11) (12).

# **Cultural Resources**

The diversity of historical/archaeological resources within the Deschutes River canyon include sites and materials which offer evidence of a continuum of human occupation spanning many thousands of years. One hundred seventy-three cultural sites have been recorded in the canyon. While these resources are of primary importance in interpreting the changing cultural utilization of the area over the millennia, they continue to be vital in the recognition and practice of traditional Tribal cultures.

These sites include villages, camps, areas of food gathering and preparation, shell middens, rockshelters, rock art sites, rock features (such as cairns and walls), quarry sources, along with trails and river crossing sites. Other sites and materials which continue to be essential in traditional cultures include plant gathering areas and materials, hunting locations, fishing stations, burial locations, and other sites and materials of cultural/religious significance.

Additional historical/archaeological resources which offer research and interpretive potential include evidence of historic use and development of the area, such as homesteads, railroad and other transportation routes and mining.



No comprehensive database documenting historical/archaeological resources exists for the Deschutes River canyon. Initial historical/archaeological resource inventory has been conducted on less than half of the land base. Due to limited monitoring programs, most of this information is outdated. Those sites which have been documented lack evaluation as to their significance. Tribal traditional concerns have not been sufficiently documented or incorporated into the existing database.

This situation has been compounded by the complexity of ownership within the area. There has been a lack of common management goals and coordinated resource plans, as well as a lack of coordination between historical/archaeological resource staffs and law enforcement personnel.

#### Archaeology

There have been 135 prehistoric sites identified in the canyon, consisting of eight different site types. Most common are the village sites which were concentrated on alluvial terraces or benches. Their structural remains represent repeated long-term habitation. Campsites are locations that also received repeated occupation, although for short periods of time. There is evidence for a range of activities at both types of sites, such as food processing and tool making. Middens are numerous locales where shell fish were obtained and processed.

Rock art sites consist of petroglyphs or, more commonly, pictographs. This rare site type is usually found in rockshelters or caves. Other rockshelters were used strictly for temporary occupation or storage. Rock feature sites, consisting of rock walls, cairns or depressions in talus slopes, remain mysterious as to function. Lithic scatters are spots where stone tools were made or repaired. Sites where the stone was originally obtained, called quarries, are few along the river. Other types of sites that undoubtedly exist in the canyon but have not been recorded include plant gathering and processing locations, fishing stations, burials, and trails. For example, Sherars Falls is thought to have been an important fishing station for thousands of years; however, there is no physical record of prehistoric fishing activities. A major occupation site, now listed on the National Register of Historic Places, was partially excavated by University of Oregon archaeologists in the late 1960s at the Macks Canyon Campground (1) (13).

Many archaeological sites have been disturbed by human use, such as concentrated recreation, farming or livestock operations. Other human disturbance can only be classified as vandalism, thievery or looting. A black market for Indian artifacts has developed, adding a significant illegal economic element to the collecting of artifacts (8).

# History

Early 19th century explorers, trappers and traders left few traces of their passing through the Deschutes Canyon except for their maps and journals. As the Oregon Trail brought increasing numbers of people west in mid-century, stockmen with horses, sheep and cattle roamed the hillsides along the river.

Later, enterprising businessmen turned the westward migration to their advantage, settling along the river at points of commerce to provide ferries, tollbridges, inns, stills, stage stations and supplies. Some farmers settled on the riverbanks to grow crops and raise stock. Miners came and went along with entrepreneurs with short-lived dreams.



Some roads still used and some barely visible were developed along the river as packers, freighters and stage operators crisscrossed the region in a growing commerce of mining, agriculture and business.

Many of the 38 documented historic sites along the river are remnants of the early 20th century railroad construction. These include construction campsites, stations, a trestle, a tunnel, dumps, supply roads and railbeds.



Scenery

The visual resources of the canyon are indeed of high quality. The river water is clear enough to see the gravel bottom (and sometimes the fish themselves) in many places. The riparian vegetation is lush and green in summer, providing a pleasant border for the river and a divider from the drier (and usually grey-brown) uplands. There are occasional juniper flats; hillside, spring-fed "oases"; side canyons and rolling hills carpeted with grass and sage. The larger scene is dominated by steep cliffs of layered basalt rock, merging into usually clear blue sky. Birds are numerous, and deer are frequently seen, especially near dawn and dusk.

There are some intrusions on the natural scenery. A railroad parallels almost the entire length of the river and well-used roads parallel the river in Segments 2 and 3. Powerlines, fences and buildings frequently are visible. There is not much arable land in the canyon, but some flats are used to grow hay crops. A few of these have pumping systems for irrigation. Maps 5 and 6 show general areas where scenic quality of the planning area has been significantly affected by human activities. Cattle and their visual effects are present along with campsites which become tent cities during peak use periods. There is an average of approximately one toilet structure visible in each mile of river. In spite of these significant changes in the landscape, and other lesser intrusions in more heavily-used recreation sites, such as trampled vegetation, bare, eroding soil, litter, human waste, hatchet-hacked trees and campfire rings, the overall scenery is still considered to be outstanding.

# Recreation

#### **Recreation Resources**

The Deschutes River and its canyon offer unique opportunities for outdoor recreation, reasonably close to Oregon's population centers. The river is the focus. The water is clean enough for swimming (although too cold for some), fast and "wild" enough (I3 major rapids) for whitewater boating, and supports good populations of game fish for sporting use. A substantial amount of public land with high quality scenery is available and accessible by public roads. Developed, as well as undeveloped campsites are numerous and fair to good populations of game animals exist.

# **Recreation Facilities**

Various public facilities, including roads allowing access to the river, parking areas, campgrounds, boat ramps, trails, toilets, drinking water and trash receptacles have been provided by Federal, State and local governments.

#### Campsites

Within the planning area there are four developed and 31 semi-developed campgrounds. The developed campgrounds are located at Maupin City Park in Segment 2, Beavertail and Macks Canyon in Segment 3 and Deschutes State Park in Segment 4. The greatest concentration of semi-developed campgrounds is in Segment 2. These areas are shown on Maps 3 and 4. For more information on capacities and facilities, see Appendix P. There are also 347 undeveloped campsites on BLM, State and Tribally-owned land; 168 in Segment 1, six in Segment 2, 32 in Segment 3 and 141 in Segment 4. In addition, 34 previously unrecorded, undeveloped campsites on BLM and State land have been identified as potential use areas. These sites will be surveyed and evaluated to determine if they are suitable for camping use.

In 1976, a survey found 58 campsites in use in Segment 1. A resurvey in 1982-83 found 108 campsites in use. Many of the later sites were considered to be of low quality, indicating that boaters probably had to pass up "preferred" sites because they were already occupied. "Low quality" campsites lack shade, windbreaks, adequate flat area for sleeping and protection from the effects of livestock grazing. In some places access to and from the river is difficult. In both surveys, some campsites were judged to be in need of rehabilitation, indicating that as early as 1976, some sites were being "overused".

Users are competing for suitable campsites in every segment, particularly during peak use periods. Some developed and semideveloped campgrounds do not have adequate facilities for the degree of use they experience. Users want both isolated and group camps and have differing needs for camp design and type of facilities, i.e. fishermen, car campers, boaters, hikers, etc. Length of camp stay and camp trading, particularly in Segment 4, have been a problem. Some of this conflict is between private and commercial users, some between motorized and nonmotorized boat users. Day users, such as hikers, hiking anglers and picnickers compete for space in or near campsites.

Managing agencies do not have a coordinated program to protect, select, stabilize, improve, expand or repair campsites or road and pathway access to campsites on the Deschutes. Random camping occurs where land ownership is unmarked or where land is under private or Tribal ownership. Demand for camping areas open to the public causes some areas such as White Horse and Harpham Flat to be overcrowded. As a result, resource damage and trespassing onto private land also occurs. Other areas such as Sherars Falls which is owned by the Confederated Tribes, have some facilities but receive extremely heavy camping use during peak fishing periods. Resource damage, public safety hazards and user conflicts often result.

Unoccupied "dummy" camps, campswitching, minimal movement from one site to another and excessive time in one campsite are problems which reduce the availability of campsites in Segment 4 during the steelhead season (primarily from July to October).

There is a lack of shaded or screened campsites in some areas because of vegetation and tree loss in the past. Campsites without toilets have occasional litter, fire rings and human waste. Some established campgrounds do not have well defined parking areas or roads. Random vehicle driving and parking destroys vegetation and contributes to riparian damage. There is no waste water disposal area for campers in most areas.








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**Public Access** 

Access, as used here, means the ability of recreationists to reach the areas which they wish to use. Public access to the bed, banks and upland areas of the river is limited by three factors: the steep topography of the canyon, extensive private and Tribally-owned lands through which the public cannot pass, and the present state of the road and trail system. While some all-weather roads exist along the Deschutes which provide public vehicle access to the river, most roads are dirt or gravel surfaced, restricting the types of vehicles which may safely travel over them. Private property and Tribal rights preclude public use of the river bed in some areas. The BLM and the State have pursued a policy of acquiring private lands for public access and use. A number of key launch and landing sites have not been fully developed. During periods of high use, crowding at landing sites can cause safety hazards and public inconvenience. This is particularly true at Harpham Flat, Maupin City Park, Sandy Beach and Sherars Falls.

#### Roads

Roads providing access to the planning area are shown on Maps 7 and 8 and listed below:

#### Segment 1

U.S. 26 at Warm Springs Road to Dry Creek Campground Trout Creek Road to Gateway Warm Springs River Road South Junction Road Skookum Creek Road to Whiskey Dick

Segment 2

U.S. 197 at Maupin Deschutes River Road from Maupin to Locked Gate Deschutes River Road from Maupin to Sherars Bridge County Road to Oak Springs



Segment 3

Oregon 216 at Sherars Bridge Deschutes River Road from Sherars Bridge to Macks Canyon Campground Primitive Road to Sinamox

Segment 4

Primitive county road (Freebridge Road) to Kloan Oregon 206 and Interstate 84 at the mouth

Trails

Short segments of developed hiking trails exist; however, the bulk of hiking use occurs along the abandoned sections of railroad grade or in areas where primitive paths have been created by anglers walking along the river.

Foot access is available through public lands at many places along the river. The following areas receive the highest levels of hiking use:

Segment 1

1-East bank upstream from Warm Springs (ODFW land)2-East bank at Mecca Flat (easement between Mecca Flat and Trout Creek)3-East bank at Trout Creek (Gateway)4-East bank at South Junction campground

Segment 2 5-East bank at Locked Gate (private land open for walk-in)

Segment 3 6-East bank at Macks Canyon Campground

Segment 4

7-West bank in Kloan area8-East bank at Deschutes State Park (old railroad R/W)9-West bank at Heritage Landing



1.265









Two trails have been developed by public agencies in the canyon. They are between Trout Creek and Mecca Flat, and on the old railroad grade upriver from Deschutes State Park. They are shown on Maps 7 and 8. The railroad grade is cut in a number of places by washouts. Also, there are

many short "trails" which have been made by anglers gaining access to their favorite spots. Handicapped anglers are able to fish the Deschutes from a wheel-chair ramp on the east bank downstream from Maupin.

#### Boating

The Deschutes River is one of the most popular boating rivers in Oregon. Its year-round flow, proximity to major population

centers in Portland and the Willamette Valley, world class fishing and whitewater opportunities make it a popular destination for thousands of boaters, both motorized and nonmotorized.

People float the river primarily for whitewater adventure and/or fishing. However, the scenic beauty of the canyon and river is also an attraction. There is great variation in the daily and seasonal distribution of use.

Every conceivable type of floating craft can be found, including rafts, drift boats, kayaks and canoes. Non-traditional "craft" are also found, such as inner tube rafts and fishing float tubes. Rafts and drift boats are the principal type of nonmotorized boats.

Use data indicate that the popularity of the river increased dramatically in the late 1970s and early 1980s and has continued to increase in recent years. In 1975, total boating use was estimated at approximately 60,000 boater days. In 1988, approximately 130,000 boater days of use occurred (motorized and nonmotorized). Daily boater use levels during the 1988 primary use season are shown in Appendix Q. It should be noted that daily boater use levels by segment as shown in Appendix Q total 135,000 boater days. This is 5,000 boater days greater than the total of 130,000 boater days for the entire river. The discrepancy occurs because a significant number of boaters use more than one segment during their visit. Since a boater day is defined as boating use during all or part of a day, some boater use during a given day accounted for two boater days rather than one. Overall boating use levels have shown a slight increase each year since 1988. Float use varies considerably from segment to segment. In Segments 1 and 2, whitewater is a popular attraction. Segments 2 and 3 have easy access and more day use. Segment 4 is less popular for whitewater and more popular for fishing. It should be noted that boating use within a particular river segment does not necessarily occur evenly throughout the segment. For example, in Segment 1 a significant portion of current boating use occurs in the seven miles from Warm Springs to Trout Creek with the remainder of the use occurring in the approximately 30-mile segment downstream from Trout Creek to the vicinity of Maupin.



Presently, there are no restrictions on float use other than the State of Oregon boater pass fee of \$1.75 per person per day or \$12 per year and a recommended private party size and a mandatory guided party size of 16 people.

Motorized boat use on the Deschutes dates back to the 1950s and is primarily related to fishing. There is a great deal of variation in the daily and seasonal distribution of use, but quantitative data are absent. There is concern that motorboat use contributes to bank erosion, degrades water quality, disturbs fish spawning and adversely affects some sensitive wildlife species. A study to evaluate streambank erosion and boating use levels in Segment 4 was conducted by the State of Oregon during the summer of 1989. Results of that study indicate that nine percent of the total streambank's erosion could be attributed to motorboat use. Natural causes such as flooding and strong currents were found to cause the majority of streambank erosion with human activities such as camping, hiking and fishing contributing the next highest impact.

Virtually all motorized use involves the use of inboard or outboard "jet" boats that are propelled by a jet of water rather than a propeller. Jet boats are uniquely suited to operation on rivers with shallow water since they are less likely to be damaged.

Motorized use is currently allowed on two-thirds of the river. No motors are allowed on the 31 miles between the northern boundary of the Warm Springs Indian Reservation and Pelton Reregulating Dam.

Study data from a 1979 Oregon Dept. of Fish and Wildlife creel count indicated that motorboat use upstream from Maupin constituted ten percent of all boat use measured at the Deschutes Club Gate during the period of April to October.

Most motorboat use and conflicts occur in Segment 4. This use contributes to competition for fishing and camping areas. Some users also resent the noise and wake that motorboats create. In 1981, 56 percent of the total boat use near the mouth (measured at Kloan, RM 7.0) was motorized. This was up from 32 percent in 1980. The 1980 count was 536 boats during a period mid-July through October, or an average of five boats per day.

In 1989, motorboat use was monitored in Segment 4 during July-September. The average number of motorboats per day was 19. For the entire season, there were 2,959 motorized trips (defined as travel in one direction) and 1,268 nonmotorized trips. Motorized trips represented approximately 70-75 percent of total trips and 54 percent of all boat use days in Segment 4. The total motorized boating use level in Segment 4 is estimated at approximately 12,000 boater days per year. Motorized boat use on the remainder of the river is estimated at 3,000 boater days per year. During the peak use months of August and September, motorized boat use has increased approximately 42 percent since 1975.

A total of 178 individual jet boats was observed, with 25 percent operated by commercial guides, and 75 percent by private users. However, commercial trips represented 60 percent of the total motorized trips. Most motorized boat use is limited to the lower 8.5 miles of river (30).



The 13 major rapids are focal points for boaters and sightseers. The most popular of these are Whitehorse and Buckskin Mary in Segment 1; Wapinitia, Boxcar and Oak Springs in Segment 2; Wreck in Segment 3; and Gordon Ridge, Colorado, Rattlesnake and Moody in Segment 4. Sherars Falls is considered to be "unrunnable", but is still a focal point for sightseers, especially when the Indians are netting salmon and steelhead from their platforms. The major rapids are shown on Maps 9 and 10.

### Launching and Landing Areas

There are 21 regularly-used launching/landing sites in the planning area. Eleven of these are improved. The highest concentration of use occurs at Warm Springs, Trout Creek, Harpham Flat, Sandy Beach, Beavertail, Macks Canyon and Heritage Landing. See Maps 9 and 10 and Appendix R for details on existing launching and landing areas.

#### Fishing

The Deschutes River attracts anglers from a wide area because of the diverse angling opportunities. During the summer of 1987 anglers interviewed at Heritage Landing originated from 33 different states and 14 foreign countries. A number of angling restrictions have been imposed on the river over the years to protect the resource and limit angler numbers. Angling from a floating device has been prohibited for decades. In 1979 elimination of hatchery trout stocking and significant fish bag limit and terminal gear restrictions drastically reduced angler numbers. However, as angler numbers dropped, other recreation activities, including whitewater boating, increased. As other recreational use escalated, the conflicts with anglers has also increased.

#### Camping

Camping opportunities range from highly developed sites at Deschutes State Park to less developed areas such as Macks Canyon to secluded places such as Trout Creek and South Junction. Many undeveloped sites are also available. Camping use along the Deschutes normally occurs as part of other activities such as boating, fishing or hunting.

### Collectable Minerals and Fossils

Collectable minerals and fossils are available on some of the public lands in the planning area. Thunder eggs can be found near South Junction, agates upstream from Maupin, and petrified wood upstream from Maupin and near Gordon Ridge. Fossils including fruits, nuts, leaves, seeds and silicified woods are available in the canyon. Even though collectable minerals exist, rock collecting is not a major activity within the planning area.

# Tourist Information and Education Services

Near the Warm Springs boat ramp are a restaurant, information center, gas station, pub, grocery and raft rentals. The City of Maupin offers the same facilities, plus overnight accommodations.

Public information and education efforts have been carried out by the managing agencies. Various maps and informational brochures have been published. Information stations have been constructed at seven primary launch sites to provide boaters with needed information. Land ownership identification signs and markers have been placed along much of the river.















# C. Resource Activities and Land Uses

# Grazing

Grazing on BLM managed lands in the Deschutes Canyon is regulated under Section 15 of the Taylor Grazing Act. There are 38 grazing allotments affecting BLM, State and Tribally-owned land within the planning area, all for cattle. Twenty-six of these are Federal allotments, five are under State permits and seven are on lands within the Warm Springs Reservation. Details on these allotments are shown in Appendix S. The locations of livestock grazing allotments in the planning area are shown on Maps 11 and 12.

In the riparian zone livestock use is now managed by seasonal grazing, as well as by artificial barriers such as railroad or exclusion fencing. Table 9 shows these exclusions and restrictions (1) (2) (5).

Segment 1 Areas	Restrictions
West side, Warm Springs to	Horses grazed until 1981;
North Junction	Use by cattle since 1981
West side downstream from N.	Livestock excluded since RR constr.
Junction	in 1911
East side upstream from Trout Creek	Grazing winter/early spring since
(except recreation sites at Trout	1982
Creek and Mecca Flat)	
East side, Trout Creek to North	Little use since RR constr.in 1911
Junction	
East side downstream from North	Livestock have been excluded for
Iunction	5 to 15 years (except on small
	private tracts)

# Table 9. Exclusions and Seasonal Restrictions on Livestock Use of the Riparian Zone on Public Lands Along the Lower Deschutes River

# Table 9. Exclusions and Seasonal Restrictions on Livestock Use of the Riparian Zone on Public Lands Along the Lower Deschutes River (continued)

#### Segment 2 Areas

West side

East side upstream from Harpham Flat East side downstream from Harpham Flat to RM 46

**Segment 3 Areas** 

West side (RM 44-39)

West side (RM 39-24)

East side

#### **Segment 4 Areas**

West side (RM 24-18.5) West side (RM 18.5-13.8) West side (13.8-10.9) West side (RM 10.9-7.6) West side (below RM 7.6) East side (RM 24.0-19.0) East side (RM 19.0-17.5) East side (RM 15.9-12.2) East side (below RM 10.2)

#### Restrictions

Livestock excluded since RR constr. in 1911 except for light grazing on private land Cattle graze on winter rotation since 1981 Cattle graze in winter and spring since 1980

Livestock excluded since RR constr. in 1911 Livestock graze primarily in winter since 1977 Use restricted to winter or early spring since 1979

Winter grazing only since 1977 Short rotation in summer since 1977 Livestock excluded since 1984 Current summer grazing Livestock excluded since 1984 Livestock excluded since 1983 Livestock excluded since 1979 Livestock excluded since 1986 Livestock excluded since 1986











Agriculture

No BLM or State land in the canyon is used for agriculture, however, there are small acreages of irrigated cropland on private lands along the river which are located at Dry Creek, Trout Creek, South Junction, Axford, Kaskela, Two Springs Ranch, downstream from Dant and near the mouth of Gordon Canyon as shown on Maps 5 and 6. Water rights records indicate that on the main Deschutes and tributaries other than White River and Trout Creek, 12.68 cubic feet per second is allotted to irrigation, 0.34 cfs for irrigation/domestic/livestock, and 0.07 cfs for livestock (5).

# **Utilities**

Some major power transmission lines are visible in and near the Deschutes River Canyon. Powerline corridors cross the river at 12 locations.

In addition to the powerline crossings, three cables for gaging stations cross the river, upstream from Moody, upstream from Maupin and downstream from Dant. They are shown on Maps 5 and 6.

# **Recreation** Activities

Although boating, fishing and camping are the most popular activities in the Deschutes Canyon, many other activities are pursued. Sightseers are attracted by the whitewater boating "show" (especially in Segment 2), the traditional Indian fishing at Sherars Falls, and the canyon scenery. Others enjoy swimming, sunbathing, picnicking and rockhounding. A few hike and ride bicycles or horses. Hunters search for deer and upland game birds in the fall seasons, and there is a trend toward more "off-season" boating use.

The length of Segment 1 (41 miles) and its limited road access dictate that most of the recreational useage is for overnight boat trips. A few rapids make the trip interesting, especially Whitehorse Rapids. Trout fishing is excellent, drawing people worldwide. A very limited amount of boating occurs during the winter months.

Segment 2 is a short stretch (15 miles), but has most of the whitewater and easy road access. Running rapids is the main reason for floating this segment, but fishing, camping, swimming and sunbathing also are popular.



Segment 3 is the least used of the four segments. Fishing, viewing scenery and wildlife and getting away from others are the main reasons for using this segment.

Reasons for using Segment 4 are very similar to those for Segment 3; however, there is more motorboating in Segment 4 than in any other segment. According to the 1989 Oregon State Marine Board study, motorized boats made approximately 70-75 percent of the total trips in Segment 4 in July, August and September (30).

Fees

Fees are collected from most of the recreation users in the planning area. Approximately 2/3 of the users on the Deschutes River are boaters. They currently pay \$1.75 per person for a daily boater pass and \$12.00 per person for an annual boater pass. Revenue from the boater pass program totalled \$120,000 in 1988. These funds are collected by State Parks and reserved in a dedicated fund to be spent on the Deschutes River Recreation Area. Adjacent landowners and Warm Springs Confederated Tribal members are exempt from paying the fees and are issued free passes upon request.

Bank anglers make up another large segment of users. Anglers currently pay about \$20/year for their fishing license and salmon/steelhead stamp. In addition, fishermen who camp on public lands are generally required to pay camping fees. Recreation vehicle owners pay State license fees. A portion of these fees is spent on the Deschutes. People camping in the Deschutes River corridor currently are charged for camping. The BLM presently charges \$2/night at sites they maintain. The State Parks also charge at the Deschutes River State Park. Hunters pay a fee to pursue their activity, including special waterfowl stamps. If these hunters use public lands for camping they are charged the same as other campers. Guides utilizing BLM land and related waters pay three percent of their adjusted gross income to the BLM. These funds, as well as camping fees, are put into a Land and Water Conservation Fund Account. Most of these funds are returned to the Prineville BLM District for use on the Deschutes River. Most of the funds required to manage the Deschutes River Recreation Area comes from Federal and State appropriations. The annual BLM budget for the Lower Deschutes Recreation Area is about \$240,000. This funding allows BLM to maintain existing facilities to a standard that meets minimum health and safety standards, administer the outfitter guide permit program, provide a limited on-the-ground management, provide a river ranger presence and participate in interagency planning for the river. While Federal appropriations are expected to increase as a result of the Deschutes River being designated a component of the National Wild and Scenic Rivers System, overall funding is not expected to be adequate to fully implement the Deschutes River Management Plan.

#### Season and Times of Use

Boater numbers begin to increase in April and May, then climb rapidly in June and July. Peak months are July and August. Appendix Q illustrates the boater days by month and river segment during 1988 (29). Table 10 summarizes actual use from 1983-1989.

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Year	Boater Days
1983	90,000
1984	102,000
1985	111,000
1986	116,000
1987	129,000
1988	130,000
1989	135,000
1990	138,000

Boating party size has averaged just over four people per party, according to the daily boater pass records from 1983 through 1989. Two other sources of information on party size are the counts by commercial photographers at Boxcar Rapids and a 1987 Oregon State University report (2).

#### Visitation Estimates

Traffic counters are in use on roads in various locations to indicate traffic that is generated primarily by recreation. Table 11 shows vehicle traffic comparisons for the years 1975 through 1979 and 1984 through 1989. The numbers indicate a rising trend in recreational use except in Segment 3.

## Place of Origin

Based on studies conducted in the 1970s, approximately 55-60 percent of Deschutes River visitors are from Western Oregon or Vancouver, Washington. Slightly more than one-third are from Eastern Oregon, and only a small percentage of visitors come from other areas.

Counter Locations	1975	76	77	78	79	1984	85	86	87	88	89
Trout Cr.	32	38	41	62	63	63	61	66	NA	57	76
South Jct	34	38	39	54	42	41	29	29	NA	26	28
Maupin-N. Junction	119	134	149	149	100	213	236	254	271	217	242
Maupin- Sherars	NA	NA	443	560	489	616	696	737	681	842	826
Sherars- Macks C.	145	160	162	155	110	118	20	129	141	141	124
Kloan	NA	NA	22	30	6	9	9	7	NA	NA	NA
Heritage Landing	NA	159	171	127	125	173	215	233	280	NA	312
Deschutes State Park	NA	NA	207	228	139	235	229	242	281	NA	300



**Emergency Services** 

Recreation and other uses of the Deschutes River and adjacent lands entail risks of several types:

1) The river is fast moving and cold with many rapids, posing the threat of drowning or hypothermia to boaters and swimmers.

2) During summer months the canyon is hot and dry with abundant fuel creating an extreme fire danger. Fires are caused by railroad operations, landowners, lightning and recreationists. Steep canyon walls and updrafts make the spread of fire extremely rapid. Some areas of the canyon are not within a fire protection district.

3) Rattlesnakes are present in the canyon, however, they are seldom seen and few people are struck.

4) Low standard road conditions contribute to vehicle damage and accidents due to the high traffic volume and unregulated speeds.

5) Most areas of the canyon are distant from hospital and fire departments. Carrying out emergency services is expensive. Recovery of the costs for fire suppression or ambulance service from persons legally liable is difficult. The problem is particularly acute for the Southern Wasco County Ambulance Service, Inc., a nonprofit volunteer organization, where a substantial number of ambulance calls are for river-related accidents. Their recovery of expenses is made in only 60 percent of these cases which severely affects their ability to properly staff and adequately serve the needs of the area.

6) A lack of road access makes rescue of injured persons difficult.

7) Lack of effective communication systems hampers search and rescue efforts. Railroad personnel occasionally assist in providing emergency services and periodically allow the use of railroad call boxes.

8) There is no adequate published plan to deal with chemical or hazardous material spills that might be caused by railway or truck operations within the recreation area.

9) There is a lack of trained emergency services personnel.



#### Law Enforcement

Numerous law enforcement agencies have responsibilities in the planning area. They include: Oregon State Police, Jefferson, Sherman and Wasco county sheriffs, Warm Springs Tribal Police, Bureau of Indian Affairs Special Agents, deputized ODF&W staff, and BLM law enforcement officers. The level of violence and the frequency of violations is increasing, particularly in Segment 2. The majority of serious violations are alcohol and/or drug related. The remaining violations usually involve littering or violation of fire regulations or boater pass requirements. Drownings and boat and rafting accidents are also generally alcohol related. The Oregon State Police rely primarily on the use of young cadets for enforcement activities in the planning area. Because of the increasing violence and nature of the violations, especially in Segments 2 and 3, the cadets and county deputies experience increasing difficulty coping with the law enforcement violations.

The mix of Tribally-owned, BLM, State and private lands with separate regulations and statutes governing conduct on each further complicates the situation. Much of the planning area is distant geographically from the headquarters of law enforcement agencies, thus making coverage of the planning area difficult and expensive. Access to the planning area is restricted, requiring foot patrol and boat useage for effective policing.

#### Guided and Outfitted Services

Guides and outfitters have been operating on the Deschutes for many years. Guides and outfitters provide a unique service for a segment of the public who choose to have a professional fishing, whitewater, hunting or pleasure/sightseeing guide navigate and help them enjoy their favorite recreational activity on the Deschutes.

Guides and outfitters using BLM lands and facilities are required to have a BLM permit. All guides and outfitters are required to register with the State of Oregon.

The number of permits issued to guides and outfitters by the Bureau of Land Management has grown from 40 in 1978 to 138 in 1989. Guides and outfitters under BLM permit are managed according to current guide and outfitter permit stipulations that include administrative, party size, logo identification, camping length of stay and resource protection stipulations. A yearly performance evaluation also occurs, based on compliance with permit stipulations.

The quality and professionalism of guides and outfitters vary. There are no limitations on the number of guides and outfitters on the Deschutes River. Unauthorized guides and outfitters also operate on the Deschutes. The ability of BLM to fieldcheck and impose administrative and/or criminal penalties when necessary on guides and outfitters has been limited. There are also many shuttle drivers operating on the Deschutes without permits to use BLM public roads for commercial gain. Raft rental operators who deliver equipment by using BLM public roads are required to obtain a permit.



Registered guides reported gross receipts totalling \$1.8 million in 1989 and paid the BLM \$52,225 in use fees based on adjusted gross. This is an average of approximately \$13,000 gross income per guide (1). They also reported the following use figures on the Deschutes for the 1989 season:

No. of	No. of	Total
Client	Guide	Visitor
Days	Days	Days
24,903	10,872	35,775

Many boaters prefer to run the river without the services of a guide. Most of them have their own boats and other equipment, but many rent from outfitters. Besides the rental agencies in Vancouver, Washington; Portland and other Willamette Valley cities, there are five outfitters in Maupin and Warm Springs who cater specifically to those using the Lower Deschutes River.

## **Economics**

The planning area is contained within a 3-county area in north Central Oregon. The three counties are: Wasco, Sherman and Jefferson classified as rural, agrarian and forest oriented. The Dalles, located in Wasco County, is the largest community within the 3-county area and is located in the Columbia River Gorge near the mouth of the Deschutes River.

#### Population

Generally, the study area has had a near stable population (1.5 percent decline) over the past ten years (1980-1989); however, the community of Madras in Jefferson County has seen a 28 percent growth in population (perhaps through incorporation of a subdivision) between 1980-1989, while the county has grown by three percent during the same period of time. Table 12 shows population estimates for the 3-county area.



ounty/Community	1980	1985	1989
Wasco	21,900	22,000	21,100
The Dalles	10,950	10,900	10,590
Maupin	505	500	490
Dufur	565	550	555
Sherman	2,190	2,070	2,000
Moro	335	320	340
Wasco	415	445	440
Jefferson	11,700	12,150	12,100
Madras	2,250	2,320	2,895
Population Estimates for Oregon 19 Center for Population Research and Portland State University Extension 1900	980-1989 1 Census		

### Employment

The 3-county study area has seen a 4.5 percent growth in its labor force and total employment between 1988 and 1989. The rate of unemployment has remained constant; however, both Jefferson and Sherman Counties have reduced their unemployment rates while Wasco County's unemployment rate has increased by 4/10ths of a percentage point.

Approximately one-quarter of all employment is in agriculture, while approximately one-half of all non-agricultural employment comes from the trade and services industries. Most recreation-related employment would fall under these latter two categories.



There is some seasonal fluctuation in agricultural employment in the summer time. This is due to the harvesting of crops during the months of June and July. Generally, employment stabilizes during the remaining portion of the year.

Tables 13, 14 and 15 show the average annual labor force for Jefferson, Sherman and Wasco Counties.

County/Ca	tegory	1988	1989		
Jefferson					
Labor force		6.730	7.030		
Total emplo	oyment	6,300	6,610		
Percent unemployment		6.4	6.0		
Agric	ulture	1,780	1,770		
Nona	griculture (wage & salary)	4,520	4,840		
	Manufacturing	3,210	3,380		
	Trade	950	1,060		
	Services & misc.	1,020	1,060		
	Government	1,020	1,000		

# Table 14. Average Annual Resident Labor Force Unemployment and Employment1988, 1989

County/Category	1988	1989
Sherman		
Labor force	770	770
Total employment	700	710
Percent unemployment	9.1	7.8
Agriculture	245	250
Nonagriculture (wage & salary)	455	460
Manufacturing	Agenta and a state of the state of the	all a state of the state of the
Nonmanufacturing	455	460
Trade	125	135
Services & misc.	50	50
Government	260	260
Source: State of Oregon, Employment Division,	Department of Human Resources, Marc	ch 1990

# Table 15. Average Annual Resident Labor Force Unemployment and Employment1988, 1989

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County/Category	1988	1989		
Wasco				
Labor force	9,760	10,230		
Total employment	8,980	9,370		
Percent unemployment	8.0	8.4		
Agriculture	1,840	2,180		
Nonagriculture (wage & salary)	7,140	7,190		
Manufacturing	1,120	1,100		
Nonmanufacturing	6,030	6,090		
Trade	1,930	1,960		
Services & misc.	1,600	1,630		
Government	1,840	1,840		
Source: State of Oregon, Employment Divisi	on, Department of Human Resources, Mar	rch 1990		



Income

Economic measures of size and diversity in local communities are reflected in their income and earnings figures. The larger and more diverse an economy, the better it is able to weather change or disruptions in the supply and demand for goods and services. Table 16 shows the 3-county study area personal income for 1985 and 1988. Wasco County is more dependent on services and retail trade for its total personal income than are Jefferson and Sherman Counties. The Dalles has a lot to do with this because of its location and size. This community is a major trading area for the immediate and surrounding communities.

Maupin is dependent on recreation use of the Deschutes River to a far greater degree than any other community in the region. Other smaller communities which are also directly dependent on recreation use of the Deschutes River include Pine Grove, Tygh Valley, Dufur, Biggs Junction and Grass Valley. The degree of dependency of these communities is evidenced by the store, tavern and restaurant in Tygh Valley which ranges from approximately 25 percent dependency for the store to estimates as high as 70 percent for the restaurant.

Recreation use on the Deschutes River provides the recreationrelated retail trade and service sectors a major spring and summer boost in sales, so much so that a considerable amount of the seasonal income generated is carried over into the fall and winter to supplement incomes in the off-season.

Some businesses in Maupin reduce their hours of operation or close in the off-season. Though incomes can be supplemented to some extent by taking on other jobs outside the community, many prefer to stay in Maupin waiting for the river recreation season to begin. There are approximately 140 year-round employees in Maupin. Employment increases to approximately 250 when seasonal employees are hired for the summer recreation season. The seasonal nature of the community is also evidenced by approximately 20 percent of total housing units in Maupin being vacant during the winter months, decreasing to an average of ten percent during the summer season.

The citizens have become more concerned about the economic viability of the community as they see sawmill closings occurring nearby, most notably the sawmill at Tygh Valley. Many local residents believe that it is only a matter of time until the sawmill in Maupin will also face the decision of whether to close or remain open. Closure of this mill would definitely be adverse to Maupin's ability to continue as a viable community.



The community of Maupin appears to be intradependent by choice. Individuals tend to buy and sell and extend credit to each other to the maximum extent possible. It is not always convenient to go the 40 miles to The Dalles to purchase goods and services. This makes the community not just a viable economic unit, but also lends itself to a social family network.

Community members place their livelihood dependency on the recreational uses of the Deschutes River from 25 to 100 percent. This range is exemplified by the lone dentist in town who depends on others in the community having discretionary income for dental work done, to the individual raft rental outlets who only open during the river recreation season and are directly and totally dependent on river recreation use.

There is a certain level of pride in supporting one another through purchases of goods and services and providing employment to local residents during the summer recreation season. Though some businesses shut down in the winter, others stay open though reducing their hours of operation. Many feel this is a service to others in the community even if they are losing money by doing so.

Community support is reflected in small businesses opening, such as a hair salon and drawing most of its business from the local populace. This dependency on local support makes these small businesses very susceptible to economic factors that are beyond their control or influence. In many cases, if one of the mainstays of the local economy falls on hard times, then these small businesses may be unable to continue.

Community Services: Revenues generated at the Maupin City Park from totalled \$19,786 in 1989 and increased to \$23,047 in 1990. This revenue is used for the development and maintenance of the park facilities and personnel costs.

Table 16. Personal Income by Major Source and Earnings by Major Industry - 1985 and1988 (Thousands of Dollars)

Personal	Jefferso	on Co.	Sherma	n Co.	Wasco	Co.	Stud	y Area
Income	1985	1988	1985	1988	1985	1988	1985	1988
Retail Trade	8,145	9,891	2,062	1,564	24,225	25,112	34,432	36,567
Services	15,498	19,326	(D)	1,186	34,162	39,607	49,660	60,119
Total	129,941	168,058	37,034	45,876	254,658	304,667	421,633	518,601
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(D) Not shown to avoid disclosure of confidential information.

Source: USDC Bureau of Economic Analysis, Total Personal Income by Major Source and Earnings, by Major Industry, 1985 and 1988, April 1989


# **VI.** Environmental Consequences

## Introduction

This chapter identifies, summarizes and compares environmental impacts projected to occur as a result of implementing the management alternatives. Impacts are discussed as either short term (up to five years after approval of this plan) or long term (beyond five years). Discussion of impacts will be the same for both the short term and long term unless stated otherwise.

Analysis indicates there would be no significant impact to climate, utilities, agriculture, geology or energy and mineral resources. They will not be considered further.

Where appropriate, tables which summarize the impacts of the alternatives on each resource have been developed. Beneficial impacts are shown by a "+" indicating a positive change from present conditions. Adverse impacts are denoted by a "-" and indicate a decrease or negative change from present conditions. The letters "L, M, or H" are used to indicate the degree or severity of change from present conditions with "L" (low) indicating a relatively small change from present condition and "M" (moderate) denoting an increasingly more significant change from present condition and "H" (high) indicating a dramatic change.

## Impacts to Air

Impacts to air quality would result from restricting or eliminating grazing in riparian areas and fire control.

Prompt detection and suppression of wildfires under the Preferred Alternative and Alternative 1 would have a beneficial effect on air quality. No impact on air quality would result from Alternatives 2 and 3. Alternative 4 would remove livestock grazing from all riparian areas. Those areas where woody plant species have been suppressed by livestock grazing would be released. Long-term shading would be improved moderating daily air temperatures.

## Impacts to Soil

Impacts to soil would result from management of grazing, roads and parking areas, campsites and boat launches, vegetation (seeding and planting), boating and trails. They are summarized in Table 17 and described below.

These actions result in changes in vegetative cover and alterations in the soil's physical, chemical or biological properties.



Table 17. Summary of Impac	ts to Soil <sup>1</sup>			- Pagella	voliment
Managing:	Preferred Alternative	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Livestock	+M	-L	+L	+M	+H
Roads/Vehicle Use Closing Upgrading Parking	+M +M +M	+L +L +L	+L NC NC	+M +M +M	+M +M +M
Campsites	+M	+L	-M	+M	+H
Boat Launches	+L	+L	-L	+L	+M
Vegetation	+M	NA	+L	+M	+M
Boating	+M	-L	-M	+M	+H
Trails	+L	-L	-L	+L	+M
Overall	+M	+L	-L	+M	+H
<sup>1</sup> + Beneficial H High - Adverse M Moderate NC No change L Low	NA Not Applicable	na cues datoria contra datoria de	rinnin Ar seen alth	and the second	lans na ce lang ta

## **Preferred** Alternative

Managing livestock grazing on BLM, State and Tribally-owned riparian lands to maintain or achieve full vegetative potential with a minimum of 60 percent of ecological status within 15 years would result in improvement in riparian vegetation, enhancing soil stability. Managing upland vegetation to maintain or achieve ecological status between 51 and 75 percent of the plant composition found in the potential natural plant community would help to stabilize upland soils.

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Limiting vehicles to designated roads, closing and rehabilitating undesignated motor vehicle routes for vehicle use and providing parking outside of riparian areas would result in new and increased plant growth in previously impacted areas, benefitting soil stability and decreasing erosion and siltation. Upgrading existing roads would cause some short-term adverse impacts as a result of cuts and fills associated with the widening of certain roads.

Providing additional parking areas outside of the riparian areas at Mecca, Trout Creek, Buckhollow, Pine Tree, Beavertail, Macks Canyon and other sites would have a beneficial effect on riparian vegetative condition and plant vigor. Soil erosion and compaction would be minimized.

Installing barriers of natural material would prevent unauthorized vehicle access into areas at Devil's Canyon, Oak Springs, Handicap Ramp, Buckhollow, Pine Tree, Jones, Rattlesnake and Ferry Canyons, Sinamox and other sites would keep vehicles out of the riparian zone, allow vegetative recovery and reduce surface erosion, benefitting soil stability.

Allowing camping only in suitable sites set aside for camping on BLM, State and some Tribally-owned lands on a first-come, first-served basis, providing basic site protection measures, stabilizing heavily used riverbanks, rehabilitating and/or closing heavily impacted campsites, not allowing camping in the vicinity of Sherars Falls and not constructing new parking areas in riparian areas would significantly improve riparian vegetative condition and increase vegetative cover. This would cause a significant improvement in soil stability.

Seeding and planting of grasses, shrubs and trees would improve soil stability in currently degraded areas which in turn would reduce soil erosion.

Restricting motorboat use would have a slight beneficial effect on streambank stability.

Redistributing overall boating use levels to reduce peak use periods would benefit soil stability and productivity by reducing human impacts resulting from crowding and competition for camping and fishing areas.

Improving existing trails and constructing new hiking trails would result in short-term soil erosion and long-term soil compaction of the trail tread. This impact would not be significant beyond a small area.

#### Alternative 1

Managing livestock grazing to achieve or maintain riparian and upland vegetation in mid-seral condition would result in continued livestock use of riparian areas and side canyons. Unprotected springs and seep areas would continue to receive livestock use causing soil compaction and erosion.

The impacts of managing motor vehicles would be the same as those discussed under the Preferred Alternative.



The impact from providing additional parking areas outside of the riparian area would be the same as in the Preferred Alternative.

Improving camping facilities by rehabilitating or temporarily closing degraded sites would have a long-term beneficial impact on reducing soil erosion by reducing recreational use and allowing vegetative recovery.

Seeding and planting of grasses, shrubs and trees would have a beneficial effect on soil stability and would reduce soil erosion.

Under Alternatives 1 and 2, increased motorboat use would result in some increased soil erosion.

Increasing levels of motorboat use would have a low adverse impact on soil stability as a result of fine soils continuing to be flushed from the streambanks due to wave action. Continued increase in the numbers of boaters would also result in a corresponding increase in soil disturbance as less suitable riverbank areas are pioneered as campsites.

The impact of expanding the trails system would be the same as in the Preferred Alternative.

## Alternative 2

The impacts from grazing would be the same as in the Preferred Alternative.

Designating roads at Trout Creek Campground and South Junction would remove traffic from off-road areas and allow soil to recover from vehicle compaction. With unlimited recreational use, keeping vehicles on designated roads would be a difficult enforcement problem.

Rehabilitation of some campsites would result in less soil erosion. Planting trees in heavily used areas also would enhance soil stability.

Adverse impacts to soil from trampling would continue and increase with more boating visitors. Bank stabilization would relieve some of those impacts.

Not restricting foot access or hardening trails in high use areas would result in soil erosion and soil compaction on and near the trails and where users create their own trails.

## Alternative 3

Fencing to exclude livestock from some riparian zones would result in significantly improved soil conditions in those areas. A gradual improvement would occur in unfenced riparian areas.

Not providing new motor vehicle access will prevent new sources of vehicle-caused soil erosion.

The impact of allowing camping only in suitable sites would be the same as in the Preferred Alternative.

Reduced peak levels of boat use, combined with improved, designated boat launches and the closure of unimproved launch sites would result in improved bank stability by keeping use on designated sites.

The impact of seeding and planting of grasses, shrubs and trees would be the same as in the Preferred Alternative.

The stabilization, and if necessary, the closing of trails in riparian areas would improve soil stability and reduce compaction from hikers and bank anglers.

#### Alternative 4

Removal of all livestock from all BLM riparian areas would result in a significant improvement in riparian soil condition by eliminating adverse impacts caused by grazing livestock and would allow the recovery of vegetation species which has been suppressed by livestock use.

The impacts from installing barriers would be the same as in the Preferred Alternative.

Seeding and planting of native species only would have a beneficial effect on soil stability. However, it would be difficult to obtain seed and plants of native species and also difficult to establish them in competition with exotic plants like cheatgrass. Success in establishment would determine the degree to which soil stability is enhanced.

Allowing camping only in suitable sites, implementing a campsite reservation system, limiting group size and providing basic site protection would have a significantly beneficial effect on soil stability.

Reduced levels of boat use, combined with improved, designated boat launches and the closure of unimproved launch sites would result in improved bank stability through reduced use and confinement of that use to designated areas.

Rehabilitating trails which parallel the river and providing point access trails would reduce the number of trails and as a result would improve both soil stability and productivity.



## Impacts to Water

Impacts to water would result from managing grazing, roads and parking areas, campsites and launching areas and fish habitat (spawning gravel) as well as vegetation (seeding and planting). They are summarized in Table 18 and discussed below.

Table 18. Summary of Impa	ects to Water <sup>1</sup>	and a start of			
Managing:	Preferred Alternative	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Livestock	+M	-M	+M	+M	+H
Roads/Vehicle Use Closing Upgrading	+M +M	+L +L	+L +M	+M +M	+M +M
Campsites	+M +M	+L +L	+L -M	+M +M	+M +H
Boat Launches	+L	+L	-L	+L	+M
Fish & Wildlife	-L	NC	NC	NC	-L
Vegetation	+M	NC	NC	+M	+H
Overall	+M	+L	+L	+M	+M
<sup>1</sup> + Beneficial H H - Adverse M M NC No Change L L	ligh Aoderate ow				

## **Preferred** Alternative

Managing livestock grazing on BLM, State and Tribally-owned riparian lands to maintain or achieve full vegetative potential with a minimum of 60 percent of ecological status within 15 years would result in improving riparian vegetation, enhancing soil stability and decreasing erosion and siltation, thereby improving water quality. Managing upland vegetation to maintain or achieve ecological status between 51 and 75 percent of the plant composition found in the potential natural plant community would help to stabilize the watershed.

Closing and rehabilitating motor vehicle routes not designated would result in new and increased plant growth in previously impacted areas, benefitting soil stability, decreasing erosion and siltation, and resulting in improved water quality.

Providing additional parking areas outside of the riparian areas at Mecca, Trout Creek, Buckhollow, Pine Tree, Beavertail, Macks Canyon and other sites would have a beneficial effect on riparian vegetative condition and plant vigor. Soil erosion and compaction would be minimized, to the benefit of water quality.

Installing barriers of natural material to prevent unauthorized vehicle access into areas at Devil's Canyon, Oak Springs, Handicap Ramp, Buckhollow, Pine Tree, Jones, Rattlesnake and Ferry Canyons, Sinamox and other sites would keep vehicles out of the riparian zone, allow vegetative recovery and reduce surface erosion, enhancing water quality.

Allowing camping only in suitable sites set aside for camping on BLM, State and some Tribally-owned lands on a first-come, first-served basis, providing basic site protection measures, stabilizing heavily used riverbanks, rehabilitating and/or closing heavily impacted campsites, not allowing camping in the vicinity of Sherars Falls and not constructing new parking areas in the riparian zone would enhance riparian vegetative cover and soil stability, resulting in improved water quality.

The annual addition of 250 cubic yards of suitable gravel to enhance fish habitat between Pelton Reregulating Dam and Highway 26 would result in a short term, slight reduction in water quality because of increased turbidity during gravel placement, however no long-term adverse impacts would result.

Seeding and planting grasses, shrubs and trees to enhance wildlife habitat would reduce soil erosion and thereby enhance water quality.

#### Alternative 1

Managing livestock grazing to achieve or maintain riparian and upland vegetation in mid-seral condition would result in continued livestock use of riparian areas and side canyons. Higher bank erosion and siltation rates would occur under this alternative than under the Preferred Alternative, adversely affecting water quality.

Closing and rehabilitating motor vehicle routes not designated would result in new and increased plant growth in previously impacted areas, benefitting soil stability and water quality.

The impact of providing additional parking areas outside of the riparian areas would be the same as in the Preferred Alternative.

Improving camping facilities by rehabilitating or temporarily closing degraded sites would have a beneficial effect on water quality due to vegetative recovery and improved soil condition. Increased camping use, especially by large groups, would result in adverse impacts to water quality due to bank erosion and siltation caused by trampling.



Alternative 2

The impact from managing livestock would be the same as in the Preferred Alternative.

The impact from closing and rehabilitating motor vehicle routes not designated would be the same as in the Preferred Alternative.

With increased camping and boating use, water quality would be degraded due to increased levels of recreation use and inadequate facilities or site protection measures to fully protect the soil resource. Bank erosion and siltation would result. Bank stabilization at heavily used sites would reduce some of this degradation of water quality. However, overall adverse impacts would still result.

## Alternative 3

Fencing to exclude livestock from some riparian zones would result in improved water quality in those areas. A long-term improvement would occur in unfenced riparian areas as management practices take effect.

Restricting vehicle use from sensitive or unstable areas and upgrading road condition and parking areas would benefit water quality as a result of a reduction in soil erosion and compaction.

Water quality would be enhanced at most campsites by limiting camping use to only suitable, designated campsites and providing basic site protection measures at the designated sites.

The impact of allowing camping only in suitable sites would be the same as in the Preferred Alternative.

Hardened boat ramps would help to enhance water quality by reducing bank erosion, siltation and resulting turbidity caused by recreational use.

The impact of seeding and planting grasses, shrubs and trees would be the same as in the Preferred Alternative.

## Alternative 4

Removal of all livestock from all BLM riparian areas would result in a significant improvement in water quality as a result of improved vegetative condition and soil stability.

Barriers to prevent unauthorized vehicle access to riparian areas would enhance soil stability and protect water quality.

The impact of installing barriers would be the same as in the Preferred Alternative.

A campsite reservation system limiting group size and providing basic site protection would have a positive effect on water quality, both at reserved sites and in the unused, recovering sites.

The impact of adding gravel to the upstream spawning beds would be the same as in the Preferred Alternative.

Closing and rehabilitating some boat launch areas, stabilizing other sites and restrictions in the number of boaters would improve water quality by reducing soil disturbance and resulting siltation.

## Impacts to Vegetation

Impacts to vegetation would result from managing grazing, vehicle use of roads and parking areas, campsites and launching areas, vegetation (seeding and planting), and fire detection and suppression. They are summarized in Table 19 and discussed below.

iuote 19. Summary	of impucts to vegetation	Part of the second	in the second		and the second
Managing:	Preferred Alternative	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Livestock	+M	+L	+M	+M	+H
Roads/Vehicle Use Closing Upgrading Parking	+M +M +M	+L +L +L	+M NC NC	+M +L +M	+M +L +M
Campsites	+M	+L	-M	+M	+H
Boat Launches	+L	+L	-L	+L	+M
Vegetation	+M	+L	+L	+M	+M
Boating	+M	-L	-M	+M	+M
Overall	+M	+L	-L	+M	+M
<sup>1</sup> + Beneficial - Adverse NC No Change	H High M Moderate L Low		1.00 U		

## Table 19 Summary of Impacts to Vegetation1



**Preferred** Alternative

Managing livestock grazing on riparian lands to maintain or achieve full vegetative potential with a minimum of 60 percent of ecological status being achieved within 15 years would result in continued improvement in riparian vegetation in many grazed areas. Excluding livestock grazing from areas after five years of monitoring if it becomes evident that positive progress in meeting long-term vegetative objectives cannot be met within a 15-year period would provide for attainment of improved vegetative conditions through rest and exclusion. Managing upland vegetation to achieve or maintain late seral (good) ecological condition would benefit vegetation by maintaining soil stability. The management actions and costs required to meet the above objective are summarized in Table 20.

Table 20. Manageme Alternative	ent Actions and Cos	sts Required fo	r Livestock (	Grazing Man	agement by
Management Action	Preferred Alternative	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Fence Construction		the second second	S. C. South Star		1997
Miles	8	0	8	24	65
Construction Cost	\$32,000	0	\$32,000	\$96,000	\$260,000
Annual Mtce Cost	\$3,600	0	\$3,600	\$11,000	\$30,000
Spring Development					
Number	4	0	4	8	41
Cost	\$12,000	0	\$12,000	\$24,000	\$123,000
Sagebrush Control					
Acres	1,600	0	1,600	0	0
Cost	\$8,000	0	\$8,000	0	0

Closing and rehabilitating motor vehicle routes not designated and confining vehicles to suitable areas would result in new and increased plant growth in previously impacted areas, resulting in significant improvements in vegetative condition in disturbed areas. Installing barriers of natural material to prevent unauthorized vehicle access into areas at Devils Canyon, Oak Springs, Handicap Ramp, Buckhollow, Pine Tree, Jones, Rattlesnake and Ferry Canyons, Sinamox and other sites would keep vehicles out of the riparian zone, allowing vegetative recovery.

Providing additional parking areas outside of the riparian areas at Mecca, Trout Creek, Buckhollow, Pine Tree, Beavertail and Macks Canyon and other sites would also have a beneficial effect on riparian vegetative condition and plant vigor.

Providing supplemental vegetative seeding and planting would assist vegetative recovery in areas previously degraded by vehicle use, resulting in better soil stability and less erosion and siltation. Upgrading certain roads would cause short-term adverse impacts to nearby vegetation as a result of rock crushing and road widening activities. Long-term benefits would occur due to the elimination of road dust and improvements in road design and stability.

Allowing camping only in suitable sites set aside for camping on BLM, State and some Tribally-owned lands on a first-come, first-served basis, providing basic site protection measures, stabilizing heavily used riverbanks, rehabilitating and/or closing heavily impacted campsites, not allowing camping in the vicinity of Sherars Falls and not constructing new parking areas in riparian areas would significantly enhance riparian vegetative condition. Similar beneficial effects would occur from upgrading and stabilizing boat launch areas. Redistributing overall boating use levels to reduce peak use periods would benefit vegetative condition by reducing human impacts resulting from crowding and competition for campsites and fishing areas.

#### Alternative 1

Managing livestock grazing to achieve or maintain riparian and upland vegetation in mid-seral condition would result in continued livestock use of riparian areas and side canyons. Vegetation in some isolated areas would be subjected to overuse and trampling.

Upgrading certain roads would cause adverse, short-term impacts to nearby vegetation as a result of rock crushing and road widening activities. Long-term benefits would occur due to the elimination of road dust and through road design and improved stability.

Closing and rehabilitating other vehicle routes and confining vehicle use to those areas along with improving camping facilities would result in new and increased plant growth in previously disturbed areas.

The impact of providing additional parking areas outside of the riparian zone would be the same as in the Preferred Alternative.



Reconstructing and stabilizing launch sites would also result in beneficial impacts to riparian vegetation by confining use to areas capable of accommodating that use without damage.

Increased boating use levels, along with other recreation uses, would result in significant increases in trampling of vegetation, especially in riparian areas.

With BLM increasing fire suppression capabilities and coordinating with local jurisdictions, prompt detection and suppression of potentially damaging wildfires would have a significantly beneficial impact on vegetation.

## Alternative 2

The impact of managing livestock grazing would be the same as in the Preferred Alternative.

The impact of closing and rehabilitating non-designated roads and limiting vehicle use would be the same as in the Preferred Alternative.

Allowing camping at existing sites would result in a continuation of significant adverse impacts on riparian and upland vegetation. Rehabilitation of some campsites would have a beneficial effect on vegetation in the immediate vicinity.

The current overuse of launch sites would be expected to continue to increase, causing more trampling of vegetation and accelerated bank erosion due to the loss of streamside vegetation including trees. Increasing use from unrestricted camping and vehicle parking would cause adverse impacts to vegetation condition in those areas where use would occur.

No limit on boater numbers, boat use or group size would result in continued escalation in numbers of river users. This increased use would result in increased disturbance of existing vegetation including trees, as more riverbank areas are pioneered for trails, campsites and/or used as boat launches.

## Alternative 3

Fencing to exclude livestock from some riparian zones would result in rapid release of species which had been suppressed by livestock grazing. A gradual improvement would occur in unfenced riparian areas as management practices take effect. Required management actions and costs are summarized in Table 20.

Closing unsuitable vehicle access routes in riparian areas, upgrading roads and restricting parking to designated areas would enhance vegetation by reducing dust and allowing the vegetation in heavily impacted areas to recover.

Vegetative cover would be enhanced by limiting camping use to only suitable designated locations and providing basic site protection measures. Vegetation at overused sites would be allowed to recover from past use and vegetation at designated sites would be better protected from use.

The impact of allowing camping only in suitable sites would be the same as in the Preferred Alternative.

Restricting boat use levels would reduce overall river use, particularly on unroaded segments. Reduced boat use combined with improved, designated boat launches would result in improved riparian vegetation.

The impact of seeding and planting grasses, shrubs and trees would be the same as in the Preferred Alternative.

Alternative 4

Removal of all livestock from all riparian areas on BLM, State and Tribally-owned land would allow the recovery of vegetation species in these areas which have been suppressed by livestock grazing. Required management actions and costs are summarized in Table 20.

Closing vehicle access routes in sensitive areas and upgrading other roads to acceptable standards would have an overall beneficial effect on vegetative condition.

The impact of installing barriers would be the same as in the Preferred Alternative.

A campsite reservation system, limiting group size and providing basic site protection would have a beneficial effect on riparian vegetation by allowing camping to occur on sites which could accommodate use. Prohibiting camping between Maupin and Buckhollow would also allow vegetation to recover from past damage.

Reconstructing or closing some existing boat launch areas and stabilizing heavily used sites would have a beneficial effect on nearby riparian vegetation by allowing vegetation to recover from past damage.

A reduced number of boaters and other recreation users would allow significant recovery of riparian vegetation from trampling and other human uses. A reduction in the amount of area disturbed by hiking trails and less use of those trails would also enhance vegetative recovery.

Planting of native species in wildlife habitat would improve vegetative condition in those areas.



## Impacts to Fish and Wildlife

Impacts to fish and wildlife would result from managing grazing, vehicle use of roads and parking areas, campsites and launching areas, vegetation (seeding and planting), fish and wildlife habitat and boating. They are summarized in Table 21 and discussed below.

Table 21. Summar	Table 21. Summary of Impacts to Fish and Wildlife <sup>1</sup>								
Managing:	Preferred Alternative	Alt. 1	Alt. 2	Alt. 3	Alt. 4				
Livestock	+M	+L	+M	+M	+H				
Roads Closing Upgrading Parking	+M +M +M	+L +L +L	+M +L +L	+M +L +M	+M +L +M				
Campsites	+M	+L	-M	+M	+H				
Boat Launches	+L	+L	-L	+L	+M				
Vegetation	+M	NA	NC	-L	+M				
Fish & Wildlife	+M	NC	NC	+L	+M				
Boating	+M	-L	-M	+M	+M				
Overall	+M	+L	-L	+M	+M				
<sup>1</sup> + Beneficial - Adverse NC No Change	H High NA Not Applica M Moderate L Low	able	an materia and	and the second	in treation				

#### Preferred Alternative

Managing livestock grazing on riparian lands to maintain or achieve full vegetative potential with a minimum of 60 percent of ecological status being achieved within 15 years would result in continued improvement in riparian vegetation in many grazed areas. Excluding livestock grazing from areas after five years of monitoring if it becomes evident that positive progress in meeting long-term vegetative objectives cannot be met within a 15-year period would provide for attainment of riparian improvement goals for vegetative condition and as a result, significantly improve fish and wildlife habitat. Managing upland vegetation to maintain or enhance a late seral (good) ecological condition would result in better wildlife habitat through soil stability and more vegetative cover.

Closing and rehabilitating motor vehicle routes not designated and limiting vehicles to designated routes would result in new and increased plant growth in previously disturbed areas, increasing vegetative cover and diversity and as a result benefitting wildlife habitat. Providing additional parking areas outside of riparian areas and installing barriers to prevent unauthorized vehicle access would also have a positive effect on riparian vegetation, thereby benefitting wildlife.

Restricting or prohibiting camping in sensitive wildlife areas and areas in need of rehabilitation, not providing new motor vehicle access as well as planting and watering trees and shrubs would allow a renewal of vegetation in formerly overused areas, fulfilling the specific wildlife habitat requirements of food, hiding cover, escape cover, thermal and nesting cover. Keeping dogs on leashes except during upland bird or waterfowl hunting seasons would reduce off-season harassment or injury from free-ranging dogs. Reduced human (or dog) disturbance would result in better wildlife utilization of available habitat.



Stabilizing, rehabilitating or temporarily closing campsites within the riparian zone in the vicinity of Devils Canyon, Handicap Ramp, Oak Springs, Steelie Flat, Homestead Flat, Robertson Flat plus closing campsites within the riparian zone at Gert and Ferry Canyons as well as other areas would allow natural vegetative recovery and result in an enhancement of wildlife habitat.

Providing supplemental seeding and planting of the best suited plant species in riparian and upland areas would have a beneficial effect on wildlife habitat. Improved wildlife habitat condition in currently degraded or disturbed areas (Segment 1, 45 acres; Segment 2, 25 acres; Segment 3, 55 acres and Segment 4, 190 acres) would help to reduce soil erosion and protect river water quality thus improving fish habitat. Improved riparian vegetation along the river margin would result in enhanced overhead shade and cover, as well as increased organic litter important for aquatic insect production, and would result in increased fish production.

Erecting and maintaining artificial structures such as nesting boxes would supplement natural nesting places and enhance the habitat of cavity nesting birds and other animals.



Reintroduction of native wildlife, such as bighorn sheep, would not significantly alter existing wildlife habitat. However, significant benefits to wildlife viewing and hunting opportunities would result.

The annual addition of 250 cubic yards of suitable gravel in primary fish spawning beds through mechanical means in the three miles of river downstream from the Pelton Reregulating Dam would result in increased substrate water permeability, aiding embryo survival and resulting in increased production of macroinvertebrates which are a primary source of fish food. Short-term negative impacts from gravel supplementation would be displacement or loss of some aquatic insects, reduction of river clarity and a slight reduction in water quality during placement.

Limiting boater use levels, improving or closing launch sites, limiting party size, and restricting motorized boat use would have a beneficial effect on wildlife habitat through decreased levels of recreation use during peak periods and resulting improvements in soil and vegetation condition.

With BLM increasing fire suppression capabilities and coordinating with local jurisdictions, prompt detection and suppression of potentially damaging wildfires would have a significantly beneficial impact on vegetation and wildlife habitat.

#### Alternative 1

Managing livestock grazing to achieve or maintain riparian and upland vegetation in mid-seral condition would result in continued livestock use of riparian areas and side canyons. Unprotected springs and seep areas would continue to receive livestock use. Overall wildlife habitat condition would be degraded.

The impact of providing additional parking areas outside of riparian areas and stabilizing or closing certain campsites in the riparian zone would be the same as in the Preferred Alternative.

Reconstructed or stabilized launch sites would discourage launching at other, undeveloped sites, allowing nearby wildlife habitat to recover.

The loss of vegetation including trees bordering the river would increase as a result of increased levels of recreation use, adversely impacting most wildlife species. Closing and rehabilitating degraded campsites would reduce soil erosion, increase vegetative ground cover and thereby benefit fish and wildlife habitat.

Under Alternatives 1, 2 and 3, the quantity of useable spawning gravel in the three miles below Pelton Reregulating Dam would continue to decrease and the river substrate would become increasingly "cemented", making spawning more difficult. Survival of fish embryos in that reach would decline, resulting in a reduction in resident and anadromous fish populations.

The impact of the BLM increasing fire suppression services would be the same as in the Preferred Alternative.

#### Alternative 2

The impact of grazing management would be the same as in the Preferred Alternative.

The impact from closing and rehabilitating non-designated roads and limiting vehicle use would be the same as in the Preferred Alternative.

Allowing camping at all existing sites would result in a continuation of significant, adverse impacts on riparian soil and vegetation, in turn resulting in degradation of fish and wildlife habitat. Rehabilitation of some campsites would improve wildlife habitat in those areas.

Maintaining existing launch sites in their present condition would cause more trampling, bank erosion and vegetation loss, also resulting in further degradation of fish and wildlife habitat. No limit on boat numbers or group size would result in continued escalation in numbers of river users. This increased use would result in more disturbances to wildlife and further degradation of wildlife habitat.

The impact from providing artificial nesting structures would be the same as in the Preferred Alternative.

#### Alternative 3

Fencing to exclude livestock from some riparian zones would result in significantly improved wildlife habitat in those areas. A gradual improvement would occur in unfenced riparian areas.

Closing vehicle access routes and parking areas in riparian areas would significantly benefit wildlife species that utilize these important areas for cover, feeding and nesting. The impact from prohibiting camping in areas that were historically sensitive wildlife habitats would be the same as in the Preferred Alternative.

The impact of limiting boater use levels, improving or closing launch sites, limiting party size and restricting motorized boat use would be the same as in the Preferred Alternative.

#### Alternative 4

Removal of livestock grazing from all riparian areas on BLM, State and Tribally-owned lands would result in significant improvement in the wildlife habitat components—cover, food and water. Elimination of livestock grazing would trigger natural vegetative recovery which would preclude the need for extensive seeding or planting for wildlife. Developing upland water sources, which include protection of the spring source with water piped to a trough, would result in better distribution of wildlife.



The impact from reintroducing native wildlife would be the same as in the Preferred Alternative.

Keeping dogs on leash except during upland bird or waterfowl hunting season, would reduce wildlife harassment, injuries and deaths. Establishing trees and shrubs beneficial to wildlife in upland areas removed from heavy recreation use would increase wildlife populations and species diversity.

The impact of adding gravel to the spawning habitat is the same as in the Preferred Alternative.

Allowing camping by reservation in only suitable sites and doing basic site protection would allow degraded campsites to revegetate, thereby enhancing riparian condition and resulting in improved fish and wildlife habitat. Rehabilitation of campsites would also be beneficial to wildlife needs (food, escape, hiding and thermal cover and reproduction). Prohibiting camping between Maupin and Buckhollow would have an additional beneficial effect by increasing vegetative cover which has been adversely impacted by camping, thus improving fish and wildlife habitat in this 7-mile segment.

Significantly reduced levels of boaters and other users would reduce human impacts to vegetation due to trampling and would allow riparian vegetation to improve. This would provide better bank stability and result in an improvement in fish and wildlife habitat. Disturbance to wildlife by larger numbers of recreation users would also be significantly reduced under this alternative.

## Impacts to Livestock Grazing

Impacts to livestock grazing would result from managing grazing and cultural sites, as well as from managing vegetation (seeding and planting) and fire. They are shown in Table 22 and discussed below.

## **Preferred** Alternative

Managing livestock grazing on BLM, State and Tribally-owned riparian lands to maintain or achieve full vegetative potential with a minimum of 60 percent of ecological status within 15 years would not be expected to have a significant impact on livestock grazing. However, if after five years of monitoring it became necessary to remove all livestock from the riparian zone, three livestock lessees would suffer the loss of approximately 300 animal unit months of forage on about 4,800 acres of public land. Managing upland vegetation to maintain or achieve a late seral (good) ecological condition would have a long-term beneficial effect through improved forage condition.

Providing supplemental vegetative seeding and planting would assist vegetative recovery in degraded areas and enhance forage values to a limited degree. Using prescribed fire where necessary would also help to maintain or achieve the desired ecological condition and as a result improve livestock forage.

Eliminating trampling impacts from grazing to cultural sites would require removing all livestock from several riparian areas and some upland sites within the planning area. This would result in an adverse impact to three BLM lessees.

Managing:	Preferred	Alt.	Alt.	Alt.	Alt.
I faceste di	Alternative		.1	NC	T
LIVESTOCK	the second	+L	+L	INC	-1VI
Cultural Sites	-L	-L	NC	-L	-L
Vegetation	+L	NA	NC	+L	NC
Fire	+L	+L	-L	+L	+L
Overall	+L	-L	-L	+L	-L
<sup>1</sup> +Beneficial - Adverse NC No Change	H High NA Not Ap M Moderate L Low	plicable			-

areas and some upland sites within the planning area. This would result in an adverse impact to three BLM

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Prohibiting open fires and increasing surveillance would lessen the chances of serious wildfires which in turn could damage vegetation utilized as livestock forage.

## Alternative 1

TT 11 00 0

Managing livestock grazing to achieve or maintain riparian and upland vegetation in mid-seral ecological condition would result in continued livestock use of some riparian areas along the Deschutes River and side canyon tributaries. Wetland areas associated with springs and seeps which have not previously been developed or protected would continue to receive livestock use. Livestock seasons of use would generally continue as they have in the past. Livestock use in grazing allotments which contain riparian areas classified as in poor condition would be modified to allow recovery to meet the mid-seral objective. Livestock AUMs would remain at present levels in the short term. Absence of intensive livestock management and additional range developments (fences, springs) to improve livestock distribution would result in continued poor quality forage in traditional use areas. This would force some expanded use on adjacent uplands but could also result in reductions of livestock in specific allotments or pastures.



Managing grazing to reduce impacts on cultural resources would require exclusion of livestock from some sensitive areas, causing a slight adverse impact to grazing.

With BLM increasing fire suppression capabilities and improving agency cooperation, prompt detection and suppression of wildfires would have a beneficial effect on vegetative condition and as a result would also improve livestock grazing.

## Alternative 2

The impact from managing livestock grazing would be the same as in the Preferred Alternative.

There would be no impact to grazing from the management of cultural resources or seeding and planting under this alternative.

Continuing the present level of fire suppression could result in serious wildfires damaging range resources and structures.

### Alternative 3

Managing livestock grazing on riparian areas to achieve full potential within 25 years would not significantly impact the current 2,865 AUMs of available forage. The riparian zones supply a very small portion of the overall forage available to livestock but are more heavily utilized because of forage quality, location and access. Fencing to exclude livestock from the riparian zones except for controlled watering points would force livestock to better utilize the forage resources away from the riparian area. This alternative would require construction of up to 24 miles of new riparian exclosure fence. Eight springs would also need to be developed in upland areas. Grazing systems or livestock seasons of use would be modified on eight allotments.

The impact of seeding and planting would be the same as in the Preferred Alternative.

The impact of managing wildfires would be the same as in the Preferred Alternative.

Alternative 4

Removal of livestock from all BLM, State and Tribally-owned riparian areas would result in a significant adverse impact to three livestock lessees whose cattle utilize approximately 300 AUMs of forage on 4,800 acres of public land. These operations are primarily dependent on the river for livestock water and would lose most of their ability to graze livestock on public land. The remainder of livestock lessees along the river corridor would not realize any significant impacts from a total riparian exclosure. Past and current livestock use along the Deschutes River corridor has concentrated on the riparian areas because of the quality of the forage and easy livestock access. The vast majority of forage available outside of the riparian zones in these

areas has never seen significant use. Excluding the riparian area would force the livestock to expand their range to some degree and use some of the adjacent hillsides, but the largest percentage of available forage would still be underutilized. A total of up to 30 miles of new riparian exclosure fence would be needed and 11 springs would also need to be developed in upland areas.

Seeding and planting using native species only would be very difficult because seeds of these species are difficult to obtain and they do not compete well with exotic species like cheatgrass.

## Impacts to Cultural Values (Archaeology and History)

Impacts to archaeologic and historic resources would result from management of grazing, cultural sites, law enforcement and visitor information services. They are shown in Table 23 and discussed below.

Managing:	Preferred Alternative	Alt. 1	Alt. 3	lt. Alt 3 4	
Livestock	+L	+L	+L	+M	+H
Cultural Sites	+M	+M	-L	+M	+H
Law Enforcement	+M	+M	-L	+M	+H
Information	+M	+M	-L	+M	+M
Overall	+M	+M	-L	+M	+H
1 + Beneficial - Adverse	H High M Moderate L Low	a an			



Preferred Alternative

Managing livestock grazing to eliminate impacts to significant historical/archaeological sites from trampling or other damage would have a beneficial effect on cultural resource sites by eliminating soil compaction, erosion and artifact breakage and displacement.

Stabilization or evaluation and salvage of disturbed or threatened sites would have significant beneficial impacts by providing an increased knowledge of prehistoric and historic utilization of the Deschutes River corridor.

Establishing new law enforcement agreements, conducting regular surveillance and monitoring significant sites which are easily accessible and/or in high recreation use areas would provide information on recreation-associated use impacts. Providing a full-time law enforcement officer as well as aerial and boat patrols in Segment 2 and to a lesser degree in other segments, would allow better protection of cultural resources in those areas. Education of landowners concerning historical/archaeological resource laws and enforcement procedures, utilizing aerial surveillance and remote sensing devices to monitor vandalism at significant sites and establishing or continuing law enforcement agreements with the county governments and the Confederated Tribes of the Warm Springs Reservation would allow for better control of the current degradation of cultural sites. These actions also would have a significant beneficial effect on the integrity and quality of cultural resources by reducing the risk of site damage or loss.

Implementing public information and education efforts through brochures, signs, information stations and visitor contact points would reinforce desirable attitudes about and behavior toward historic and prehistoric resources. The program would be designed to reduce adverse impacts to cultural resources. Managing, restricting or prohibiting human use of significant cultural sites by signing and/or fencing would also better protect and preserve the resource and reduce the risk of site damage or loss.

### Alternative 1

Excluding livestock grazing to reduce impacts on some significant cultural sites would reduce impacts to those features, however, damage to other features would continue as a result of trampling and artifact breakage.

The impact of protecting, stabilizing or salvage of threatened cultural sites would be the same as in the Preferred Alternative.

The impact of implementing public information and education efforts would be the same as in the Preferred Alternative.

The impact of providing a full-time law enforcement officer would be the same as in the Preferred Alternative.

## Alternative 2

Continuing present patterns of livestock grazing would cause continued decline in condition of cultural resources subject to trampling and breakage.

Continuing existing law enforcement and level of public information and education would allow continuance of the downward trends in condition resulting from vandalism and lack of understanding of and appreciation of the prehistoric and historic utilization of the Deschutes River corridor.

#### Alternative 3

The impact from managing livestock grazing would be the same as in the Preferred Alternative.

The impact of protecting cultural resources through cooperative agreements with landowners would be the same as in the Preferred Alternative.

A reduction in recreation use would have a beneficial effect on the integrity and quality of cultural resources by reducing the chances for vandalism and other forms of damage.

The impact of establishing new law enforcement agreements and surveillance would be the same as in the Preferred Alternative.

#### Alternative 4

The elimination of livestock grazing from BLM, State and Tribally-owned lands would significantly reduce trampling, soil compaction and erosion of sites as well as artifact breakage and displacement. Restricting or prohibiting recreation use in significant cultural areas and providing interpretation would also better protect and preserve the resource and reduce the risk of site damage or loss. Distributing handouts through guides, boater passes and display boards and developing an educational curriculum would also have a beneficial impact on visitor information regarding cultural resources.



## Impacts to Threatened, Endangered or Sensitive Species

Impacts to threatened, endangered or sensitive species would result from management of livestock grazing, boating and campsites. They are shown in Table 24 and discussed below.

Managing:	Preferred Alternative	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Livestock	+M	-L	+L	+M	+H
Boating	+M	-M	-M	+M	+H
Campsites	+M	-L	-M	+M	+H
Overall	+M	-L	-L	+M	+H

Site specific impacts to some identified threatened, endangered or sensitive species, such as molluscs, which would result from proposed management actions are not clearly understood. The managing agencies will request technical assistance from the U.S. Fish and Wildlife Service to ensure that no management actions contained in the final plan will adversely impact any candidate species to the point of causing it to become listed as threatened or endangered.

## **Preferred** Alternative

Management of livestock grazing under this alternative would result in continued improvement in vegetative condition in both riparian and upland areas which would provide improved habitat for all animal species and improve the overall condition of vegetative species. If livestock grazing was excluded after five years of monitoring, beneficial impacts would be even greater.

Significantly reducing the river area in which motorboats could be used and reducing peak motorized and nonmotorized boating use levels would result in a corresponding decrease in adverse impacts to aquatic and riparian dependent species which are presently subject to disturbance or damage (28). Restricting or prohibiting camping in sensitive wildlife areas would also reduce disturbance to animals as well as adverse impacts to habitat condition.

#### Alternative 1

Adverse impacts to both plant and animal species would result from increased levels of recreation use, especially camping, motorized and nonmotorized boating. Primary impacts would occur as a result of disturbance to the animals as well as habitat damage in both aquatic and riparian habitats.

#### Alternative 2

Impacts under this alternative would be the same as those discussed under Alternative 1.



## Alternative 3

Impacts resulting from the management of livestock grazing and campsites would be the same as those discussed under the Preferred Alternative. The seasonal restriction of motorboats on most of the river and reducing peak recreation use levels would beneficially affect species which are dependent on aquatic or riparian habitat during the primary use season as a result of reduced disturbance and habitat damage.

#### Alternative 4

Significant beneficial impacts would result from removing livestock grazing from BLM, State and Tribally-owned riparian areas. The elimination of livestock grazing in these areas would improve vegetative condition and as a result, improve habitat. Banning motorboat use and reducing overall, as well as peak recreation use levels, would improve aquatic and riparian habitat condition as a result of fewer boaters and campers disturbing wildlife and encroaching into sensitive areas.



## Impacts to Scenery

Impacts to scenery would result from management of livestock grazing, roads, campsites and boat launches. They are shown in Table 25 and discussed below.

Managing:	Preferred Alternative	Alt. 2	Alt. 3	Alt. 4	
Livestock	+L	-L	+L	+M	+H
Roads/Vehicle Use	+M	+M	+L	+M	+M
Campsites	+M	+M	-L	+M	+M
Boat Launches	+M	+M	-L	+M	+M
Overall	+M	+M	-L	+M	+M
<sup>1</sup> + Beneficial H F - Adverse M M L L	ligh Aoderate ow				

## **Preferred** Alternative

Management of livestock grazing under this alternative would improve visual quality in the long term as vegetative condition improves, especially in riparian areas. Restricting recreational uses (camping, boat launching, vehicle driving) coupled with rehabilitation of disturbed areas through closure, revegetation or facility development would also have significant beneficial impacts on scenic quality. Upgrading roads, developing parking areas and pullouts would have short-term adverse impacts during construction but long-term benefits would occur as a result of confining use to designated areas.

Reduced levels of peak recreation use would reduce the adverse impacts to soil and vegetation, resulting in a gradual improvement in the scenery as natural conditions improve. Setting only suitable sites aside for camping and providing basic site protection measures along with closing and rehabilitating unsuitable sites, would enhance visual quality along the river. This would occur as a result of allowing vegetation to return to a more natural appearing condition by protecting the vegetation in and near the designated campsites.

#### Alternative 1

Managing livestock grazing to achieve or maintain riparian and upland vegetation in mid-seral condition would result in continued livestock use of riparian areas, side canyons, unprotected springs and seep areas, adversely impacting the scenic value of the vegetation.

The impacts of facility development and upgrading roads and trails under this alternative would be the same as those discussed under the Preferred Alternative.

#### Alternative 2

Continuing present management of livestock grazing would result in a gradual sustained improvement of upland and riparian vegetation resulting in an overall improvement in scenic quality.

Confining vehicle use to certain designated roads and trails would enhance visual quality as a result of decreased disturbance to soil and vegetation. Allowing vehicle parking to continue as it has in most areas would result in continued adverse impacts to scenery through destruction of the vegetation.

Allowing camping use and boat launching at all existing sites and not installing new facilities would result in continued impairment of the visual quality of campsites and launching areas.

#### Alternative 3

Managing livestock grazing on riparian areas under this alternative would provide a gradual, sustained improvement of the riparian vegetation, resulting in a significant improvement of scenic quality adjacent to the river in the long term.

The impact from managing roads and parking areas would be the same as in the Preferred Alternative.

Restricting camping in wildlife areas along with improving wildlife habitat would improve the opportunity to view wildlife along the banks of the river.

The impacts of reducing levels of peak recreation use and setting only suitable sites aside for camping and providing basic site protection would be the same as in the Preferred Alternative.



Alternative 4

Removal of livestock grazing from all riparian areas on BLM, State and Tribally-owned lands would allow more rapid recovery of riparian vegetation and scenic quality would improve as overall vegetative condition improved.

The impact of upgrading certain roads would be the same as in the Preferred Alternative.

Allowing camping only by reservation in suitable sites and doing basic site protection would encourage recovery of vegetation on the unused sites, to the benefit of riparian scenery.

Developing off-river camping facilities at White River, Tygh Valley and/or Buckhollow and closing the area between Maupin and Buckhollow to camping would significantly reduce the visual impact of this activity on soil and vegetation. The scenic quality of the area would be improved, creating a more natural-appearing environment for day use.

Prohibiting camping in historically sensitive wildlife areas, closing some boat launch sites, planting native vegetative species and reintroducing native wildlife would permit re-establishment of former wildlife use. If successful, planting native species and reintroducing native wildlife would enhance scenic quality through improved opportunities for viewing wildlife.

## Impacts to Recreation

Nearly every proposed management action would result in direct or indirect impacts on some aspect of recreation use within the planning area. They are summarized in Table 26 and discussed below. The actions which would have the greatest impact on recreation users would be those which limited use levels. Establishing use limits would stabilize recreational use within the planning area allowing resource managers to project management activity needs of boaters and other users. Established user limits would also be a major determinant of capital and other developing requirements and would have a corresponding effect on the degree of visual change that would be expected to occur.

Under a limited entry system, limits are set up on the number of boaters (and other users) allowed on the river. The attempt would be to shift peak-use weekends to non-peak days (primarily weekdays and off-season weekends).

## Impacts to All Boaters

The most significant impacts to boaters would occur as a result of limiting or not limiting boating use levels. If use levels are regulated, the implementation of a limited entry allocation system would have a significant impact on boaters.

Managing:	Preferred Alternative	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Overall Recreation Use (Boaters, Anglers, Campers & Other Recreation Users)	Constant of Constant	et Subarn			ALCONT -
Quantity of Use Quality of Experience	+L +L	+M -L	+M -M	-L +L	-M +M
Roads/Vehicle Use Closing Upgrading Parking	-L +M +M	-L +M +M	+L NC NC	-L +M +M	-L +L NA
Campsites	+M	+H	-L	+M	+L
Boat Launches	+L	+M	-L	+L	NA
Fish & Wildlife	+M	+L	-L	+M	+H
Vegetation	+M	-L	-L	+M	+H
Trails	+L	+L	-L	+L	+L
Fees	-L	+L	NC	-L	-M
Law Enforcement	+M	+L	-M	+M	+H
Information & Education	+M	+L	NC	+M	+H
Overall	+M	+L	-L	+M	+H



Other impacts would result from managing campsites, boat launches, guided and outfitted services and fees. Currently there are no use limitations on the Deschutes River and neither the guided or the non-guided public are required to obtain a permit. An allocation system is unnecessary as long as there is no limited entry system. However, an allocation system would require

users to apply for a permit. All applicants may not receive a permit. The particular allocation system selected may affect the chances of a particular boater (i.e. outfitted vs. non-outfitted) getting a permit. Table 27 shows how consistent each of the allocation methods is with established criteria.

Criteria:	Preferred Alternative	Alt. 1 <sup>2</sup>	Alt. 2 <sup>2</sup>	Alt. 3	Alt. 4
1. Equitable Treatment	+L	NA	NA	+L	+H
2. Disruption to Guides	+M	NA	NA	+M	-L
3. Not Create Private	in the second second				
Property Value	-H	NA	NA	+L	+H
4. Accommodate All Types of Boaters	+L	NA	NA	+L	+L
Guide Service	+M	NA	NA	+M	+L
Public Access	-M	NA	NA	-I.	+1.
7. Efficient System	+L	NA	NA	+L	+M
8. Easy to Administer	+L	NA	NA	-L	+M
9. Penalize Cheaters	+L	NA	NA	+L	+L
10. Flexibility	+M	NA	NA	+L	+H
11. Defensible	-M	NA	NA	-L	+M
Overall	+L	NA	NA	+L	+M

L Low

<sup>2</sup>The issue of allocation of permits between guided and nonguided publics only arises when a decision is made to limit entry to a river. Until that decision is made, anyone that desires to go on the river can do so. Accordingly, no analysis is made in this chart for Alternatives 1 and 2 since they do not include limited entry provisions and allocation is not an issue. If an analysis of Alternatives 1 and 2 were to be included, both would be rated '+' on all criteria.

### **Preferred** Alternative

Impacts on boaters would not be significant during the 3-year trial period. Attempts would be made to shift boater use levels and patterns through indirect and/or voluntary means. If at the end of that period all reasonable efforts to shift boating use to conform with management objectives is unsuccessful, a mandatory limited entry system would be implemented.

Over the long term, the Preferred Alternative would have the effect of stabilizing use at a maximum level. As demand for permits on a daily basis exceeded the supply of available permits, boaters desiring to float the Deschutes during the summer season would be restricted. Use limits would impose constraints on the number of boaters that would be available as a source of business to guides, outfitters and local businesses. A limited entry system would impose additional planning requirements on all members of the public desiring to float the Deschutes River on days for which a permit is required.

Establishment of a limited entry system would to a large extent define the nature of the river experience on each segment of the



Lower Deschutes River. Relatively speaking, the experience on Segments 1, 3 and 4 would be similar from a user density experience and significantly less than that which would be experienced on Segment 2.

If a limited entry system is implemented, overall use levels would be expected to decrease by approximately six percent below the 1988 base levels in the short term due to reductions in peak weekend use assuming that many weekend boaters would not be willing or able to shift their use to weekday periods.

Over the long term, overall river-wide boating use levels would be expected to increase by 12 percent as demand continues to increase and more users shift to weekday use periods. Off-season boating use (Sept./ Oct. through May 15) would not be affected. Table 28 shows the short and long-term impacts on boating use levels by segment. Appendix Q shows what effect the Preferred Alternative would have on 1988 base year boating use levels.

Reductions in use levels over 1988 levels would impact users in a number of ways. Some might shift to weekday periods or to off-season periods. Some may shift to other segments of the river where permits are available. Some may shift to other rivers. Some may shift to other forms of activities. Some may not be able to shift their use and would lose the opportunity to boat on the Deschutes.



The use limits are set for each segment and as a result the impacts will differ by segment. Data used throughout this section are based on boater pass data collected in 1988 and projections made from that data. Weekends are considered to be Friday - Sunday and holidays. Weekdays are Monday - Thursday excluding holidays.

## Segment 1

On Segment 1 there would be significantly fewer boaters on summer weekends than there were during the 1988 base year. Nonseasonal use would not be significantly affected. Somewhat higher levels of weekday use than occurred in 1988 would be expected. Overall boating use levels would be expected to be reduced by 17 percent in the short term and 13 percent in the long term. The user experience on Segment 1 would change as user densities would be greatly decreased on summer weekends and increased on summer weekdays. Changes in user density may affect time in sight and sound of boaters, campers and fishermen. Changes may affect the ability to obtain more desirable campsites and fishing sites, social conflicts, the sense of relative isolation or crowding, and the general perception of the river experience and the Deschutes River canyon.

Segment 1 is 41 miles long. The maximum daily density of use on weekends in this section (500 per day in 41 miles), would be approximately .25 times that of Segment 2, 2.5 times that of Segment 3 and about 1.6 times that of Segment 4. On weekdays, daily density would be approximately .25 times that of Segment 2, 1.5 times that of Segment 3 and equivalent to that of Segment 4. On a seasonal basis, the maximum density of use in this section (47,000 boaters on 41 miles) would be about .25 times that of Segment 2 and about two times that of Segment 3 and 1.5 times that of Segment 4.

In Segment 1, use levels are set at 500 per day on weekends and 300 per day on weekdays from May 15 to September 15. Seasonal limits are set at 47,000 boater days.

During 1988, 14 of 17 weekends exceeded the use levels established for weekend use on Segment 1. If the use limits in this alternative were in place in 1988, 14,600 weekend boaters would not have been able to boat on those weekends in Segment 1. They would have had to either shift their use to another day or segment or they would not have been able to boat the Deschutes. During the summer of 1988, there were 33,900 weekend boaters. The 14,600 that would not have been able to boat on those same weekends constitute 43 percent of the summer weekend boaters in Segment 1. Under the Preferred Alternative, a maximum of 27,500 summer weekend boaters would be accommodated. Weekend use would be reduced by 18 percent from 1988 levels.

During 1988, four of 18 weekday periods exceeded the use levels established for weekday use on Segment 1. If the use limits in this alternative were in place in 1988, 600 weekday boaters would not have been able to boat on those weekdays in Segment 1 when they did. During the summer of 1988, there were approximately 14,600 weekday boaters. The 600 boaters that would not have been able to boat on those same weekdays constitute four percent of the weekday boaters in 1988. Under the Preferred Alternative, a maximum of 20,700 summer weekday boaters would be accommodated. Weekday use would be allowed to increase by 42 percent over 1988 levels.

In addition to daily use limits, there are also seasonal use limits that set a maximum number of users during the summer season (47,000 on Segment 1). On most segments, even though daily use limits might never by exceeded, the seasonal limits could. In that event, it would be necessary to introduce further limitations that may curtail daily use. On Segment 1, the maximum daily use limits nearly equal the seasonal use levels. (An average of 55 weekend days at 500 per day, 69 week-days at 300 per day equals 48,200.)

#### Segment 2

On Segment 2, maximum use levels would generally accommodate the use levels experienced in 1988, both weekend and weekday. Non-seasonal use would not be affected. Overall use for the summer season (May 15 - September 15) would be allowed to increase by 31 percent over 1988 levels in the long term.

The user experience with regard to levels of use in 1988 would be relatively unchanged from what existed during most of the 1988 season. However, growth in use over 1988 levels for summer weekends would be significantly limited. Substantial summer weekday growth in user numbers could occur. The user experience may be affected by the relative density as described under Segment 1.

Segment 2 is 15 miles long. The maximum daily density of use in this section on weekends (1,500 boaters per day in 15 miles), would be approximately four times that of Segment 1, 11 times that of Segment 2 and eight times that of Segment 4. On weekdays the maximum density (800 per day in 15 miles), would be about four times that of Segment 1, six times that of Segment 3 and four times that of Segment 4. On a seasonal basis, the density (71,000 in 15 miles) would be four times that in Segment 1, nine times that of Segment 3 and six times that of Segment 4.

On Segment 2, use levels would be set at 1,500 per day on summer weekends and 800 per day on summer weekdays. The seasonal use limit would be set at 71,000 boater days.

During 1988, six of 17 summer weekends exceeded the use levels established for weekend use on Segment 2. If the use limits under the Preferred Alternative had been in place in 1988, 2,500 boaters would not have been able to boat on those weekends in Segment 2 when they did. They would have been required to shift their use to another day or segment or they would not have been able to boat the Deschutes. During the summer of 1988 there were approximately 39,000 summer weekend boaters. The 2,500 that would not have been able to boat on the same weekend when they did would constitute six percent of the 1988 summer weekend use. Under the Preferred Alternative, a maximum of 82,500 weekend boaters would be accommodated by weekend daily permits, however, the seasonal limit of 71,000 would not allow this.

During 1988, 0 of 18 summer weekday periods exceeded the use levels established for weekday use on Segment 2. If the use limits under the Preferred Alternative had been in place in 1988, all boaters would have been able to boat on those weekdays in



Segment 2 when they did. During the summer of 1988, there were 9,200 summer weekday boaters. Under the Preferred Alternative, a maximum of 55,200 weekday boaters would be accommodated by weekday daily permits, however, the seasonal limit of 71,000 including weekends would not allow this.

In addition to daily use limits, there are also seasonal use limits that set a maximum number of users during the summer season (71,000 on Segment 2). Even though daily use limits might never be exceeded, the seasonal limits could. In that event, it would be necessary to introduce further limitations that would curtail daily use. On Segment 2, the maximum daily use limits far exceed the seasonal use levels. (An average of 55 weekend days at 1,500 per day, 69 weekdays at 800 per day equals 137,700.)

#### Segment 3

On Segment 3, maximum use levels would accommodate the use levels experienced in 1988 both weekends and weekdays. Non-seasonal use would not be affected. Overall use for the summer season could increase by 100 percent over 1988 levels. The user experience would be expected to change significantly from that experienced in 1988. Generally, growth in use during both summer weekends and weekdays would be expected to occur. User experience would be affected by the relative density of use in the same ways described under Segment 1 above.

Segment 3 is 21 miles long. The maximum daily density of use on summer weekends in this section (200 boaters per day in 21 miles) would be approximately .4 times that of Segment 1, .1 times that of Segment 2 and .75 times that of Segment 4. The maximum daily density of use on summer weekdays would be approximately .66 times that of Segment 1, .16 times that of Segment 2 and .75 times that of Segment 4. On a seasonal basis, the maximum density of use (11,000 in 21 miles) would be .5 times that of Segment 1, .12 times that of Segment 2 and .5 times that of Segment 4.

In Segment 3, daily boater use levels are set at 200 per day for both weekends and weekdays. Seasonal limits are set at 11,000 boater days.

During 1988, two of 17 summer weekends exceeded the use levels established for weekend use on Segment 3. If the use limits under the Preferred Alternative had been in place in 1988, 50 boaters would not have been able to boat on those weekends in Segment 3 when they did. They would have been required to shift their use to another day or segment or they would not have been able to boat the Deschutes. During the summer of 1988, there were approximately 4,000 summer weekend boaters. The 50 that would not have been able to boat on the same weekend when they did would constitute one percent of the 1988 summer weekend use. Under the Preferred Alternative, a maximum of 11,000 weekend boaters would be accommodated by weekend daily permits. However, the seasonal limit of 11,000 weekend and weekday boaters would not be allowed.

During 1988, 0 of 18 summer weekday periods exceeded the use levels established for weekday use on Segment 3. If the use limits under the Preferred Alternative had been in place in 1988, all boaters would have been able to boat on those weekdays in

Segment 3 when they did. During the summer of 1988, there were approximately 1,800 summer weekday boaters. Under the Preferred Alternative, a maximum of 13,800 weekday boaters would be accommodated by weekday daily permits. However, the seasonal limit of 11,000 (including weekends) would not allow this.

In addition to daily use limits, there are also seasonal use limits that set a maximum number of boaters during the summer season (11,000 on Segment 3). Even though daily use limits might never be exceeded, the seasonal limits could. On Segment 3, the maximum daily use limits far exceed the seasonal use levels. (An average of 55 weekend days at 200 per day, 69 weekdays at 200 per day equals 24,800.)

#### Segment 4

On Segment 4, the summer season is defined differently from other segments because of the fall steelhead fishery that exists. The primary use season is from May 15 to October 15. This adds four weekends and four weekday periods to the primary use season when use limits would be in effect.

On Segment 4, maximum use levels would significantly reduce the late summer weekend use levels over those experienced in 1988 and would accommodate summer weekday and early to mid-summer weekend use levels experienced in 1988. Overall use for the season would be increased by seven percent over 1988 levels. Except for late summer weekends, user experience with regard to user levels would be relatively unchanged from that which existed in 1988. Generally, growth could occur in early to mid-summer weekends and most summer weekdays. There would be fewer boaters on mid- to late summer weekends. The user experience would be affected by the relative density as described under Segment 1 above.

Segment 4 is 23 miles long. The maximum daily density of use on summer weekends in this section (300 boaters per day in 23 miles) would be approximately .6 times as much as that of Segment 1, .13 times that of Segment 2 and 1.4 times that of Segment 3. The maximum daily density of use on summer weekdays (300 boaters in 23 miles) would be approximately equal to that of Segment 1, .2 times that of Segment 2 and 1.4 times that of Segment 3. On a seasonal basis, the maximum density of use (23,000 in 23 miles) would be about the same as that of Segment 1, .2 times that of Segment 2, and two times that of Segment 3.

On Segment 4, use levels would be set at 300 boaters per day for both weekends and weekdays. Seasonal limits would be set at 23,000 boater days.

During 1988, ten of 21 summer weekends exceeded the use levels established for weekend use on Segment 4. If the use limits under the Preferred Alternative had been in place in 1988, 1,250 boaters would not have been able to boat on those weekends in Segment 4 when they did. They would have been required to shift their use to another day or segment or they would not have been able to boat the Deschutes. During the summer of 1988, there were 13,600 summer weekend boaters. The 1,250 that would not have been able to boat on the same weekend when they did would constitute nine percent of the 1988 summer weekend use. Under the Preferred Alternative, a maximum of 20,700 weekend boaters would be accommodated by weekend daily permits. However, the seasonal limit of 23,000 (including weekdays) would not allow this.



During 1988, one of 22 summer weekday periods exceeded the use levels established for weekday use on Segment 4. If the use limits under the Preferred Alternative had been in place in 1988, 125 boaters would not have been able to boat on those weekdays in Segment 4 when they did. During

the summer of 1988, there were 8,300 summer weekday boaters. The 125 boaters that would not have been able to boat on the same weekday they did would constitute 1.5 percent of the 1988 weekday boaters. Under the Preferred Alternative, a maximum of 25,500 weekday boaters would be accommodated by weekday daily permits. However, the seasonal limit of 23,000 including weekends would not allow this.

In addition to daily use limits, there are also seasonal use limits that set a maximum number of users during the summer season (23,000 on Segment 4). Even though daily use limits might never be exceeded, the seasonal limits could. In that event, it would be necessary to introduce further limitations that would curtail daily use. On Segment 4, the maximum daily use limits far exceed the seasonal use levels. (Sixty-nine weekend days at 300 per day, 85 weekdays at 300 per day equals 46,200.)

Table 28. Impacts of Preferred Alternative on Short Term and Long Term Boating Use Levels During Primary Use Season<sup>1</sup>

	Base Year Use Levels (1988)	No. of Wee Periods W Present Ov Use Levels Be: Increased	ekend hen verall Would Decreased	No. of We Periods W Present Ov Use Levels Be: Increased	ekday hen verall s Would Decreased	Total No. of Weekend Boaters Displaced	Total No. of Weekday Boaters Displaced	Estimated Short Term Boating Use Levels <sup>2</sup>	Long Term Boating Use Levels	Estimated Short Term Change in Boating Levels	Long Term Change in Boating Use Levels
Segment 1	54,300 (May 15- Sept. 15)	3	14	14	4	14,600	600	45,300	47,000	-9,000	-7,300
Segment 2	53,900 (May 15- Sept. 15)	11	6	18	0	2,500	0	54,500	71,000	+600	+17,100
Segment 3	5,500 (May 15- Sept. 15)	15	2	18	0	50	0	5,500	11,000	0	+5,500
Segment 4	21,500 (May 15- Oct. 15)	11	10	21	1	1,250	125	21,900	23,000	+400	+1,500
Total	135,200	A vera re				18,400	725	127,200	152,000	-8,000	+16,800

<sup>2</sup>It is estimated that 25 percent of displaced weekend boaters would adjust their period of use to weekdays in short term.
## Allocation Method

The 40 percent common pool split allocation method proposed under this alternative would be based on actual use patterns of the outfitted and non-outfitted publics, as observed during a three-year period. Forty percent of the permits would be taken off the top for a common pool where both outfitted and non-outfitted publics would compete. Both groups would have a fixed percentage of the remaining 60 percent of the total permits. The 40 percent common pool would allow for flexibility in adjusting to varying demands for outfitted and non-outfitted use. In the short term, until the five-year adjustment occurs, any major change in use patterns (e.g. a major increase in either outfitted or non-outfitted trips) would not be reflected in the system and one group would be disadvantaged and another advantaged. The outfitted public would be assured of 60 percent of their allocation based on historic use. The non-outfitted public would be guaranteed 60 percent of their allocation based on historic use.

The determination of the use split between the outfitted and non-outfitted users would be based on three years' data collected following the finalization of the plan (the 1992-1994 seasons). Using data from these years may lead to increasing use as the outfitted and non-outfitted public may attempt to "stack the deck" in their favor by gaining the maximum initial allocation. This would occur during a period in which voluntary methods would be used to attempt to curb use in order to avoid implementation of a limited entry system. Extensive data on commercial and noncommercial use would be collected during this period covering the entire Lower Deschutes River.

## Adjustment

This use split would be adjusted every five years as a result of changing demand. The provision for periodic adjustments may lead to attempts to manipulate the system by both the outfitted and non-outfitted publics in order to increase their respective percentage. Efforts would be made to minimize this potential. Sixty percent of the use would be affected by this split. Time and expense would be required to gather necessary data and agree on appropriate adjustments.

#### **Guide** Limits

Limiting the number of commercial guides operating on the river to 80 may promote better quality outfitter services by providing a relatively stable and predictable business environment with less turnover. New guides may have a long wait or may not be able to operate on the river as a result of limiting the number of permitted guides.

## Permit Transfer

As guide numbers reduce to the 80-guide cap through attrition, there would be no opportunity to transfer permits and as a result, the permit would be lost. Because of the possibility of later gain, there would be some incentive for guides to avoid this limitation. Only as guide numbers reach and eventually fall below 80 would guides be allowed to transfer permits and gain the economic benefits associated with the sale of their business. Any value associated with possession of a permit could also be



conveyed at the time of sale. Individual outfitters would benefit as a result of their ability to transfer their permits and realize any resulting value from having a limited access right for commercial use to the Deschutes. Permit transfers would be carried out in accordance with existing BLM regulations.

The public in general would not realize any value associated with transfer of possession of one of a limited number of commercial permits on the Deschutes River. This value would be implied in a portion of the sale price. The outfitted public could be adversely affected by possibly incurring higher costs since outfitters entering the market through purchase of a business would amortize that cost with their operating expenses, which in turn may affect the price to the public seeking trips. If costs to the public are increased, a portion (three percent) of those costs would be paid to the BLM as use fees.

Those outfitters leaving the system through attrition would not realize the same advantages as those leaving after the 80outfitter cap has been reached.

## Permit Distribution Dates (private - Dec. 1) (guided - March 1)(pool - April 1)

Sixty percent of the non-outfitted permits would be made available in December for those users who have planned their trips by that time. Sixty percent of the outfitted permits would be made available a year in advance of the use season allowing the guides to calendar and book their commercial trips in advance. The 40 percent common pool in April would be available for both outfitted and non-outfitted users. Making all these permits available in April may result in a situation where there are no permits available for the "on-the-spur-of-the-moment" users.

The impact of fees that would be levied under this alternative would not significantly affect use levels. The quality of experience would be enhanced slightly as a result of additional revenue being available for management and/or facility development.

Designation of hike-in angling only between Moody and Rattlesnake would have little impact on boat-borne anglers since few of them currently stop and fish there.



# Alternative 1

There would be no limits set on the number of boaters under this alternative. Overall boating use levels would be expected to increase by 33 percent by 1995 as a result of not limiting the numbers of boaters. See Appendix T for boating use projections. Table 29 shows the short and long term impacts on boating use levels by segment. Crowding levels would increase, however additional facilities would also be provided to better accommodate this use.

### Segment 1

Segment 1 is 41 miles long. The average daily density of use on weekends in this section was approximately .33 times that of Segment 2 and 12 times that of Segment 3 and two times that of Segment 4 in 1988. On weekdays, average daily density was approximately .6 times that of Segment 2, 1.4 times that of Segment 3 and equivalent to that of Segment 4 in 1988. On a seasonal basis, the density of use in this section (54,300 boaters on 41 miles) was about .33 times that of Segment 2, about five times that of Segment 3 and about 1.7 times that of Segment 4.

## Segment 2

Segment 2 is 15 miles long. The average daily density of use on weekends in this section was approximately three times that of Segment 1, 40 times that of Segment 3 and five times that of Segment 4 in 1988. On weekdays, daily density was approximately 1.8 times that of Segment 1, three times that of Segment 3 and two times that of Segment 4 in 1988. On a seasonal basis, the density of use in this section (53,900 boaters on 15 miles) was about three times that of Segment 1, about 15 times that of Segment 3, and above five times that of Segment 4.

## Segment 3

Segment 3 is 21 miles long. The average daily density of use on weekends in this section was approximately .8 times that of Segment 1, .02 times that of Segment 2 and .12 times that of Segment 4 in 1988. On weekdays, daily density was approximately .66 times that of Segment 1, .33 times that of Segment 2 and .75 times that of Segment 4 in 1988. On a seasonal basis, the density of use in this section (5,500 boaters on 21 miles) was about .2 times that of Segment 1, about .06 times that of Segment 2 and about .33 times that of Segment 4.

## Segment 4

Segment 4 is 23 miles long. The average daily density of use on weekends in this section was approximately .5 times that of Segment 1, .2 times that of Segment 2 and eight times that of Segment 3 in 1988. On weekdays, daily density was approximately equivalent to that of Segment 1, .5 times that of Segment 2 and 1.2 times that of Segment 3 in 1988. On a seasonal basis, the density of use in this section (21,500 boaters on 21 miles) was about .6 times that of Segment 1, about .2 times that of Segment 2 and about three times that of Segment 3.



Doing away with the present boater pass program and charging camping fees and three percent of gross revenue of guides would not have a significant effect on boating use levels.

Alternative 2

Impacts to boaters under this alternative would be the same as Alternative 1 except that no new facilities would be constructed to accommodate an anticipated increase of 33 percent in boating use levels by 1995. Table 29 summarizes the effect of this alternative on short and long term boating use levels by segment.

There would be no change in fees charged under this alternative.

Table 29. Impacts of Alternatives 1 and 2 on Short Term and Long Term Boating Use Levels During Primary Use Season<sup>1</sup>

	Base Year Use Levels (1988)	No. of Wee Periods W Present Ov Use Levels Be: Increased	ekend hen verall Would Decreased	No. of Wey Periods W Present Ov Use Levels Be: Increased	ekday hen verall Would Decreased	Total No. of Weekend Boaters Displaced	Total No. of Weekday Boaters Displaced	Estimated Short Term Boating Use Levels	Boating Use Levels (1995) <sup>2</sup>	Estimated Short Term Change in Boating Levels	Change in Boating Use Levels (1995) <sup>2</sup>
Segment 1	54,300 (May 15- Sept. 15)	17	0	18	0	0	0	54,300	72,000	0	+17,700
Segment 2	53,900 (May 15- Sept. 15)	17	0	18	0	0	0	53,900	72,000	0	+18,100
Segment 3	5,500 (May 15- Sept. 15)	17	0	18	0	0	0	5,500	7,000	0	+1,500
Segment 4	21,500 (May 15- Oct. 15)	21	0	22	0	0	0	21,500	29,000	0	+7,500
Total	135,200		-	-	4	0	0	135,200	180,000	0	+44,800
<sup>1</sup> Primary us <sup>2</sup> Projections	e season for Segme taken from Apper	ents 1, 2 and ndix T.	3 - May 15 t	o Septembe	r 15 (121 day	vs); Segment 4 -	May 15 - Octob	oer 15 (152 days)		Wienti Providencial Providencial	

## Alternative 3

While present overall boating use levels would not be significantly affected over the long term under this alternative, short term use levels and the pattern of use during the primary use season would be significantly changed. Peak weekend use levels would be reduced by as much as 70 percent in some segments. Overall long-term boating use levels would not be changed significantly. Off-season boating use levels (Sept./Oct. through May 15) would not be affected significantly. Table 30 shows the short and long term impacts on boating use levels by segment. Appendix Q shows what effect this alternative would have on 1988 base year boating use levels.

Alternative 3 limits boaters to approximately the same overall levels as 1988 by averaging their use over the entire summer use period. This would create significant reductions in weekend levels in all segments of the river and significant increases in all segments on weekdays. It would affect boater perceptions as discussed under Segment 1 in the Preferred Alternative.

#### Segment 1

Segment 1 is 41 miles long. The maximum daily density of use on all days in this section (450 per day in 41 miles) and the maximum seasonal density (55,800 boaters in 41 miles) would be approximately .3 times that of Segment 2 and about five times that of Segment 3 and two times that of Segment 4.

In Segment 1, use levels would be set at 450 per day from May 15 to September 15.

During 1988, 14 of 17 weekends exceeded the use levels established for weekend use on Segment 1. If the use limits in this alternative were in place in 1988, approximately 16,200 weekend boaters would not have been able to boat on those weekends in Segment 1 when they did. They would have had to either shift their use to another day or segment or they would not have been able to boat the Deschutes. During the summer of 1988, there were 33,900 weekend boaters. The 16,200 that would not have been able to boat on those same weekends constitute 48 percent of the summer weekend boaters. Under Alternative 3, a maximum of 24,750 summer weekend boaters would be accommodated. Weekend boaters would have to be reduced by 27 percent.

During 1988, one of 18 weekday periods exceeded the use levels established for weekday use on Segment 1. If the use limits in this alternative were in place in 1988, 150 weekday boaters would not have been able to boat on those weekdays in Segment 1 when they did. During the summer of 1988, there were 14,500 weekday boaters. The 150 boaters that would not have been able to boat would constitute 1.5 percent of the 1988 weekday boaters. Under Alternative 3, a maximum of 31,000 summer weekday boaters would be allowed to increase by 112 percent.



Segment 2

Segment 2 is 15 miles long. The maximum daily density of use in this section on all days (450 boaters per day in 15 miles) and for the season (55,800 boaters in 15 miles) would be approximately three times that of Segment 1, 12 times that of Segment 2 and five times that of Segment 4.

On Segment 2, use levels would be set at 450 per day on summer days.

During 1988, 16 of 17 summer weekends exceeded the use levels established for weekend use on Segment 2. If the use limits under Alternative 3 had been in place in 1988, 23,750 boaters would not have been able to boat on those weekends in Segment 2 when they did. They would have been required to shift their use to another day or segment or they would not have been ble to boat the Deschutes. During the summer of 1988 there were approximately 39,000 summer weekend boaters. The 23,750 that would not have been able to boat on the same weekend when they did would constitute 61 percent of the 1988 summer weekend use. Under Alternative 3, a maximum of 24,750 weekend boaters would be accommodated by weekend daily permits. Total weekend boaters would be reduced by 36 percent.

During 1988, one of 18 summer weekday periods exceeded the use levels established for weekday use on Segment 2. If the use limits under this alternative had been in place in 1988, 70 boaters would not have been able to boat on those weekdays in Segment 2 when they did. During the summer of 1988, there were 9,200 summer weekday boaters. The 70 boaters that would not have been able to boat on the same weekday they did would constitute less than one percent of the 1988 weekday boaters. Under Alternative 3, a maximum of 31,050 weekday boaters would be accommodated by weekday daily permits. There could be as much as a 240 percent increase in weekday boaters.

## Segment 3

Segment 3 is 21 miles long. The maximum daily density of use on summer days in this section (50 boaters per day in 21 miles) and the seasonal density (6,200 boaters in 21 miles) would be approximately .2 times that of Segment 1, .08 times that of Segment 2 and .33 times that of Segment 4.

In Segment 3, daily boater use levels would be set at 50 per day for both weekends and weekdays.

During 1988, 14 of 17 summer weekends exceeded the use levels established for weekend use on Segment 3. If the use limits under Alternative 3 had been in place in 1988, 1,900 boaters would not have been able to boat on those weekends in Segment 3 when they did. They would have been required to shift their use to another day or segment or they would not have been able to boat the Deschutes. During the summer of 1988 there were approximately 4,000 summer weekend boaters. The 1,900 that would not have been able to boat on the same weekend when they did would constitute 47 percent of the 1988 summer weekend use. Under Alternative 3, a maximum of 2,750 weekend boaters would be accommodated by weekend daily permits. Weekend use would be reduced by 33 percent.

During 1988, six of 18 summer weekday periods exceeded the use levels established for weekday use on Segment 3. If the use limits under Alternative 3 had been in place in 1988, 400 boaters would not have been able to boat on those weekdays in Segment 3 when they did. The 400 that would not have been able to boat would constitute 21 percent of the 1988 weekday boaters. During the summer of 1988 there were 1,800 summer weekday boaters. Under this alternative, a maximum of 3,450 weekday boaters would be accommodated by weekday daily permits. There could be an increase of as much as 89 percent in weekday boating levels.

#### Segment 4

On Segment 4, the summer season is defined differently from other segments due to the fall steelhead fishery that exists in this area. The primary use season is May 15 to October 15. This adds four weekends and four weekday periods to the primary use season when use limits would be in effect.

Segment 4 is 23 miles long. The maximum daily density of use on summer days in this section (150 boaters per day in 23 miles) and the maximum seasonal density (23,100 in 23 miles) would be approximately .5 times that of Segment 1, .2 times that of Segment 2 and three times that of Segment 3.

On Segment 4, use levels are set at 150 boaters per day for both weekends and weekdays.

During 1988, 15 of 21 summer weekends exceeded the use levels established for weekend use on Segment 4. If the use limits under Alternative 3 had been in place in 1988, 5,500 boaters would not have been able to boat on those weekends in Segment 4 when they did. They would have been required to shift their use to another day or segment or they would not have been able to boat the Deschutes. During the summer of 1988 there were 13,600 summer weekend boaters. The 5,500 that would not have been able to boat on the same weekend when they did would constitute 42 percent of the 1988 summer weekend use. Under Alternative 3, a maximum of 10,350 weekend boaters would be accommodated by weekend daily permits. Weekend use would be reduced by 25 percent.

During 1988, ten of 22 summer weekday periods exceeded the use levels established for weekday use on Segment 4. If the use limits under Alternative 3 had been in place in 1988, approximately 1,400 boaters would not have been able to boat on those weekdays in Segment 4 when they did. During the summer of 1988, there were 8,300 summer weekday boaters. The 1,400 that would not have been able to boat on the same weekday when they did would constitute 17 percent of the 1988 summer weekday use. Under Alternative 3, a maximum of 12,750 weekday boaters would be accommodated by weekday daily permits. Weekday use could increase by 53 percent.

#### Allocation Method

The 15 percent common pool historic split allocation method proposed under this alternative would be based on actual use patterns between outfitted and non-outfitted publics, based on 1988 data, with 15 percent taken off the top for a common pool



(ten percent from the non-outfitted public and five percent from the outfitted public). The outfitted and non-outfitted publics would have a fixed percentage of the total allocation in which to compete for permits. The 15 percent common pool would allow for some flexibility for adjusting the allocation of outfitted and non-outfitted use.

Individual guides would not receive a set number of permits and as a result, the outfitted public would not be able to book trips with any guarantee. They would have to wait for a lottery drawing or attempt to obtain left-over permits or turned back permits. The guides would be unable to book trips until a lottery date which may not coincide with printing of brochures and other marketing efforts. Some would get more than their individual historic share and others could get less.

The determination of historic use would be based on use as it existed in the 1988 base year. Data on the outfitted public is not as accurate as the data on the non-outfitted public which is based on boater pass information. Use of past data is less likely to cause manipulation of data than use of data which has not yet been collected.

## Adjustment

Under this alternative, there would be no periodic adjustment of the historic split. If use patterns change, adherence to this historic split would result in inequities and would become a point of contention between the outfitted and non-outfitted publics. No time or expense would be incurred in collecting and evaluating adjustment data, as it would under the Preferred Alternative.

# Guide Limit

Limiting the number of commercial guides operating on the river to 90 would provide a relatively stable and predictable business environment for guides. This is a slightly higher number than in the Preferred Alternative with similar impacts.

# Permit Transfer

Prohibiting the transfer of permit allocations by individual guides would prevent the guide from realizing an economic benefit from the value associated with the permit. Any value created by limiting the number of commercial opportunities available could not be realized as part of a business sale. The outfitted public would not be affected by any possible increased costs associated with the sale of the permitted business.

Permit Distribution Dates (Dec. 1 - 20 percent) (April 1 - 20 percent) (two weeks prior to launch - 60 percent)

Distributing the permit availability from December through the use season would allow for the public to obtain a chance for a launch date on three different planning horizons. Those who plan in advance could utilize the December or April lottery

drawings (20 percent of the permits in each) while those who tend to operate on the spur of the moment could pick up left-over permits from the lottery drawing or for the 60 percent of the permits set aside for the use season. The availability of a set number of permits throughout the use season would be a more costly and complex system to set up and administer than the set lottery dates.

Charging an all-user fee under this alternative would not significantly affect overall use levels. The quality of the recreation experience would be slightly enhanced as a result of additional revenue being available for management and/or facility development.

# Table 30. Impacts of Alternative 3 on Short Term and Long Term Boating Use Levels During Primary Use Season<sup>1</sup>

	Base Year Use Levels (1988)	No. of Wee Periods W Present Ov Use Levels Be: Increased	ekend hen verall s Would Decreased	No. of We Periods W Present Ov Use Levels Be: Increased	ekday hen verall s Would Decreased	Total No. of Weekend Boaters Displaced	Total No. of Weekday Boaters Displaced	Estimated Short Term Boating Use Levels <sup>2</sup>	Long Term Boating Use Levels	Estimated Short Term Change in Boating Levels	Long Term Change in Boating Use Levels
Segment 1	54,300 (May 15- Sept. 15)	3	14	17	1	16,200	150	44,500	54,500	-9,800	+200
Segment 2	53,900 (May 15- Sept. 15)	1	16	17	1	23,750	70	38,000	54,500	-15,900	+600
Segment 3	5,500 (May 15- Sept. 15)	3	14	12	6	1,900	400	4,000	6,000	-1,500	+500
Segment 4	21,500 (May 15- Oct. 15)	6	15	12	10	5,500	1,400	16,000	22,800	-5,500	+1,300
Total	135,200	-	-	-	-	47,350	2,020	102,500	137,800	-32,700	+2,600

<sup>1</sup>Primary use season for Segments 1, 2 and 3 - May 15 to September 15 (121 days); Segment 4 - May 15 - October 15 (152 days). See Appendix Q. <sup>2</sup>It is estimated that 25 percent of displaced weekend boaters would adjust their period of use to weekdays in the short term.



Alternative 4

This alternative would significantly reduce overall boating use levels below 1988 levels. Nearly all weekend levels and some weekday levels as well as overall use levels would be reduced. Table 31 shows the short and long term impacts on boating use levels by segment. Appendix Q shows the effect of this alternative on 1988 base year boating use levels would be significantly reduced, especially in Segment 4 as a result of the year-round ban on motorboats.

Segment 1

Segment 1 is 41 miles long. The maximum daily density of use on all days in this section (300 per day in 41 miles) and the maximum seasonal density (37,200 boaters in 41 miles) would be approximately .3 times that of Segment 2, and about five times that of Segments 3 and 1.7 times that of Segment 4.

In Segment 1, use levels would be set at 300 per day from May 15 to September 15.

During 1988, 16 of 17 weekends exceeded the use levels established for weekend use on Segment 1. If the use limits in this alternative were in place in 1988, 21,000 weekend boaters would not have been able to boat on those weekends in Segment 1 when they did. They would have had to either shift their use to another day or segment or they would not have been able to boat the Deschutes. During the summer of 1988, there were approximately 34,000 weekend boaters. The 21,000 that would not have been able to boat on those same weekends constitute 62 percent of the summer weekend boaters. Under Alternative 4, a maximum of 16,500 summer weekend boaters would be accommodated. Weekend boaters would have to be reduced by 52 percent.

During 1988, eight of 18 weekday periods exceeded the use levels established for weekday use on Segment 1. If the use limits in this alternative were in place in 1988, 700 weekday boaters would not have been able to boat on those weekdays in Segment 1 when they did. During the summer of 1988, there were 14,500 weekday boaters. The 700 boaters that would not have been able to boat would constitute five percent of the 1988 weekday boaters. Under Alternative 4, a maximum of 20,700 summer weekday boaters would be accommodated. Weekday use would be allowed to increase by 42 percent.

# Segment 2

Segment 2 is 15 miles long. The maximum daily density of use in this section on all days (300 boaters per day in 15 miles) and for the season (37,200 boaters in 15 miles) would be approximately three times that of Segment 1, 14 times that of Segment 3 and five times that of Segment 4.

On Segment 2, use levels would be set at 300 per day on summer days.

During 1988, 17 of 17 summer weekends exceeded the use levels established for weekend use on Segment 2. If the use limits under Alternative 4 had been in place in 1988, 29,500 boaters would not have been able to boat on those weekends in Segment 2 when they did. They would have been required to shift their use to another day or segment or they would not have been able to boat the Deschutes. During the summer of 1988 there were approximately 39,000 summer weekend boaters. The 29,500 that would not have been able to boat on the same weekend when they did would constitute 76 percent of the 1988 summer weekend use. Under Alternative 4, a maximum of 16,500 weekend boaters would be accommodated by weekend daily permits. Total weekend boaters would be reduced by 58 percent.

#### Segment 3

Segment 3 is 21 miles long. The maximum daily diversity of use would be set at 30 boaters per day for both weekends and weekdays.

During 1988, nine of 18 summer weekday periods exceeded the use levels established for weekday use on Segment 3. If the use limits under Alternative 4 had been in place in 1988, 700 boaters would not have been able to boat on those weekdays in Segment 3 when they did. During the summer of 1988 there were about 1,800 summer weekday boaters. The 700 that would not have been able to boat when they did would constitute 38 percent of the weekday boaters in 1988. Under Alternative 4, a maximum of 2,100 weekday boaters would be accommodated by weekday daily permits. There could be an increase of 13 percent in weekday boating levels.

## Segment 4

On Segment 4, the summer season is defined differently from other segments and is May 15 to October 15. This adds four weekends and four weekday periods to the primary use season when use limits would be in effect.

Segment 4 is 23 miles long. The maximum daily density of use on summer days in this section (100 boaters per day in 23 miles) and the maximum seasonal density (15,400 in 23 miles) would be approximately .66 times that of Segment 1, .2 times that of Segment 2 and three times that of Segment 3. On Segment 4, use levels would be set at 100 boaters per day for both weekends and weekdays.

During 1988, 17 of 21 summer weekends exceeded the use levels established for weekend use on Segment 4. If the use limits under Alternative 4 had been in place in 1988, 8,000 boaters would not have been able to boat on those weekends in Segment 4 when they did. They would have been required to shift their use to another day or segment or they would not have been able to boat the Deschutes. During the summer of 1988 there were 13,600 summer weekend boaters. The 8,000 that would not have been able to boat on the same weekend when they did would constitute 58 percent of the 1988 summer weekend use. Under Alternative 4, a maximum of 6,900 weekend boaters would be accommodated by weekend daily permits. Weekend use would be reduced by 50 percent.



During 1988, 12 of 22 summer weekday periods exceeded the use levels established for weekday use on Segment 4. If the use limits under Alternative 4 had been in place in 1988, 3,000 boaters would not have been able to boat on those weekdays in Segment 4 when they did. During the

summer of 1988, there were 8,300 summer weekday boaters. The 3,000 that would not have been able to boat on the same summer weekday when they did would constitute 35 percent of th 1988 summer weekday use. Under Alternative 4, a maximum of 8,500 weekday boaters would be accommodated by weekday daily permits. Weekday use could increase by 2 percent.

# Table 31. Impacts of Alternative 4 on Short Term and Long Term Boating Use Levels During Primary Use Season<sup>1</sup>

ar an 1 an ar polo 10 10 10 10 10 10 10 10 10 10 10 10 10	Base Year Use Levels (1988)	No. of Wee Periods W Present Ov Use Levels Be: Increased	ekend hen verall Would Decreased	No. of Wee Periods W Present Ov Use Levels Be: Increased	ekday hen verall Would Decreased	Total No. of Weekend Boaters Displaced	Total No. of Weekday Boaters Displaced	Estimated Short Term Boating Use Levels <sup>2</sup>	Long Term Boating Use Levels	Estimated Short Term Change in Boating Levels	Long Term Change in Boating Use Levels
Segment 1	54,300 (May 15- Sept. 15)	1	16	10	8	21,000	700	36,300	36,300	-18,000	-18,000
Segment 2	53,900 (May 15- Sept. 15)	0	17	12	6	29,500	1,200	33,000	36,300	-20,900	-17,600
Segment 3	5,500 (May 15- Sept. 15)	2	15	9	9	2,600	700	3,200	3,630	-2,300	-1,870
Segment 4	21,500 (May 15- Oct. 15)	4	17	10	12	8,000	3,000	13,500	15,200	-8,000	-6,300
Total	135,200	-	-	-	-	61,100	5,600	86,000	91,430	-49,200	-43,770

<sup>1</sup>Primary use season for Segments 1, 2 and 3 - May 15 to September 15 (121 days); Segment 4 - May 15 - October 15 (152 days). See Appendix Q. <sup>2</sup>It is estimated that 25 percent of displaced weekend boaters would adjust their period of use to weekdays.

### Allocation Method

The 100 percent common pool allocation method proposed under this alternative would allow all members of the public submitting applications to boat on the river to have an identical chance of getting selected. Guides or private boaters would be able to expand their use beyond or fall below historical levels based on market demands and success or failure in the lottery. This method would provide total flexibility between the amounts of outfitted versus non-outfitted publics use.

The guided industry would be affected by this allocation system in that there would be no guarantee of permits to the individual guides or the guiding industry. The guides would be unable to book trips until a lottery date which may not coincide with printing of brochures and other marketing efforts. Some would get more than their individual historic share and others would get less. The outfitted public is generally less familiar with 'applying for use permits than the non-outfitted public. Under this alternative the outfitted public could apply for a permit or have the guide apply for the permit for them.

The outfitted public would not be able to book trips with any guarantee. They would have to wait for a lottery drawing or attempt to obtain left-over permits or turned back permits.

No administrative costs would be necessary to determine historic or future use ratios. Over time as use patterns change, this system would automatically accommodate these changes.

### Adjustment

Under this alternative, there would be no periodic adjustment of the historical split since changes are automatically accommodated by the system.

Guide Limit

Same as Preferred Alternative.

Permit Transfer

Same as Alternative 3

Permit Distribution Dates (Dec. 1 - 25 percent) (April 1 - 25 percent) (two weeks prior to launch - 50 percent)

#### Same as Alternative 3

The charging of an all-user fee would not significantly affect overall use levels. The quality of experience would be slightly enhanced as a result of additional revenue being available for management and/or facility development.



# Impacts to Nonmotorized Boaters

All boaters would be affected by managing use levels and the impacts resulting from a limited entry system. In addition, impacts to nonmotorized boaters would also result from managing motorized boats, campsites and boat launches.

# **Preferred** Alternative

Banning or restricting motorized boats would have a significant beneficial effect as a result of reduced competition and conflict resulting from noise, boat wakes, etc. Allowing motorboats to operate only between sunrise and sunset and limiting the number of trips per day would also reduce conflicts and congestion during the periods when motorboats would be allowed. Requiring all floating craft to display a boat identification tag would likely result in better overall visitor behavior and fewer

conflicts as a result of more accountability and easier identification of users for law enforcement purposes. Limiting party size for nonmotorized boat users to 16 in Segments 1, 3 and 4 and 24 in Segment 2 would reduce overall recreational use to a slight degree. Reduced peak levels of boating use would result in less crowding at launch sites and competition for campsites. The result would be fewer conflicts between users. Providing site protection facilities at campsites would also improve the quality of the experience. Improving major boat launches and closing the Sherars Falls landing site and providing improvements for landings at Sandy Beach would enhance boater safety and convenience.

During the periods when motorized boats would not be allowed, the social conflicts and competition between motorized and nonmotorized boat users would not occur. Nonmotorized boat users would have the opportunity of deciding whether or not they wanted to float the river when motorized boats would be present or when the river would be used solely by nonmotorized boats during the 8-week restricted period. During the remaining ten months of the year, motorized and nonmotorized boat use in the lower 31 miles of the river would continue to occur together. Conflict between motorized and nonmotorized boaters would still occur during the periods of time that motorized



boats are allowed.

## Alternative 1

Not restricting boating use levels or restricting motorboat use would continue to change the recreational experience to an even more crowded, congested environment with more conflicts between users. Use would be expected to increase by 33 percent by 1995.

Limiting boating party size with no limit on the number of groups per day would not significantly affect overall use levels.

Reconstructing boat launch sites at several locations could have the potential of decreasing waiting time and congestion, however, increased levels of boating use would likely reduce these gains.

#### Alternative 2

Maintaining existing launch sites in present condition would result in a continuation of inadequate launch facilities resulting in congestion, public safety problems and additional user conflicts.

Not limiting private boating party size would allow a continued increase in the number of nonmotorized boaters and result in more congestion and conflicts between users. Not limiting the number of guides also would increase the congestion and conflicts.

#### Alternative 3

Reconstructing certain boat launch and vehicle parking areas and rehabilitating some heavily used sites would have a beneficial effect on scenic quality and as a result improve the quality of the recreation experience.

Closing the Sherars Falls landing site and developing/requiring boat landing at Sandy Beach would enhance the recreation experience by significantly improving public safety.

Reconstructing some launch sites and closing others would cause some boaters to change their recreation use pattern. Problems of safety, law enforcement and social conflicts would be reduced.

This shift in use would change the weekend/holiday and weekday peak use season boating experience significantly. Weekend/holiday use levels would be reduced by 50 to 75 percent significantly reducing competition, crowding and congestion. The weekday experience would also be significantly changed from relatively low levels of use to levels of more than twice as much as occurs presently. This would significantly increase competition, crowding and congestion from present levels. The



overall end result would be the same boating experience on weekdays as weekends/holidays. The weekday boating experience during the summer with relatively low levels of use would be lost. Eliminating motorboat use during the peak use season on Segment 1, 2 and 3 and restricting

motorboat use on alternating weekends in Segment 4 would enhance the experience for nonmotorized boaters. The majority of conflicts between motorized and nonmotorized boaters would still occur in Segment 4 since less than 50 percent of the boating use occurs during these periods.

# Alternative 4

The restriction of boat use levels would reduce the recreation opportunities available to nonmotorized boat users. Less use would, however, enhance the quality of the recreation experience in terms of solitude and crowding, and in competition for campsites. Overall use levels would be reduced by 70 to 80 percent on peak weekends/holidays during the primary use season. Use levels during weekday periods during the primary use season would increase significantly. This would result in some additional crowding with a corresponding loss of seclusion that presently exists during weekday periods.

Requiring all floating craft to display a boat identification tag would likely result in better overall visitor behavior and fewer conflicts as a result of more accountability and easier identification of users. The improvement of launch sites would enhance the recreation experience through reduced crowding and waiting periods. The closure of launch sites would cause a reduction in public access and could adversely impact boaters by causing some congestion and crowding at other launch sites. However, this would not be significant due to a reduction in daily and overall boater numbers. Limiting group size would adversely impact large boating groups; however, it would not affect overall use levels. Group size limits would enhance the perception of solitude. Establishment of a pass-through zone from Moody to Rattlesnake Rapids for boaters would cause a loss of angling opportunity for those users.

Banning motorboats would eliminate use conflicts with bank anglers and nonmotorized boat users. As a result, it would significantly enhance the recreation experience for all nonmotorized users.

# Impacts to Motorized Boaters

In addition to the impacts which would affect all boaters, impacts to motorized boaters would also result from managing motorized boat use as well as campsites and boat launches.

# **Preferred** Alternative

Banning motorized boats year-round on Segments 1 and 2 would add 25 miles to the existing closure along the Warm Springs Reservation. These miles are upstream from Sherars Falls, part of which (Maupin to Sherars Falls) has no known motorized boat use. During the peak use season, a restriction (May 15 to Sept. 30) would close 13 additional miles between Sherars Falls and Beavertail. From Beavertail downstream, additional restrictions would restrict motorized boat use to alternating weeks for an 8-week period (July 15 to the Tuesday after Labor Day) during the peak steelhead season. As a result of these closures and restrictions, some motorized boat users would shift to nonmotorized boats for at least part of the use season. Also, the existing moderate amount of motorized boat use upriver from Harpham Flat would be displaced either to the lower river during periods when it is open, or to other rivers in the region that are open to motorized boat use. Some users may not be able to adjust to the restrictions and would give up their use of motorized boats. The unique whitewater and trout fishing motorized boating experience available on the stretch between Sherars Falls and the northern boundary of the Warm Springs Reservation would then be lost.

Restrictions on motorized boat use during the 8-week peak late summer season effectively reduces motorized boating opportunities by 50 percent. This reduction in opportunity during the prime steelhead fishing season would cause additional congestion at launch sites on the first day of the use period and at landing sites on the last day of the use period as motorized boat users attempt to spend as much time as possible on the river. Motorized boat users would also be competing with nonmotorized boat users for fishing and camping spots during the periods when both user groups would be allowed. Party size restrictions of five people per boat and limitations on the number of round trips that could be made would reduce this competition by reducing motorized boat use levels. It would also reduce recreation opportunities for those having motorboats capable of carrying more people. During the remaining ten months of the year, motorized and nonmotorized boat use in the lower 31 miles of the river would continue to occur together. Conflict between motorized and nonmotorized boaters would continue during the periods of time that motorized boats are allowed.

Establishing a pass-through zone for all floating craft from Rattlesnake Rapids (upstream end) to Moody would allow hike-in anglers to fish that stretch of river without having to compete with boat-borne anglers. This would reduce competition for fishing spots and as a result reduce the chances for conflict. Boat-borne anglers would no longer be able to stop and fish in this 1-1/2-mile segment of river and as a result, that fishing opportunity would be lost for that user group unless they walked in from the ends of the pass-through zone.

Allowing the operation of one tour boat in Segment 4 with a maximum party size of 16 passengers would allow a public day use sightseeing opportunity that is not available through any other means without significant additional impacts than those that would occur with other motorboats.

### Alternative 1

Limiting party size would adversely affect the recreation experience of motorboaters, resulting in a net loss of recreation opportunities for those having motorboats capable of carrying more people. Such restrictions would likely decrease overall boat size in the long term and as a result, enhance the experience of other (nonmotorized) users. Unlimited or unrestricted motorboat use, even with limited party size, would result in a continued increase in the numbers of river users, including anglers. Limiting party size for motorboat users would control or prohibit the use of larger boats and tour groups. This would have a slightly beneficial impact on the overall recreational experience of other users. Reconstructing launch sites would reduce



congestion and waiting periods, except at peak times. Not limiting motorized and nonmotorized boat use would have an adverse impact on all boaters as a result of increased crowding, congestion and competition. Complaints over conflicts with bank anglers and float boaters would increase.

Redesign and reconstruction of existing launch sites would reduce launching time, congestion and conflicts.

Developing and setting campsites aside for motorboaters would enhance the recreation experience for motorboaters, but would result in complaints and conflicts with other users.

The amount of motorized boat use would be expected to increase under this alternative, especially in the lower part of Segment 1. As the number of motorboats increased, other types of river use, particularly float boating and the associated conflicts and competition, would also increase.

Not establishing a pass-through zone would result in the continuation of conflicts between walk-in fishermen and fishermen using motorboats between Moody and Rattlesnake Rapids.

Developing and setting aside campsites for motorboaters would benefit motorboaters, but would have adverse impacts on nonmotorized boaters as a result of reduced availability of campsites. Complaints and conflicts would occur.

## Alternative 2

The impact under this alternative would be the same as Alternative 1 except that party size would not be limited and no campsites would be developed or set aside for motorboaters. The number of motorboat users would continue to increase.

## Alternative 3

The impact of banning motorboats year-round on Segments 1 and 2, seasonally restricting their use between Sherars Falls and Beavertail and restricting their use in Segment 4 to alternate weeks during the peak steelhead season would be the same as in the Preferred Alternative. The impact of establishing a pass-through zone for all floating craft from Rattlesnake Rapids to Moody would be the same as in the Preferred Alternative.

In the off-season (October 1-May 14), motorboat use would not be restricted in the lower part of Segment 1 or in Segments 2, 3 or 4.

## Alternative 4

Banning motorboats on a year-round basis would cause a significant adverse impact to the recreation experience of motorized users by eliminating their use which totals approximately 15,000 boater days per year.

# **Impacts to Anglers**

Impacts to anglers would result from managing fish and wildlife, boating, angling and guided and outfitted services.

## **Preferred** Alternative

Year-round bans on motorized boats or restrictions during the peak summer season would have a significant beneficial impact to the experience of nonmotorized users. Reducing motorboat use would result in less competition and fewer conflicts with other users.

The annual addition of 250 cubic yards of suitable gravel in primary fish spawning beds through mechanical means in the three miles of river downstream from the Pelton Reregulating Dam would restore substrate water permeability, aid embryo survival and restore production of macroinvertebrates which are a primary fish food item to a pre-hydroelectric project level. These improvements would help to restore trout and salmon production, which would improve angling opportunities. Short-term



adverse impacts from gravel supplementation would be displacement or loss of some aquatic insects, reduction of river clarity and a slight reduction in water quality during placement.

Impacts to boating anglers would not be significant during the 3-year trial period when attempts would be made to shift boater use levels and patterns. If a mandatory allocation system would be implemented after that period, a short-term reduction in the number of boating anglers is expected.

Over the long term, overall boating angler numbers would increase as demand continues and adjustments to weekday use periods occur. Refer to Table 28 and Appendix Q for further details on impacts to boating use levels.

Providing basic fishing site protection measures, increasing the number of desirable angling sites and acquiring public easements for angling access would enhance the angling experience. Developing and improving facilities such as hiking trails, parking areas, walk-overs and walkthroughs and certain access roads also would enhance the experience of anglers and allow better distribution of their numbers. Designating the river between Moody and Rattlesnake Rapids for hike-in anglers only would alleviate a current source of conflict with boat-borne anglers.



Alternative 1

A catch and release program would be expected to result in a short term decrease in angler numbers. In the long term angler numbers would increase as the quality of the fishery improved and demand for this type of angling experience increased.

The impact from developing hiking trails, adding parking areas, improving some roads and other user facilities would be the same as in the Preferred Alternative.

# Alternative 2

Not changing angling restrictions, not acquiring additional public access or not developing additional facilities would result in a significant adverse impact on the recreation experience of anglers as the number of users continues to grow and competition for angling sites and fish increases.

# Alternative 3

Liberalizing angling regulations and allowing public fishing from Tribally-owned lands would result in increased angler use and fish harvest, benefitting all anglers.

The impact of installing walk-throughs and walk-overs through riparian livestock exclosure fencing would be beneficial to anglers.

# Alternative 4

Allowing fishing from a floating device would result in increased competition and angler conflict at the popular angling sites, especially between bank anglers and boat anglers. Angling efficiency would increase leading to an increase in fish harvest per angler. The experience would be significantly enhanced since overall angler numbers would be reduced from present levels.

Limiting non-angler use during popular fishing periods would enhance the experience of anglers. Non-anglers would claim discrimination and possibly cause conflicts with anglers.

The impact from adding spawning gravel to the upper three miles of river would be the same as in the Preferred Alternative.

# Impacts to Campers

Impacts to campers would result from managing campsites, use levels and public information and education.

## Preferred Alternative

Providing brochures and maps would inform campers on how to avoid peak use periods and utilize less crowded sections of the river, resulting in less competition for campsites and enhancing the recreation experience.

Allowing camping in suitable sites set aside for camping, providing basic site protection measures and closing and rehabilitating campsites where there is conflict with significant cultural, riparian and/or wildlife values would enhance the camping experience and minimize environmental damage. There would be a decrease in camping opportunities, adversely impacting some users.



Requiring human waste to be packed out from areas where sanitation facilities are not provided would decrease the hazards to human health and enhance the recreation experience.

Limiting camping group size to 16 people would reduce the feeling of crowding and lessen conflicts between groups. Requiring camping equipment and personal property to be removed from the campsite after occupancy would ensure opportunities for other campers to use the site.

Prohibiting camping in the vicinity of Sherars Falls if alternative facilities could be provided at White River State Park or Buckhollow would reduce the congestion and improve the appearance of the Sherars Falls area.

Providing campsites for hikers, mountain bikers and equestrians would broaden the recreational opportunities and better distribute use.



# Alternative 1

Allowing camping on a first-come, first-served basis in sites set aside for camping would result in an increase in the number of campers, more competition and conflicts. Limiting the length of stay

to seven days in developed/semi-developed campgrounds and two days in boat-in campsites would alleviate the competition and conflicts and distribute use more equitably. Limiting camping group size to 25 would result in crowding, competition for campsites and more conflicts between groups. Development of camping facilities on private land would alleviate competition and conflicts on public land, but would result in greater numbers of users on the river and greater adverse impacts.

Planting trees in campsites lacking shade would enhance the camping experience. Setting aside campsites on the east bank between Lockit and Harris Canyon for motorboat camping would enhance the experience of motorboaters, but would result in complaints and conflicts from other users.

## Alternative 2

Not restricting camping and not limiting group size would result in a continued increase in the number of users, with competition, conflicts and adverse impacts to the environment.

## Alternative 3

The impacts of allowing camping in suitable sites set aside for camping, providing basic site protection measures and closing and rehabilitating campsites where there is conflict with significant cultural, riparian and/or wildlife values would be the same as in the Preferred Alternative.

The impacts of limiting camping group size to 16 people and limiting camping length of stay to four nights in undeveloped sites and 14 nights in developed sites would be the same as in the Preferred Alternative.

The impacts of planting trees in campsites lacking shade and setting aside campsites for motorboat camping would be the same as in the Preferred Alternative.

## Alternative 4

Allowing camping only by reservation would reduce the number of recreation users on the river and as a result would reduce camping use. The recreation experience for those getting reservations would be enhanced, however there would be an inconvenience to the camping public with having to make reservations. The impact of requiring camping equipment and personal property to be removed from the campsite after occupancy would be the same as in the Preferred Alternative.

# Impacts to Guided and Outfitted Services

In addition to the impacts to guided and outfitted services resulting from a limited entry system utilizing one of the allocation methods discussed earlier, other impacts to guided and outfitted services would also occur.

# **Preferred** Alternative

Limiting group size for nonmotorized guides to 16 people per party per day in Segments 1, 3 and 4 and 24 in Segment 2 and for motorized guides to five people per boat with no more than two round trips per day would slightly reduce use by individual guides.

Banning motorized boat use on the remainder of Segment 1 and all of Segment 2 plus instituting seasonal restrictions on the upper part of Segment 3 and alternating week restrictions during the peak steelhead season on the lower part of Segment 3 and all of Segment 4 would have significant adverse impacts to guides utilizing motorized boats. As a result of these closures and



restrictions, some guides would shift to nonmotorized boats for at least part of the use season. Also, the existing motorized guide services operating upriver from Harpham Flat would be displaced either to the lower river during periods when it is open, or to other rivers in the region that are open to motorized boat use. Some guides may not be able to adjust to the restrictions and would go out of business.

Requiring guides to distribute information to their clients would assure that guided visitors would become more aware of and more informed about river ecology, history, outdoor ethics and regulations. The inconvenience to the guides would not be significant and opportunities to enhance the experience of their clients would be increased.

Requiring guides and outfitters to be certified for operation on the Deschutes River would provide better quality guide service.

Improving wildlife habitat, prohibiting camping in sensitive wildlife areas, planting native species and reintroducing native wildlife would improve hunting opportunities for big game, upland game, fur bearers and waterfowl.

Opportunities for re-establishing native wildlife species would be available which could improve wildlife viewing and enhance the



recreation experiences. Protection or restoration of some habitat would potentially limit or restrict access for some users.

## Alternative 1

Under Alternatives 1 and 2, not limiting the number of guides or the number of clients would result in increases in the number of visitors to the area with an accompanying increase in congestion and user conflicts. This would however be mitigated to some degree as a result of facility construction. Competition within the guiding industry would also increase. This would result in a greater turnover in guides as existing operators went out of business and new ones attempted to establish a business.

Limiting party size without limiting the number of guides would require some guides who historically have exceeded the proposed party size limit to either cut back on the number of clients, thus reducing income, or acquire additional equipment to serve the same number of clients, thus increasing costs of operation. Total numbers of users would not change significantly.

## Alternative 2

Requiring guides to continue to meet minimum requirements of public safety would provide a minimum level of quality in guide services.

## Alternative 3

Restricting motorboat use and limiting party and boat size and operating hours would have the same impact as the Preferred Alternative.

The impact of limiting the number of guides and requiring guides to be certified would be the same as in the Preferred Alternative.

## Alternative 4

The impact of limiting the number of guides to 80 would be the same as in the Preferred Alternative.

Improving wildlife habitat, prohibiting camping in sensitive wildlife areas, planting native species and reintroducing native wildlife would improve hunting opportunities for big game, upland game, fur bearers and waterfowl. Opportunities for reestablishing native wildlife species would be available which could improve wildlife viewing and enhance the recreation experiences. Protection or restoration of some habitat would potentially limit or restrict access for some users. Limiting boating use levels under this alternative would significantly reduce overall boating use. Reduced boat use combined with improvement of designated launch sites and closure of unimproved launch sites would result in less congestion, fewer user conflicts and enhanced recreational experiences. However, guides and outfitters would be adversely impacted due to a reduction of approximately 20 percent in the number of potential customers.

Banning motorboats on a year-round basis on the entire river would cause a significant adverse impact to the recreation experience of motorized boat users by eliminating their use. Conflicts with nonmotorized boat users including guided parties would be eliminated and the recreation experience of those guided parties would be significantly enhanced. Some guides and outfitters would cease commercial operations on the river, others would convert to nonmotorized boats.

Requiring guides and their equipment to be certified would be an added burden to the individual guides. However, it would assure the public of experienced guide services using safe equipment.

The impact of requiring guides to distribute information would be the same as in the Preferred Alternative.

## Impacts to Other Recreation Users

Impacts to other recreation users (sightseers, hikers, hunters, mountain bikers, equestrians) would result from managing boating use, livestock grazing, roads and parking, fish and wildlife, trails, emergency services, law enforcement and information and education.

## **Preferred** Alternative

Year-round bans on motorized boats or restrictions during the peak summer season would have a significant beneficial impact to the experience of nonmotorized users. Reducing motorboat use would result in less competition and fewer conflicts with other users.

Managing livestock grazing on riparian lands to maintain or achieve full vegetative potential with a minimum of 60 percent of ecological status being achieved within 15 years would result in continued improvement in riparian vegetation in many grazed areas an improvement in scenic quality and resulting enhancement of the recreation experience.

Closing and rehabilitating motor vehicle routes not designated, providing additional parking areas outside of riparian areas and installing barriers to prevent unauthorized vehicle access into certain areas would benefit plant growth in previously impacted areas with a corresponding improvement in scenic quality, thereby enhancing the recreation experience.



Setting aside suitable, undeveloped campsites in appropriate upland areas for hikers and mountain bike riders would help to distribute recreation use to more of the planning area away from the river and riparian zone and reduce impacts to those areas.

Improvements of wildlife habitat in presently degraded areas would improve hunting opportunities for big game, upland game, fur bearers and waterfowl in direct relationship to the degree of habitat improvement.

Acquiring public easements on private lands or exchanging lands would expand recreation opportunities and help to assure public enjoyment over the long term.

Placing signs, bulletin boards and a brochure dispenser at launches, landings and at the beginning of the road to the Deschutes Club locked gate would provide necessary information to users, as would providing and staffing information stations at Deschutes State Park, Sherars/Buckhollow, Trout Creek, Maupin City Park, Warm Springs and Harpham Flat. Identifying and interpreting wildlife, historical and archaeological features; converting the existing Maupin railroad station into a visitor center and requiring guides and outfitters to distribute brochures to their clients would also help to produce or reinforce desirable attitudes and behavior among visitors. Recreation experiences would be enhanced through disseminated information, a better public understanding of land management would be gained, and better public involvement in land use decisions would result.

# Alternative 1

Not restricting motorized boats or use levels would allow conflicts and competition to increase.

Managing livestock grazing to achieve or maintain riparian and upland vegetation in mid-seral condition would result in continued livestock use of riparian areas and side canyons. Unprotected springs and seep areas would also continue to receive livestock use. As a result scenic quality would be reduced with an overall adverse impact on the recreation experience.



The impact of closing and rehabilitating certain roads and providing parking areas outside the riparian area would be the same as in the Preferred Alternative.

Upgrading certain roads would have a minor adverse impact on visual quality from dust, road cuts and fills during construction. Long-term beneficial impacts would be an improvement in the quality of access, public safety and law enforcement. Reconstructing parking and pullout areas would have a beneficial effect on riparian scenic values and public safety.

Designating or closing motor vehicle routes and providing additional parking areas would prevent further vehicle damage to the riparian areas which would result from indiscriminate driving of vehicles. Road closures would lead to localized increases in congestion on remaining roads and access points. Some shifts in recreational use patterns would occur as a result of designating roads and road closures. Vehicle oriented fishing and camping would be displaced to other areas. Road closures would require more access by boat, walking, horseback or bicycles and would enhance those forms of transportation when they are used for recreation.

Improvements of wildlife habitat in presently degraded areas would improve hunting opportunities for big game, upland game, fur bearers and waterfowl in direct relationship to the degree of habitat improvement.

Protecting and interpreting cultural values in high use areas would provide increased knowledge of prehistoric and historic utilization of the Deschutes River corridor, thereby enhancing the recreational experience.

Developing hiking trails and additional parking areas would degrade the angling experience of the few who now use the more inaccessible sites, but would enhance the experience of other anglers seeking less congested opportunities.

Reinforcing existing hiking trails and providing hiking, horseback riding and mountain bike facilities would make trails better able to withstand use and make it less likely that hikers would go "off trail" through sensitive habitat. Creating new trails would improve access and disperse visitors to less-used areas. Recreation use levels would increase.

Providing a full-time law enforcement officer in segment 2 and using boats and aircraft for enforcement would enhance public safety, reduce social conflicts and improve compliance with established laws and regulations.

The impact of providing staffed information stations at key locations, providing interpretive facilities and a visitor center at Maupin Park would be the same as in the Preferred Alternative.



Alternative 2

Not restricting motorized boats or use levels would allow competition and conflicts to increase.

The impact of managing livestock grazing would be the same as in the Preferred Alternative.

Maintaining existing roads and parking areas at present standards would result in increasing congestion, conflicts and potential accidents as recreation use levels increase.

Scenic values associated with river use would degrade as recreational use levels increased. The recreational experience would deteriorate as use increased because of more competition and more conflicts between users.

Improving wildlife habitat over the long term would improve the opportunities for visitors to view a variety of wildlife species. Hunting opportunities for big game, upland game, fur bearers and waterfowl would improve in direct relationship to the degree of habitat improvement.

Continuing management of cultural resources as in the past would allow an increase in illegal digging and artifact collection, which, unfortunately are forms of recreation for some people. The legitimate recreation of viewing and contemplating cultural resources would be degraded.

Not restricting foot access and hardening trails only in high use areas would result in continued deterioration of the recreation experience due to the adverse impacts on adjacent vegetation and reduction in scenic quality.

Continuing present levels of emergency services would result in a potential overloading of those services due to an increase in road and boat accidents that would occur as a result of increased recreation use levels. Continuing the present level of law enforcement would also result in an increase of social conflicts and accidents as use levels increase.

Continuing the current level of public information and education with increasing levels of use would result in an increase in negative behavior due to a general lack of knowledge of the environment, as well as public safety and respect for other users.

Alternative 3

Seasonal restrictions on motorboat use and reductions in peak use levels would impact other recreation users to the same degree as discussed in the Boating Use Levels section.

Managing grazing to achieve or maintain late seral condition or to reach full vegetative potential and excluding livestock from the riparian zone would enhance the recreation experiences through a significant improvement in vegetative condition and

resulting scenic quality. Improving riparian upland wildlife habitat would significantly improve hunting opportunities for big game, upland game, fur bearers and waterfowl and provide a corresponding increase in wildlife viewing opportunities. Restricting camping and other uses in historically sensitive wildlife areas would also permit the re-establishment of former wildlife use in those areas and as a result enhance wildlife viewing.

Upgrading roads, parking areas and pullouts and closing and rehabilitating other unsuitable areas would have a beneficial effect on public safety and vegetative appearance, thereby enhancing the recreation experience.

Closing and rehabilitating vehicle routes would result in some shifts in recreational use patterns with vehicle oriented fishing and camping being displaced to other areas. Road closures would require more access by boat, walking, horseback or bicycles and would lead to increased congestion on remaining roads and access points. A greater sense of crowding and a greater potential for conflicts and accidents would follow.

Stabilizing, improving and rehabilitating foot trails would improve access and safety for visitors and moderately increase use in certain areas which presently receive low levels of hiking use. Closing trails would have an adverse impact on some users.

Reducing recreation use and eliminating livestock grazing in areas with significant cultural resources would have an adverse impact by displacing some visitors and slightly reducing available livestock forage. However there would be a long-term beneficial impact in saving the cultural resources as valuable public recreation assets.

Restricting bicycle use in areas where they are presently used for access to preferred fishing spots would reduce the total number of angler days in several areas along the river. This restriction would curtail the angling opportunities for bicyclists, while potentially enhancing the experience for other anglers due to reduced competition. Designation of a hike-in angling only area between Moody and Rattlesnake Rapid would have a moderately beneficial impact on hike-in anglers and a slight adverse impact on boat-borne anglers. It would not affect overall angler numbers since few boat anglers currently stop and fish from the shore in this area.

Instituting safety regulations such as speed limits, parking restrictions and prohibition of open fires would reduce the incidence of accidents, drownings and fires.

Establishing a local court and requiring all floating devices to display an ID number would make law enforcement easier and probably would result in better visitor behavior and fewer conflicts. Providing interpretive areas, a visitor center, signs and bulletin boards and a public contact person would also help to produce or reinforce desirable attitudes and behavior among visitors.

The impact of disseminating information would be the same as in the Preferred Alternative.



Alternative 4

Banning motorized boats and reducing overall and peak use levels would impact other users to the same degree as is discussed in the Boating Use Levels section.

Removing livestock from all BLM, State and Tribally-owned riparian areas would result in a significant new growth of vegetation, improving the scenic quality.

Upgrading roads and limiting vehicle size would have a significantly beneficial effect on public safety by widening dangerous narrow stretches and reducing congestion. Overall, traffic volumes would also be lower as a result of reduced levels of use. Installing vehicle barriers and closing certain areas to vehicle use would also keep vehicles out of the riparian zone, changing visitor use to more walking, boating, horseback and trail use.

Restoration and protection of wildlife habitat and re-introduction of native wildlife would improve wildlife viewing opportunities and the river user's overall recreation experience. However, protection or restoration of some habitat would potentially limit or restrict public access in some areas. Hunting opportunities for big game, upland game, fur bearers and waterfowl would also improve in direct relationship to the degree of habitat improvement.

Seeding and planting of native species only would provide better screening between campsites, windbreaks, shade and enhanced wildlife viewing opportunities.

Restricting or prohibiting recreation use in significant cultural areas would have an adverse impact through displacement of some visitors. However with interpretation, a beneficial effect in saving the cultural resources as valuable recreation assets would likely be achieved.

Rehabilitating river trails and point access trails would result in changing some habits of use, especially by anglers. The recreation experience would be enhanced by improvements to vegetative condition and resulting improvement in scenic quality and wildlife viewing opportunities.

The impact of distributing handouts through guides, boater passes and display boards and developing educational curriculum would be the same as in the Preferred Alternative.



# **Impacts to Access**

Impacts to access would result from managing roads and trails, parking and pullout areas and boat launches. They are summarized in Table 32 and discussed below.

Managing:		Preferred Alternative	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Roads/Vehicle Use	TTO PART			1 1 1 1 1 1 1		
Closing		-L	-L	-L	-L	-L
Upgrading		+M	+M	-L	+M	+L
Parking		+M	+M	NC	+M	NA
Boat Launches		+L	+L	-L	+L	-L
Trails		+L	+L	-L	+L	+L
Overall		+M	+M	-L	+M	+L
<ul> <li>+ Beneficial</li> <li>- Adverse</li> <li>NC No Change</li> </ul>	H High M Moderate L Low	NA Not Applicable				

# Table 32. Summary of Impacts to Access<sup>1</sup>

# **Preferred** Alternative

Closing roads would result in shifts in recreational use patterns. Vehicle-oriented fishing and camping would be displaced to other areas. More access would be gained by walking, horseback, bicycles and boats.

Upgrading access roads from Maupin to the Locked Gate, from Buckhollow to Macks Canyon, into Mecca Flat and Trout Creek, including widening and placement of guardrails would have a long-term beneficial impact on access, public safety and law enforcement. It would, however, be expected to increase short-term use levels in Segments 1, 2 and 3 possibly requiring the implementation of a limited entry system sooner.



Maintaining the Kloan road in its present condition would keep traffic volume low, but still allow access.

Limiting the size of vehicles would help to reduce vehicle congestion, particularly in the Locked Gate to Sherars Falls segment.

Redesigning, reconstructing existing parking areas and pullouts or providing new parking areas outside of riparian areas would enhance public safety by providing wider, more level facilities for easier use, less subject to congestion. Use and access would be better distributed.

Constructing new parking areas at Mecca Flat, Trout Creek, South Junction, Devils Canyon, Long Bend, Harpham Flat, Wapinitia, Boxcar Rapids, Maupin City Park, Sandy Beach, Beavertail, Macks Canyon, Heritage Landing, Deschutes State Park, Kloan and other suitable areas would improve access and public safety.

Improving existing launch sites or constructing new launch sites at Warm Springs, Mecca Flat, South Junction, Harpham Flat, Wapinitia, Sandy Beach, Buckhollow, Pine Tree, Beavertail, Macks Canyon and Heritage Landing would decrease waiting time and traffic congestion, enhancing public safety.

Stabilizing or otherwise improving foot trails in riparian areas would provide access for fishing and other recreation while still protecting the surrounding resources. Closing some trails would be necessary to protect the resources if stabilization was not effective. Creating new trails and facilities for hiking, horseback and mountain bike riding, with access through fences and easements across private land would improve access and disperse visitors to less-used areas.

## Alternative 1

Closing roads would result in shifts in recreational use patterns. Vehicle-oriented fishing and camping would be displaced to other areas. More access would be gained by walking, horseback, bicycles and boats. Road closures would lead to increased congestion on remaining roads and access points with a greater sense of crowding.

The impact of improving launch sites would be the same as in the Preferred Alternative.

Development of new hiking trails along the river would help to improve angler distribution.

The impact of upgrading certain roads would be the same as in the Preferred Alternative.

The impact of reconstructing parking areas and pullouts would be the same as in the Preferred Alternative.

The impact of reinforcing trails and providing trail facilities would be the same as in the Preferred Alternative.

## Alternative 2

Closing undesignated vehicle routes would have an adverse impact on vehicle-oriented users causing them to move to other areas. More access would be gained by walking, horseback, bicycles or boats. Road closures would lead to increased congestion on remaining roads and access points.

Not acquiring additional public access would result in increased recreational conflicts as user populations continue to grow.

Maintaining existing roads, trails, parking areas and launch sites at present standards would result in increasing congestion, conflicts and potential accidents as recreation use rises.

Allowing vehicle parking to continue as it is and not restricting foot access would provide a continuation of the easy access that users now enjoy.

## Alternative 3

Limiting parking to designated areas and closing other areas which have been open to vehicle use would have an adverse impact on access, requiring users to walk or ride longer distances.

Restricting bicycle use would have an adverse impact on those who want to gain access by cycling.

The impact of upgrading roads, parking and pullouts would be the same as in the Preferred Alternative.

The impact from redesigning and reconstructing launch sites would be the same as in the Preferred Alternative.

The impact of stabilizing foot trails and providing trail facilities would be the same as in the Preferred Alternative.

## Alternative 4

Installing vehicle barriers would displace some vehicle recreation and could cause occasional "end of the road" parking congestion. Access would be shifted to those walking or riding bicycles.

The impact of limiting vehicles by size would be the same as in the Preferred Alternative.

The impact of upgrading certain roads would be the same as in the Preferred Alternative.



The impact of maintaining the Kloan Road in its present condition would be the same as in the Preferred Alternative.

Reconstructing or closing existing boat launching sites would cause a short-term adverse impact on access during reconstruction, but an improvement in river access in the long run. Closing some existing sites would have a long-term adverse impact on access and might cause use at other sites to increase significantly.

Rehabilitating existing trails paralleling the river would not have a significant impact on access. Providing point access trails would result in improved access to the river and broader distribution of recreational use.

# Impacts to Economic Values

The most significant economic impacts would occur to local economies as a result of either increasing or decreasing boating and other recreation use levels.

Lesser impacts to economic values would also result from managing livestock grazing and fish and wildlife habitat. These impacts are summarized in Table 33 and 34 discussed below.

Table 33. Summary of Impacts to Economic Values <sup>1</sup>										
		Preferred Alternative	Alt's. 1 & 2	Alt. 3	Alt. 4					
Local Economies: Madras Maupin The Dalles	-	-L +M +M	+H +H +H	-L -L -L	-H -H -H					
Regional Employment		+M	+H	-L	-H					
Livestock Grazing Fish & Wildlife		NC +L	NC +L	NC +L	-M +M					
Overall		+M	+H	+L	-H					
<sup>1</sup> + Beneficial - Adverse NC No Change	H High M Moderate L Low									

# Table 34. Recreation-Related Retail Trade Income Generation from Boating Use byAlternative on the Deschutes River (Constant Dollars)

	Prefe	rred Alternativ	e	Alternativ	ves 1 & 2	Alternativ	ve 3	Alternative 4			
Community	Present	Short Term	Long Term	Short Term	Long Term	Short Term	Long Term	Short Term	Long Term		
Madras	\$660,000	-\$110,000	-\$90,000		+ \$215,000	-\$120,000	+\$ 2,000	- \$220,000	-\$ 220,000		
Maupin	\$3,550,000	- \$195,000	+\$515,000	-	+\$1,180,000	-\$888,000	+\$44,000	-\$1,300,000	- \$1,160,000		
The Dalles	\$660,000	+ \$10,000	+\$170,000	4	+ \$220,000	- \$170,000	+\$44,000	- \$250,000	- \$ 200,000		
Within Region	\$4,870,000	-\$295,000	+\$595,000	-	+\$1,615,000	-\$1,178,000	+\$90,000	-\$1,770,000	-\$1,580,000		
Beyond Region	\$1,700,000	- \$ 95,000	+ \$220,000	-	+ \$ 690,000	- \$410,000	+ \$36,000	- \$ 625,000	- \$ 550,000		
Total	\$6,570,000	-\$390,000	+\$815,000	*	+\$2,305,000	-\$1,588,000	+\$126,000	-\$2,395,000	-\$2,130,000		
Note: This boa Mat	Note: This is assuming that Madras receives 25% of noncommercial boat use revenues from Segment 1, Maupin receives 50% of noncommercial boat use revenues from Segment 1 and 75% from Segment 2, The Dalles receives 50% of all boat use revenues from Segment 3 and 4, and Maupin receives 20% of all boat use revenues from Segment 3 and 4. The remainder of expenditures occur elsewhere in the region or										

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beyond.



Madras

Madras is the largest community within Jefferson County which makes it an economic hub for the immediate area. Madras provides service for users of the upper portion of the Lower Deschutes River along Segments 1 and 2.

# **Preferred** Alternative

The decline in boating use in Segment 1 would have an adverse effect on local purchases of goods and services in the short and long term in the Madras community. The increase in boating use in Segment 2 would partially offset the loss in local purchases by recreation users. The recreation-related retail trade and income-generated would be reduced by \$110,000 in the short term and \$90,000 in the long term over current income levels.

# Alternative 1

The Madras economy would continue to benefit from the growth in boater use on Segments 1 and 2 in the long term. Local merchants, including outfitters and guides, could expect continued growth in sales and services provided to those who recreate in the area. The recreation-related retail trade sector income generated would be expected to stay the same in the short term, but would be expected to increase by \$215,000 in the long term.

Alternative 2

The same impacts apply as in Alternative 1.

# Alternative 3

Boating use levels in Segments 1 and 2 would be maintained at 1988 base year levels. This would cause reduced income to Madras in the short term as many displaced weekend boaters would not adjust their pattern of use. In the long term, it would be expected that local businesses would return to essentially the same level as they have in the past. The recreation-related income generated would be expected to decrease by \$120,000 in the short term and increase by \$2,000 in the long term.

# Alternative 4

A significant decrease in the overall level of boating use along Segments 1 and 2 would adversely affect local business in Madras. Fewer purchases of supplies and services would require fewer outfitters and guides in the area. Rather than the local economy expanding in relation to recreation use, a contraction of the local economy would be expected to occur. The recreation-related retail trade sector income generated would be expected to decrease by \$220,000 in the short and long term.
#### Maupin

The economy of the community of Maupin is more tied to the recreational activities associated with the river than any other community in the region. Most purchases in Maupin are for immediate consumables such as food, supplies, equipment and services. These purchases are also seasonal in nature. Maupin has two main sources of personal income generation: 1) the local sawmill and 2) recreation-related services. The recreation-related services tend to be seasonal in nature. Float boating, camping and fishing tend to be spring, summer and fall activities to a greater degree with specific uses restricted through allowable seasons.

The community of Maupin has ties to Segments 1 and 2 to a greater degree and Segments 3 and 4 to a lesser degree. Maupin is heavily used by day users and those who choose to camp in Segment 2.

Area economic events in the past five years have contributed to much uncertainty and concern by local citizens for the future economic health of Maupin. Reduced timber sales on National Forest lands have diminished receipts to Wasco County. Also, the farming and ranching industry, an economic mainstay in rural areas, has become less of an economic factor in the community. Thus recreation use on the Deschutes River has become more critical for community and business vitality.

#### Preferred Alternative

Maupin depends on recreation users for a significant portion of its summer trade. The decline in boating use of approximately 9,000 boater days in Segment 1 in the short term would cause a significant adverse impact on local purchases of goods and services in Maupin. A small amount of this short-term loss would be offset by increases in boating use in Segments 2 and 3. In the long term, significant increases in overall boating use of approximately 22,000 boater days would be expected to occur in Segments 2 and 3.

Decreases in boating use levels on Segment 1 and the resulting adverse economic impact on Maupin would be offset by increases in use levels in Segment 2 in the long term. The economic benefit of increases in boating use in Segment 2, however, are not necessarily as great as equivalent decreases in boating use in Segment 1. This is because boating use in Segment 2 tends to be day use in nature as compared to two and three-day trips in Segment 1. The resulting expenditures in the local community by day users are generally less than expenditures of overnight visitors to the area. While an increase in long term economic benefits to the community of Maupin would occur under this alternative, they would not be as significant since the majority of these increases would be primarily day use.

The result would be increased seasonal income to the community of Maupin. An increase in seasonal jobs should accompany the rise in recreation use. The recreation-related retail trade sector income generated would be reduced by an estimated \$195,000 in the short term, but would be expected to increase by \$515,000 in the long term.



Alternative 1

The continued expansion of recreation use under this alternative would provide the community of Maupin additional seasonal income which would help sustain the community during the off-season. Since a portion of the business community either reduces its hours of service or completely closes down during the off-season, dependence on recreation users' expenditures is very high. The recreation-related retail trade sector income generated would be expected to stay the same in the short term and increase by \$1,180,000 in the long term.

Alternative 2

The same impacts apply as in Alternative 1.

Alternative 3

The alternative would provide for no increase in overall recreation use levels. The economy of Maupin would be adversely affected in the short term as a result of the loss of a significant number of weekend boaters unable to adjust their use to weekday periods and as a result don't visit the Deschutes. In the long term overall boater numbers would return to present levels, however, some existing businesses heavily dependent on river recreation use would not be expected to survive until that time. The recreation-related retail trade sector income generated would be expected to decrease by \$888,000 in the short term, but increase by \$44,000 in the long term.

#### Alternative 4

This alternative would have an adverse effect on Maupin by significantly reducing recreation use in the area. As a result, expenditures for outfitters and guides and sales by the local merchants would also be reduced significantly. Several businesses heavily dependent on river recreation use would be lost over the short and long term. The impact of this could also create a domino effect causing other business failures in the community. The recreation-related retail trade sector income generated would be expected to decrease by \$1,300,000 in the short term and by \$1,160,000 in the long term.



#### The Dalles

The economy of The Dalles is the most diversified in the study area. Its size and location enables the community to draw upon timber, agriculture, aluminum, recreation, transportation and commerce associated with the Columbia River. Recreation-related activities along Segment 4 most directly impact The Dalles. Certain recreational supplies and food purchases can be obtained in The Dalles.

Because of the diverse economy, any restrictions on use of the Deschutes River will have a lesser impact on The Dalles as compared to Maupin, Madras or other smaller communities.

#### Preferred Alternative

This alternative would not have a significant impact on The Dalles economy in the short term. Local businesses would increase their level of activity as a result of recreation use in Segments 3 and 4 in the long term. The recreation-related retail trade sector income generated would be expected to increase \$10,000 in the short term and \$170,000 in the long term.

#### Alternative 1

This alternative would have a significant impact on The Dalles economy. The amount of growth in use along Segments 3 and 4 of the Lower Deschutes River would be significant enough to cause some economic growth. This alternative would benefit existing businesses allowing for some economic growth. The recreation-related retail trade sector income would be expected to stay the same in the short term and increase by approximately \$220,000 in the long term.

#### Alternative 2

The impacts are the same as Alternative 1.

#### Alternative 3

Local businesses would slightly increase their level of activity in the long term as a result of recreation use on Segments 3 and 4. However, short-term decreases in use levels would adversely affect the local economy. The recreation-related retail trade sector income generated would be expected to decrease by \$170,000 in the short term and increase by \$44,000 in the long term.

#### Alternative 4

This alternative would cause a decline in recreation-related business activity in The Dalles. It would be expected that some guide services may be unable to continue in the area unless their business could utilize other rivers in the region. The recreation-related retail trade sector income generated would be expected to decrease by \$250,000 in the short term and by \$200,000 in the long term.



The Region

Overall, the Preferred Alternative would be expected to add 1.6 percent to the region's income and one percent to the number of retail trade jobs in the 3-county region. Alternatives 1 and 2 would add 4.4 percent to the region's retail trade income and 2.5 percent to the number of retail trade jobs with Alternative 3 adding .3 percent and .1 percent respectively. Alternative 4 would be expected to reduce the region's retail trade income by 4.3 percent.

Table 35 summarizes the change in jobs that would be expected to occur within the Region and beyond under each alternative.

Table 35. Change in Jobs in Region and Beyond Region in Recreation-Related Retail Trade by Alternative\*

	Present	Number of Jobs Created (Subtracted)							
Community		Preferred Short Term	Alternative Long Term	Alternat Short Term	tives 1&2 Long Term	Alterna Short Term	tive 3 Long Term	Alternativ Short Term Lo	ve 4 ong Term
Region	4	-14	+29		+80	-58	+5	-87	-78
Beyond Region	-	-5	+11	-	+34	-21	+1	-31	-27
Total	-	-19	+40		+114	-79	+6	-118	-105
*49.3 jobs per \$1,	,000,000 in Inc	ome Generated	(IMPLAN Emp	loyment Multip	liers)				

### **Other Economic Impacts**

#### **Preferred** Alternative

Under all alternatives, improvements in wildlife habitat would result in improved wildlife cover, food and nesting places. Hunting opportunities for big-game, upland game, fur bearers and waterfowl (and the economics of hunting) would improve in direct relationship to the degree of habitat improvement. Beneficial effects would be the greatest under the Preferred Alternative and Alternatives 3 and 4 with lesser benefits under Alternatives 1 and 2. The annual addition of 250 cubic yards of suitable spawning gravel would help to restore spawning habitat quality for trout, salmon and steelhead. Increased embryo survival would translate into a corresponding increase in harvestable trout, salmon and steelhead, angling opportunities and an enhanced local economy. The cost of this operation would total approximately \$7,500 per year.

Improving wildlife habitat would result in improved wildlife cover, food and nesting places. Hunting opportunities for big game, upland game, fur bearers and waterfowl (and the economics of hunting) would significantly improve under this alternative.

#### Alternative 1

Managing livestock grazing to achieve mid-seral status would have no significant effect on grazing economics.

Under Alternatives 1, 2 and 3, not replacing spawning gravel would lead to a reduction in fish populations and result in slight adverse economic impacts as a result of lower fish populations and angling use in the upper three miles of river downstream from Pelton Reregulating Dam.

Catch and release angling would result in a short-term decrease in the number of anglers with an adverse impact on the local economy. Long-term angler numbers would increase as the quality and "blue ribbon" reputation of the Deschutes fishing increased.

#### Alternative 2

Management would result in a gradual, sustained improvement to range condition allowing a slight increase in allowable livestock grazing, however, this would not be significant to the overall economies of livestock grazing in the planning area.

Under Alternatives 1, 2 and 3, not replacing spawning gravel would lead to a reduction in fish populations and result in an adverse impact on the economics of angling in the vicinity of Warm Springs.

#### Alternative 3

Under Alternative 3, managing livestock grazing on riparian areas to achieve full potential within 25 years would not significantly impact the current 2,865 AUMs of livestock grazing use.

Liberalizing angling regulations would result in increased angler use and fish harvest, and a moderately beneficial impact on the local economy.



Alternative 4

Removing livestock from all but private riparian areas would result in a significant adverse impact to three grazing lessees where cattle utilize approximately 300 AUMs over 4,800 acres of BLM managed land. These operations are dependent on the river for livestock watering. As a result they would lose most of their ability to run livestock in the area. The remainder of livestock lessees along the river corridor would not be affected to any significant degree.

The impacts on fish habitat as a result of spawning gravel placement would be the same as those discussed under the Preferred Alternative.

Allowing fishing from a floating device would improve angler efficiency and increase fish harvest. However, the reduction in angler numbers that would occur under this alternative would still result in a significant reduction in local income.



### Impacts to Law Enforcement and Emergency Services

Impacts to law enforcement and emergency services would result from managing roads, boating, cultural resources, guided

	IN STATE OF COME	12000	1 Jap	and the designed	
Managing:	Preferred Alternative	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Roads/Vehicle Use					
Upgrading	+M	+M	-L	+M	+M
Boating	+M	-L	-L	+L	+M
Cultural Resources	Hard +L of the offense	+L	NC	NC	+L
Guided & Outfitted Services	+L	NC	NC	+L	+L
Law Enforcement & Emerg. Svs	+M	+M	-L	+L	+M
Overall	+M	+L	NC	+L	+M
<sup>1</sup> + Beneficial H High - Adverse M Modera NC No Change L Low	te		to a second s		The manufacture

### Table 36. Impacts to Law Enforcement and Emergency Services<sup>1</sup>

#### **Preferred** Alternative

Upgrading roads would improve driving conditions and safety as well as allowing better access for emergency services.

Providing a full-time officer, increasing the use of aircraft and motorboats for law enforcement during the primary season and establishing a uniform communication network available to all law enforcement officials would enhance public safety and reduce social conflicts and improve surveillance and protection of cultural resources.



Requiring all floating devices to display an identification tag would allow for better law enforcement and would likely result in better visitor behavior and fewer conflicts. Requiring guides to be certified for operation would lessen the need for emergency services slightly since nearly all of the need for emergency services have been with unguided groups and individuals.

#### Alternative 1

Under Alternatives 1 and 2, continuing to manage boating as in the past would result in continued escalation in the number of river users, requiring increased law enforcement. Catch and release angling would also present a challenging law enforcement dilemma since some anglers would be reluctant to release all fish landed.

Upgrading roads would improve driving conditions and safety as well as allowing better access for emergency services.

Providing a full-time law enforcement officer in Segment 2 and using boats and aircraft for surveillance and enforcement would significantly enhance public safety, reduce social conflicts and improve protection of cultural resources.

#### Alternative 2

Limiting off-highway vehicle use to designated roads would incur additional law enforcement expense. Protecting cultural values in high use areas would also require additional law enforcement patrols and monitoring for illegal digging and artifact collecting.

Continuing to allow unregulated motorboat and nonmotorized boat use with no party size limits would result in more social conflicts and place greater demands on law enforcement.

Maintaining existing roads at present standards would result in increased traffic congestion as use levels increase and a corresponding increase in the vehicle accident rate. Allowing vehicle parking to continue as in the past would also result in congestion, conflicts and potential accidents, requiring a significant law enforcement presence.

Emergency services would continue to be provided by the Maupin-based Southern Wasco County Ambulance Service Inc. Air-Life services are available from Bend or Portland in dire emergencies.

#### Alternative 3

Limitations on camping, boating and angling would require significant increases in patrolling and law enforcement. Requiring all floating devices to display an identification tag would allow better law enforcement and would likely result in better visitor behavior and fewer conflicts.

Requiring guides to be certified for operation would lessen the need for emergency services only slightly since nearly all of the need for emergency services have been with unguided groups and individuals.

Upgrading roads to meet safety standards would have a significantly beneficial effect on traffic safety. Road paving would result in quicker law enforcement response and emergency access.

#### Alternative 4

Regular surveillance and remote sensing to monitor vandalism would allow for a better response time for the investigation of alleged violations of cultural resources.

Requiring boat identification numbers and a visitor contact/monitoring system would provide better individual accountability and improved law enforcement as a result of easier identification of boating and other user groups.

Banning motorboats would reduce boating conflicts and safety problems and as a result, would lessen the need for law enforcement.





#### Impacts to Fire

Impacts to fire hazards would result from managing vehicle use, camping, boating and emergency services. They are summarized in Table 37 and discussed below.

#### Table 37. Summary of Impacts to Fire1 Alt. Managing: Preferred Alt. Alt. Alt. Alternative 1 2 3 4 Camping +M-L -L +L +MBoating -L -L +L+L+M**Emergency Services** +M+M-L +L +LOverall +M -L -L +L +M H High M Moderate <sup>1</sup> + Beneficial - Adverse L Low

#### Preferred Alternative

Restricting boating and camping use levels would reduce peak recreational use and also reduce potential fire hazards during those periods. However, an increased risk would occur during the weekday periods as a result of increased levels of use.

Overall fire hazard would be reduced as a result of increased surveillance and law enforcement.

With BLM increasing its fire suppression capabilities and assuming lead responsibility for coordinating fire suppression within the canyon, overall acreages burned would be expected to decrease and the control of wildfires in presently unprotected areas would improve. This would significantly reduce the risk to life and property.

#### Alternative 1

Allowing unlimited boating and camping would increase the potential for wildfires caused by smokers and campfires.

The impact from BLM increasing its fire suppression capabilities and assuming lead responsibility for coordinating fire suppression within the canyon would be the same as in the Preferred Alternative.

#### Alternative 2

Unrestricted boating and camping would increase the potential for wildfires caused by smokers and campfires.

BLM would continue providing fire protection from the Maupin fire guard station (two engines, four people) with back-up assistance from Prineville (helicopter crew and bucket) and nearby rural fire departments. The increase in number of recreational visitors to the planning area, plus the railroad operations would have the potential for overloading existing fire protection capabilities, especially if more than one fire occurred at the same time.

#### Alternative 3

Restricting boating and camping use levels would reduce peak recreational use and also reduce potential fire hazards during those periods. However, an increased risk would occur during the weekday periods as a result of increased levels of use.

Strictly enforcing fire regulations and conducting increased surveillance would help to reduce the probability of fires caused by recreation users.

#### Alternative 4

Reducing the total number of boaters and campers and allowing camping by reservation only would decrease the fire hazard from escaped campfires. Prohibiting camping between Maupin and Buckhollow would significantly decrease the risk of wildfire in that area.



## Impacts to Public Safety

Impacts to safety would result from managing roads, parking areas, boating, guided and outfitted services, emergency services and public information/education. They are summarized in Table 38 and discussed below.

## Table 38. Summary of Impacts to Public Safety<sup>1</sup>

		Alexandre and	1 all and a second	and the second	the second
Managing:	Preferred Alternative	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Roads/Vehicle Use		Martin Contractor	teran second		
Closing	+L	+L	-L	+L	+L
Upgrading	+M	+L	-L	+M	+M
Parking	+L	+L	-L	+L	+L
		T			
Boating	-L	-L	-L	+L	+L
Guided and Outfitted Services	+L	+L	+L	+L	+L
E					
Emergency Services	+L	+L	-L	+L Carry	+L
Information/Education	+L	+L	-L	+L	+L
					AND THE OWNER OF THE
Overall	+L	+L	-L	+L	+L
<sup>1</sup> + Beneficial L Low - Adverse M Moderate H High		And And And	line and second	Charles on their	

#### **Preferred** Alternative

Restricting vehicles to designated roads and upgrading certain roads and reconstructing parking and pullout areas would improve public safety by reducing the potential for vehicle-related accidents.

Providing a full-time law enforcement officer in Segment 2 would decrease the chances for serious public conflicts and accidents.

Implementing safety regulations such as speed limits, parking restrictions and prohibition of open fires would reduce the potential for vehicle accidents, drownings and fires.

Requiring an identification tag on all boats would discourage boat operators from using their boats in a discourteous or unsafe manner.

Requiring guides and their equipment to be certified would improve the quality of guided trips.

Providing interpretive areas, a visitor center, a public contact person and signs and bulletin boards would help to promote safe recreational practices, increase public knowledge of safety hazards and provide a safer environment.

With BLM increasing its fire suppression capabilities and assuming responsibility for coordinating fire suppression within the canyon, fires would be restricted to smaller acreages and more quickly controlled in presently unprotected areas.



Developing cooperative agreements with landowners for protecting cultural resources on private land would allow better protection of those resources from vandalism.

#### Alternative 1

Restricting vehicles to designated roads and upgrading certain roads and reconstructing parking and pullout areas would improve public safety by reducing the potential for vehicle-related accidents.

Designating or closing motor vehicle routes would lead to increased congestion on remaining roads and access points, increasing the probability of accidents.

Not restricting boating use levels would lead to an increase in boaters, resulting in greater potential for accidents, both on the roadways and the river.

Not limiting motorized boating use levels would allow an increase in the number of motorboats, resulting in an increase in public safety risks and accidents.



Requiring guides to meet minimum requirements would enhance the quality of guided trips.

With BLM increasing its fire suppression capabilities and coordinating fire suppression with local jurisdictions, dangers from wildfires would be decreased.

Providing a full-time law enforcement officer in Segment 2 would decrease the chances for serious public conflicts and accidents.

Providing staffed information stations, interpretive facilities and a visitor center would allow better public safety education, with a resulting decrease in unsafe behavior and safety problems.

#### Alternative 2

Closing undesignated vehicle routes without upgrading alternate routes would lead to increased congestion on remaining roads and access points, increasing the chances for accidents.

Maintaining existing roads, parking areas and pullouts at present standards, with the problems of narrow width, high traffic volume, dust, rutting and "washboards" would result in a high potential for accidents.

Continuing to allow unregulated motorboat use and providing no reconstruction of launch sites would result in an increased number of river users, increasing the potential for boating accidents.

Continuing present levels of law enforcement and emergency services would result in inadequate response to river related accidents.

Continuing the current type and level of public information and education would result in many users not having adequate knowledge of river related safety practices.

#### Alternative 3

Upgrading roads, especially widening the narrow segments and limiting parking to designated areas would have a significant positive effect on public safety. Developing new parking areas and pullouts and closing others would also enhance public safety by reducing the potential for accidents.

Limiting boating use levels (including motorboats), improving launch sites and limiting party size would maintain present recreational use levels and improve public safety.

Implementing safety regulations such as speed limits, parking restrictions and prohibition of open fires would reduce the potential for vehicle accidents, drownings and fires.

Requiring an identification tag on all boats would discourage boat operators from using their boats in a discourteous or unsafe manner.

Providing interpretive areas, a visitor center, a public contact person and signs and bulletin boards would help to promote safe recreational practices, increase public knowledge of safety hazards and provide a safer environment.

Requiring guides to be certified for operation would improve the quality of guided trips.

Alternative 4

Upgrading certain roads, especially through widening narrow segments and limiting vehicle size, would reduce congestion at launch sites and parking areas and would have a beneficial effect on public safety.

Significantly reducing boating use levels, improving launch sites and limiting group size would significantly reduce the potential for boating accidents.

Banning motorboats would improve the river's boating safety since all traffic would be moving in the same direction at similar speeds.

Requiring guides and their equipment to be certified would improve the quality of guided trips.

Distributing handout information through guides, boater passes and display boards and developing and distributing an educational curriculum for schools would increase public awareness of safety problems and then solutions, enhancing overall public safety.



## Impacts to Private Land and Property Rights

No direct impacts to private land would occur under any of the alternatives since none of the proposed management actions require changes in the use of property now in private ownership. Secondary impacts could, however, occur on private land as a result of actions taken on adjacent BLM, State or Tribally-owned land. They include impacts which could result from managing roads, camping, cultural resources, boating and trails. They are summarized in Table 39 and discussed below.

Table 39. Summary of Impacts to Private Land and Property Rights <sup>1</sup>									
Managing:	and make	Preferred Alternative	Alt. 1	Alt. 2	Alt. 3	Alt. 4			
Camping		+L	+L	-L	+L	+L			
Cultural Resources		+L	+L	NC	+L	+L			
Boating		+L	-L	-L	+L com	+L			
Trails		+L	+L	NC	+L	+L			
Overall		+L	+L	-L	+L	+L			
<sup>1</sup> + Beneficial - Adverse NC No Change	L Low M Moderate H High								

#### **Preferred** Alternative

Developing cooperative agreements with landowners for protecting cultural resources on private land would allow better protection of those resources from vandalism.

Limiting boating use levels and limiting party size would lessen the chances for trespass on private lands. Limiting camping to certain areas, limiting group size and length of stay would also reduce the potential for trespass on private lands.

The installation of property boundary signs adjacent to the river as well as in upland areas would significantly reduce the potential for inadvertent trespass onto private land. It would also improve the ability to prosecute willful cases of trespass.

Improving existing trails and constructing new hiking trails would make hiking routes more durable and better defined which would lessen the likelihood of hikers inadvertently trespassing on adjacent private lands.

#### Alternative 1

Allowing camping on private lands under easements obtained from willing sellers would provide additional opportunities for public camping. Landowners would be compensated for the use of their land for recreation.

Not restricting boating use levels would result in continued escalation in the number of river users. The problem of trespass on private land would also increase as overall river use increases.

Improving existing trails and constructing new hiking trails would make hiking routes more durable and better defined which would lessen the likelihood of hikers inadvertently trespassing on adjacent private lands.

#### Alternative 2

Allowing unrestricted camping would result in an escalation of adverse impacts to private land through increased trespassing. No limit on boat numbers or group size would result in continued escalation in numbers of river users and the related problem of trespassing on private lands that would occur with increased use.

#### Alternative 3

The impact of developing cooperative agreements with landowners for protecting cultural resources on private land is the same as in the Preferred Alternative.

The impacts of constructing hiking trails, limiting boating use levels, limiting party size, limiting camping to certain areas, limiting group size and length of stay are also the same as in the Preferred Alternative.

#### Alternative 4

Prohibiting camping between Maupin and Buckhollow would lessen the potential for trespass on private land in that area.

Significantly reducing boating use levels and limiting party size would significantly reduce the chances for trespass. Limiting camping to certain areas by reservation, limiting trail locations to suitable areas and limiting group size and length of stay would also reduce the number of users and the potential for trespass.



## Consistency of Alternatives with Federal, Tribal, State and Local Plans

The plans, policies and programs of various agencies are affected by river related objectives, issues and proposed management actions.

#### Federal Plans, Programs and Policies

All alternatives are moderately to highly consistent with officially approved or adopted Federal natural resource related plans, programs or policies. On balance, the preferred alternative is the most consistent given the mix of proposed actions that protect sensitive or outstandingly remarkable values while accommodating high levels of recreation use and associated facilities within the corridor. In some instances, additional analysis and documentation may be required in order to meet procedural requirements prior to land use or resource allocation changes. For the BLM, these changes will be considered in the next amendment or revision of the Two Rivers Resource Management Plan. It is assumed that other Federal agencies will modify any proposed actions or programs to conform to the final Lower Deschutes River Management Plan. This would include construction projects such as road improvements, utility corridors, pest control programs and management of species or their habitat under the Endangered Species Act. Other programs could be modified or extended to avoid impacts or extend benefits.

#### Tribal, State and Local Plans

Table 40 displays the relationship between the county and city comprehensive plans to river planning objectives and issues. Table 41 displays consistency with Statewide planning goals. Table 42 displays consistency with the State of Oregon Wildlife Goals. There are no known conflicts between the plan alternatives and the policies or programs of the Oregon State Parks and Recreation Department, State Police, Marine Board, Dept. of Agriculture, Dept. of State Lands (both lands and navigable waterways), Dept. of Forestry (fire protection), Dept. of Environmental Quality (air and water quality), Energy Facility Siting Council and Northwest Power Planning Council.

and Issues								
	A Contraction of the		Preferred Alternative	Alt. 1	Alt. 2	Alt. 3	Alt. 4	
Objecti	ves/Issues		and the second	1.1.1				
I. Pr R	rotection of Natural and Cultural esources							
А	. Riparian Areas	Warm Springs Tribes	Н	L	М	Н	Н	
		Jefferson County	Н	М	Н	Н	Н	
		Wasco County	Н	М	Н	Н	Н	
		City of Maupin	Н	М	Н	Н	Η	
		Sherman County	Н	М	Η	Н	Н	
B	Water Quality and Flows	Warm Springs Tribes	Н	L	М	Н	Н	
		Jefferson County	Н	М	Н	Н	Н	
		Wasco County	H	Μ	Н	Н	Н	
		City of Maupin	Н	М	Н	Н	Η	
		Sherman County	Н	М	Η	Н	Н	
С	. Wildlife Habitat	Warm Springs Tribes	М	L	М	М	Н	
		Jefferson County	Н	М	Н	Н	Н	
		Wasco County	Н	М	Н	Н	Н	
		City of Maupin	Н	М	Н	Н	Н	
		Sherman County	Н	М	Н	Н	Н	
D	. Historical/Archaeological	Warm Springs Tribes	М	L	М	Н	Н	
		Jefferson County	Н	М	Н	Н	Н	
		Wasco County	Н	М	Н	Н	Н	
		City of Maupin	NA	NA	NA	NA	NA	
		Sherman County	Н	М	Н	Н	Н	

Table 40. Relationship of Tribal, State and Local Plans to River Planning Objectives



Table 40. Relationship of Tribal, State and Local Plans to River Planning Objectivesand Issues (continued)

				Preferred	A1+ 1	A1+ 2	A1+ 3	Alt 4
1.33	1.11			Alternative	Alt. I	Alt. 2	All. 5	All. 4
П.	Recre	eation Activities						
	A.	Nonmotorized Boating	Warm Springs Tribes	М	L	М	М	Н
			Jefferson County	Н	М	М	М	М
			Wasco County	Н	Н	Н	Н	Н
			City of Maupin	Н	Н	Н	Н	Η
			Sherman County	Н	Н	Н	Н	Н
	B.	Motorized Boating	Warm Springs Tribes	M x	L	М	М	Н
			Jefferson County	M x	NS	NS	NS	NS
			Wasco County	M x	М	М	Н	М
			City of Maupin	M x	NS	NS	NS	NS
			Sherman County	M x	Ι	Ι	М	Н
	C.	Fishing Experience	Warm Springs Tribes	М	L ·	Μ	M	Н
			Jefferson County	Н	Μ	М	Н	Н
			Wasco County	Н	М	М	Н	Η
			City of Maupin	Нx	NS	NS	NS	NS
			Sherman County	H	Μ	Μ	Η	Н
	D.	Camping	Warm Springs Tribes	М	L	М	М	Η
			Jefferson County	Нx	М	М	Μ	М
			Wasco County	Нx	М	М	М	М
			City of Maupin	NA	NA	NA	NA	NA
			Sherman County	H x	М	М	М	Μ
	E.	Guided and Outfitted						
		Services	Warm Springs Tribes	M x	NS	NS	NS	NS
			Jefferson County	M x	NS	NS	NS	NS
	142		Wasco County	M x	NS	NS	NS	NS

		and a second	and the second	and the second s	Will print they	112 - 110	11000	and the
				Preferred	1.5		in a set	
				Alternative	Alt. 1	Alt. 2	Alt. 3	Alt. 4
			City of Maupin	Mx	NIS	NIS	NS	NIS
			Sherman County	Mx	NS	NS	NS	NS
	E.	Public Access	Warm Springs Tribes	Mx	L	M	M	Н
	1.	, achter needoo	Jefferson County	Н	Ĥ	M	M	M
			Wasco County	Н	Н	М	М	М
			City of Maupin	Н	Н	Н	Н	Н
			Sherman County	Н	Н	Н	Н	Н
	G.	User Fees	Warm Springs Tribes	M x	NS	NS	NS	NS
			Jefferson County	M x	NS	NS	NS	NS
			Wasco County	M x	NS	NS	NS	NS
			City of Maupin	M x	NS	NS	NS	NS
			Sherman County	M x	NS	NS	NS	NS
III.	Publ	ic Safety/Services						
	Α.	Emergency Services	Warm Springs Tribes	Нx	М	М	Н	Н
			Jefferson County	Н	М	М	Н	Н
			Wasco County	Н	М	М	Н	Η
			City of Maupin	Нx	Μ	Μ	Н	Η
			Sherman County	Нx	NS	NS	NS	NS
	B.	Law Enforcement	Warm Springs Tribes	Нx	NS	NS	NS	NS
			Jefferson County	H x	NS	NS	NS	NS
			Wasco County	Нx	NS	NS	NS	NS
			City of Maupin	Н	Η	Н	М	М
			Sherman County	Нx	NS	NS	NS	NS

Table 40. Relationship of Tribal, State and Local Plans to River Planning Objectives and Issues (continued)



1.			Preferred Alternative	Alt. 1	Alt. 2	Alt. 3	Alt. 4
C.	Trespass on Tribal and	Warm Springs Tribes	м	L	М	М	Н
	Private Lands	Jefferson County	Мх	NS	NS	NS	NS
		Wasco County	Мх	NS	NS	NS	NS
		City of Maupin	Н	Н	Н	Н	Н
		Sherman County	Мx	NS	NS	NS	NS
D.	Information and Public	Warm Springs Tribes	Нx	NS	NS	NS	NS
	Education	Jefferson County	Нx	NS	NS	NS	NS
		Wasco County	Нx	NS	NS	NS	NS
		City of Maupin	Нx	NS	NS	NS	NS
		Sherman County	Нx	NS	NS	NS	NS
H = High CoM = ModeraL = Low CoI = InconsistNA = Not ANS = Not Spx = Expected	onsistency te Consistency nsistency ent pplicable or No Authority recific level after plan implementation						

Table 41. Relationship of Alternatives to County Comprehensive Plans as they Incorporate and Reflect Statewide Land Conservation and Development Goals

#### LCDC Statewide Goal

#### Number and Description

1. To develop a citizen involvement program that ensures the opportunity for citizens to be involved in all phases of the planning process.

The State/Federal river management planning process provides for public input at various stages. Public input was specifically requested in developing issues and management concerns or problems and a range of alternatives to consider various solutions to the issues. Public input will continue to be utilized in the environmental analysis process and development of the final river management plan.

To establish a land use planning process and policy framework as a basis for all decisions and actions related to use of land and to assure an adequate factual base for such decisions and actions.

The preferred alternative and other alternatives have been developed in accordance with the river planning process approved by the interagency Deschutes River Policy Group which provides a policy framework for all decisions and actions. The analysis also complies with the procedural guidance under the National Environmental Policy Act of 1969 and the Council on Environmental Quality regulations.

3. To preserve and maintain agricultural lands.

The vast majority of public lands in the planning area are not suitable for intensive agriculture. All alternatives provide for continued use of private lands for agriculture. The acquisition (based on willing seller/buyer basis) of agricultural lands by the Federal, State or local governments or any association which leads to discontinued agricultural or grazing use, would not be inconsistent with approved alternate uses of Goal 3 lands.



#### 4. To conserve forestlands for forest use.

The river planning area has no significant commercial forestland or woodlands. Due to the lack of historical use, no alternative would affect wood products production in the short or long term.

5. To conserve open space and protect natural and scenic resources.

Natural and visual resources and identified outstandingly remarkable values were considered in the development of the preferred alternative and other alternatives. Recreation use levels and related management, under the preferred alternative and other alternatives would impact both the quantity, quality and type of recreational experience, as well as natural and visual resources. Adverse impacts to visual resources, wildlife habitat and unique natural areas are greatest under Alternatives 1 and 2 and least under Alternatives 3, 4 and the preferred alternative where natural values and recreation in a less crowded setting are emphasized.

6. To maintain and improve the quality of the air, water and land resources of the State.

The Federal and State water quality standards would be met and water quality would be maintained and/or improved under all alternatives. All alternatives would comply with the Statewide Smoke Management Plan since the entire area would be under a "full suppression" fire strategy and relatively little, if any, prescribed fire use is anticipated. Water quality standards would be met through local and State government procedures on State and private lands and project compliance or mitigation on Federal lands.

7. To protect life and property from natural disasters and hazards.

Natural hazard areas, particularly floodplains and areas with highly erosive soils have been identified. All alternatives provide for appropriate management of natural hazard areas. Authorized developments within natural hazard areas will be minimal under each alternative, with project construction and engineering reflecting local conditions, such as setbacks from rims and floodplains.

8. To satisfy the recreational needs of the citizens of the State and visitors and where appropriate, to provide for the siting of necessary recreational facilities including destination resorts.

The Deschutes River Policy Group actively coordinates its outdoor recreation and river corridor planning efforts with affected agencies to establish integrated management objectives on a regional basis. Under the Preferred Alternative and all other alternatives, opportunities would be provided to meet many recreational needs that currently exist but would not fully utilize the recreational potential of the area. Additional recreational opportunities and slight growth, in most segments, would be available under the Preferred Alternative, however not to the degree as would be available under Alternatives 1 and 2. Certain types of recreational opportunities, where the presence of other users is not a deterrent or disagreeable, would have a higher quality under Alternatives 1 and 2. Types of recreation opportunities requiring less populated environments would have a higher quality under Alternatives 3 and 4 and the Preferred Alternative. The quality of experience would be affected by having to wait in line to use the river, via the limited entry system if it is implemented.

9. To diversify and improve the economy of the State.

During the first three years, the Preferred Alternative and Alternatives 1 and 2 would induce economic stability and economic gains through increased recreational use. Alternatives 1 and 2 would provide higher economic gains after the first three years because they allow additional future growth.

However, under the Preferred Alternative, if the limited entry system is implemented in the fourth year, there would be a decrease in economic income, particularly on weekends. This would be caused by displacement of weekend users who may not be able to, or desire to utilize the river during weekday periods. Instituting the limited entry system would cause significant decreases in weekend use. Eventually economic stability may recover due to increased dollar costs to use a limited commodity. When mid-week and weekend levels are saturated and a limited entry system exists, increased dollar value of the limited commodity would be the only economic gain that would occur.

Alternatives 3 and 4 would provide less economic benefits initially because of reduced use levels. Eventually economic benefits may increase as people become willing to spend more for a scarce commodity.

All alternatives would encourage an economic stability picture in the long term because it would institute predictability. However, economic gains would not result to the degree they have in the past and some types of businesses would suffer.



A slightly improved economy would occur under the Preferred Alternative and more so under Alternatives 1 and 2. The Preferred Alternative and Alternatives 3 and 4 would cause disruptions in the local economies as they adjust to a limited entry system and changed use patterns. Alternatives 3 and 4 would result in decreased economic potential.

10. To provide for the housing needs of citizens of the State.

A very limited number of residences might be sited on private lands within the non-urban corridor, assuming State and local siting standards would be met. Housing units within appropriately zoned portions of the City of Maupin could be within 1/4 mile of the river, but would be outside the Federal river corridor and are not within the designated State scenic waterway.

11. To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.

A very limited amount of public lands may be available for rural facility development following a BLM land sale or exchange, if the action would be permitted under the Scenic Waterways Statewide rules and local government comprehensive plan and ordinances. Private and State land uses for urban and rural development would be guided by State rules under the Scenic Waterways program.

12. To provide and encourage a safe, convenient and economical transportation system.

All alternatives provide for continuation of existing linear and areal rights-of-way for powerlines, pipelines, railroads, communications facilities, roads and other public purposes. No additional major facilities would be permitted across public land except at designated crossing points, adjacent to existing rights-of-way. Development of hiking, biking and horse trails would emphasize nonmotorized transportation reducing the need for motorized transportation system development.

#### 13. To conserve energy.

Conservation and efficient use of energy sources are objectives in all participating local, State and Federal agency activities. The preferred alternative and Alternatives 3 and 4 encourage use of local shuttle buses, van pools, bicycles, horses and hiking trails within the river corridor.

14. To provide for an orderly and efficient transition from rural to urban land use.

The potential sale, transfer or exchange of public lands adjacent to the communities of Warm Springs and Maupin is unlikely at this time under all alternatives, but would provide for a logical growth pattern for those communities in areas which will not have adverse affects on competing land uses. Development of private lands for additional residences and urban uses would be guided by county, city and State guidelines and comprehensive plans.

Goals 15-19 address the Willamette River Greenway and various ocean, coastal or estuarine resources. They are not applicable to the three counties or City of Maupin (any portion of the Lower Deschutes River Planning Area).





# Table 42. Consistency of the Lower Deschutes River Plan Alternatives with State of Oregon Wildlife Goals

Wildlife Goal

1. To maintain all species of wildlife at optimum levels and prevent the serious depletion of any indigenous species.

All alternatives are consistent with the objective: Maintaining or achieving maximum wildlife species diversity through habitat diversity and preventing any depletion of species with proper management.

2. To develop and manage the lands and waters of the State in a manner that will enhance the production and public enjoyment of wildlife.

Habitat improvement for the upland, riparian and aquatic habitats in the preferred alternative and Alternatives 1, 3 and 4 are consistent with the objective. Alternative 2 would maintain the present situation without any planned development to improve habitat.

3. To regulate wildlife populations and the public enjoyment of wildlife in a manner that is compatible with primary uses of the land and waters of the State and provides optimum public recreation benefits.

All alternatives, except Alternative 2, are consistent with the objective by improving habitat diversity and increasing wildlife species diversity, which would enhance the quality of public enjoyment of wildlife. Alternative 2 would maintain the existing situation.

4. To develop and maintain public access to the lands and waters of the State and the wildlife resources thereon.

All alternatives would restrict vehicle use in areas that would have adverse impacts to wildlife species. All Alternatives would be consistent with the objective in developing or maintaining public access, although wildlife disturbances could occur. The Preferred Alternative as well as Alternatives 3 and 4 would limit or preclude motorized boats on one or more river segments except for administrative and emergency uses.

5. To permit an orderly and equitable utilization of available wildlife.

All alternatives are consistent with this objective. Limited access and vehicle use could restrict opportunities into areas under all alternatives.

#### Other Resource Plan or Program Comparisons

#### Oregon State Air Quality Implementation Plan

Depending on cumulative effects in conjunction with neighboring prescribed burning, the smoke particulate emissions from any prescribed burning in the river corridor may conflict with the Oregon State Implementation Plan (SIP) concerning air quality. Emissions from prescribed burning can have significant short-term adverse effects on visibility in and around wilderness areas. There are legal requirements to preserve or enhance visibility quality in designated Class I Areas (Clean Air Act, 1977). The closest Class I Area downwind of the river corridor is the Strawberry Wilderness on the Malheur National Forest. Under certain weather conditions, smoke from the river corridor may affect visibility in the Strawberry Wilderness.

#### **Oregon Outdoor Recreation Plans**

The Oregon Statewide Comprehensive Outdoor Recreation Plan 1988-1993 (SCORP) was approved in December 1988. The SCORP has been reviewed and found consistent with the Statewide planning goals and reflects designation of the Lower Deschutes in the 1988 Omnibus Oregon Wild and Scenic Rivers Act, as well as BLM and local government planning processes and interrelationships.

There are no designated components of the State "Bicycle Route System" or "Historic and Scenic Highways" program. The proposed river plan would also support the broad objectives of the "State Parks 2010 Plan" which was developed by the Oregon State Parks and Recreation Division, beginning in 1987. There are also a variety of State Grant-In-Aid programs listed in the SCORP which could be utilized for appropriate projects by local governments to meet objectives of the river plan. Expansion of publicly-owned lands or easements could be funded through the Federal Land and Water Conservation Fund, lower Deschutes boater pass receipts, general Marine Board receipts or cash on land donations. In addition, land exchanges by the State or BLM could either "block up" lands in the corridor or facilitate acquisition of key nearby parcels that would provide improved access or off-river camping and trip-staging areas. It is assumed that all acquisitions would be on a "willing buyer-willing seller basis," that acquisitions would be held to the minimum needed to meet river objectives and acquired lands would be managed consistent with the final approved river plan.

#### Establishment of Pacific Northwest System of Research Natural Areas and Preserves

Federal and State land management agencies and private organizations have been actively developing a system of Research Natural Areas (RNAs) on Federally-managed lands since 1927. The Oregon Natural Heritage Program has identified plant community or habitat cells for representation in a complete State Natural Areas program. During the BLM's land-use planning process, staff specialists and interested members of the public identify potential RNAs and consider expansion or additional management directions for existing, designated RNAs. Potential RNAs may also be identified during the development of recreation management plans, allotment management plans, habitat management plans, construction project field review, on-



going inventories and plan monitoring, or from additional public input. The guiding principle of RNA and Preserve management is to prevent activities which directly or indirectly modify ecological processes in the area. RNA and Preserve uses are restricted to protect opportunities for

observational activities associated with research and education. Private land components of the natural heritage base are generally entitled "Preserves." There are currently over 100 RNAs and Preserves on Federal, State and private lands in Oregon which contain plant communities and other natural features that are preserved for scientific and educational values. There are no designated RNAs or private land preserves within the Lower Deschutes Planning Area, despite inventory efforts to locate candidate areas during past planning efforts.

#### Irreversible or Irretrievable Commitment of Resources

Areas committed to facilities and roads constitute an irretrievable loss of vegetative production. Land committed to major roads and facilities could be considered to be an irreversible effect.

Use of mineral resources such as cinders and gravel has both irretrievable and irreversible effects.

### Short-Term Use and Long-Term Productivity

The most significant activity proposed by the alternatives is the continued management of vegetation for wildlife habitat, recreation and visual resources. Livestock grazing also affects the vegetation. The short-term effects increase the long-term productivity as existing conditions are altered to enhance the long-term conditions. Short-term use of soils for roads, or other activities which compact soil will reduce the long-term productivity on a site specific basis. This would occur on a small portion of the river corridor and would be widely scattered.

### Probable Adverse Environmental Impacts that Cannot be Avoided

1. Soil would be displaced as a result of construction of roads, trails and recreation facilities. Overall, soil productivity would be maintained except for sites dedicated to roads, recreation sites and other facilities which compact the soil or occupy a site.

2. Air quality may be temporarily degraded in localized areas as a result of prescribed fires.

3. Short-term degradation of visual quality in recreation and visual areas would occur as a result of recreation site and trail construction until vegetation covers the disturbed areas.

4. Areas suitable for undeveloped recreation could become unsuitable for this type of recreation experience if they are allocated to other land uses. Management prescriptions (practices) scheduled for these other land uses could permanently destroy or temporarily modify attributes making them suitable for undeveloped recreation (i.e. building roads; changing land form; or changing vegetation arrangement, species composition, or age class mix).

## VII. Implementation

## A. Roles and Interagency Relationships

Successful implementation of the Lower Deschutes River Management Plan will require coordination and cooperation between all of the managing agencies. The Omnibus Oregon Wild and Scenic Rivers Act requires the Secretary of the Interior to enter into a cooperative management agreement with the State of Oregon and the Confederated Tribes for plan development and subsequent implementation. The general roles and relationships that would occur if the Preferred Alternative were adopted are discussed in the Management Common to all Alternatives section and below. Each managing agency would make its decisions under applicable Federal, State, local or Tribal procedures which may offer either additional public comment or decision appeal rights.

Bureau of Land Management Action Responsibilities and Priorities: (subject to approval under the National Environmental Policy Act procedures and 43 CFR 4.4 decision review procedures).

#### I. Protection and Enhancement of River Related Natural and Cultural Resources

- 1. Manage and, where necessary, adjust livestock grazing on BLM lands; construct necessary range developments.
- 2. Conduct cultural resources resurvey, increase surveillance and begin stabilization of cultural sites on BLM land as needed.
- 3. Conduct vegetation monitoring studies on BLM land.
- 4. Conduct vegetative seeding, planting and prescribed burning on BLM lands.
- 5. Increase fire suppression capabilities and assume lead responsibility for coordinating all fire suppression within the canyon.

6. Seek technical assistance from U.S. Fish and Wildlife Service regarding implications of proposed management actions on candidate or listed threatened or endangered species.



#### II. Recreation Facility or Site Rehabilitation or Development

1. Designate or close and rehabilitate vehicle routes as well as parking areas/pull-outs on BLM land.

2. Designate and "harden" or close and rehabilitate undeveloped campsites on BLM land.

3. Coordinate the upgrading/construction of camping and day-use areas, as well as roads, trails, parking areas, launch/landing sites, signs and other information/education facilities on BLM land.

III. Management of Recreation Use Levels and Commercial Activities

1. Jointly monitor recreational use levels with State agencies and the Confederated Tribes.

2. Administer commercial special recreation permit system for entire river.

#### IV. Public Safety, Services and Communications

1. Establish law enforcement agreements between BLM and Sherman County; continue agreements with Jefferson and Wasco counties.

2. Coordinate publication of maps and information/education brochures.

3. Coordinate establishment of a uniform communication network for managing agencies.

State of Oregon [and Local Governments] Action Responsibilities and Priorities (subject to State-level rule making or local government ordinance adoption procedures)

I. Protection and Enhancement of River Related Natural and Cultural Resources

1. Manage and, where necessary, adjust livestock grazing on state land. Construct necessary range developments. (Oregon Department of Fish and Wildlife - ODFW).

2. Conduct vegetative monitoring studies on State lands (ODFW).

3. Conduct vegetative seeding and planting on State land (ODFW).

4. Coordinate survey, surveillance and stabilization of cultural resources on State land. (Oregon State Parks and Recreation Department-OSPRD)

5. Conduct wildlife and fish monitoring on entire river. (ODF&W)

6. Conduct gravel replacement in upper three miles of river downstream from Pelton Reregulating Dam. (ODFW)

#### II. Recreation Facility or Site Rehabilitation or Development

1. Designate or close and rehabilitate vehicle routes as well as parking areas/pull-outs on State land. (OSPRD)

2. Designate and "harden" or close and rehabilitate undeveloped campsites on State land. (ODFW/OSPRD)

3. Coordinate the upgrading/construction of camping and day-use areas as well as roads, trails, parking areas, launch/landing sites, signs and other information/education facilities on State land. (OSPRD)

4. Sign and re-open Ferry Canyon Road. (Wasco County)

5. Obtain funding and upgrade Maupin City Park. (City of Maupin)

#### III. Management of Recreation Use Levels and Commercial Activities

1. Jointly monitor recreation use levels with BLM and the Confederated Tribes (OSMB, ODFW/OSPRD)

2. Administer angling and hunting regulations. (ODFW)

3. Administer joint agency boater allocation system, if one is implemented. (Oregon State Marine Board-OSMB)

4. Take the lead in raising boater pass fee in short term. Replace it with an all-user fee with a "Deschutes River foundation/ sinking fund" in the long term. (OSPRD)

5. Develop and implement boat identification tag system. (OSMB)

6. Implement motorboat regulations. (OSMB)



### IV. Public Safety, Services and Communications

1. Develop and implement public information/education facilities and efforts jointly with BLM and the Confederated Tribes. (ODFW/OSPRD)

2. Develop regulation for legislative action requiring all dogs to be kept on leash except while actually hunting during established hunting seasons. (Oregon State Police - OSP)

3. Obtain funding and increase law enforcement capability, especially a full-time officer during the primary use season. (OSP)

4. Institute a 25-passenger vehicle capacity limit. (OSP)

Confederated Tribes of the Warm Springs Indian Reservation Action Responsibilities and Priorities (subject to Tribal rule and policy making procedures)

I. Protection and Enhancement of River Related Natural and Cultural Resources

1. Manage and where necessary, adjust livestock grazing on Tribally-owned land; construct necessary range developments. [To be assisted by the Bureau of Indian Affairs]

2. Conduct vegetative monitoring studies on Tribally-owned land.

3. Conduct vegetative seeding and planting on Tribally-owned land.

4. Conduct survey, surveillance and stabilization of cultural sites on Tribally-owned land.

## II. Recreation Facility or Site Rehabilitation or Development

1. Designate or close and rehabilitate vehicle routes as well as parking areas/pull-outs on Tribally-owned land.

2. Designate and "harden" or close and rehabilitate undeveloped campsites on Tribally-owned land.

3. Coordinate the upgrading/construction of camping, day use, roads, trails, parking areas, launch/landing sites, signs and other information/education facilities on Tribally-owned land.

III. Management of Recreation Use Levels and Commercial Activities.

1. Jointly monitor recreation use levels with BLM and State agencies.

IV. Public Safety, Services and Communications

1. Continue to implement and enforce the Reservation Fishing and Camping Regulations.

## **B.** Cost Estimates

Estimated costs of construction and maintenance for all facilities proposed under each alternative are shown in Tables 43 and 44. Table 45 summarizes estimated costs for increased fire suppression and law enforcement capabilities under each alternative. It should be noted that these costs are for survey, design, construction and maintenance. No administrative or management costs are included.

Table 46 shows estimated operating costs and revenue generated from the existing boater pass program and various all user fees. These estimates are based on existing overall use levels.



Area/Facility to be Developed	Preferred Alternative Cost in \$000s	Alternative 1 Cost in \$000s	Alternative 2 Cost in \$000s	Alternative 3 Cost in \$000s	Alternative 4 Cost in \$000s
Undeveloped campsites at average cost of \$9,000 per site <sup>1</sup> except under Alternative 2.	3,000 (334 sites 'ncluding 21 on Tribally-owned and)	3,070 (341 sites including 21 on Tribally-owned land)	50 (319 sites)	1,480 (164 sites)	970 (108 sites)
Developed/Semi-Devel- oped Campsites and Day-Use Areas					
Site Name					
Segment 1					
Mecca Flat	325	325		200	100
Dry Creek	150	150		100	70
Trout Creek	250	250	100	150	100
South Junction	250	250	100	150	100
Segment 2					
Bull Pasture	325	325		-	-
Nena Creek	15	15	-	100	50
Devil's Canyon	15	15	-	100	50
Long Bend	15	15	-	100	50
Harpham Flat	500	500	1 1 4 A	150	100
Wapinitia	15	15	0.24-200	75	50
Wapinitia Overflow	-	15	-	15	-
Boxcar Rapids	15	15	24	15	
Maupin City Park	350	300		100	100
Oasis Flat	300	250		100	-
Grey Eagle	15	100		100	÷ .
14 17 1		15			
Area/Facility to be Developed	Preferred Alternative Cost in \$000s	Alternative 1 Cost in \$000s	Alternative 2 Cost in \$000s	Alternative 3 Cost in \$000s	Alternative Cost in \$000s
----------------------------------	--	---------------------------------	---------------------------------	---------------------------------	-------------------------------
Rocky Flat		15			-
Handicap Ramp	15	100		50	n dereste
Oak Springs	300	250		100	
Surf City	50	100		100	-
White River	75	100		100	
andy Beach	500	75			
herars Falls		75	50	100	
White River State Park	225	225			125
Segment 3					
Buckhollow	50	50			he was
Boulder Flat		50	-		1000
ine Tree	50	50	-	50	e la serie
win Springs	60	60	-	100	50
Dak Brook	40	40	-	100	50
ones Canyon	70	70		70	50
Gert Canyon	40	40	1	40	These Hards
eavertail	20	30		30	30
Jpper Rattlesnake	40	40		100	
ower Rattlesnake	40	40	-	100	50
Aacks Canyon	20	30	-	30	30
Segment 4					
Cloan	an part - ale al al	60	-	-	-
Deschutes State Park		250			
fotal	\$7,135	\$7,375	\$300	\$4,005	\$2,125

## Table 43. Estimated Development Costs for Camping and Day-Use Areas by Alternative (continued)



## Table 44. Estimated Construction Costs for Roads, Trails, Launch Areas and Informational Facilities by Alternative

Construction Project	Preferred Alternative Cost in \$000s	Alternative 1 Cost in \$000s	Alternative 2 Cost in \$000s	Alternative 3 Cost in \$000s	Alternative 4 Cost in \$000s
Roads			TANKA CANADAN	State Street and	sign service
Mecca Flat	150	150		150	The season in the season of the
Trout Creek	300	400	Carlos and Control of	300	and the second second
Maupin-Harpham Flat	1,050	1,050		1,050	780
Harpham Flat-Locked Gate	1,040	1,400	-	1,040	1,040
Buckhollow-Macks Canyon	4,800	4,800		4,800	El Hards- and hard
Kloan	-	500		500	
Parking Areas & Pullouts	200	250		150	150
Trails					
Mecca Flat-North Junction	630	630	NE 2	630	in march of
White River-Nena Creek		850			- 1. M 1. M.
Twin Tunnels		40		No. 1 Canada Sala	and the second sec
Beavertail		40		Astrono - Children	and the second
Macks Canyon-Deschutes					
State Park	750	750	5.7 N L + N N N N	750	Tenne and
Heritage Landing Upstream	100	100	1.1.1.1.		
Equestrian Facilities	88	88	18 0 - AV 9	88	-
Access Trails Stabilization	150	150	Contraction of the	100	100
Total	9,258	11,198	0	9,558	2,070
Boat Launching/Landing Sites					
Warm Springs	80	80	Second real former		Mining - The
Mecca Flat	196	196		196	Closed
Dry Creek		22			Closed
Trout Creek	22	22	while the state	and the second	All suger merel
South Junction	60	60	AND A DECEMPTOR OF A DECK	40	Closed
Locked Gate	and a second second	STATE MANAGE			Closed

## Table 44. Estimated Construction Costs for Roads, Trails, Launch Areas and Informational Facilities by Alternative (continued)

Construction Project	Preferred Alternative Cost in \$000s	Alternative 1 Cost in \$000s	Alternative 2 Cost in \$000s	Alternative 3 Cost in \$000s	Alternative 4 Cost in \$000s
Nena Creek	22	22		and and star	Closed
Devil's Canyon		22	-	22	Closed
Long Bend		22	-	22	Closed
Harpham Flat	22	22	-	22	CONTRACTOR -
Wapinitia	22	22	-	22	Closed
Maupin City Park	1		-		
Surf City			-	-	Set Still - Market
Sandy Beach	236	22	-	236	-
Sherars Falls	100 - C. C. C. C.				Closed
Little Sandy Beach	22	22 .	-	22	Closed
Pine Tree	22	22	-	22	-
Beavertail	25	25	-	25	
Macks Canyon	25	25	-	25	-
Heritage Landing	236	236	Route and ME	ALTER AND	
Deschutes State Park	-	60		40	Closed
Total	990	902	0	694	0
Information/Education Facilities Signs & Bulletin Board					and the second second
Displays	30	50	50	30	30
Information Stations	240	320	40	160	
Interpretive Signs Visitor Center at Old	100	150	50	100	100
Maupin Railroad Station Visitor Center at Maupin	266			266	
City Park	20 2000	830		2. 1878	
Maps and Brochures	40	40	20	20	20
Education Curriculum	-			The second second	25
Total	676	1,390	160	576	175



## Table 44. Estimated Construction Costs for Roads, Trails, Launch Areas and Informational Facilities by Alternative (continued)

Construction Project	Preferred Alternative Cost in \$000s	Alternative 1 Cost in \$000s	Alternative 2 Cost in \$000s	Alternative 3 Cost in \$000s	Alternative 4 Cost in \$000s
Total Estimated Annual Maintenance C	ost				
Campgrounds/Day-Use Areas	400	410	30	240	120
Roads/Trails/Parking Areas/ Launching/Landing Sites	600	675	0	550	160
Information Education	30	60	10	25	12
Total 1,030	1,145	40	815	292	
Grand Total of All Con- struction and Mtce Costs	19,089	22,010	500	15,648	4,662

### Table 45. Estimated Costs for Increased Fire Suppression and Law Enforcement Capabilities

Construction Project	Preferred Alternative Cost in \$000s	Alternate 1 Cost in \$000s	Alternative 2 Cost in \$000s	Alternative 3 Cost in \$000s	Alternative4 Cost in \$000s
Living Quarters Additional Fire Engine (annual cost)	100 20	100 20	1.	2	-
Operating Expense (annual cost)	10	10	-		
Helicopter Expense (annual cost)	-	105	-	-	
Fire Crew (annual cost)	20	20	-		
Fireboat		40	-	-	-
Full Time Law Enforcement Officer May - Sept. (annual cost)	40	40	-		

	Current Boater Pass Program \$1.75	All User Fee \$1.75	All User Fee \$3.00	All User Fee \$5.00
Revenue Costs	\$430,000 \$365,000	\$605,000 \$465,000 <sup>2</sup>	\$972,000 \$465,000 <sup>2</sup>	\$1,556,000 \$465,000
Net	+\$65,000	+\$140,000	+\$507,000	+\$1,091,000
<sup>1</sup> Assumptions 1 1) Altering the	nade: current fee system would not signifi poaters to "bank users" is 2.3 to 1 (ba	cantly change overall use levels. sed on State Parks 1982 study).		
2) The ratio of l				



# C. Monitoring and Evaluation Based on Limits of Acceptable Change

Monitoring and evaluation of the plan will be based on the Limits of Acceptable Change concept (LAC). LAC is a process for establishing acceptable and appropriate conditions and will govern the management strategy to be applied to the Lower Deschutes River. LAC is based on the premise that change to the ecological and social conditions of an area will occur as a result of natural and human factors. The goal of management is to keep the character and rate of change due to human factors within acceptable levels and consistent with the objectives of the plan.

The primary emphasis of the LAC system is on the conditions desired, rather than on how much use or abuse an area can tolerate. The management challenge is not one of how to prevent any human-induced change in the planning area, but rather one of deciding what changes should occur, how much change will be allowed, what management actions are needed to guide and control it and how the managing agencies will know when the established limits are being or have been reached.

Once in place and functioning, the mechanics of the LAC system can alert the managing agencies to unacceptable change in the Deschutes Canyon before it is too late to react. For each river value to be monitored, one or more key indicators are selected which allow the managing agencies to keep their "thumb on the pulse" of that aspect of the ecosystem or social setting. For each key indicator, a standard is set. This is the threshold value which determines the amount of change that is either desired or will be accepted. The purpose of the indicators and standards is to provide managers with a tool to determine if the resource values and opportunities they are trying to manage for are actually being provided. The standards serve as "triggers" which cause predetermined management actions to be implemented by the managing agencies when the limit is being approached.

The LAC process is designed to be the foundation for the long-term protection and enhancement of the primary river-related values in the Lower Deschutes Canyon. The process must, however, be flexible enough to allow for unique site specific situations, provide ample opportunity for public involvement and be cost effective.

Value to be Maintained and Enhanced	Key Indicator of Overall Condition	Management Standard to be Used	Management Action(s) to be Implemented	Monitoring Required to be Implemented
Water				
Quality	Fecal coliform, temperature, dissolved oxygen and turbidity.	<ul> <li>*Fecal coliform: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.</li> <li>*Temperature: No measurable increases shall be allowed out- side of the assigned mixing zone, as measured relative to a control point immediately upstream from a discharge when stream temperatures are 58° F. or greater; or more than 0.5° F. increase due to a single source discharge when receiving water temperatures are 57.5° F. or less; or more than 2° F. increase due to all sources combined when stream temperatures are 56° F. or less, except for specifically limited duration activities which may be author- ized by DEQ under such conditions as DEQ and the Department of Fish and Wildlife may prescribe and which are necessary to accommodate legitimate uses of or activities where temperatures in excess of this standard are unavoidable and all practical preventive techniques have been been applied to minimize temperature rises.</li> <li>*Dissolved oxygen: Dissolved oxygen concentrations shall not be less than 90 percent of saturation at the seasonal low, or less than 95 percent of saturation in spawning areas during spawning, incubation, hatching, and fry stages of salmonid fishes.</li> </ul>	Livestock grazing on BLM, State and Tribally-owned lands will be managed within acceptable stan- dards (see Vegetation section). Motor vehicle use will be confined to designated roads and trails. All other vehicle routes will be closed and rehabilitated. Recreational use will be managed within acceptable crowding standards (see Recreational Use sections).	The analytical testing methods for determining compliance with the water quality standards shall be in accordance with the most recent edition of Standard Methods for the Examination of Water and Waste Water publishe jointly by the American Public Health Association, American Water Pollution Control Feder- ation, unless the Oregon Depart- ment of Environmental Quality publish an applicable superseding method, in which case testing shall be in accordance with the superseding method.

The following section outlines the key indicators, management standards and monitoring that would be conducted if the



Value to be Maintained and Enhanced	Key Indicator of Overall Condition	Management Standard to be Used	Management Action(s) to be Implemented	Monitoring Required to be Implemented
Water (cont'd)		*Turbidity (Jackson Turbidity Units, JTU): No more than a 10 percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity.		
		*State Water Quality Standards - Oregon Administrative Rule 340. These standards are currently under review by Oregon D.E.Q.		
	Instream flow levels	Minimum of 3,000 cfs measured at Pelton Reregulating Dam.	Incorporate instream flow level into Federal Energy Regulatory Commission relicensing require- ments for Pelton-Round Butte project.	Daily measuring of flow levels through Pelton Reregulating Dam and at Moody gauge.
		Minimum of 3,800 cfs measured at Moody.	State of Oregon will obtain an instream water right of 3,000 cfs at Pelton Reregulating Dam and 3,800 cfs at Moody.	

Fisheries

Key Indicator of Overall Condition Total return, harvest

for trout, steelhead

and salmon.

and spawning escapement

Management Standard to be Used

Spring chinook-total return, 8.500-12.000 harvest 5.500-8,000, spawning escapement of wild fish, 3,000-4,000. Fall chinook-total return. 10,000-12,000, harvest 4,000-5,000, spawning escapement of wild fish, 6,000-7,000. Summer steelhead-total return, 16,000-22,000, harvest 6,000-12,000, spawning escapement of wild fish, 10,000. Rainbow trout-managed as wild fish, maintained at a total constrained at a total population indicated by 1,500-2,500 fish per mile larger than eight inches in the Nena Creek area with 30 percent of those 1,500-2,500 fish per mile being over 12 inches. Bull trout-maintaining existing population.

Management Action(s) to be Implemented

Maintain present angling regulations Summer steelhead and Spring chinook •Improve fish habitat in main river and tributaries. ·Improve fish passage in White River system. Fall chinook Improve fish habitat in main river. Trout Improve fish habitat in main river. If standard cannot be met or maintained with above actions, implement the following actions: Summer steelhead and Spring and Fall chinook Restrict in-river harvest Trout •If more than 30 percent of population over 8" is less than 12" in length, increase bag limit. •Reduce the length of the angling season to 6 months and/or Increase minimum legal size requirement and/or ·Require catch and release of all fish over 12" and/or Add additional tackle

restrictions.

#### Monitoring Required to be Implemented

Summer steelhead and Fall chinook Continue annual harvest monitoring. ·Continue annual tag and re-capture program. Spring chinook Continue count of returns at Warm Springs Hatchery, Pelton fish trap. Continue annual harvest monitoring at Sherars. Trout •Continue annual tag and re-capture program in Nena Creek area. •Implement tag and re-capture programs in other portions of the river as needed.



Value to be Maintained and Enhanced	Key Indicator of Overall Condition	Management Standard to be Used	Management Action(s) to be Implemented	Monitoring Required to be Implemented	
Wildlife					
Threatened or Endangered Species		All threatened, endangered and sensitive wildlife species habitat will be maintained at least at present standards.	Conduct small mammal, reptile and amphibian survey to identify potential threatened or endangered species.		
		Habitat enhancement will result from ecological improvement, particularly in riparian areas.			
Bald Eagle (Haliaetus leucocephalus)	Bird populations and number of roost sites.		Identify all bald eagle roost sites and protect trees used for roosting from damage. Restrict recreational use levels near roost sites from December through March if necessary to prevent harass- ment.	Continue winter waterfowl/eagle count on lower 17 miles of river on annual basis. Couple this information with the Columbia and Wamic/Pine Grove annual survey. Conduct winter eagle count by helicopter on entire lower 100 miles every 2 years.	
Peregrine falcon (Falco peregrinus anatum)	Bird populations and number of nesting sites.	Conform with Statewide recovery goals of 2 peregrine nest sites within the Lower Deschutes Canyon.	If peregrine nesting occurs, close area around nest sites to public use from April through July if necessary to prevent harassment.	Conduct spring helicopter count in lower 30 miles of river annually to determine when or if adult birds begin nesting in the canyon. Once nesting sites are identified, monitor individual nests annually.	X
Oregon Sensitive Species					
Osprey	Number of nesting sites.	Increase nesting sites from 2 to 6.	Maintain existing nesting platforms and construct addi- tional platforms in suitable areas.	Count nesting sites every 2 years.	

Value to be Maintained and Enhanced	Key Indicator of Overall Condition	Management Standard to be Used	Management Action(s) to be Implemented	Monitoring Required to be Implemented
Vegetation				01
Upland Plant Communities	Ecological condition and trend as indicated by the composition of Idaho fescue, bluebunch wheat- grass and bitterbrush.	Upland vegetation on BLM, State and Tribally-owned lands would be managed to maintain or achieve ecological status between 51 and 75 percent of the plant composition found in the potential natural plant community (late seral or good ecological condition).	In areas of predominantly BLM, State and Tribally-owned lands or in areas with substantial interspersion of BLM, State, Tribally-owned and private lands, livestock grazing will be managed to meet established standards. This management could include various intensive	Complete ecological site inventory on all BLM, State and Tribally-owned lands. Implement intensive monitoring studies (i.e. utilization, actual use, ecological condition and trend) to measure progress in meeting the riparian and upland
Riparian Plant Communities	Ecological condition and trend as indicated by the composition of woody vegetation.	Riparian plant communities on BLM, State and Tribally-owned lands would be managed to main- tain or achieve full vegetative potential with a minimum of 60 percent of ecological status being achieved within 15 years. All sites would have a mix of	grazing management systems or temporary or permanent exclus- ion of livestock from the ripar- ian zones and adjacent uplands. In order to minimize conflicts between recreation use and live- stock grazing and to provide for accelerated improvement in ecological condition, the	standards on BLM, State and Tribally-owned lands. Establish some permanent plot or transect studies in each ecolo- logical site, augmented by photo documentation and subjective evaluations.

shrubs at the 50 percent

potential level with the

dominant species being alder.

season of use for grazing of BLM, State and Tribally-owned

lands in the planning area will

be limited to periods between November 1 and May 1.

In areas of extensive blocks of

of livestock management systems

that would result in riparian

and upland plant communities reaching the management standards. The management

agencies may work cooperatively with individual private landowners to assist in the development of grazing systems and construction of livestock management facilities.

Programs or measures will be implemented which promote cooperation and education in the process of achieving the plan's vegetative standards. This information will be directed at Deschutes Management Agencies, the Warm Springs Tribes, livestock operators and the public.

private or allotted lands, the management agencies will encourage implementation Reinventory ecological site condition as changes in status warrant.

Similar monitoring will be conducted on private and allotted lands where landowners/managers are agreeable.

If, after five years, studies indicate a no positive trend toward meeting vegetative standards, temporary or permanent livestock exclusions will be implemented on BLM, State and Tribally-owned lands and recommended or encouraged on private and allotted lands.



Vegetation (cont'd)

Value to be Maintained and Enhanced Key Indicator of Overall Condition

Management Standard to be Used

Management Action(s) to be Implemented Monitoring Required to be Implemented

Motor vehicle use on BLM, State and Tribally-owned lands will be confined to designated roads and trails. All other vehicle routes will be closed and rehabilitated.

Recreational use will be managed within acceptable crowding standards (see Recreational Use section).

Prescribed fire will be used as appropriate to maintain or achieve desired ecological condition.

#### **Botanical**

Special status plant species

Astragalus tyghensis (Tygh Valley milkvetch)

Astragalus howellii var. howellii (Howell's milkvetch)

Cyperus rivularis (shining cyperus)

Mimulus jungermannioides (hepatic monkey flower)

Lomatium farinosum var. hambleniae (Hamblens lomatium)

Talinum spinescens (talinum)

Note: As monitoring continues, there may be some adjustments to the legal status of certain species. A serious decline in population density and/or health may result in the elevation of status and a corresponding increase in needed monitoring. Conversely, a a significant, long-term increase in population density may result in a lowering of status and a corresponding decrease in monitoring activity.

All plant species which are Federal Candidates for listing under the Threatened and Endangered Species Act will be protected and managed to ensure they do not become listed.

#### Management Action(s) to be Implemented

Conduct complete botanical inventory of BLM, State and Tribally-owned lands within the canyon.

All BLM, State or Triballyowned actions in the canyon will be subject to on-site review to determine the presence or absence of these species and appropriate mitigation measures will be initiated, including project modification or abandonment.

An estimation of threats to each population will be made as part of each monitoring visit, including any impacts associated with recreational use of the habitat. As a result, changes in land use through closure, fencing, change in grazing practices, etc. may be required to protect the species.

#### Monitoring Required to be Implemented

Each population of Federal candidates for listing as en-450 dangered or threatened (Astragalus tyghensis, Astragalus howellii var. howellii and Mimulus jungermannioides are currently known to occur) will be monitored annually for 3 consecutive years utilizing basic plant sampling techniques. Determine plant vigor, size and flower/fruit production. More intensive studies to determine seed production, seedling establishment, plant mortality and other factors will be conducted at smaller subsets of these populations. After 3 years, sample plots will be revisited every 3 to 5 years.

Lomatium farinosum var. hambleniae and Talinum spinescens, which are endangered or threatened in Oregon but more common elsewhere, will receive less intensive monitoring, but in some instances will still be substantial.

Cyperus rivularis is an Oregon Natural Heritage Program review species and will be monitored at least every 5 to 7 years to determine if it is still present and if there are any changes in habitat due to biotic or unauthorized human activities.

Population extent, number of individual plants and population health.

Key Indicator of Overall

Condition

#### Management Standard to be Used



Cultural (Historic & Archaeological)

Key Indicator of Overall Condition

trend)

Site Integrity (condition/



No significant cultural resource which is being irreparably damaged by human use or eroded by natural forces to the point that it is in danger of being lost will be acceptable.

#### Management Action(s) to be Implemented

Public information and education efforts through brochures, signs, information stations and visitor contact points will be implemented.

Human use will be managed, restricted or closed by signing and/or fencing if damage to significant sites is now occurring or could occur in the future.

Impact to cultural resources may be mitigated in some high use areas by surface collection of visible material.

The managing agencies will conduct a survey or resurvey of all BLM, State and Tribally-owned lands within 5 years. Private allotted lands will also be surveyed if permission can be obtained from the landowner. Nominations to the National Register of Historic Places will occur as appropriate.

Surveillance of significant sites which are easily accessible and/or in high recreation use areas will be conducted by field personnel, law enforcement people and/or volunteers on a regular basis.

Stabilization of significant sites will be implemented if feasible. If stabilization of the disturbed or threatened site is not feasible. the site will be salvaged to the degree possible.

#### Monitoring Required to be Implemented

Sites on BLM, State and Triballyowned lands will be field checked to determine site condition, vandalism, natural and/or humancaused disturbance and rephotographed as needed on the following priority schedule: 1-House pits, burials, rock shelters and rock art sites which are easily accessible or in high use areas at least monthly; 2-House pits, rock shelters, burials and rock art sites which are not easily accessible or in high use areas at least once per year; 3-Shell middens, quarry sites, flaking stations, talus depressions, rock cairns and campsites along with historic railroad and settlement features which are easily accessible or in high use areas at least every 2 years; 4-Shell middens, quarry sites, flaking stations, talus depressions, rock cairns and campsites along with historic railroad and settlement features which are not easily accessible or in high use areas at least every 5 years.

#### Key Indicator of Overall Condition

Scenery and Geology

Cultural modifications (human-caused changes) which would significantly alter landform, vegetation, water, color or character of the area. Contrasts created by new management activities will not be allowed if they attract the attention of the casual observer within the characteristic landscape. Natural ecological changes will predominate.

Management Standard to be Used

#### Management Action(s) to be Implemented

The entire river will be divided into scenery quality rating units based on landscape character. A scenery evaluation will be completed at one-river mile intervals to be used as a baseline comparison for future cultural modifications.

Specific standards will be developed for each scenery quality rating unit which addresses acceptable and unacceptable cultural modifications including degrees of change in land use, surface disturbance and development densities.

Visual contrast rating and evaluation will be conducted for all proposed cultural modifications on BLM, State, Tribally-owned as well as private and allotted lands. Actions which are not consistent with visual resource management objectives will be modified or rejected.

#### Monitoring Required to be Implemented

Ongoing as proposals develop and supplemented with on-the-ground surveillance at least twice per year to detect possible unauthorized activities.



Value to be Maintained and Enhanced	Key Indicator of Overall Condition	Manage	ement Sta	ndard to	be Used	Managen Impleme
Recreational Use						
Boating	Quality of experience.	Individ segmen	ual boater t per day	s in each as shown	n n below:	•Develop and map
		Segment	W'End Stndrd	W'Day Stndrd	Season Stndrd	periods, and utili
		1	500	300	47,000	•Limit pa
		2	1,500	800	71,000	segment
		3	200	200	11,000	people in people fo
		4	300	300	23,000	• Limit le nights in and 14 n sites. • Charge
						Other op considere implemer redistribu through i •Provide

ment Action(s) to be ented

p public use brochures p to inform and educate how to avoid peak use , reduce user impacts ize less crowded of the river. party size to 16 people notorized boats in its 1, 3 and 4 and 24 segment 2 and 5 or motorized boats. ength of stay to 4 in undeveloped sites nights in developed a fee of \$2

ptions that would be red during the 3-year entation period to pute boating use levels indirect means would be: basic site protection measures in launch and landing areas. •Designate launch and landing areas and designate separate areas for motorized and nonmotorized craft. ·Redesign and sign launch and landing areas for more efficient, Institute weekend uniformed BLM, Parks and volunteer personnel as information and education resources. ·Institute weekend police cadet patrol.

### Monitoring Required to be Implemented

Random week-day and week-end/ holiday sampling conducted during the primary use season at boat landing sites to monitor actual numbers of boaters using each segment.

Sampling error will be within 5 percent.

Develop short verbal survey of visitors utilizing questionnaire about quality of recreation experience. Administer survey at random shore locations on randomly selected half days during the primary use season.

value to be Maintained and Enhanced	Key Indicator of Overall Condition	Management Standard to be Used	Management Action(s) to be Implemented	Monitoring Required to be Implemented
Recreational Use (cont.)				
Boating			<ul> <li>Design a voluntary program of staggered starting time for boats during the high use season.</li> <li>Institute a self-regulating use system on the basis of even/odd use on weekends.</li> <li>Institute a permit system for weekends only.</li> <li>Remove some types of use from some areas, i.e. off-highway vehicles, motorized boats.</li> <li>As a last resort after a 3-year attempt to achieve the management standard through indirect means and in an effort to regulate use levels to protect and enhance the identified river values, the allocation and rationing system described in the preferred alternative would be implemented if standards have not been achieved.</li> </ul>	
Camping	Quality of experience.	Camper numbers per segment per day to be determined by studies. Same experience and crowding level as boating.	<ul> <li>Develop public use brochures and map to inform and educate campers how to avoid peak use periods and utilize less crowded sections of the river.</li> <li>Limit group size to 16 people except in group areas where group size will not exceed 50.</li> <li>Limit length of stay to 4 nights in undeveloped sites and 14 nights in developed sites.</li> <li>Provide additional camping facilities at the following areas: Segment 1 - Mecca Flat, Dry Creek, Trout Creek and South Junction</li> </ul>	Develop short verbal survey of visitors utilizing question- naire about quality of recreation experience. Administer survey at random developed campsite randomly selected half days during the primary use season Sampling error will be within 5 percent.

- 0



Value to be Maintained Key and Enhanced Cor

Key Indicator of Overall Condition

Recreational Use (cont.)

Camping

Other Recreational Users Quality of experience.

Number of visitors per segment per day to be determined by studies. Same experience and crowding level as boating.

Management Standard to be Used

Management Action(s) to be Implemented Monitoring Required to be Implemented

Segment 2 - Bull Pasture, Nena Creek, Devil's Canyon, Long-Bend, Wapinitia, Harpham Flat, Maupin City Park, Oasis Flat, Oaksprings, White River State Park and Sandy Beach
Segment 3 - Oakbrook, Gert Canyon, Jones Canyon, Rattlesnake Canyon, as well as Beavertail and Macks Canyon
Segment 4 - Deschutes State Park.
Further limit length of stay to 2 nights in undeveloped sites and 7 nights in developed sites. As a last resort to manage camping use levels within acceptable limits, campsites will be reserved in advance during the primary use season.

Develop public use brochures and map to inform and educate users on how to avoid peak use periods and utilize less crowded sections of the river.
Charge a fee of \$2.
As a last resort to manage visitor use levels within acceptable limits, daily user passes will be required with only enough available to stay within crowding standards. Develop short verbal survey of visitors utilizing questionnaire about quality of recreation experience. Administer survey at random locations on randomly selected half days during the primary use season. Sampling error will be within 5 percent.

**Undeveloped** Campsites

on BLM, State and

Tribally-owned Lands

Key Indicator of Overall Condition

Percent of campsite that

is exposed bare soil. •Stability of riverbank.

•Degree of soil loss.

Vegetative composition, condition and trend.

significant vegetative

Degree of tree damage

including exposed roots.

disturbance.

·Percent of campsite with

Management Standard to be Used

Management Action(s) to be Implemented

Complete campsite inventory and evaluation for all campsites on BLM, State and Tribally-owned lands.

•Set aside and provide basic site protection measures at undeveloped boat-in sites for camping as follows: Segment 1 - 161 sites (21 on Tribally-owned land) Segment 2 - 6 sites Segment 3 - 32 sites Segment 4 - 135 sites

For those campsites which are set aside for camping, harden all sites which are being impacted to a moderate, heavy or extreme degree with basic site protection measures.

•Campsites which have received heavy or extreme impacts will be rehabilitated and if necessary, closed until levels of impacts have been mitigated to at least moderate.

#### Monitoring Required to be Implemented

A campsite monitoring system will be developed to document present campsite condition and means to measure cumulative change in soil and vegetative condition.

This specific monitoring system will incorporate the elements of 2 USDA Forest Service reports entitled "Area of Vegetation Loss: A New Index of Campsite Impact" published in July 1989 and "Wilderness Campsite Moni-toring Methods: A Sourcebook" published in April 1989.

Soil stability.

Impacts to campsites will be light or moderate based on subjective judgement regarding vegetation impacted, exposed tree roots, trails, bare areas, dead trees, erosion and vegetation change as follows:

Light-Previous ground vegetation present on the site. Vegetation often flattened but not permanently injured. Minimal physical change.

Moderate-Previous ground vegetation intact, but growth somewhat retarded. Ground vegetation worn away in center of activity area.

Heavy-Most previous ground vegetation gone, beginning tree root exposure, trails radiate from site, erosion absent, litter or duff still present, impact restricted to site.

Extreme-Previous ground vegetation gone, dead trees, tree roots exposed, erosion present or beginning, compacted soil restricts reestablishment of indigenous vegetation, changes in species composition, bare mineral soil widespread, little litter or duff, satellite areas may be present.



## **D.** Plan Update and Amendment Process

The implementation of the Deschutes River Management Plan will be monitored during the life of the plan to ensure that management actions are meeting their intended purposes. A cooperative management agreement involving the United States through the Secretary of Interior, the State of Oregon and the Confederated Tribes is required by the Omnibus Oregon Wild and Scenic River Act. This agreement will govern the implementation of the plan. It is expected that this agreement will establish the specific process to ensure that:

- management actions are resulting in satisfactory progress toward achieving objectives,

- actions are consistent with current policy,
- original standards and assumptions were correctly applied and impacts correctly predicted,
- mitigation measures are satisfactory,
- it is still consistent with the plans and policies of Federal, State or local governments and the Confederated Tribes,

As part of plan evaluations, the managing agencies will review the plan for consistency with their officially approved related plans, programs and policies. Advisory groups will also be consulted during evaluations in order to secure their input.

Upon completion of a periodic evaluation or in the event that modifying the plan becomes necessary, the managing agencies will determine what, if any, changes are necessary to ensure that the management actions of the plan are consistent with its objectives. If the managing agencies find that a plan amendment is necessary, an environmental analysis and public review of the proposed change will be conducted with appropriate opportunities for public and interagency review and comment. If the amendment is approved by the managing agencies, it may be implemented 30 days after public notice. A plan amendment may be initiated because of the need to consider monitoring findings, new data, new or revised policy, a change in circumstances, or a proposed action that may result in a change in the scope of resource uses or a change in the terms, conditions and decisions of the approved plan.

Potential minor changes, refinements or clarifications in the plan may take the form of maintenance actions. Maintenance actions respond to minor data changes. Such maintenance is limited to further refining or documenting a previously approved decision incorporated in the plan. Plan maintenance will not result in expansion in the scope of resource uses or restrictions or change the terms, conditions and decisions of the approved plan unless clearly required by Federal or State law. Maintenance actions are not considered a plan amendment and do not require the formal public involvement and interagency coordination process undertaken for plan amendments.

## VIII. List of Preparers, References and Glossary

### A. List of Preparers

#### **Executive Review Board Members**

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## C. Glossary

Access - The ability of recreationists to reach the areas in which they wish to recreate.

Access easement - A legal right to cross the land granted to the public by a landowner.

Administrative rules - Regulations established by State agency boards and commissions in accordance with Oregon Revised Statutes.

Allocation - The assignment of recreational use or access to users through management methods after it is determined that demand for the resource exceeds acceptable limits or established standards.

Allotment - An area of land where one or more livestock operators graze their livestock.

Aquatic - Living or growing in or on the water.

Archaeological site - Geographic locale containing structures, artifacts, material remains and/or other evidence of past human activity.

Artificial Structures - Constructed cavities which provide shelter for wildlife, such as bird houses.

**Basic site protection measures** - Engineering techniques designed to reduce or control recreation impacts. In campsites it could include tent pads, toilets, footpaths, steps and vegetative plantings. (Also see campsite hardening.)

**BLM lands** - Any land and interest in land managed by the United States Government and administered by the Secretary of the Interior through the Bureau of Land Management.

**Boat** - Watercraft used or capable of being used as a means of transportation on the water, but does not include aircraft equipped to land on water, boathouses, floating homes, air mattresses, beach and water toys or single inner tubes.

Boater - Any person who utilizes a floating craft or device for transportation on the surface of the river.

Boater day - Use by a boater of any river segment for all or part of a day.

**Boater pass** - A license (not a permit) required by State law to launch, operate or ride in any boat or engage in any camping, fishing or other activity in connection with being transported by a boat on those portions of the Deschutes River designated as scenic waterways.

Campground - One or more developed campsites in a specific area.

Camping - outdoor living for recreation.

Campsite - individual unit for camping.

**Campsite hardening** - Measures taken to reduce camper impact on the natural resources, such as paving a footpath. Also see Basic site protection measures.

**Campsite quality rating** - The evaluation of the characteristics of a campsite such as size, slope, presence of shade and overall desirability for human use.

**Campsite rehabilitation** - Measures taken to restore damaged campsites and to prevent further damage to natural resources, such as planting grass and shrubs.

Campsite switching - two groups trading campsites in order to avoid the length of stay regulations.

Chemical spills - Accidental releases of chemical products which have the potential for damaging natural or human resources.

**Client** - A paying member of a guided or outfitted group.

**Cultural resources** - Remains of human (historical and archaeological) activity, occupation, or endeavor, reflected in districts, sites, structures, buildings, objects, artifacts, ruins, works of art, architecture and natural features that were of importance in past human events. Cultural resources consist of: (1) physical remains; (2) areas where significant human events occurred, even though evidence of the events no longer remains; and (3) the environment immediately surrounding the actual resource.

Degraded site - Any area which is in early seral status or in declining ecological condition.

**Deschutes River Scenic Waterway Recreation Area** - The area defined by ORS 390.930-.940 that originates at Pelton Reregulating Dam and terminates at the river's confluence with the Columbia River and includes related adjacent land within ? mile of the average high water line.

**Deschutes Wild and Scenic River Area** - The area within the proposed WSR boundaries originating at Pelton Reregulating Dam and ending at the confluence with the Columbia River. The area averages not more than 320 acres per rivermile.

**Developed campground** - Accessible by motor vehicle and contains improvements for camper comfort and sanitary facilities such as toilets, drinking water, tables and trash receptacles.



**Diversity** - A measure of the variety of species and habitats in an area that takes into account the relative abundance of each species or habitat.

**Dummy camps** - Unoccupied campsites in which persons have left objects to give the appearance of occupancy, so that they can claim possession at a later time.

**Early seral** - Ecological status that corresponds to 0 to 25 percent of the plant composition found in the potential natural community. Synonymous with poor range condition.

**Ecological status -** Four classes of successional stage (or range condition) used to express the degree to which the composition of the present plant community reflects that of climax. The four classes (followed by the percentage of plant community that is climax for the site) are: *Potential, Natural Community,* 76-100; *Late seral,* 51-75; *Mid-seral,* 26-50 and *Early seral,* 0-25.

**Environmental Impact Statement (EIS)** - A formal document to be filed with the Environmental Protection Agency that considers significant environmental impacts expected from implementation of Federal actions.

Erosion - Detachment and movement of soil or rock fragments by water, wind, ice or gravity.

Exclosure - An area fenced to exclude animals (primarily livestock).

Fire suppression areas - Those areas identified where fire suppression is required in order to prevent unacceptable resource damage and/or to prevent loss of life or property.

Forage - All browse and herbaceous plants that are available to grazing animals including wildlife and domestic livestock.

Grandfathered right - A right to continue using a public resource due to longevity.

Gravel recruitment - The downstream movement of gravel caused by high volume of flow.

Ground cover - Grasses or other plants that keep soil from being blown or washed away.

Group size - The number of people in a boating or camping party including guides and any support personnel.

Guide - A person who provides services by leading one or more other persons in outdoor recreation activities for a fee.

Guide permit - A license to carry out the activities of a guide.

Habitat - The type of environment in which certain plants or animals live.

Historic site - Locales used by immigrants from the 1820s to 1930s.

Impact - A change in the environment caused by the activities of humans.

Instream water right - A right to the use of water which remains in the stream, such as for fish, recreation or pollution abatement.

**Issue** - A subject or question of widespread public discussion or interest regarding management of a geographic area which has been identified through public participation.

Landing site - The riverbank location where boats are taken from the river.

Late seral - Ecological status corresponding to 5l to 75 percent of the plant composition found in the potential natural plant community. Synonymous with good range condition.

Launch site - The riverbank location where boats are placed in or removed from the river.

Legal liability - The obligation to pay for services received, such as the cost of rescue from a river accident or ambulance costs.

Limited entry system - A system in which the number of participants in an activity is limited to meet certain management objectives.

**Locatable minerals** - The metallic minerals subject to development specified in the General Mining Law of 1872. Within the planning area this includes gold, mercury and bentonite.

Management objectives - Parameters or goals to be used as standards to measure the success of the management plan.

Mid-seral - Ecological status that corresponds to 26 to 50 percent of the composition found in the potential natural plant community. Synonymous with fair range condition.

Monitoring - The orderly collection of data to evaluate the effects or changes that result from management actions.

Motorboat - Any boat propelled in whole or in part by machinery, including boats temporarily equipped with detachable motors.



Multiple use - The harmonious use of land or water resources for more than one purpose.

National Register of Historic Places (NRHP) - The official list, established by the Historic Preservation Act of 1966, of the nation's cultural resources worthy of preservation.

National Wild and Scenic Rivers System - A system of Congressionally designated rivers and their immediate environments that have outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural and other values and are preserved in a free-flowing condition. The system is of three types: (1) Recreation—rivers or sections of rivers readily accessible by road or railroad that may have some development along their shorelines and that may have undergone some impoundment or diversion in the past; (2) Scenic—rivers or sections of rivers free of impoundments, with shorelines or watersheds still largely undeveloped but accessible in places by roads; and (3) Wild—rivers or sections of rivers free of impoundments and generally inaccessible except by trails, with watersheds or shorelines essentially primitive and waters unpolluted.

Native species - Plants or animals that are indigenous to an area.

Noise standards - Measurements of sound which are used to determine when that sound becomes obnoxious to human ears.

Non-commercial - Activities in which there is a bona fide sharing of the cost of the activity between all participants.

No-trace camping - The art of camping without leaving signs of use.

No-wake zone - An area where boat speed is reduced to minimize boat wake, with a 5 mph maximum speed.

Noxious weed - A plant specified by law as being especially undesirable, troublesome and difficult to control.

**Off-highway vehicle (OHV)** - Any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding (l) any nonamphibious, registered motorboat; (2) emergency vehicles; and (3) vehicles in official use.

On-site regimentation - Regulations, restrictions or controls which limit or influence how people use an area or resource.

Outfitter - A person who for compensation or other gain, provides equipment, supplies or materials for the conduct of outdoor recreational activities.

Paleontological resource - Remnants of life from past geological ages as seen in fossil plants and animals.

Pass-through zone - An area of streambank where boaters are prohibited from stopping.

**Performance evaluation** - A check on the professional performance of a guide as a means of assuring high standards in the activity.

Permittee - One who holds a license to use public lands or waters for financial gain.

**Permit system** - A method of allotting use of a public resource through issuance of permits.

Plan objectives - Guiding statements or goals that present the purposes and overall intent of the planning effort.

**Planning area** - The Deschutes River and its immediate environment within either the State Scenic Waterways boundary or interim National Wild and Scenic Rivers boundary between the Pelton Reregulating Dam and the Columbia River.

**Potential Natural Community (PNC)** - The final or stable biotic community in a successional series. Usually self-perpetuating, it corresponds to 76 to 100 percent of the plant composition found in the potential natural plant community. Synonymous with excellent range condition.

Prehistoric - The period of time before written records.

Primitive campsite - Contains no improvements for camper comfort or sanitation.

Public Contact Person - A person assigned to do public information and education work.

Public Utilities Commission (PUC) - The State agency that regulates investor-owned electric and natural gas utilities, water companies, telephone and transportation industries.

Return flows - Excess irrigation water which returns to a stream.

**Right-of-way** - A permit or easement which authorizes a specific use of a specific area of land.

Riparian area - The land adjacent to water, where water, soil and vegetation interact to form a unique microclimate.

River ranger - A person assigned to do public information and education work along with minor law enforcement.

Sanitation facilities - Installations of buildings or other structures which ease the disposition or collection of human waste.

**Scoping** - The process by which significant issues relating to a proposal are identified. It includes eliciting public comment, evaluating concerns and developing issues and alternatives for consideration.



**Sediment** - Soil, rock particles and organic or other debris carried from one place to another by wind, water or gravity.

**Semi-developed campground** - accessible by motor vehicle and contains some improvements for camper comfort and sanitation but does not meet all requirements of a developed campground.

Sensitive wildlife habitat - Habitat such as riparian areas, which are crucial for nesting, rearing, feeding or cover.

Shuttle driver - A person who shuttles personal vehicles from a launch site to a landing site for a fee.

Shuttle service - The hauling of people, boats, vehicles or other equipment for a fee.

Sidecasting - The disposal of rock or soil materials alongside the roadway or railroad during road construction or maintenance.

State lands - Lands managed by an Oregon government agency.

Stewardship - The exercise of responsible care of land, water or other natural resources, or recreational resources such as a campsite.

Succession - The process of vegetative community change towards climax or potential natural community.

Suitable campsite - A site on which soil, vegetation and slope conditions are capable of accommodating camping use without significant damage to the basic resources.

Tackle restriction - A prohibition on the use of certain fishing equipment.

Treaty rights - Legal rights of the Confederated Tribes of the Warm Springs Indians, established in their treaty with the United States Government in 1855.

Allotted lands - Lands within the Confederated Tribes of the Warm Springs Indian Reservation which are privately owned.

Tribally-owned lands - Lands owned by the Confederated Tribes of the Warm Springs within or outside the reservation boundary.

Turbidity - A measure of water clarity.

Undeveloped campsite - Contains few improvements for camper comfort or sanitation, usually accessible only by boat.

Water quality - The chemical, physical and biological characteristics of water with respect to its suitability for a particular use.

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# Appendix A. Lower Deschutes Wild and Scenic River Boundary - Proposed Administrative Boundary

Legal description of proposed administrative boundary commencing at Pelton Reregulating Dam and extending downstream to the Columbia River.

## T. 10 S., R. 12 E., W.M.

Section 1 (Regulator Dam):

Beginning at the centerline point of the east end of the Regulating Dam, thence northeasterly along the centerline of the existing road to the intersection of a road, thence northerly and easterly along the centerline of the existing road to the intersection of the north-south centerline of southeast 1/4 of section 1, thence northerly to the center east 1/16 corner, thence easterly to the westerly right-of-way boundary line of highway 26, thence along said right-of-way boundary to the north line of section 1.

## T. 9 S., R. 12 E., W.M.

#### Section 31:

Thence northeasterly along the northwest right-of-way boundary of highway 26 to the east-west centerline of the northwest 1/4, thence easterly to the northeast 1/16 corner, thence northerly to the east 1/16 corner common to sections 30 and 31.

## Section 30:

Thence northerly to the center east 1/16 corner, thence easterly to the 1/4 corner common to sections 29 and 30.

## Section 29:

Thence easterly to the center west 1/16 corner, thence northerly to the northwest 1/16 corner, thence easterly to the center north 1/16, thence northerly to the 1/4 corner common to sections 20 and 29.



## Section 20:

Thence easterly to the east 1/16 corner common to sections 20 and 29, thence northerly to the center east 1/16 corner, thence easterly to the rimrock of the canyon, thence northeasterly along said rimrock to the line common to section 20 and 21.

## Section 21:

Thence continuing northeasterly along said rimrock to the line common to sections 16 and 21.

## Section 16:

Thence continuing northeasterly along said rimrock to the southeast 1/16 corner, thence easterly to the south 1/16 corner common to sections 16 and 15.

## Section 15:

Thence easterly to the southwest 1/16 corner, thence northerly to the center west 1/16 corner, thence easterly to the 1/4 corner common to sections 15 and 14.

## Section 14:

Thence easterly to the 1/4 corner common to sections 14 and 13.

## Section 13:

Thence easterly to the center west 1/16 corner, thence northerly to the northwest 1/16 corner, thence easterly to the northeast 1/16 corner, thence northerly to the east 1/16 corner common to sections 13 and 12.

## Section 12:

Thence easterly to the section corner common to sections 12 and 13, T. 9 S., R. 13 E., W.M. and sections 7 and 18, T. 9 S., R. 14 E., W.M.

## T. 9 S., R. 14 E., W.M.

## Section 7:

Thence northerly to the south 1/16 corner common to sections 7 and 12, thence easterly to the southwest 1/16 corner, thence northerly to the center west 1/16 corner, thence easterly to the center 1/4 corner, thence northerly to the center north 1/16 corner, thence easterly to the north 1/16 corner common to sections 7 and 8, thence northerly to the corner common to sections 5, 6, 7 and 8.

## Section 5:

Thence northerly to the south 1/16 corner common to sections 5 and 6, thence easterly to the southwest 1/16 corner thence northerly to the center west 1/16 corner, thence easterly to the center ? corner, thence northerly to the 1/4 corner common to section 5, T. 9 S., R. 14 E. and section 32, T. 8 S., R. 14 E., W.M.

## T. 8 S., R. 14 E., W.M.

## Section 32:

Thence northerly to the center south 1/16 corner, thence easterly to the southeast 1/16 corner, thence northerly to the east 1/16 corner common to sections 29 and 32.

#### Section 29:

Thence easterly to the section corner common to sections 28, 29, 32 and 33, thence northerly to the section corner common to sections 20, 21, 28 and 29.

#### Section 21:

Thence easterly to the east 1/16 corner common to sections 21 and 28, thence northerly to the center east 1/16 corner, thence easterly to the 1/4 corner common to sections 21 and 22, thence northerly to the section corner common to sections 15, 16, 21 and 22.

### Section 15:

Thence easterly to the west 1/16 corner common to sections 15 and 22, thence northerly to the west 1/16 corner common to sections 10 and 15.

## Section 10:

Thence northerly to the northwest 1/16 corner, thence westerly to the north 1/16 corner common to sections 9 and 10.

#### Section 9:

Thence westerly to the northeast 1/16 corner, thence northerly to the east 1/16 corner common to sections 4 and 9.

## Section 4:

Thence westerly to the 1/4 corner common to sections 4 and 9, thence northerly to the center north 1/16 corner, thence westerly to the northwest 1/16 corner, thence northerly to the west 1/16 corner common to section 4, T. 8 S., R. 14 E. and section 33, T. 7 S., R. 14 E., W.M., thence westerly to the section corner common to sections 4 and 5, T. 8 S., R. 14 E. and sections 32 and 33, T. 7 S., R. 14 E., W.M.



T. 7 S., R. 14 E., W.M.

## Section 32:

Thence westerly along the section line common to sections 5 and 32 to the intersection with the west right-of-way boundary line of the Burlington-Northern railroad, thence northwesterly along the west right-of-way boundary line of said railroad to the intersection of the section line common to sections 29 and 32.

## Section 29:

Thence easterly to the section corner common to sections 28, 29, 32 and 33, thence northerly to the 1/4 corner common to sections 28 and 29.

## Section 28:

Thence easterly to the center west 1/16 corner, thence northerly to the west 1/16 corner common to sections 21 and 28.

## Section 21:

Thence northerly to the west 1/16 corner common to sections 16 and 21, thence westerly to the section corner common to sections 16, 17, 20 and 21.

## Section 17:

Thence northerly to the section corner common to sections 8, 9, 16 and 17.

## Section 9:

Thence easterly to the 1/4 corner common to sections 9 and 16, thence northerly to the 1/4 corner common to sections 4 and 9.

## Section 4:

Thence easterly to the east 1/16 corner common to sections 4 and 9, thence northerly to the center east 1/16 corner, thence easterly to the east 1/4 corner common to sections 3 and 4, thence northerly to the section corner common to sections 3 and 4, T. 7 S., R. 14 E. and sections 33 and 34 of T. 6 S., R. 14 E., W.M.

#### T. 6 S., R. 14 E., W.M.

#### Section 34:

Thence easterly to the west 1/16 corner common to section 3, T. 7 S., R. 14 E. and section 34, T. 6 S., R. 14 E., W.M., w.M., thence northerly to the west 1/16 corner common to sections 27 and 34, T. 6 S., R. 14 E., W.M.

#### Section 27:

Thence northwesterly to the section corner common to 21, 22, 27 and 28.

## Section 21:

Thence northerly to the 1/4 corner common to sections 21 and 22, thence westerly to the center west 1/16 corner, thence northerly to the northwest 1/16 corner, thence westerly to the north 1/16 corner common to sections 20 and 21, thence northerly to the section corner common to the sections 16, 17, 20 and 21.

#### Section 17:

Thence westerly to the west 1/16 corner common to sections 17 and 20, thence northerly to the center west 1/16 corner, thence westerly to the 1/4 corner common to sections 17 and 18.

## Section 18:

Thence westerly to the west 1/4 corner of section 18, thence northerly to the west section corner common to sections 7 and 18.

## Section 7:

Thence easterly to the west 1/16 corner common to sections 7 and 18, thence northerly to the northwest 1/16 corner, thence easterly to the center north 1/16 corner, thence northerly to the ? corner common to sections 6 and 7, thence easterly to the east 1/16 corner common to sections 6 and 7.

#### Section 6:

Thence northerly to the northeast 1/16 corner, thence westerly to the north 1/16 corner on the west boundary of section 6, thence northerly to the corner common to section 1, T. 6 S., R. 13 E., section 6, T. 6 S., R. 14 E., section 31, T. 5 S., R. 14 E. and section 36, T. 5 S., R. 13 E., W.M.

## T. 5 S., R. 13 E., W.M.

## Section 36:

Thence westerly to the east 1/16 corner on the south section line of section 36, thence northerly to the east 1/16 corner common to sections 25 and 36, thence westerly to the 1/4 corner common to sections 25 and 36.



#### Section 25:

Thence northerly to the 1/4 corner common to sections 24 and 25.

## Section 24:

Thence northerly to the center north 1/16 corner, thence easterly to the northeast 1/16 corner, thence northerly to the east 1/16 corner common to sections 13 and 24.

## Section 13:

Thence northerly to the east 1/16 corner between sections 12 and 13, thence easterly to the east section corner common to sections 12 and 13, T. 5 S., R. 13 E. on the west line of section 7, T. 5 S., R. 14 E., W.M.

## T. 5 S., R. 14 E., W.M.

## Section 7:

Thence northerly to the south 1/16 corner on the west line of section 7, thence easterly to the southwest 1/16 corner, thence northerly to the center west 1/16 corner, thence easterly to the center 1/4 corner, thence northerly to the center north 1/16 corner, thence northeasterly to the east 1/16 corner common to sections 6 and 7.

## Section 6:

Thence northeasterly to the south 1/16 corner common to sections 5 and 6.

#### Section 5:

Thence northeasterly to the center west 1/16 corner, thence northerly along the west boundary of the southeast 1/4 of the northwest 1/4 to the mean high waterline on the southeast bank of the Deschutes River, thence northeasterly along said mean high waterline to the section line common to section 32, T. 4 S., R. 14 E. and section 5, T. 5 S., R. 14 E., W.M.

## T. 4 S., R. 14 E., W.M.

#### Section 32:

Thence continuing northeasterly along the mean high waterline on the southeasterly bank of the Deschutes River to intersection with the section line between sections 32 and 33.

#### Section 33:

Thence continuing northerly along the mean high waterline on the east bank of the Deschutes River to the intersection with the section line between sections 32 and 33, thence northerly to the section corner common to sections 28, 29, 32 and 33.

#### Section 29:

Thence northerly to the north 1/16 corner, between sections 28 and 29, thence westerly to the northeast 1/16 corner, thence northerly to the east 1/16 corner common to sections 20 and 29.

#### Section 30:

Thence northerly to the southeast 1/16 corner, thence northeasterly to the 1/4 corner common to sections 20 and 21.

## Section 21:

Thence northeasterly to the northwest 1/16 corner, thence northerly to the west 1/16 corner common to sections 16 and 21.

## Section 16:

Thence northerly to the center west 1/16 corner, thence westerly to the 1/4 corner between sections 16 and 17, thence northerly to the north 1/16 corner between sections 16 and 17, thence northeasterly to the west 1/16 corner between sections 9 and 16, thence easterly to the section corner common to sections 9, 10, 15 and 16.

#### Section 10:

Thence northeasterly to the southwest 1/16 corner, thence easterly to the southeast 1/16 corner, thence northerly to the east 1/16 corner common to sections 3 and 10, thence easterly to the section corner common to sections 2, 3, 10 and 11.

## Section 3:

Thence northerly to the corner common to sections 2 and 3, T. 4 S., R. 14 E. and sections 34 and 35, T. 3 S., R. 14 E., W.M.

#### T. 3 S., R. 14 E., W.M.

## Section 35:

Thence easterly to the 1/4 corner common to section 2, T. 4 S., R. 14 E. and section 35, T. 3 S., R. 14 E., W.M., thence northerly to the center south 1/16 corner, thence easterly to the south 1/16 corner common to sections 35 and 36, thence northerly to the section corner common to sections 25, 26, 35 and 36.



## Section 26:

Thence northerly to the section corner common to sections 23, 24, 25 and 26.

## Section 23:

Thence northerly to the section corner common to sections 13, 14, 23 and 24.

## Section 14:

Thence northerly to the south 1/16 corner common to sections 13 and 14.

## Section 13:

Thence easterly to the southwest 1/16 corner, thence southerly to the west 1/16 corner common to sections 13 and 24, thence easterly to the section corner common to sections 13 and 24, T. 3 S., R. 14 E. and sections 18 and 19, T. 3 S., R. 15 E., W.M.

## T. 3 S., R. 15 E., W.M.

## Section 18:

Thence easterly to the 1/4 corner common to sections 18 and 19, thence northerly to the 1/4 corner common to sections 7 and 18, thence easterly to 1/16 corner common to sections 7 and 18, thence southerly to the center east 1/16 corner, thence southeasterly to the south 1/16 corner common to sections 17 and 18.

## Section 17:

Thence southeasterly to the west 1/16 corner common to sections 17 and 20, thence easterly to the section corner common to sections 16, 19, 20 and 21, thence northerly to the section corner common to sections 8, 9, 16 and 17.

## Section 9:

Thence easterly to the 1/4 corner common to sections 9 and 16, thence northerly to the center 1/4 corner, thence northeasterly to the northeast 1/16 corner common to sections 9 and 10.

## Section 10:

Thence northeasterly to the west 1/16 corner common to sections 3 and 10.

## Section 3:

Thence northeasterly to the center south 1/16 corner, thence northerly to the 1/4 corner common to section 3, T. 3 S., R. 15 E. and section 34, T. 2 S., R. 15 E., W.M.

## T. 2 S., R. 15 E., W.M.

## Section 34:

Thence easterly to the east 1/16 corner common to section 3, T. 3 S., R. 15 E. and section 34, T. 2 S., R. 15 E., W.M., thence northerly to the northeast 1/16 corner, thence easterly to the north 1/16 corner common to sections 34 and 35.

## Section 35:

Thence easterly to the north 1/16 corner common to sections 35 and 36, thence northerly to the section corner common to sections 25, 26, 35 and 36.

## Section 26:

Thence northerly to the section corner common to sections 23, 24, 25 and 26.

## Section 23:

Thence northerly to the south 1/16 corner common to sections 23 and 24.

#### Section 24:

Thence northeasterly to the center 1/4 corner, thence easterly to the east 1/4 corner of section 24.

## T. 2 S., R. 16 E., W.M.

## Section 19:

Thence southerly to the west 1/4 corner of section 19, thence easterly to the center 1/4 corner, thence northerly to the 1/4 corner common to sections 12 and 19.

## Section 12:

Thence northerly to the 1/4 corner common to sections 7 and 12.

## Section 7:

Thence northerly to the 1/4 corner common to sections 6 and 7.



## Section 6:

Thence northeasterly to the center east 1/16 corner, thence easterly to the 1/4 corner common to sections 5 and 6.

## Section 5:

Thence northeasterly to the 1/4 corner common to section 5, T. 2 S., R. 16 E. and section 32, T. 1 S., R. 16 E., W.M.

## T. 1 S., R. 16 E., W.M.

## Section 32:

Thence northeasterly to the 1/4 corner common to sections 31 and 32.

## Section 31:

Thence westerly to the center east 1/16 corner, thence northerly to the east 1/16 corner common to sections 30 and 31.

## Section 30:

Thence northerly to the northeast 1/16 corner, thence easterly to the north 1/16 corner common to sections 29 and 30.

## Section 29:

Thence easterly to the northwest 1/16 corner, thence northerly to the west 1/16 corner common to sections 20 and 29.

## Section 20:

Thence easterly to the 1/4 corner common to sections 20 and 29, thence northeasterly to the 1/4 corner common to sections 20 and 21, thence northerly to the section corner common to sections 16, 17, 20 and 21.

## Section 17:

Thence northerly to the south 1/16 corner common to section 16 and 17, thence westerly to the southeast 1/16 corner, thence northerly to the northeast 1/16 corner, thence easterly to north 1/16 corner common to sections 16 and 17, thence northerly to the section corner common to sections 8, 9, 16 and 17.

## Section 8:

Thence northerly to the section corner common to sections 4, 5, 8 and 9.

## Section 4:

Thence easterly to the west 1/16 corner common to sections 4 and 9, thence northerly to the southwest 1/16 corner, thence easterly to the center south 1/16 corner, thence northerly to the north 1/4 corner, section 4, T. 1  $S_{4<}$  R. 16 E., W.M., thence easterly to the section corner common to sections 4 and 5, T. 1 S., R. 16 E., W.M.

#### Section 5:

Thence westerly to the section corner common to section 32 and 33, T. 1 N, R. 16 E., W.M.

## T. 1 N., R. 16 E., W.M.

## Section 32:

Thence westerly to the east 1/16 corner on the south line of section 32, thence northerly to the southeast 1/16 corner, thence westerly to the southwest 1/16 corner, thence northerly to the center west 1/16 corner, thence westerly to the 1/4 corner common to sections 31 and 32.

## Section 31:

Thence northerly to the section corner common to sections 29, 30, 31 and 32, thence westerly to the section corner common to sections 30 and 31, T. 1 N., R. 16 E. and sections 25 and 36, T. 1 N., R. 15 E., W.M.

## T. 1 N., R. 15 E., W.M.

## Section 25:

Thence westerly to the east 1/16 corner common to sections 25 and 36, thence northerly to the northeast 1/16 corner, thence westerly to the northwest 1/16 corner, thence northerly to the west 1/16 corner common to sections 24 and 25.

## Section 24:

Thence northerly to the southwest 1/16 corner, thence westerly to the south 1/16 corner common to sections 23 and 24.

## Section 23:

Thence northerly to the section corner common to sections 13, 14, 23 and 24.

#### Section 14:

Thence northerly to the section corner common to sections 11, 12, 13 and 14.



## Section 11:

Thence northerly to the westerly boundary of the old Deschutes railroad right-of-way, thence northerly along said right-of-way boundary to a point on the south boundary of the northwest 1/4 of section 12, thence easterly to the center 1/4 corner, thence northerly to the 1/4 corner common to sections 1 and 12, thence westerly to the west 1/16 corner common to sections 1 and 12.

## Section 1:

Thence northwesterly to the north 1/16 corner common to sections 1 and 2.

## Section 2:

Thence westerly to the northeast 1/16 corner, thence northerly to the east 1/16 corner common to section 2, T. 1 N., R. 15 E. and section 35, T. 2 N., R. 15 E., W.M.

## T. 2 N., R. 15 E., W.M.

#### Section 35:

Thence northerly to the east 1/16 corner common to sections 35 and 26.

#### Section 26:

Thence northerly to the center east 1/16 corner, thence easterly to the west right-of-way boundary of the old Deschutes railroad, thence northerly along the west boundary of the old railroad right-of-way to where it intersects the west boundary of lot 1, thence northerly to the intersection of the south boundary of the right-of-way for highway 206, thence westerly along said highway right-of-way boundary to the intersection with the section line common to sections 26 and 27, thence southerly to the southwest corner of lot 7, thence easterly to the northwest corner of lot 6, thence southerly to the west 1/16 corner common to sections 26 and 35.

## Section 35:

Thence southerly to the center west 1/16 corner, thence westerly to the 1/4 corner common to sections 34 and 35, thence southerly to the section corner common to sections 34 and 35, T. 2 N., R. 15 E. and sections 2 and 3, T. 1 N., R. 15 E., W.M.

## T. 1 N., R. 15 E., W.M.

## Section 2:

Thence southerly to the 1/4 corner common to sections 2 and 3, thence easterly to the center 1/4 corner, thence southerly to the center south 1/16 corner, thence easterly to the southeast 1/16 corner, thence southerly to the east 1/16 corner common to sections 2 and 11.

#### Section 11:

Thence southerly to the center east 1/16 corner, thence easterly to the center ? corner, thence southerly to the 1/4 corner common to sections 11 and 14.

#### Section 14:

Thence westerly to the west 1/16 corner common to sections 11 and 14, thence southerly to the west 1/16 corner common to sections 14 and 23.

#### Section 23:

Thence southerly to the center west 1/16 corner, thence easterly to the center 1/4 corner, thence southerly to the 1/4 corner common to sections 23 and 26.

#### Section 26:

Thence southerly to the center 1/4 corner, thence easterly to the 1/4 corner common to sections 25 and 26.

## Section 25:

Thence easterly to the intersection with the east right-of-way boundary of the electric transmission line, thence southerly along said right-of-way boundary to the intersection of the section line common to sections 25 and 36.

## Section 36:

Thence southerly along said right-of-way boundary to the intersection with the north line of the southeast 1/4 of the southeast 1/4, thence easterly to the south 1/16 corner common to section 36, T. 1 N., R. 15 E. and section 31, T. 1 N., R. 16 E., W.M.

## T. 1 N., R. 16 E., W.M.

#### Section 31:

Thence easterly to the center south 1/16 corner, thence southerly to the south 1/4 corner section 31.



## T. 1 S., R. 16 E., W.M.

#### Section 6:

Thence southeasterly to the northeast 1/16 corner, thence easterly to the north 1/16 corner common to sections 5 and 6.

## Section 5:

Thence southeasterly to the center 1/4 corner, thence southerly to the south 1/16 corner, thence westerly to the southwest 1/16 corner, thence southerly to the west 1/16 corner common to sections 6 and 8.

## Section 8:

Thence southerly to the west 1/16 corner common to sections 8 and 17.

## Section 17:

Thence southerly to the west 1/16 corner common to sections 17 and 20.

## Section 20:

Thence southwesterly to the north 1/16 corner common to sections 19 and 20, thence southerly to the south 1/16 corner common to sections 19 and 20.

## Section 19:

Thence westerly to the southwest 1/16 corner, thence southerly to the west 1/16 corner common to sections 19 and 30.

## Section 30:

Thence easterly to the section corner common to sections 19 and 30, thence southerly to the section corner common to sections 30 and 31.

## Section 31:

Thence southerly to the west 1/4 corner of section 31, thence southeasterly to the southwest 1/16 corner, thence southerly to the west 1/16 corner common to section 31, T. 1 S., R. 16 E. and section 6, T. 2 S., R. 16 E., W.M.

## T. 2 S., R. 16 E., W.M.

## Section 6:

Thence southwesterly to the north 1/16 corner on the west side of section 6, thence southerly to the section corner common to sections 6 and 7, T. 2 S., R. 16 E. and sections 1 and 12, T. 2 S., R. 15 E., W.M.

## Section 7:

Thence southerly to the section corner common to sections 7 and 18, T. 2 S., R. 16 E. and sections 12 and 13, T. 2 S., R. 15 E., W.M.

#### Section 18:

Thence southerly to the 1/4 corner common to section 18, T. 2 S., R. 16 E. and section 13, T. 2 S., R. 15 E., W.M.

## T. 2 S., R. 15 E., W.M.

## Section 13:

Thence westerly to the 1/4 corner common to sections 13 and 14, thence southerly to the section corner common to sections 13, 14, 23 and 24, thence southwesterly to the center south 1/16 corner, thence westerly to the southwest 1/16 corner, thence southerly to the west 1/16 corner common to sections 23 and 26.

## Section 26:

Thence southerly to the center west 1/16 corner, thence westerly to the 1/4 corner common to sections 26 and 27, thence westerly to the 1/4 corner common to sections 27 and 28, thence southerly to the section corner common to sections 27, 28, 33 and 34.

#### Section 33:

Thence southwesterly to the section corner common to sections 32 and 33, T. 2 S., R. 15 E. and sections 4 and 5, T. 3 S., R. 15 E., W.M.

## T. 3 S., R. 15 E., W.M.

## Section 4:

Thence southerly to the northwest 1/16 corner common to sections 4 and 5.



#### Section 5:

Thence westerly to the center north 1/16 corner, thence southerly to the 1/4 corner common to sections 5 and 8, thence easterly to the section corner common to sections 4, 5, 8 and 9.

## Section 9:

Thence southerly to the 1/4 corner common to sections 8 and 9.

## Section 8:

Thence southwesterly to the 1/4 corner common to sections 8 and 17, thence westerly to the west 1/16 corner common to sections 8 and 17, thence northwesterly to the north 1/16 corner common to sections 7 and 8, thence northerly to the section corner common to section 5, 6, 7 and 8.

## Section 7:

Thence westerly to the 1/4 corner common to sections 6 and 7, thence southerly to the center north 1/16 corner, thence westerly to the north 1/16 corner common to section 7, T. 3 S., R. 15 E. and section 12, T. 3 S., R. 14 E., W.M., thence southerly to the section corner common to sections 7 and 18, T. 3 S., R. 15 E. and sections 12 and 13, T. 3 S., R. 14 E., W.M.

## Section 18:

Thence southerly to the north 1/16 corner common to section 18, T. 3 S., R. 15 E. and section 13, T. 3 S., R. 14 E., W.M.

## T. 3 S., 14 E., W.M.

## Section 13:

Thence westerly to the north 1/16 corner common to sections 13 and 14.

## Section 14:

Thence westerly to the center north 1/16 corner, thence southerly to the ? corner common to sections 14 and 23.

## Section 23:

Thence westerly to the west 1/16 corner common to sections 14 and 23, thence southerly to the center west 1/16 corner, thence westerly to the 1/4 corner of sections 22 and 23, thence southerly to the section corner common to sections 22, 23, 26 and 27.

## Section 26:

Thence southerly to the 1/4 corner common to sections 26 and 27, thence easterly to the center west 1/16 corner. () thence southerly to the west 1/16 corner common to sections 26 and 35.

## Section 35:

Thence southeasterly to the center north 1/16 corner, thence southerly to the center 1/4 corner, thence easterly to the intersection with the east side of the Burlington Northern right-of-way boundary, thence southwesterly along said right-of-way boundary to the intersection of the section line between sections 34 and 35.

#### Section 34:

Thence southwesterly on said right-of-way boundary to the intersection of the section line between section 34, T. 3 S., R. 14 E. and section 3, T. 4 S., R. 14 E., W.M.

## T. 4 S., R. 14 E., W.M.

#### Section 3:

Thence southwesterly along said right-of-way boundary to the intersection with the north line of the southeast 1/4 of the southwest 1/4 of section 3, thence westerly to the south 1/16 corner common to sections 3 and 4, thence southerly to the section corner common to sections 3, 4, 9 and 10.

#### Section 10:

Thence southerly to the north 1/16 corner common to sections 9 and 10.

#### Section 9:

Thence easterly to the center north 1/16 corner, thence southerly to the center south 1/16 corner, thence westerly to the south 1/16 corner common to sections 8 and 9.

## Section 8:

Thence westerly to the southeast 1/16 corner, thence southerly to the east 1/16 corner common to sections 8 and 17.

## Section 17:

Thence westerly to the 1/4 corner common to sections 8 and 17, thence southerly to the center north 1/16 corner, thence easterly to the east boundary of the Burlington Northern railroad right-of-way, thence southerly along said right-of-way boundary to the east boundary of the northeast 1/4 of the southeast 1/4, thence southerly to the east 1/16 corner common to sections 17 and 20.



#### Section 20:

Thence southerly to the northeast 1/16 corner, thence westerly to the center north 1/16 corner, thence southerly to the 1/4 corner common to sections 20 and 29.

## Section 29:

Thence westerly to the west 1/16 corner common to sections 20 and 29, thence southerly to the center west 1/16 corner, thence easterly to the center 1/4 corner, thence southerly to the 1/4 corner common to sections 29 and 32.

## Section 32:

Thence southerly to the center north 1/16 corner, thence westerly to the mean high waterline on the west bank of the Deschutes River, thence southerly along said high waterline to the intersection of the section line common to section 32, T. 4 S., R. 14 E., and section 5, T. 5 S., R. 14 E., W.M.

## T. 5 S., R. 14 E., W.M.

## Section 5:

Thence southerly along said mean high waterline to intersection with the south boundary of lot 3, thence westerly to the top of the canyon rim, thence southwesterly to the intersection of the section line between sections 5 and 6.

## Section 6:

Thence southwesterly to the center east 1/16 corner, thence southwesterly to the west 1/16 corner common to sections 6 and 7.

#### Section 7:

Thence southerly to the northwest 1/16 corner, thence westerly to the north 1/16 corner common to section 7, T. 5 S., R. 14 E. and section 12, T. 5 S., R. 13 E., W.M.

## T. 5 S., R. 13 E., W.M.

#### Section 12:

Thence southwesterly to the center west 1/16 corner, thence southerly to southwest 1/16 corner, thence westerly to the south 1/16 corner common to sections 12 and 13, thence southerly to the section corner common to sections 11 and 12.

## Section 13:

Thence easterly to the west 1/16 corner on the north boundary of section 13, thence southerly to the southwest 1/16 corner, thence southwesterly to the section corner common to sections 13, 14, 23 and 24.

## Section 24:

Thence southerly to the section corner common to sections 23, 24, 25 and 26.

## Section 25:

Thence southerly to the section corner common to sections 25, 26, 35 and 36.

## Section 36:

Thence southerly to the south 1/16 corner common to sections 35 and 36, thence easterly to the southwest 1/16 corner, thence southerly to the west 1/16 corner common to section 36, T. 5 S., R. 13 E. and section 1, T. 6 S., R. 13 E., W.M.

## T. 6 S., R. 13 E., W.M.

## Section 1:

Thence southerly to northwest 1/16 corner, thence easterly to the center north 1/16 corner, thence southerly to the center south 1/16 corner, thence westerly to the south 1/16 corner common to section 1, T. 6 S., R. 13 E. and section 6, T. 6 S., R. 14 E., W.M., thence southerly to the section corner common to sections 1 and 12, T. 6 S., R. 13 E. and sections 6 and 7, T. 6 S., R. 14 E., W.M.

## Section 12:

Thence westerly to the 1/4 corner common to sections 1 and 12, thence southerly to the ? corner common to sections 12 and 13.

## Section 13:

Thence southerly to the 1/4 corner common to sections 13 and 24.

## Section 24:

Thence southeasterly to the east 1/4 corner of section 24, thence southerly to the south 1/16 corner of the west section line of section 19, T. 6 S., R. 14 E., W.M.



T. 6 S., R. 14 E., W.M.

Section 19:

Thence easterly to the south 1/16 corner common to sections 19 and 20.

## Section 20:

Thence easterly to the south 1/16 corner common to sections 20 and 21, thence southerly to the section corner common to sections 20, 21, 28 and 29.

## Section 28:

Thence easterly to the west 1/16 corner common to sections 21 and 28, thence southerly to the west 1/16 corner common to sections 28 and 33.

## Section 33:

Thence southeasterly to the 1/4 corner common to section 33, T. 6 S., R. 14 E. and section 4, T. 7 S., R. 14 E., W.M.

## T. 7 S., R. 14 E., W.M.

## Section 4:

Thence southerly to the center south 1/16 corner, thence westerly to the southwest 1/16 corner, thence southerly to west 1/16 corner common to sections 4 and 9.

## Section 9:

Thence southerly to the center west 1/16 corner, thence westerly to the 1/4 corner common to sections 8 and 9.

## Section 8:

Thence westerly to the center 1/4 corner, thence southerly to the center south 1/16 corner, thence westerly to the southwest 1/16 corner, thence southerly to the west 1/16 corner common to sections 8 and 17.

## Section 17:

Thence southerly to the west 1/16 corner common to sections 17 and 20.

## Section 20:

Thence southerly to the northwest 1/16 corner, thence easterly to the center north 1/16 corner, thence southerly ( to 1/4 corner common to sections 20 and 29.

#### Section 29:

Thence southerly to the center 1/4 corner, thence westerly to the center west 1/16 corner, thence southerly to the west 1/16 corner common to sections 29 and 32.

## Section 32:

Thence southerly to the west 1/16 corner on the south line of section 32.

## T. 8 S., R. 14 E., W.M.

## Section 5:

Thence easterly to the north 1/4 corner of section 5, thence southerly to the center north 1/16 corner, thence easterly to the northeast 1/16 corner, thence southerly to the center east 1/16 corner, thence easterly to the 1/4 corner common to sections 4 and 5.

#### Section 4:

Thence southerly to the section corner common to sections 4, 5, 8 and 9, thence easterly to the west 1/16 corner common to sections 4 and 9.

## Section 9:

Thence southerly to the center west 1/16 corner, thence easterly to the center 1/4 corner, thence southerly to the center south 1/16 corner, thence easterly to the southeast 1/16 corner, thence southerly to the east 1/16 corner common to sections 9 and 16.

## Section 16:

Thence southerly to the northeast 1/16 corner, thence easterly to the north 1/16 corner common to sections 15 and 16, thence southerly to the 1/4 corner common to sections 15 and 16, thence westerly to the center east 1/16 corner, thence southerly to the southeast 1/16 corner, thence westerly to the center south 1/16 corner, thence southerly to the 1/4 corner common to sections 16 and 21.



## Section 21:

Thence southerly to the center 1/4 corner, thence westerly to the 1/4 corner common to sections 20 and 21.

## Section 20:

Thence westerly to the center east 1/16 corner, thence southerly to the southeast 1/16 corner, thence westerly to the center south 1/16 corner, thence southerly to the 1/4 corner common to sections 20 and 29.

## Section 29:

Thence southerly to the ? corner common to sections 29 and 32.

## Section 32:

Thence southerly to the center 1/4 corner, thence westerly to the center west 1/16 corner, thence southerly to the southwest 1/16 corner, thence westerly to the south 1/16 corner common to sections 31 and 32, thence southerly to the section corner common to sections 31 and 32, T. 8 S., R. 14 E. and sections 5 and 6, T. 9 S., R. 14 E., W.M.

## T. 9 S., R. 14 E., W.M.

## Section 6:

Thence southerly to the 1/4 corner common to sections 5 and 6, thence westerly to the center east 1/16 corner, thence southerly to the east 1/16 common to sections 6 and 7, thence westerly to the section corner common to sections 6 and 7, T. 9 S., R. 14 E. and sections 1 and 12, T. 9 S., R. 13 E., W.M.

## T. 9 S., R. 13 E., W.M.

## Section 12:

Thence westerly to the east 1/16 corner common to sections 1 and 12, thence southerly to the northeast 1/16 corner, thence westerly to the center north 1/16 corner, thence southerly to the center south 1/16 corner, thence westerly to the south 1/16 corner, thence westerly to the south 1/16 corner common to sections 11 and 12.

## Section 11:

Thence southerly to the section corner common to sections 11, 12, 13 and 14, thence westerly to the section corner common to sections 10, 11, 14 and 15.

### Section 15:

Thence westerly to the section corner common to sections 9, 10, 15 and 16.

## Section 16:

Thence southerly to the north 1/16 corner common to sections 15 and 16, thence westerly to the center north 1/16 corner, thence southerly to the center 1/4 corner, thence westerly to the 1/4 corner common to sections 16 and 17.

## Section 17:

Thence westerly to the center east 1/16 corner, thence southerly to the east 1/16 corner common to sections 17 and 20, thence westerly to the west 1/16 corner common to sections 17 and 20.

## Section 20:

Thence southerly to the west 1/16 corner common to sections 20 and 29, thence westerly to the section corner common to sections 19, 20, 29 and 30.

#### Section 30:

Thence southerly to the mean high waterline on the north bank of the Deschutes River, thence westerly and southerly along said mean high waterline to a point on the north boundary of the northeast 1/4, southwest 1/4 of section 30, thence westerly to the center west 1/16 corner, thence southerly to the west 1/16 corner common to sections 30 and 31.

## Section 31:

Thence southerly to the center west 1/16 corner, thence southerly to the point of intersection with the south right-ofway boundary of the existing road, thence southwesterly along said right-of-way boundary to the intersection with the section line between section 31, T. 9 S., R. 13 E. and section 36, T. 9 S., R. 12 E., W.M.

#### T. 9 S., R. 12 E., W.M.

#### Section 36:

Thence continuing southwesterly along south right-of-way boundary of said road to the intersection with the section line between section 36, T. 9 S., R. 12 E. and section 1, T. 10 S., R. 12 E., W.M.

## T. 10 S., R. 12 E., W.M.

#### Section 1:

Thence easterly to the mean high waterline on the west bank of the Deschutes River, thence southerly along said mean high waterline to the Reregulating Dam, thence easterly across the Reregulating Dam to the Point of Beginning.











# Appendix B. Content Summary of Public Comments

# Content Summary: Letters Received Prior to January 17, 1990

This report summarizes 153 letters received by the Deschutes River Management Committee between June 1988 and January 17, 1990 which was prior to the release of the Issues and Alternatives for Management of the Lower Deschutes River. It describes the types of people writing to the committee and their concerns and policy recommendations.

In interpreting the following tallies of responses, two notes are in order. First, people who wrote several letters were counted only once. Second, group letters were counted once for each person who signed.

# Who Wrote to the Committee

Most letters came from Willamette Valley residents (80), with 15 from Washington, 13 from Central Oregon and and Gorge, and 16 from other points in Oregon. Six (6) came from elsewhere in the United States and 21 did not provide an address.

The vast majority of the letter writers (96) described themselves as recreational users of the river. Twenty (20) of these people reported using guide services.

Others explained they were professional guides (11), local merchants, residents, or landowners (4) and elected officials (2).

## Segment of the River Addressed

Segment 4 drew twice the number of comments as the other segments, with 69 people specifically addressing this part of the river. Thirty (30) mentioned Segment 3, 27 Segment 2 and 24 Segment 1. Notably, many writers did not address their comments to a particular area of the river.

## **Issues** Addressed

The discussion of letter content covered the following issues: use levels, recreational river uses, natural resource conditions, facilities, access, user fees, fishing regulations, camping regulations, law enforcement, and information and education.



**Use** Levels

Twenty-seven (27) people made general complaints about the current use level on the river. They objected to the effects of overcrowding both on the outdoor experience and on the natural environment.

Six (6) said the use level is not a problem. They explained that the river is only crowded at certain times of the week or year, and they think that is acceptable for a river so close to major population centers.

# **Recreation River Uses**

The vast majority of letters focused on a particular recreational use of the river, either opposing or advocating regulations or limitations. The following table provides an overview of these general policy positions which are discussed below.

	Total #	Don't			
	Comments	Limit	Dislike	Limit	Ban
Motorized boats	95	28	2	43	22
Commercial use	63	21	8	34	_
Nonmotorized boats	18	2	1	15	-
Horseback riding	13	11		2	
Float tubes	10	7			3
Bicycle riding	9	7		2	

# Motorized Boats

Jet boats were the hottest topic by far, with 95 people having something to say on the matter. Of particular interest was motorized traffic in Segment 4.

On the whole, opinion ran in favor of new rules and restrictions. Twenty-two (22) people called for banning motorized craft from the river, 43 favored some limitations or regulations, and two expressed dislike for jet boats without advocating a particular solution. Twenty-eight (28) people came to the defense of jet boats, saying they did not want new regulations.

The thrust of most pro-jet boat letters is that one river use should not be singled out for curtailment or elimination. Many explained that the jet boats had been on the river a long time, and should not have to make room for growing numbers of other users.

Another commonly mentioned rationale for allowing jet boats is that they provide access to the river for the elderly, and others who would be unable to get to good fishing spots by rafting or hiking.

Jet boat supporters tended to feel that education in river courtesy was what was needed to resolve conflicts between motorized and float craft.

Complaints about jet boats were myriad. Noise, erosion and disrespect for other boaters were all common themes. Many reported that the number of jet boats on the river had multiplied in recent years.

As might be expected, complaints about jet boats and commercial use were intertwined, with many people objecting that the sleds allow people to go upstream and down, dropping off people and taking their pick of the fishing and camping spots. A common sentiment among the anti-jet boat contingent was that the river shouldn't be dominated by those who can afford a jet boat or a guided trip.

Those wanting to limit jet boats forwarded all types of solutions—everyone with their own combination of rules. One large category of solutions was limiting areas of operation for jet boats. The most common of these suggestions was removing jet boats from the first two to five miles from the mouth. Many wanted to limit the number of motorized boats. Another set of solutions concerned times of operation. Many felt that the first step was to keep jet boats from operating early in the morning and into the evening. Other popular suggestions included limiting the size, horsepower, or speed of boats.

Those wishing to ban jet boats said exactly that' "Get all jet boats off the Deschutes". Nonetheless, many of these people made exception for river patrol craft.

## Commercial Use

Thirty-four (34) people requested some limitations on commercial use of the river and eight complained about commercial use without forwarding specific suggestions. Twenty-one (21) people said they did not want commercial use curtailed.

About half of those opposing limitation of commercial use were satisfied customers who signed group letters calling for continued guided trips on the Deschutes. The more detailed defenses of commercial use make the point that guides are an asset for the Deschutes because they are experienced river users who promote safety and adherence to rules on the river. "We've had to rescue drunk rafters", or "We leave the campgrounds better than we found them" are examples cited in defense of guides.

Those desiring limitations generally felt that guided trips create too much competition for camping and fishing sites. Complaints of "permanent camps" set up by guides were common. Most of the proposed regulations involved limiting the number of guides. Some suggested limiting the number of people a guide can take, or requiring guides to stay with their customers rather than dropping them off and going to pick up more.



# Nonmotorized Boats

Nonmotorized boats drew much less comment than motorized did. Fifteen (15) people favored limitations for these boats, one expressed dislike for them without suggesting solutions, and two wrote to say that they did not want restrictions of nonmotorized boats.

The desire to limit float craft was mostly a desire to reduce crowding overall, although there were some objections that rafters in general are not considerate of the environment and other river users. Some people suggest resolving conflict between motorized and nonmotorized craft by giving each its own stretch of river.

# Horseback Riding

Eleven (11) people wrote to request that horses be included in the management plan. These letters did not go into specifics, but simply stated "I support the planned use of the Deschutes to include horse riding, camping and packing". Two (2) objected to horses in the Deschutes area on the grounds that they are harmful to the environment.

# Float Tubes

Float tubes were endorsed by seven people, while three opposed them. Proponents of float tubes touted the safety they provide and explained that fishing from a tube is not fishing from a boat. Opponents of tubes said they were hard for boaters to see, and that they basically allowed fishing from a boat.

# **Bicycles**

Seven (7) people requested that biking be allowed along the Deschutes, with a few requesting trail improvement for bikes. Two (2) were opposed to bike use. Natural Resource Conditions

Twenty-three (23) people identified a problem with the natural resource condition along the river. The most common complaints were of erosion caused by jet boats, and the impacts of camping. One person wrote to say that natural resource condition of the river is not a problem.

Five (5) people contended that grazing is not a problem, while three said that it is.

Five (5) people called for further study of ecological conditions on the river.

# Facilities

Sixteen (16) people suggested adding or improving facilities, while five wanted no more of this work done.

More toilets was the most common facilities requested. Others wanted more campsites or better campsites. Several rafters requested better facilities at landing points, which they felt are too crowded and have inadequate parking.

Those against facility improvement felt that it was not in keeping with the natural experience on the Deschutes, and that it would attract more people to the river.

## Access

Ten (10) called for better access to the river. Many of these people wanted roads paved or gravelled. Some wanted increased access to Segment 3. A few requested new trails along the river for hikers or bikers.

Six (6) said they did not want access improvements because it would bring more people and increase pressure on the river.

## **User Fees**

Eighteen (18) favored raising or broadening user fees on the river. By far the most common suggestion of this type was charging a fee from all river users, not just boaters. Other ideas included creating a toll road and raising fees for rafters. Generally, people wanted the revenue for facility improvements.

Two (2) people said that fees should not be increased.

## Fishing Regulations

Twelve (12) people wanted more fishing regulations. A ban of side-planers was the most common request. Others wanted to set aside areas for catch and release or fly only. Four (4) people said they wanted no more regulations or reduced regulations.

# **Camping Regulations**

More camping regulations were requested by 15 people. They offered a variety of regulations including limiting length of stay, requiring camping reservations, restricting camping to established sites.

Three (3) wanted no more regulations.



Law Enforcement

Nineteen (19) people cited a need for better enforcement of boating and camping rules. The primary issues were stopping extended stays in camps by guided groups and confining all campers to designated sites. Designated sites were seen as a way to minimize environmental impacts and spread out campers along the river.

Five (5) people called for better enforcement of fishing regulations and five wanted better enforcement of trespassing.

Five (5) people favored boater safety laws such as no drinking and boating.

# Information and Education

Fourteen (14) people identified a need for information and education programs. Many wanted river etiquette and safety materials at launch sites. Most of these education efforts would be aimed at rafters. A few wanted warning signs near Sherars. Others wanted rafters to understand the needs of fishermen and powerboat users, so that conflicts would be minimized.

Content Summary - Public Comment on the Issues and Alternatives for Management of the Lower Deschutes River Document

This report summarizes public comment received by the Deschutes River Management Committee from January 17 to April 30, 1990, the response period following release of the Committee's *Issues and Alternatives* document. It provides a profile of who wrote to the committee, analysis of response card measures and discussion of the problems and solutions forwarded by the public.

Response cards included with the document accounted for the majority of the public input. A total of 653 cards were received and tabulated through March 30, 1990. In addition, 217 letters and statements from public meetings were analyzed and tabulated, and two form letters from interested organizations were reviewed and counted through March 30, 1990. In April, another 237 response cards and letters were received. This report presents a detailed discussion of all comments received through April 30, 1990.

# Who Wrote to the Committee

## A Note on Tabulations

The tabulated responses in this report include comments from both response card and letter comments, and represent the opinions of 1,056 people. Those writing more than one letter, or sending a card and a letter, were counted only once. Form letter comments were counted separately and are not included in the following tallies, except as noted.

# **Respondent** Profile

Most of the public input came from people in the Willamette Valley.

Willamette Valley	535
Central OR/Gorge	261
Washington	89
Eastern OR	35
Other Oregon	24
Other United States	41
No address given	71

The vast majority of people who wrote to the committee identified themselves as independent recreational users of the river. In reviewing the table below, bear in mind that several of the categories overlap; e.g. many landowners are also residents and recreational river users.

River users, independent	63
River users, guided	114
River users, unspecified	10
Professional guides	7
Local residents	30
Landowners	2
Local merchants	20
Elected officials	



People reported doing a range of activities on the river. The majority fish, float and camp.

Fishing	680
Using a nonmotorized boat	649
Camping	581
Hiking	363
Using a motorized boat	221
Hunting	52
Horseback riding	36
Biking	10
Other activity	31

\*Includes form letter responses.

# Segment of the River

Segment 4 drew the greatest number of comments, with 133 people specifically addressing this part of the river. One hundred and ten (110) mentioned Segment 1, 90 Segment 2, and 67 Segment 3. Notably, many writers did not address their comments to a particular area of the river.

# The Response Card: Satisfaction with Issues

The response card asked people to rate their satisfaction with how the report addresses the problems and solutions for specific management issues. As shown in the table below, motorized boating topped the list of concerns, followed by the number of people, guided and outfitted services, livestock grazing, and campsite availability.

	Very Satisfied	Somewhat Satisfied	Dissat- isfied	Not Familiar with Issue	
	%	%	%	%	
Fish habitat	36	40	8	17	
Wildlife habitat/vegetation	32	43	9	17	
Livestock grazing	22	29	25	24	
Historical/archaeological					
resources	26	31	4	38	
Nonmotorized boating	33	38	17	13	
	Very Satisfied %	Somewhat Satisfied %	Dissat- isfied %	Not Familiar with Issue %	
-------------------------------	------------------------	----------------------------	------------------------	---------------------------------	--
Motorized boating	16	24	43	17	
Availability of fishing sites	26	40	16	18	
Campsite availability	23	41	23	13	
Campsite facilities	30	40	15	15	
Guided & outfitted services	18	28	28	16	
Access roads	31	37	18	14	
Boat launches	35	32	7	16	
Trails	35	32	7	16	
User fees	38	35	13	14	
Number of people	20	37	29	14	
Public safety/services	27	42	7	24	

Respondents were asked to explain why they were dissatisfied with an issue. These comments indicated that the satisfaction ratings reflect concerns about the river more than concerns about the *Issues and Alternatives* document. Comment Summary

The following comment summary includes written answers from response cards, as well as other written comments received.

The summary consists of five sections:

- River Uses

- Regulations and Conditions
- The Issues and Alternatives document
- Management Alternatives
- The Planning Process



#### **River Uses**

The majority of the comments received were concerns about specific river uses. The table below provides an overview of the policy positions expressed. It includes form letter responses. More detailed descriptions of opinions follow.

	Total #	Don't			
	Comments	Limit	Dislike	Limit	Ban
Motorized boats	626	177	28	200	221
Commercial use	264	32	47	172	13
Nonmotorized boats	122	31	6	83	2
Horseback riding	89	88	0	1	0
Float tubes	17	11	0	2	4
Bicycle riding	7	5	0	2	0

#### Motorized Boats

Jet boats were the hottest topic by far. Of particular interest was motorized traffic in Segment 4.

Complaints about jet boats were myriad. Noise, erosion and disrespect for other boaters were all common themes.

As might be expected, complaints about jet boats and commercial use were intertwined, with many people objecting that the sleds allow people to go upstream and down, capturing the best fishing and camping spots. A common sentiment among the anti-jet boat contingent was that the river shouldn't be dominated by those who can afford a jet boat or a guided trip.

Those wanting to limit jet boats forwarded all types of solutions—everyone with their own combination of rules. One large category of solutions was limiting areas of operation for jet boats. The most common of these suggestions was removing jet boats from the first two to five miles from the mouth. Several people suggested this as a pass-through zone for both motorized and nonmotorized boats.

Many wanted to limit the number of motorized boats. Another set of solutions concerned times of operation. Many felt that the first step was to keep jet boats from operating early in the morning and into the evening. Other population suggestions included limiting the size, horsepower or speed of boats.

Those wishing to ban jet boats said exactly that, "Get all jet boats off the Deschutes". Nonetheless, many of these people made exception for river patrol craft.

More than three-quarters of the pro-jet boat contingent sent in the following statement in support of powerboats and Alternative 2:

"I recommend that the BLM adopt ALTERNATIVE 2 as the Deschutes River Management alternative regarding jet boat use on the Deschutes River. Plan ALTERNATIVES 3 and 4 are completely unsatisfactory in that they limit powerboats but not rafts and drift boats. Congestion of the Deschutes River is created by all user groups and limits only on powerboats are unfair".

Among the other pro-jet boat people, a common theme was that one user group should not be singled out for limitation. Many felt that restriction of jet boats would result in greater crowding because many drift boats would be needed to take the people who now could use one jet boat. Also, they argued that camp site competition would increase because jet boats reduce the number of overnight trips, and can use different campsites.

	Total #	Don't			
	Comments	Limit	Dislike	Limit	Ban
Commercial Use	264	32	47	172	13

Those desiring limitations generally felt that guided trips create too much competition for camping and fishing sites, and were annoyed by the traffic on the river. Limiting the number of people a guide can take was a particularly popular suggestion. Several thought this should be achieved by requiring guides to stay with their customers rather than dropping them off and going to pick up more. More restrictions on camping for guides were also quite common, as was limiting the number of guides on the river.

Those supporting commercial use said that they care for the river and provide a needed service. Additionally, a number of people spoke to the allocation issue, advocating the freedom of choice method. Only one or two people supported the other allocation methods. Some people made comments such as "if we limit access, don't let the guides take all the passes".

	Total #	Don't			
	Comments	Limit	Dislike	Limit	Ban
Nonmotorized Boats	122	31	6	83	2

The desire to limit float craft was mostly a desire to reduce crowding overall, although there were some objections that rafters in general are not considerate of the environment and other river users. Some people suggested resolving conflict between motorized and nonmotorized craft by giving each its own stretch of river. Several people said they did not want the hordes of rafters from Segment 2 to spill over into other parts of the river.



A common thought among those supporting nonmotorized boats was that no activity could have less impact than floating on top of the water.

Other people favored boater safety laws such as banning drinking and boating, and requiring people to take a course or pass a test before being able to get on the river. A few people objected to banning alcohol on the river.

	Total #	Don't			
	Comments	Limit	Dislike	Limit	Ban
Horseback Riding	89	88	0	1	0

Support of horse use in the area was largely a coordinated effort. Most of these letter writers identified themselves as members of Oregon Equestrian Trails, and one came from a committee representing the 75 members of the Redmond Saddle Club. The following statement appeared in virtually all of these letters:

"I support the horseback riding and trails in Alternative 1 under ACCESS: ROADS AND TRAILS, Problem: Inadequate foot access, page 55."

Most of these letters called for new trails, suggesting places such as Harris Canyon and Macks Canyon. A horse camp at Harris Canyon was another common request with this group. Also prevalent was a request to extend the public response time to the end of March. A few suggested that the Committee follow National Park and Wilderness Plans.

	Total #	Don't			
	Comments	Limit	Dislike	Limit	Ban
Float Tubes	17	11	0	5	1

Float tubes were not a major issue. People objected that tubes are hard for boats to see, and allow fishing from a floating device. Those on the other side of the issue said that tubes enhance safety, and do not constitute fishing from a floating device. They also explained that tubes have less environmental impact than other uses.

	Total #	Don't			
	Comments	Limit	Dislike	Limit	Ban
Bicycles	7	5	0	2	0

One person wanted to restrict bikes because they cause environmental damage. Some argued for continued access for bicycles on the grounds that they help spread fishermen out along the river.

#### **Regulations and Conditions**

	Total #		Keep	
	Comments	Decrease	Current	Increase
Use level regulations	380	0	160	220
Natural resources enhancement	211	0	19	192
Access	192	0	38	154
Grazing regulations	158	0	9	149
Facilities	156	0	15	145
User fees	148	0	26	122
Enforcement: boating/				
camping/general	138	0	5	133
Fishing regulations	112	17	33	62
Camping regulations	89	9	18	62
Information/education	79	<u> </u>		79
Land	41	0	1	40
Enforcement: fishing	30	0	2	28
Enforcement: trespass	10	0	3	7
Totals	380	0	160	220

#### **Use Level Regulations**

Those favoring limited access commonly expressed their position as placing "quality over quantity". What limiting access meant differed greatly from person to person. Many wanted to limit only peak use, focusing restrictions on weekends, summer months, or Segment 2. Some took the exact opposite approach of leaving peak use to the "float and giggle" crowd, and limiting access elsewhere to maintain the experience in other times and segments. No clear preference for rationing methods was expressed.

Opponents of limited access forwarded several arguments. Most valued the Deschutes for the spontaneous trips it affords. Many explained that crowding is what people should expect in summer on a very accessible river. They thought the Deschutes has never been a wilderness river and that people should not try to make it become one.



Some fear that limiting the peak use times will ruin the experience currently enjoyed midweek or in less travelled parts of the river. A few suggested that limited access on the Deschutes would have adverse effects on other rivers such as the Metolius.

Opposition to limited access was particularly prevalent among residents of central Oregon and the Gorge. They cited both the spontaneity argument, and the need to maintain the economy of the area. Some local people suggested that any permit system make special exemptions for people who live in the area.

	Total #		Keep	
	Comments	Decrease	Current	Increase
Natural Resource Enhancement	211	0	19	192

Seventy-three (73) people identified a problem with the natural resource condition along the river and 51 advocated that steps be taken to improve the river environment. The most common complaints were of erosion caused by jet boats and the impacts of camping. Suggested resource improvements included restoring vegetation along the riverbank and upgrading fish habitat. Several people thought that damaged areas should be placed off limits and allowed to regenerate.

Several people called for further study of ecological conditions on the river.

Of those who wrote to say that natural resource condition of the river is not a problem, several commented that the voluntary litter cleanup crew had found less garbage in recent years.

*	Total #	Total #		Keep	
	Comments	Decrease	Current	Increase	
Access	192	0	38	154	

Most of those calling for increased or improved access wanted roads paved or gravelled to increase safety and control dust. The roads between Locked Gate and Maupin and from Sherars to Macks Canyon, were commonly identified as needing repair.

Many requested new trails for hikers or bikers.

Several people suggested that improving access was the key to spreading out use and relieving overcrowded conditions. Some wanted increased access to Segment 3.

Those who did not want access improvements thought it would bring more people and increase pressure on the river.

	Total #		Keep	
	Comments	Decrease	Current	Increas
Grazing Regulations	158	0	9	149
Opinion was overwhelmingly in favor had grazed by the river a long time and	of moving cattle away from the riv d were not a problem.	ver. Those defending	g grazing mainta	ined that ca
	Total #		Keep	
	Comments	Decrease	Current	Increas
Facilities	156	0	11	14
More campgrounds and toilets were the points, which they felt are too crowded	ne most common facilities requests. d, and have inadequate parking.	Several rafters requ	iested better faci	lities at land
Those against facility improvement felt	t that it was not in keeping with the	e natural experience	on the Deschute	es, and that
would attract more people to the river.	Making water available at campsi	tes was criticized by	several people.	
would attract more people to the river.	Making water available at campsi Total #	tes was criticized by	several people. Keep	
would attract more people to the river.	Making water available at campsi Total # Comments	tes was criticized by Decrease	several people. Keep Current	Increas
User Fees	Making water available at campsi Total # Comments 148	tes was criticized by Decrease 0	v several people. Keep Current 26	Increa 122
User Fees The two most common fee increase sug of boater passes. Generally, people war	Making water available at campsis <b>Total #</b> <b>Comments</b> 148 ggestions were charging a fee from nted the revenue for law enforcement	tes was criticized by Decrease 0 all river users, not j ent and facility impi	x several people. Keep Current 26 ust boaters, and rovements.	Increa 122 raising the
User Fees The two most common fee increase sug of boater passes. Generally, people was Arguing against increases were mostly impact.	Making water available at campsis <b>Total #</b> <b>Comments</b> 148 ggestions were charging a fee from nted the revenue for law enforcement rafters who argued that they pay o	tes was criticized by Decrease 0 all river users, not j ent and facility impr enough already beca	v several people. Keep Current 26 ust boaters, and rovements. ause their use of	Increas 122 raising the the river ha
User Fees The two most common fee increase sug of boater passes. Generally, people was Arguing against increases were mostly impact.	Making water available at campsid <b>Total #</b> <b>Comments</b> 148 ggestions were charging a fee from nted the revenue for law enforcement rafters who argued that they pay of <b>Total #</b>	tes was criticized by Decrease 0 all river users, not j ent and facility impr enough already beca	v several people. Keep Current 26 ust boaters, and rovements. ause their use of Keep	Increas 122 raising the the river ha
User Fees The two most common fee increase sug of boater passes. Generally, people wan Arguing against increases were mostly impact. Law Enforcement	Making water available at campsid <b>Total #</b> <b>Comments</b> 148 ggestions were charging a fee from nted the revenue for law enforcements v rafters who argued that they pay of <b>Total #</b> <b>Comments</b>	tes was criticized by Decrease 0 all river users, not j ent and facility impi enough already beca Decrease	r several people. Keep Current 26 ust boaters, and rovements. ause their use of Keep Current	Increas 122 raising the the river ha Increas
User Fees The two most common fee increase sug of boater passes. Generally, people was Arguing against increases were mostly impact. Law Enforcement Enforcement: boating/	Making water available at campsid <b>Total #</b> <b>Comments</b> 148 ggestions were charging a fee from nted the revenue for law enforcements rafters who argued that they pay of <b>Total #</b> <b>Comments</b>	tes was criticized by Decrease 0 all river users, not j ent and facility impr enough already beca Decrease	v several people. Keep Current 26 ust boaters, and rovements. ause their use of Keep Current	Increas 122 raising the the river ha Increas
User Fees The two most common fee increase sug of boater passes. Generally, people was Arguing against increases were mostly impact. Law Enforcement Enforcement: boating/ camping/general	Making water available at campsid <b>Total #</b> <b>Comments</b> 148 ggestions were charging a fee from nted the revenue for law enforcements v rafters who argued that they pay of <b>Total #</b> <b>Comments</b> 138	tes was crificized by Decrease 0 all river users, not j ent and facility impr enough already beca Decrease 0	r several people. Keep Current 26 ust boaters, and rovements. ause their use of Keep Current 5	Increas 122 raising the the river ha Increas 133
<ul> <li>User Fees</li> <li>The two most common fee increase sug of boater passes. Generally, people was</li> <li>Arguing against increases were mostly impact.</li> <li>Law Enforcement</li> <li>Enforcement: boating/ camping/general</li> <li>Enforcement: fishing</li> </ul>	Making water available at campsid <b>Total #</b> <b>Comments</b> 148 ggestions were charging a fee from nted the revenue for law enforcements v rafters who argued that they pay of <b>Total #</b> <b>Comments</b> 138 30	tes was criticized by Decrease 0 all river users, not j ent and facility impr enough already beca Decrease 0 0	r several people. Keep Current 26 ust boaters, and rovements. ause their use of Keep Current 5 2	Increas 122 raising the the river ha Increas 133 28



The primary issues for general enforcement were stopping illegal guides, and cracking down on extended stays in camps by guided groups. Requiring visible ID numbers on all boats was a popular means of improving enforcement.

Those opposing increased enforcement were concerned about cost and felt current efforts are adequate.

	Total #		Keep	
	Comments	Decrease	Current	Increase
Fishing Regulations	112	17	33	62

The primary regulation interests were setting aside areas for catch and release or fly only, and stopping gill netting. A ban of side-planers was also suggested.

Those who wanted no change in regulations were of two groups. One group was upset that the Committee would consider relaxing bag limits and other restrictions. The other group did not want to see the river become all catch and release or fly.

Those who wanted fewer restrictions primarily argued for fishing from float craft. (A couple people thought a good trade-off would be to go fly only from boats.) A few wanted to keep more fish.

	Total #		Keep	
	Comments	Decrease	Current	Increase
Camping Regulations	89	9	18	62

A variety of regulations were advanced, including limiting length of stay, size of group camping, requiring camping reservations, and restricting camping to established sites.

Those who wanted to keep the current regulations voiced two major issues. Many said that reservations were undesirable, arguing that if the number of boater permits were limited, the camping problem would be solved. Others objected to the idea that campgrounds would be set aside for particular user groups.

The few who wanted lighter camping restrictions wanted to do away with length of stay and fire rules.

	Total #		Keep	
	Comments	Decrease	Current	Increase
Information and Education	79	-	-	79
Those who identified a need for informat als at launch sites. Most of these educatio understand the needs of fishermen and p Deschutes' natural and historical resource	ion and education programs was n efforts would be aimed at rafte owerboat users. A few people w es.	nted such things as rs, teaching them to anted more interpre	river etiquette ar o care for the env etive informatior	nd safety mate rironment and n about the
	Total #		Keep	
	Comments	Decrease	Current	Increase
Land	41	0	1	40
Adding land to the recreation area was n	resented as a means to alleviate a	a shortage of campin	ng and fishing sp	oots. In most
cases, people specifically stated they wou	ild like access to Warm Springs la	arter.		
The Issues and Alternatives D	ocument	ind.		
Cases, people specifically stated they wound the <i>Issues and Alternatives D</i> Only about 10% of those writing offered a 25 people.	ocument specific critiques of the report. Th	nree major themes e	merged, each me	entioned by 1

- The questionnaire should have asked people to vote for alternatives for each issue.

Several other comments on the document appeared three to 15 times.

- Use current usage data. The Shelby study was flawed.

- The report did not mention of wild summer steelhead.

- The report did not mention *improvements* in natural resources needed, such as improvements in fish habitat, or restoring vegetation.



- The report did not address landowners' concerns.

- The report did not give an option of severely restricting guides.

- The report did not give an option of all catch and release fishing presented.
- The report did not discuss trails enough.
- Historical/archaeological resources were poorly identified.
- Treat kayakers separately from other float craft.
- Distinguish between rafters and fishermen.

#### Alternatives

Preferred alternatives were not solicited, but roughly 10% indicated one nonetheless. Forty-four (44) favored Alternative 3, 34 Alternative 4, 34 Alternative 2 and 28 favored Alternative 1. Most people indicating a preference did so with exceptions; they were not completely satisfied with the alternative on all issues.

Additionally, the form letter in support of powerboats argued for Alternative 2 and the one in support of horse use favored Alternative 1.

Several people complained that the less use and much less use alternatives offer "carrots" such as higher bag limits. They felt that structuring the alternative that way was unfair or inconsistent.

#### Process

About 15% had comments about the planning process. These remarks covered a wide range of concerns. Two ideas drew more than 20 comments:

- The process is fine. Very thorough.

- Don't let guides and other commercial interests have too great an influence on the management decisions.

The following are ideas mentioned three times or more:

- Leave fishing regulations and limits to Fish and Wildlife.

More meetings are needed (in Portland, Eastern Oregon).

- I did not receive the report far enough in advance of the public meeting.

- Get the planning done soon.

- Let people vote on the issues.

- Keep State control. Don't let BLM take over.

- Money is being wasted. For example-the elaborate report.

- Not everyone can attend meetings. Pay attention to written comments too.

#### Other Input

The following input, being of a different nature from other comments, was not included in the above tallies. - The Dalles Rod and Gun Club submitted nine completed questionnaires from a survey of their members.

- PGE's Environmental Services department wrote to address two issues: lack of gravel recruitment in the 3-mile section between the Pelton Reregulating Dam and Shitike Creek, and lack of flushing flows below the Pelton/Round Butte complex.

- Fifty-four (54) people wrote to express that recreational use of the river be limited, and to designate Dwight Billman, a Portland attorney as their representative in the planning process.



#### Content Summary - Summary of Comments at Public Meetings

This report summarizes oral comments made at meetings in Bend, Madras, Maupin, The Dalles, Portland and Eugene in January and February 1990. A total of 77 people are included in the counts presented below.

#### **Respondent Profile**

Most of the public input came from people residing in Central Oregon or the Gorge. The figures below represent numbers of people.

Central OR/Gorge	48
Willamette Valley	25
Washington	1
No address given	3

Relative to sets of public comments reviewed previously, this input contains a high percentage of people who live, work, or own land on the river. Several elected officials are also included.

River users, independent	22
Local residents	17
Professional guides	15
Elected officials	8
Landowners	7
Local merchants	7
Not specified	9

People tended not to specify their activities on the river.

Fishing	31
Using a nonmotorized boat	29
Using a motorized boat	14
Camping	7
Hiking	3
Hunting	0
Horseback riding	0
Biking	0

#### Segment of the River

Segment 1 drew the greatest number of comments. This differs from other sets of comments which tended to focus on Segment 4.

Segment 1	20
Segment 2	18
Segment 4	16
Segment 3	8

#### **River Uses**

The table below provides an overview of the policy positions expressed regarding specific river uses.

Unlike other sets of public input, these comments ran in favor of not limiting commercial use.

	Total #	Don't			
	Comments	Limit	Dislike	Limit	Ban
Motorized boats	30	11	5	11	3
Commercial use	18	11	2	5	0
Nonmotorized boats	10	7	0	3	0
Float tubes	1	1	0	3	0
Horseback riding	0	0	0	0	0
Bicycle riding	0	0	0	0	0



### **Regulations and Conditions**

The following table summarizes attitudes on the need for changing regulations and conditions on the river.

Relative to other sets of public input, these comments emphasized enforcement and education more.

	Total #		Keep	
	Comments	Decrease	Current	Increase
Use level regulations	51	0	29	22
Access				
Enforcement: unspec.	19	0	0	19
User fees	14	0	1	13
Information/education	14	0	0	14
Natural resources				
enhancement	13	0	1	12
Facilities	13	0	1	12
Grazing regulations	12	0	2	10
Fishing regulations	10	2	5	3
Enforcement: fishing	6	0	0	6
Boating safety regulations	6	0	0	6
Camping regulations	5	0	2	3
Enforcement: boating/camping	3	0	0	3
Land	3	0	0	3
Enforcement: trespass	1	0	0	1

Almost no one expressed a preference among the four management alternatives.

## Appendix C. Examples of Ecological Condition

Vegetative potential is not the same for all sites along the river. Examples depicting the dramitic differences are shown below:

*Steep, talus railroad fill sites have few, if any, shrubs in the vegetative composition.* 

Photo showing a silty loam site on an island above Trout Creek Campground. Sites like this which are dominated by Reed Canary Grass and sedges have the potential to have shrubs in the composition. However, without disturbance transition to a shrub community will be slow.







Many sites along the river have the full potential to develop a vartiety of trees., shrubs, grasses, sedges, and rushes.



The following before and after photographs taken in 1986 and 1990 depict both vegetative release and potential following 4 years of livestock exclusion (photos by ODF&W).

Photo 4a. River mile 12.5.





Photo 4b. Note shrub release on the far bank.



Photo 5a and 5b -- River mile 18.5 showing release of shrubs.







Photo 6a and 6b -- River mile 16.5 showing release of shrubs and expansion of rushes and sedges along the water's edge.



# Appendix D. Undeveloped Campsites Open/Closed by Alternative

I1 I2 13 I4 I5 I6 17 18 19 110 I11 I12 I13 I14 I15

I16

117

L

L

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11

Open

Open

						L = Light Rehab O close temj rehabilita	pen but may porarily for tion	
Site Number	LAC Impact Eval- uation	Land Owner- ship	Pref. Alt.	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Site Inven- tory Number
Segment 1								
I1	М	BLM	Open	Open	Open	Open	Open	IE9
I2	H	"	Open-Rehab.	Open	Open	Open	Open	IE10
13	M	"	Open	Open	Open	Closed	Closed	IE10A
14	M	.11	Open	Open	Open	Closed	Closed	IE10B
I5	M	11	Open	Open	Open	Closed	Closed	IE11
I6	M		Open	Open	Open	Closed	Closed	IE11A
17	H	"	Open-Rehab.	Open	Open	Open	Open	IE12
18	L	11	Open	Open	Open	Closed	Closed	IE12A
19	M	11	Open	Open	Open	Closed	Closed	IE12B
110	M	"	Open	Open	Open	Closed	Closed	IE12C
I11	M	11	Open	Open	Open	Closed	Closed	IE12D
I12	L	"	Open	Open	Open	Closed	Closed	IE12E
I13	L	11	Open	Open	Open	Closed	Closed	IE12F
I14	L	n	Open	Open	Open	Open	Closed	IE13
I15	M	"	Open	Open	Open	Closed	Closed	IE13A

Open

Open

Open

Open

Open

Open

Key:

E = ExtremeH = Heavy M = Moderate

IE13B

**IE14** 

Open

Closed



	Impact	Land						Site Inven-	
Site	Eval-	Owner-	Pref.	Alt.	Alt.	Alt.	Alt.	tory	
Number	uation	ship	Alt.	1	2	3	4	Number	
I18	Н	"	Open-Rehab.	Open	Open	Open	Open	IE15A	
I19	Μ	"	Open	Open	Open	Closed	Closed	IE15B	
I20	M		Open	Open	Open	Closed	Closed	IE15C	
I21	M	"	Open	Open	Open	Closed	Closed	IE15D	
I22	M	"	Open	Open	Open	Open	Open	IE16	
123	M	11	Open	Open	Open	Closed	Closed	IE16A	
I24	L	"	Open	Open	Open	Open	Open	IE16B	
I25	L	"	Open	Open	Open	Closed	Closed	IE16C	
I26	L	n	Open	Open	Open	Closed	Closed	IE16D	
I27	M	n	Open	Open	Open	Closed	Closed	IE16E	
I28	L	"	Open	Open	Open	Closed	Closed	IE16F	
I29	L	"	Open	Open	Open	Closed	Closed	IE16G	
I30	L	"	Open	Open	Open	Closed	Closed	IE16H	
I31	L	11	Open	Open	Open	Closed	Closed	IE16I	
I32	L	"	Open	Open	Open	Closed	Closed	IE16J	
133	Μ	"	Open	Open	Open	Open	Open	IE19A	
I34	L	11	Open	Open	Open	Closed	Closed	<b>IE19A1</b>	
135	M	11	Open	Open	Open	Open	Closed	IE20	
I36	Μ	11	Open	Open	Open	Open	Open	IE20A	
137	L	"	Open	Open	Open	Closed	Closed	IE24	
I38	L	BLM	Open	Open	Open	Open	Open	IE24A	
139	M	"	Open	Open	Open	Closed	Closed	IE25	
I40	L	11	Open	Open	Open	Open	Open	IE31A	
I41	М	"	Open	Open	Open	Closed	Closed	IE31B	
I42	M	11	Open	Open	Open	Open	Open	IE32	
143	M	"	Open	Open	Open	Open	Closed	IE34	
I44	L	11	Open	Open	Open	Closed	Closed	IE34A	
145	L	11	Open	Open	Open	Closed	Closed	IE34C	
I46	М	u	Open	Open	Open	Open	Open	IE35C	

-

Site	Impact Eval-	Land Owner-	Pref.	Alt.	Alt.	Alt.	Alt.	Site Inven- tory
Number	uation	ship	Alt.	1	2	3	4	Numbe
I47	L	"	Open	Open	Open	Open	Closed	IE36
I48	L	11	Open	Open	Open	Closed	Closed	IE36A
I49	H	.11	Open-Rehab.	Open	Open	Open	Open	IE37
150	Н	11	Open-Rehab.	Open	Open	Closed	Closed	IE38
151	H	"	Open-Rehab.	Open	Open	Open	Closed	IE39
I52	H	11	Open-Rehab.	Open	Open	Closed	Closed	IE39A
I53	H	11	Open-Rehab.	Open	Open	Closed	Closed	IE39B
I54	H	11	Open-Rehab.	Open	Open	Closed	Closed	IE40
155	L	11	Open	Open	Open	Closed	Closed	IE41
I56	H	11	Open-Rehab.	Open	Open	Closed	Closed	IE42
157	L		Open	Open	Open	Open	Open	IE42A
158	L		Open	Open	Open	Closed	Closed	IE42B
159	L	11	Open	Open	Open	Closed	Closed	IE42C
160	H	11	Open	Open	Open	Open	Closed	IE43
I61	M	11	Open	Open	Open	Closed	Closed	IE43A
I62	L	"	Open	Open	Open	Closed	Closed	IE43B
163	M	u .	Open	Open	Open	Open	Open	IE43C
I64	М		Open	Open	Open	Open	Closed	IE44
165	M	11	Open	Open	Open	Closed	Closed	IE45
166	L	"	Open	Open	Open	Closed	Closed	IE45A
I67	L	11	Open	Open	Open	Closed	Closed	IE45B
I68	L	11	Open	Open	Open	Closed	Closed	IE45C
I69	M	11	Open	Open	Open	Open	Open	IE46
170	L		Open	Open	Open	Closed	Closed	IE46A
I71	L	"	Open	Open	Open	Closed	Closed	IE46B
172	L		Open	Open	Open	Closed	Closed	<b>IE47</b>
173	M	11	Open	Open	Open	Closed	Closed	IE47A
I74	M	"	Open	Open	Open	Closed	Closed	IE47B
175	L	11	Open	Open	Open	Closed	Closed	IE47C

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	LAC Impact	Land						Site Inven-
Site	Eval-	Owner-	Pref.	Alt.	Alt.	Alt.	Alt.	tory
Number	uation	ship	Alt.	1	2	3	4	Number
176	М		Open	Open	Open	Open	Open	IE48
177	L	"	Open	Open	Open	Closed	Closed	IE48A
178	Μ	11	Open	Open	Open	Closed	Closed	IE49
179	M	11	Open	Open	Open	Closed	Closed	IE49A
180	L	"	Open	Open	Open	Closed	Closed	IE49A1
181	L	11	Open	Open	Open	Open	Closed	IE49B
182	H	"	Open-Rehab.	Open	Open	Open	Open	IE50
183	L	"	Open	Open	Open	Closed	Closed	IE50A
184	M	"	Open	Open	Open	Closed	Closed	IE50B
185	М	"	Open	Open	Open	Closed	Closed	IE50C
186	Μ	"	Open	Open	Open	Closed	Closed	IE50D
187	H	"	Open-Rehab.	Open	Open	Closed	Closed	IE51
188	L	11	Open	Open	Open	Closed	Closed	IE51A
189	M	BLM	Open	Open	Open	Closed	Closed	IE51B
190	H	ODFW	Open-Rehab.	Open	Open	Closed	Closed	IE52
I91	H		Open-Rehab.	Open	Open	Closed	Open	IE52A
192	H	"	Open-Rehab.	Open	Open	Open	Closed	IE52B
193	Н	"	Open-Rehab.	Open	Open	Closed	Closed	IE52C
194	Н	"	Open-Rehab.	Open	Open	Closed	Closed	IE52D
195	M	"	Open	Open	Open	Closed	Closed	IE52E
196	M	"	Open	Open	Open	Open	Open	IE52F
197	Е	BLM	Open-Rehab.	Open	Open	Open	Open	IE58
198	H	"	Open-Rehab.	Open	Open	Closed	Closed	IE58A
I99	Μ	Pvt	Closed	Open	Closed	Closed	Closed	IE58B
1100	H	Pvt	Closed	Open	Closed	Closed	Closed	IE58C
I101	H	BLM	Open-Rehab.	Open	Open	Open	Open	IW1
I102	H	11	Open-Rehab.	Open	Open	Open	Open	IW1A
I103	М	11	Open	Open	Open	Open	Closed	IW1B
I104	Μ	Pvt	Closed	Open	Closed	Closed	Closed	IE67

Site	Eval-	Owner-	Pref.	Alt.	Alt.	Alt.	Alt.	tory
Tumber	uation	Ship	AIG.	1	2	5	-	Ivanioe
I105	L	BLM	Open	Open	Open	Closed	Closed	IW2
I106	H	"	Open-Rehab.	Open	Open	Open	Open	<b>IE68</b>
I107	M	11	Open	Open	Open	Closed	Closed	IE69
I108	M		Open	Open	Open	Closed	Closed	IE69A
I109	H	"	Open-Rehab.	Open	Open	Open	Open	IE69B
I110	M	11	Open	Open	Open	Closed	Closed	IE69C
I111	M		Open	Open	Open	Closed	Closed	IW3
I112	H	"	Open-Rehab.	Open	Open	Open	Closed	IW4
I113	M	11	Open	Open	Open	Closed	Closed	IE69D
I114	H	11	Open-Rehab.	Open	Open	Open	Open	IE69E
I115	L	"	Open	Open	Open	Closed	Closed	IE69F
I116	H		Open-Rehab.	Open	Open	Open	Closed	IE69G
I117	M		Open	Open	Open	Closed	Closed	IW4A
I118	M	-11	Open	Open	Open	Open	Open	IW4B
I119	H	11	Open-Rehab.	Open	Open	Closed	Closed	IW4C
I120	Μ	11	Open	Open	Open	Closed	Closed	IW4D
I121	M	"	Open	Open	Open	Open	Open	IW4E
I122	E		Open-Rehab.	Open	Open	Closed	Closed	<b>IE72</b>
I123	H	11	Open-Rehab.	Open	Open	Open	Open	<b>IE73</b>
I124	M		Open	Open	Open	Open	Closed	IE73A
I125	M	"	Open	Open	Open	Open	Open	IW5
I126	L		Open	Open	Open	Open	Open	IW5A
I127	H	"	Open-Rehab.	Open	Open	Open	Open	<b>IE75</b>
I128	E	"	Open-Rehab.	Open	Open	Closed	Closed	IE76
I129	H	"	Open-Rehab.	Open	Open	Open	Closed	<b>IE77</b>
I130	M	"	Open	Open	Open	Open	Open	<b>IE78</b>
I131	H	"	Open-Rehab.	Open	Open	Closed	Closed	<b>IE79</b>
I132	Μ	"	Open	Open	Open	Closed	Closed	<b>IE80</b>
I133	L	"	Open	Open	Open	Closed	Closed	IW6



	LAC Impact	Land						Site Inven-
Site	Eval-	Owner-	Pref.	Alt.	Alt.	Alt.	Alt.	tory
Number	uation	ship	Alt.	1	2	3	4	Number
I134	L	<i>u</i>	Open	Open	Open	Open	Open	IW6A
I135	Μ	Pvt	CLosed	Open	Closed	Closed	Closed	IW7A
I136	L	BLM	Open	Open	Open	Closed	Closed	IE80A
I137	M	"	Open	Open	Open	Open	Open	IE82
I138	H	"	Open-Rehab.	Open	Open	Closed	Closed	IE82A
I139	M	BLM	Open	Open	Open	Open	Open	IE83
I140	M	"	Open	Open	Open	Open	Open	IE84
I141	L	11	Open	Open	Open	Open	Closed	IE84A
I142	L	11	Open	Open	Open	Open	Open	IW9
I143	L	"	Open	Open	Open	Closed	Closed	IW9A
I144	Μ	"	Open	Open	Open	Closed	Closed	IW9B
I145	M	Pvt	Closed	Open	Closed	Closed	Closed	IE85
I146	Н	11	Closed	Open	Closed	Closed	Closed	<b>IE86</b>
I147	Н	11.	Closed	Open	Closed	Closed	Closed	IE87
TOTALS		147	*161	*168	140	54	39	

\* #s include Tribe campsites (see following pages)

WST - Warm Springs Tribe

	LAC	1						55	
	Impact	Land	1.1				1.1.1	Number	1
Site	Eval-	Owner-	Pref.	Alt.	Alt.	Alt.	Alt.	of	
Number	uation	ship	Alt.	1	2	3	4	Sites	
IWT 1	н	WST	Closed	Closed	Closed	Closed	Closed	1	
IWT 2	H	"	Closed	Closed	Closed	Closed	Closed	1	
IWT 3	M	WST	Closed	Closed	Closed	Closed	Closed	1	
IWT 4	L	"	Closed	Closed	Closed	Closed	Closed	1	
IWT 5	M	WST	Closed	Closed	Closed	Closed	Closed	1	
IWT 6	H	"	Closed	Closed	Closed	Closed	Closed	8	
IWT 7	L	WST	Closed	Closed	Closed	Closed	Closed	2	
IWT 8	L	11	Closed	Closed	Closed	Closed	Closed	2	
IWT 9	L	WST	Closed	Closed	Closed	Closed	Closed	1	
<b>IWT 10</b>	L	11	Closed	Closed	Closed	Closed	Closed	2	
IWT 11	L	WST	Closed	Closed	Closed	Closed	Closed	4	
IWT 12	L	"	Closed	Closed	Closed	Closed	Closed	10 +	
IWT 13	L	WST	Closed	Closed	Closed	Closed	Closed	1	
<b>IWT 14</b>	L	11	Closed	Closed	Closed	Closed	Closed	2	
IWT 15	L	WST	Closed	Closed	Closed	Closed	Closed	1	
IWT 16	M	11	Open	Open	Closed	Closed	Closed	3	
IWT 17	L	"	Open	Open	Closed	Closed	Closed	2	
<b>IWT 18</b>	L	"	Open	Open	Closed	Closed	Closed	3	
IWT 19	L	u	Open	Open	Closed	Closed	Closed	4	
IWT 20	L	11	Open	Open	Closed	Closed	Closed	22	
<b>IWT 21</b>	L	11	Closed	Closed	Closed	Closed	Closed	4	
<b>IWT 22</b>	L	11	Closed	Closed	Closed	Closed	Closed	1	
IWT 23	L		Closed	Closed	Closed	Closed	Closed	1	
<b>IWT 24</b>	L	11	Open	Open	Closed	Closed	Closed	1	
IWT 25	L		Open	Open	Closed	Closed	Closed	1	
IWT 26	M	"	Open	Open	Closed	Closed	Closed	2	
IWT 27	L	"	Open	Open	Closed	Closed	Closed	1	
IWT 28	M		Closed	Closed	Closed	Closed	Closed	1	
IWT 29	H	11	Closed	Closed	Closed	Closed	Closed	3	
<b>IWT 30</b>	M	"	Closed	Closed	Closed	Closed	Closed	3	



Site Number	LAC Impact Eval- uation	Land Owner- ship	Pref. Alt.	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Number of Sites
IWT 31	L		Open	Open	Closed	Closed	Closed	2
IWT 32	H		Open	Open	Closed	Closed	Closed	1
IWT 33	L	11	Closed	Closed	Closed	Closed	Closed	î
IWT 34	M	11	Open	Open	Closed	Closed	Closed	6
IWT 35	L		Open	Open	Closed	Closed	Closed	1
IWT 36	M	11	Open	Open	Closed	Closed	Closed	1
IWT 37	L	"	Open	Open	Closed	Closed	Closed	1
<b>IWT 38</b>	L	"	Closed	Closed	Closed	Closed	Closed	1
IWT 39	М	"	Closed	Closed	Closed	Closed	Closed	2
<b>IWT 40</b>	L		Open	Open	Closed	Closed	Closed	1
IWT 41	М	"	Open	Open	Closed	Closed	Closed	2
<b>IWT 42</b>	M	II	Closed	Closed	Closed	Closed	Closed	1
<b>IWT 43</b>	L	"	Closed	Closed	Closed	Closed	Closed	5
IWT 44	L		Closed	Closed	Closed	Closed	Closed	2
IWT 45	М	"	Closed	Closed	Closed	Closed	Closed	4
<b>IWT 46</b>	L	"	Closed	Closed	Closed	Closed	Closed	3
IWT 47	L	"	Open	Open	Closed	Closed	Closed	1
<b>IWT 48</b>	L	"	Open	Open	Closed	Closed	Closed	4
IWT 49	L	"	Closed	Closed	Closed	Closed	Closed	1
IWT 50	L	11	Open	Open	Closed	Closed	Closed	1
TOTAL	50		*21	*21	Closed	Closed	Closed	131

\* #s include Tribe campsites

	LAC Impact	Land						Site Inven
Site	Eval-	Owner-	Pref.	Alt.	Alt.	Alt.	Alt.	tory
Number	uation	ship	Alt.	1	2	3	4	Numb
Segment 2								
II1	Н	BLM	Open-Rehab.	Open	Open	Open	Open	IIW10
II2	Μ	"	Open	Open	Open	Open	Closed	IIW11
113	E	"	Open-Rehab.	Open	Open	Open	Open	IIW12
II4	Μ	"	Open	Open	Open	Open	Closed	IIW13
115	H	"	Open-Rehab.	Open	Open	Open	Closed	IIW14
II6	Н	"	Open-Rehab.	Open	Open	Closed	Closed	IIW15
Total		6	6	6	6	5	2	
Segment 3								
III1	L	BLM	Open	Open	Open	Open	Closed	IIIW8
III2	L	"	Open	Open	Open	Open	Closed	IIIW9
III3	L	n	Open	Open	Open	Open	Open	IIIW1
III4	M	"	Open	Open	Open	Open	Open	IIIW12
III5	L		Open	Open	Open	Open	Open	IIIW13
III6	H	"	Open-Rehab.	Open	Open	Open	Open	IIIW14
III7	Μ	"	Open	Open	Open	Open	Closed	IIIW15
III8	M	"	Open	Open	Open	Open	Open	IIIW10
III9	L		Open	Open	Open	Open	Open	IIIW17
III10	L		Open	Open	Open	Open	Closed	IIIW18
III11	H		Open-Rehab.	Open	Open	Open	Open	IIIW19
III12	Μ	"	Open	Open	Open	Closed	Closed	
IIIW19AIII13	H	ü	Open-Rehab.	Open	Open	Open	Open	
IIIW19BIII14	E	"	Open-Rehab.	Open	Open	Closed	Closed	IIIE1
III15	H		Open-Rehab.	Open	Open	Open	Closed	IIIE2
III16	H	"	Open-Rehab.	Open	Open	Closed	Closed	IIIE3

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	LAC	Tread						Site
Sita	Impact Eval-	Chang	Prof	A 14	A 14	A 14	A 14	Inven-
Number	uation	shin	Alt	1	2	3	Ant.	Number
III17	M	"	Open	Open	Open	Open	Open	IIIW/20
III18	L	11	Open	Open	Open	Open	Closed	IIIW21
III19	L	"	Open	Open	Open	Open	Open	IIIW22
III20	M	"	Open	Open	Open	Open	Open	IIIW23
III21	L	"	Open	Open	Open	Closed	Closed	IIIW24
III22	H	"	Open-Rehab.	Open	Open	Open	Open	IIIW25
III23	L	"	Open	Open	Open	Open	Open	IIIW28
III24	Н	"	Open-Rehab.	Open	Open	Open	Open	IIIW29
III25	M	"	Open	Open	Open	Open	Open	IIIW30
III26	H		Open-Rehab.	Open	Open	Open	Closed	IIIE4
III27	M	"	Open	Open	Open	Open	Open	
IIIW30AIII28	Н	"	Open-Rehab.	Open	Open	Closed	Closed	IIIW31
III29	H	"	Open-Rehab.	Open	Open	Open	Closed	IIIW32
III30	H	"	Open-Rehab.	Open	Open	Open	Open	
IIIW32AIII31	E	"	Open-Rehab.	Open	Open	Open	Closed	IIIW33
III32	L		Open	Open	Open	Open	Closed	IIIW36
Total		32	32	32	32	27	17	

Rehab - open but may closed temporarily for rehabilitation.

Site	Impact Eval	Land	Prof	A1+	A16	A1+	A1+	Inven-
Number	uation	ship	Alt.	1	2	3	4	Numbe
Segment 4								
IV1	L	ODFW	Open	Open	Open	Open	Closed	IVW1
IV2	L	"	Open	Open	Open	Open	Closed	IVW2
IV3	M	BLM	Open	Open	Open	Open	Open	IVE1
IV4	L	11	Open	Open	Open	Closed	Closed	IVE1A
IV5	Μ	"	Open	Open	Open	Closed	Closed	IVE2
IV6	L	"	Open	Open	Open	Closed	Closed	IVW3
IV7	L	"	Open	Open	Open	Open	Closed	IVW4
IV8	L	"	Open	Open	Open	Closed	Closed	IVE1B
IV9	L	"	Open	Open	Open	Open	Closed	IVE2A
IV10	M	11	Open	Open	Open	Closed	Closed	IVW5
IV11	L	"	Open	Open	Open	Closed	Closed	IVW6
IV12	H	"	Open-Rehab.	Open	Open	Open	Open	IVW6A
IV13	L	11	Open	Open	Open	Closed	Closed	IVE3
IV14	L	"	Open	Open	Open	Closed	Closed	<b>IVE3A</b>
IV15	H	11	Open-Rehab.	Open	Open	Open	Closed	IVE4
IV16	M	11	Open	Open	Open	Open	Open	IVE5
IV17	L	11	Open	Open	Open	Closed	Closed	IVE6
IV18	L	11	Open	Open	Open	Closed	Closed	IVE6A
IV19	L	11	Open	Open	Open	Closed	Closed	IVE6B
IV20	L	11	Open	Open	Open	Closed	Closed	IVE6C
IV21	E		Open-Rehab.	Open	Open	Open	Open	IVE7
IV22	L	"	Open	Open	Open	Closed	Closed	IVW7
IV23	L	11	Open	Open	Open	Open	Closed	IVE8
IV24	L	"	Open	Open	Open	Open	Open	IVW8
IV25	L	"	Open	Open	Open	Open	Closed	IVE9
IV26	M		Open	Open	Open	Closed	Closed	IVE10
IV27	Н	"	Open-Rehab.	Open	Open	Open	Open	IVE11

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Site	LAC Impact	Land	Prof	A 14	A 14	A 14	A14	Site Inven-
Number	uation	ship	Alt.	1	2	3	4	Number
		and t						
IV28	E	"	Open-Rehab.	Open	Open	Closed	Closed	IVE12
IV29	L	11	Open	Open	Open	Closed	Closed	<b>IVW10</b>
IV30	L	"	Open	Open	Open	Open	Open	IVW11
IV31	E		Open-Rehab.	Open	Open	Closed	Closed	IVW12
IV32	L		Open	Open	Open	Open	Closed	IVE13
IV33	H	11	Open-Rehab.	Open	Open	Open	Open	IVE14
IV34	L	11	Open	Open	Open	Open	Open	IVE14A
IV35	M	11	Open	Open	Open	Closed	Closed	IVW13
IV36	L	"	Open	Open	Open	Open	Open	IVW14
IV37	L	11	Open	Open	Open	Open	Closed	IVE15
IV38	L	n	Open	Open	Open	Closed	Closed	IVE16
IV39	L	"	Open .	Open	Open	Open	Closed	IVE17
IV40	L	"	Open	Open	Open	Closed	Closed	IVE17B
IV41	L	ODFW	Open	Open	Open	Closed	Closed	IVE17C
IV42	L	BLM	Open	Open	Open	Open	Open	IVE17A
IV43	М	"	Open	Open	Open	Closed	Closed	IVW15
IV44	L	"	Open	Open	Open	Open	Closed	IVW16
IV45	M	ODFW	Open	Open	Open	Open	Open	IVW17
IV46	L	"	Open	Open	Open	Open	Closed	IVW17A
IV47	L	"	Open	Open	Open	Closed	Closed	IVW17B
IV48	L	"	Open	Open	Open	Open	Closed	IVW17C
IV49	L	"	Open	Open	Open	Open	Open	IVE20
IV50	L	"	Open	Open	Open	Closed	Closed	IVE20A
IV51	L	ODFW	Open	Open	Open	Open	Open	IVW20
IV52	L		Open	Open	Open	Closed	Closed	IVE24
IV53	E	BLM	Open-Rehab.	Open	Open	Open	Open	IVE25
IV54	L	11	Open	Open	Open	Closed	Closed	IVE25A
IV55	Н	"	Open-Rehab.	Open	Open	Closed	Closed	IVE25B
IV56	L		Open	Open	Open	Open	Open	IVE26

Site	Impact Eval-	Land Owner-	Pref	Alt	Alt	Alt	Alt	Inven-
Number	uation	ship	Alt.	1	2	3	4	Numbe
IV57	М	ODFW	Open	Open	Open	Closed	Closed	IVE26A
IV58	L	"	Open	Open	Open	Open	Open	IVE26B
IV59	L	"	Open	Open	Open	Open	Closed	IVE27
IV60	L		Open	Open	Open	Open	Open	IVE29
IV61	М	.11	Open	Open	Open	Closed	Closed	IVE30
IV62	E	11	Open-Rehab.	Open	Open	Open	Closed	IVE30A
IV63	М	11	Open	Open	Open	Open	Open	IVE31
IV64	М		Open	Open	Open	Closed	Closed	IVE31A
IV65	M	11	Open	Open	Open	Open	Open	IVE32
IV66	Н	.11	Open-Rehab.	Open	Open	Open	Closed	IVW28
IV67	Н	"	Open-Rehab.	Open	Open	Open	Open	IVW29
IV68	M	"	Open	Open	Open	Closed	Closed	IVW30
IV69	L	11	Open	Open	Open	Closed	Closed	IVW31
IV70	L	BLM	Open	Open	Open	Open	Closed	IVW31A
IV71	M	ODFW	Open	Open	Open	Open	Open	IVW32
IV72	L	BLM	Open	Open	Open	Closed	Closed	IVW33
IV73	L	ODFW	Open	Open	Open	Closed	Open	IVE33
IV74	E	"	Open-Rehab.	Open	Open	Open	Closed	IVE33A
IV75	L		Open	Open	Open	Closed	Closed	IVE33B
IV76	L	"	Open	Open	Open	Open	Closed	IVE33C
IV77	L	11	Open	Open	Open	Open	Open	IVW34
IV78	M	11	Open	Open	Open	Open	Open	IVW35
IV79	Н	11	Open-Rehab.	Open	Open	Open	Open	IVW35A
IV80	L		Open	Open	Open	Closed	Closed	IVW35E
IV81	H		Open-Rehab.	Open	Open	Closed	Closed	IVW36
IV82	H	"	Open-Rehab.	Open	Open	Closed	Closed	IVW36A
IV83	M	"	Open	Open	Open	Open	Closed	IVW36E
IV84	M	ü	Open	Open	Open	Closed	Closed	IVW37
IV85	L	"	Open	Open	Open	Open	Open	IVW374



Site Number	LAC Impact Eval- uation	Land Owner- ship	Pref. Alt.	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Site Inven- tory Number
IV86	L		Open	Open	Open	Closed	Closed	IVE34
IV87	L	11	Open	Open	Open	Open	Closed	IVE35
IV88	L		Open	Open	Open	Open	Closed	IVW40
IV89	Н	"	Open-Rehab.	Open	Open	Open	Open	IVE36
IV90	Е	"	Open-Rehab.	Open	Open	Closed	Closed	IVW41
IV91	Н	"	Open-Rehab.	Open	Open	Open	Open	IVW42
IV92	L		Open	Open	Open	Closed	Closed	IVE37
IV93	Μ	11	Open	Open	Open	Closed	Open	IVW43
IV94	L	"	Open	Open	Open	Open	Open	IVW43A
IV95	L	"	Open	Open	Open	Open	Closed	IVW43E
IV96	Н		Open-Rehab.	Open	Open	Open	Open	IVW44
IV97	L	"	Open	Open	Open	Closed	Closed	IVE38
IV98	E	u .	Open-Rehab.	Open	Open	Open	Open	IVE38A
IV99	М	"	Open	Open	Open	Open	Open	IVE39
IV100	Н	"	Open-Rehab.	Open	Open	Closed	Closed	IVE39A
IV101	L	"	Open	Open	Open	Open	Closed	IVW45
IV102	L	"	Open	Open	Open	Closed	Closed	IVW46
IV103	L	n	Open	Open	Open	Open	Closed	IVE40
IV104	L	"	Open	Open	Open	Open	Open	IVW47
IV105	М	"	Open	Open	Open	Closed	Closed	IVE41
IV106	L	ii	Open	Open	Open	Closed	Closed	IVW47A
IV107	Н	11	Open-Rehab.	Closed	Open	Open	Closed	IVW48
IV108	L	"	Open	Open	Open	Closed	Open	IV48D
IV109	M	"	Open	Closed	Open	Open	Closed	IV48C
IV110	Н	11	Open-Rehab.	Closed	Open	Closed	Closed	IV48B
IV111	H	11	Open-Rehab.	Closed	Open	Closed	Open	IV48A
IV112	L	"	Open	Closed	Open	Closed	Closed	IVW49
IV113	М	"	Open	Open	Open	Closed	Open	IVE43
TV114	M	ü	Open	Open	Open	Closed	Closed	IVE43A

Sita	Impact	Land	Drof	A 14	A 14	A 14	A 14	Inven-
Number	uation	ship	Alt.	An. 1	An. 2	Alt. 3	<b>A</b> It. 4	Numbe
IV115	Η	"	Open-Rehab.	Closed	Open	Open	Closed	IVW50
IV116	H	"	Open-Rehab.	Open	Open	Closed	Open	IVW51
IV117	H	"	Open-Rehab.	Open	Open	Open	Closed	IVE44
IV118	Н	11	Open-Rehab.	Open	Open	Open	Closed	IVE45
IV119	L	11	Open	Open	Open	Open	Open	IVW52
IV120	L	11	Open	Open	Open	Closed	Closed	IVE46
[V121	L		Open	Open	Open	Closed	Closed	IVW52/
V122	L	"	Open	Open	Open	Closed	Closed	IVE47
IV123	Н		Open-Rehab.	Open	Open	Open	Open	IVW53
V124	L	11	Open	Open	Open	Open	Closed	IVW54
V125	L	"	Open	Open	Open	Closed	Open	IVW55
V126	L	11	Open	Open	Open	Open	Open	IVE48
V127	Μ	"	Open	Open	Open	Open	Open	IVE49
V128	L	"	Open	Open	Open	Open	Closed	IVE50
V129	L		Open	Open	Open	Open	Closed	IVW56
V130	L	11	Open	Open	Open	Closed	Open	IVE51
V131	Μ	11	Open	Open	Open	Open	Closed	IVW56
V132	M	11	Open	Open	Open	Open	Closed	IVW57
W133	H	"	Open-Rehab.	Open	Open	Closed	Closed	IVE52
W134	M	"	Open	Open	Open	Closed	Closed	IVE52A
V135	M	11	Open	Open	Open	Open	Closed	IVE52C
V136	L	"	Open	Open	Open	Open	Closed	IVE53A
V137	L	"	Open	Open	Open	Open	Open	IVE53B
V138	М	11	Open	Open	Open	Closed	Open	IVW57
V139	H	"	Open-Rehab.	Open	Open	Open	Open	IVE53C
V140	Μ	"	Open	Open	Open	Open	Open	IVE54
W141	М	"	Open	Open	Open	Open	Open	IVE55
<b>Fotals</b>		141	141	135	141	78	50	



## Appendix E. Comparison of Developed/Semi-Developed Campgrounds by Alternative (# of Sites)

Cite Manuel	Land	Pref.	A14 1	416.0	A16 0	A14 4
Site Name	Status	Alt.	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Segment 1						
Mecca Flat	BLM	20 (1G)	20	10	10	7
Dry Creek	C.T.W.S.R.	20	20	10	10	7
Trout Creek	BLM	25 (2G)	25 (2G)	18*	18	12
South Junction	BLM	25 (1G)	25	18	18	12
TOTAL UNITS:	4	90	90	46	56	38
Segment 2						
Bull Pasture	BLM	25 (1G)	25			- 0 -
Nena Creek	BLM	5	5	5	5	3
Devil's Canyon	BLM	5	5	5	5	5
Long Bend	BLM	10	10	10	10	6
Harpham Flat	BLM/PVT	30 (2G)	30	20	20	15
Wapinitia	BLM	5	5	5	*	3
Wapinitia Over-						
flow	BLM	*	3	3	÷	-
Boxcar Rapids	BLM	*	1	1	-	-
Maupin City	City of					
Park	Maupin	50 (1G)	50	42*	28*	28*
Oasis Flat	BLM	12 (2G)	12	12	12	-
Grey Eagle	BLM	5	5	5	5	÷
Moss Hole	BLM	-	4	4		-
Rocky Flat	BLM	-	2	2		-
Handicap Ramp	BLM	5	5	5	3*	-
Oak Springs	BLM	1 (1G)	8	8	8	-
Surf City	BLM		3	3	3	-
White River	C.T.W.S.R.	5	5	5	5	- A.
Sandy Beach	C.T.W.S.R.	15 (1G)	10 million 10	÷		-



Site Name	Land Status	Pref. Alt.	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Segment 2						
Sherars Falls White River	C.T.W.S.R.	83 B	10	10	10	
State Park	OR St. Pks		-	÷	-	10
TOTAL UNITS:	20	173	188	145	100	70
Segment 3						
Buckhollow	BLM	*	2	2	-	
Boulder Flat	BLM	-	5	5	-	-
Pine Tree	BLM	*	2	2	-	-
Twin Springs	BLM	6	6	6	6	5
Oak Brook	BLM	4	4	4	4	3
Jones Canyon	BLM	7	7	7	7	3
Gert Canyon	BLM	4	4	4	4	3
Beavertail Upper Rattle-	BLM	20	30	20	20	20
snake Lower Rattle-	BLM	4	4	4	4	÷
snake	BLM	4	4	4	4	2
Macks Canyon	BLM	18	30	18	18	18
TOTAL UNITS:	11	67	98	76	67	54
Segment 4						
Kloan Deschutes	OR St. Pks	-	6		-	-
State Park	OR St. Pks	34	50	50	34	34
TOTAL UNITS	2	34	56	50	34	34

(G) = Group sites included
\* = Under this alternative, campsites would be converted to day use.
- = No overnight camping, however, day use available.
# Appendix F - Decisions of the Deschutes River Executive Review Board on Motorized Craft Regulation and User Levels

### September 20, 1990

### Background

The current Deschutes River planning process began in 1987, following the Oregon Legislature's establishment of the Deschutes River Management Committee which was directed to develop a management plan for the Lower Deschutes River Scenic Waterway. In 1988, Congress passed the Omnibus Oregon Wild and Scenic Rivers Act which designated the Lower Deschutes as a Federal Wild and Scenic River. In order to integrate the existing state planning process with Federal requirements, and meet the Congressional intent that the State process should continue, a Memorandum of Understanding was signed by the managing agencies, local governments, and the Deschutes River Management Committee. Under the terms of that Memorandum, when the Policy Group (the managing agencies, local governments and the Deschutes River Management, local governments and the Confederated Tribes of the Warm Springs Reservation. The Board is to negotiate the final resolution of the issues brought to it by the Policy Group and is to base its decision on alternatives considered by the Policy Group. The resolution is to be documented in writing with a discussion of the rationale of the decisions made.

The Policy Group forwarded two issues for resolution by the Board; powerboat management and levels of use. The Board, comprising Gail Achterman, Natural Resources Assistant to the Governor; Richard Allen, Jefferson County Commissioner; D. Dean Bibles, State Director of the Bureau of Land Management; and Jim Noteboom, attorney for the Confederated Tribes of the Warm Springs Reservation of Oregon, met on September 20, 1990, at the State Capitol in Salem. Following is the Board's decision and rationale. This decision will be incorporated into the draft Preferred Alternative which, along with the Federally required range of management alternatives and the accompanying economic and environmental impact analyses, will be presented to the public for review and comment. Revisions may be made to the draft Preferred Alternative, depending on public response and incorporated into the final management plan.



### Motorboat Management

Because the Confederated Tribes had generally advocated for the most stringent restrictions on motorboats and because Paul Donheffner, Director of the Oregon State Marine Board, had generally advocated for lesser restrictions on motorboats, Jim Noteboom and Paul Donheffner were assigned to draft proposals on the issues for consideration of the Executive Review Board. Other Policy Group members were then encouraged to comment on those proposals.

The Preferred Alternative of the Confederated Tribes was a total ban of motorized watercraft on the Lower Deschutes River with the exception of motorized watercraft use by landowners to gain access to their property and use by Administrative and Law Enforcement personnel. The Tribes submitted a compromise alternative that would include a ban on Segments 1, 2 and 3 and regulated use on Segment 4. Paul Donheffner submitted a proposal for regulated use on Segment 4 and seasonal use on that part of Segment 1 below the Warm Springs Reservation and on Segments 2 and 3.

Accordingly, the primary difference between the two proposals submitted was whether or not there should be a total ban on Segments 1, 2 or 3, or a partial ban. In addition to these proposals, both the Prineville District of BLM and the Oregon Department of Fish and Wildlife submitted alternative proposals.

There was general support among the Policy Group for the conditions listed in the Tribes' compromise alternative for Segment 4 and the lower part of Segment 3. We adopt those conditions with minor modifications. They include:

- 1. Segment 4 and the lower part of Segment 3 (to Beavertail Campground) will be managed uniformly with regard to motorized boats.
- 2. Motorboats may operate from legal sunrise to legal sunset.
- 3. Each motorboat may make two round trips from Heritage Landing, Macks Canyon or Beavertail per day, except for emergencies.
- 4. Each motorboat may carry five people, including the operator.
- 5. All floating craft will observe a pass-through zone from Moody Rapids at the mouth to Rattlesnake Rapids, and motorized craft will not be allowed to camp on the west side of the river from Free Bridge to Sharp's Bar.
- 6. One tour boat with a maximum of 16 passengers with a permit to be issued on the basis of an annual bid and prospectus.

7. All commercial outfitters and guides will be subject to an operation permit administered by the BLM.

NOTE: The Executive Review Board was under the impression that the proposal of alternating use weeks for powered and non-powered boat use in Segment 4, which has been under consideration by the policy group, had been resolved. This was subsequently determined to not be the case. This issue will be considered and resolved by the Executive Review Board at a future meeting.

The Executive Review Board agrees that motorboat use, especially in Segment 4, is the major focus of public concern on the Deschutes. The majority of the public comments received by the Policy Group address motorboat use on the lower part of the river, and most of those comments urge restricting or banning motorboats. Policy Group members also agree that the available data indicate that the problem is primarily a social conflict between motorboats and other users of the river.

Those who support a seasonal, peak use ban on Segments 1, 2 and 3, along with the restrictions on Segment 4, advance a number of arguments.

- 1. A seasonal ban would provide a motor-free environment on 75% of the river during the peak use season.
- 2. Motorized boating is a long-established use on the Deschutes.
- 3. Motorized watercraft are an important means of access to the river for angling and upland hunting during the off-season.
- 4. Fewer people are on the river during the off-season and the presence of motorized watercraft at that point will cause less social conflict.
- 5. There is little or no safety problem as evidenced by the lack of accidents.
- 6. The Deschutes is a "recreational" river, rather than a "wild" river.
- 7. Motorized vehicle use is allowed along much of the river.
- 8. The seasonal ban allows motorized boat use to continue where it has existed before.

In addition, some local government officials feel that a total ban is too restrictive because they are concerned about negative impacts on tourist-based businesses. Supporters of the peak use ban disagree that a seasonal ban would have the effect of expanding the existing conflicts into Segments 1 and 2 and the upper part of Segment 3. When the agreed-upon restrictions are in effect on Segments 4 and 3, the seasonal ban would be in effect for the remainder of the river. Motorboaters would have no opportunity to avoid the restrictions by moving to another part of the river.



Those who support a year-round ban on Segments 1, 2 and 3 also presented a number of arguments.

- 1. A seasonal ban will not resolve user conflicts, particularly during the fall fishing season and would allow continuing and increasing conflicts on Segments 1 and 2.
- 2. Both a formal statistical survey (the Shelby study) and comments received by the Policy Group show that a substantial portion of the public favors a prohibition of jet boats.
- 3. Jet boats are fundamentally inconsistent with the character of the river, especially in Segments 1 and 2.
- 4. Most of jet boat use historically is on Segment 4 and it should not be allowed to develop further on Segments 1, 2 and 3.
- 5. A year-round ban will provide the opportunity for an off-season nonmotorized environment on the upper river.
- 6. The upper river is primarily a rafting river and jet boats are incompatible and inconsistent with that use.
- 7. There are a relatively few number of jet boats used on the river and they cause a disproportionate amount of controversy.

Weighing these positions and taking into account the implementation of the restrictions listed on page 2 for Segment 4 and the lower part of Segment 3, our decision is to ban motorized boats year-round on Segments 1 and 2. Motorized boats will be banned on the upper part of Segment 3 from Sherars Falls to Beavertail Campground during the peak use season of May 15 to September 30. On the lower part of Segment 3, from Beavertail Campground to Macks Canyon Campground, motorized boats will be under the same regulations as apply to Segment 4 as outlined above. The regulations on Segment 4 from October 1 to May 14 will also be applied to the upper part of Segment 3 from Beavertail Campground to Macks Canyon Campground. The bans and restrictions in any segment will not apply to motorized craft used for necessary landowner access, administrative uses and emergency services.

We recognize that these restrictions are a substantial curtailment of an existing use. However, we cannot ignore the public response to this issue. A clear majority of the letters received by the Deschutes River Management Committee since 1987 ask for restrictions or a ban on jet boats. This is consistent with the findings of the Shelby study. While resource management is not a voting process, it is evident that a serious social conflict exists and that without intervention, it will only get worse. Our aim is to reduce the social conflicts caused by the use of motorized craft without imposing a total ban and to propose a long-term solution that will not transfer the existing Segment 4 conflicts to some other portion of the river or season of the year. During the off-season, motorized craft will be allowed to use Segments 3 and 4. Segments 1 and 2 are now heavily used by nonmotorized boaters and allowing motorized craft during the peak season raises safety and compatibility questions. Banning motorized craft during the off-season will reserve the upper part of the Scenic Waterway for those who prefer a primitive and

nonmotorized experience. Banning motorized craft from the upper part of Segment 3 during the peak season will prevent potential transfer of Segment 4 conflicts. We do not want to minimize the issue of possible adverse impacts to local tourist-based businesses. However, motorboats are not now major uses on Segments 1 and 2 and there are economic development opportunities associated with non-power boat use.

### **User Numbers**

It is crucial to discuss at the outset our understanding of how the user number limits will be used. From the beginning, the Deschutes River Management Committee and the Policy Group agreed to use the Limits of Acceptable Change (LAC) approach to manage the river. LAC is a process approach which emphasizes monitoring changes in conditions resulting from use of the river and minimizing those social and environmental impacts. Under the LAC process, a quantifiable standard for a particular indicator is chosen. When monitoring shows that the standard is being approached or exceeded, the manager takes actions designed to keep or return the monitored value back within the standard. For instance, there are several measurable indicators that can be used to monitor water quality such as turbidity, the presence of certain substances or organisms, or the dissolved oxygen content. When monitoring shows that the standards for these indicators are being approached or exceeded, the manager volut take steps to ensure the measured values are kept below or brought within the standard.

In this context, user numbers are LAC standards for monitoring intensity of use. All members of the Policy Group agree that a limited entry system on the Deschutes is a last resort, a step to be taken only when other reasonable management actions do not achieve the standard. Our understanding is that when the plan is implemented, certain management actions to alleviate the social and environmental impacts of intense use will be taken immediately, and their effectiveness will be judged against the LAC standards for user numbers and other indicators such as user perception as determined by surveys and specific environmental indicators. If these standards are being approached or exceeded, further, more restrictive management steps will be taken. These steps will be specified in the draft Preferred Alternative and in the final plan. We also understand that if the LAC process leads to the decision that a limited entry system is necessary, that system could be a partial one, such as requiring permits only for July and August, or only for weekends. Further, occasional observations of user numbers greater than the LAC standards would not necessarily trigger implementation of a limited entry system. Similarly, although the user numbers we set forth below are in several instances lower than the peak levels currently observed, a limited entry system will not be imposed immediately upon plan implementation. Rather, the managing agencies would first implement the less restrictive management actions specified in the plan. In the event that a limited entry system is instituted, the number of permits issued for a given date would not necessarily be the same as the limits we have set for daily user numbers. This is because the seasonal limits for each segment would be exceeded if boater numbers reached the daily use limits every day during the peak use season. Additionally, we understand that as plan implementation continues, LAC standards, including those for user numbers, can be adjusted in response to changing conditions.



Another important point is that the numbers we set forth are based on boater numbers only. That is not because we believe that boaters are the only users who should be monitored, or whose use levels should trigger management actions. Currently, we only have extensive data for boaters. The

Policy Group has agreed and we concur, that data will be collected on other types of use and that user levels consistent with the boater use levels we have established will be determined. Our decision on boater numbers can be taken as our directive to the Policy Group regarding the type of river experience that management should maintain for all users.

The Policy Group was able to agree that use levels for boaters should be based on a percentage change from the boater numbers observed in 1988. They also agreed that the method chosen should be based on a logical thought process with a clear rationale and be applicable to all user groups and that it should concentrate on the peak use periods, recognize segment by segment differences in patterns of use, reduce weekend conflicts and congestion and preserve the differences between the weekend and weekday experiences. Policy Group members discussed, but did not agree to, a proposal which would set the percentages at 80% for Segment 1, 120% for Segment 2, 170% for Segment 3, and 110% for Segment 4. There was a philosophic disagreement as to whether and how much overall use on the Deschutes should be decreased or increased. The Policy Group designated Lynn Ewing to write a position paper supporting an approach that would lead to more intense use levels, and Jim Noteboom to write the approach that would lead to less intense use levels. The Prineville District of BLM and Oregon Department of Fish and Wildlife also submitted proposals.

The Ewing proposal is based on the highest daily peaks in boater days in 1988 and allows for increased use on all segments of the river. The Noteboom proposal is based on the total boater days for the period of May 15 to September 15 in 1988 and allows for reductions in Segments 1 and 4 and increases in Segments 2 and 3, for an overall increase of 7.3% from 1988. The BLM proposal is based on the total boater days for the period of May 15 to September 30 and applies the percentages discussed by the Policy Group. The ODFW proposal applies those same percentages to an average derived from the weekend and weekday figures.

We agreed with the approach that on each segment, the standard would set both maximum daily boater levels for weekdays and weekends and a maximum for the season. (Weekends include Fridays and any holidays.) In making these decisions, we considered the established uses on each segment and their weekly and seasonal patterns, public comments, collateral effects of the limitations on motorized craft and economic and social arguments. For the seasonal limit, we accepted the approach which applies the percentages discussed by the Policy Group to total boater days from May 15 to September 15. We did not follow any one approach to arrive at the daily maxima. The following table presents both the 1988 boater daily use levels and our decision on the LAC standard which is the number of boaters allowed on the river in each segment of the river each day during the peak use season. This is not the number of boater passes sold in a given day or the number of boaters launching per day.

	1988	LAC	1988	LAC	1988	LAC
	W'End	W'End	W'Day	W'Day	Season	Season
Segment	Peak	Limit	Peak	Limit	Total	Limit
1	1,374	500	762	300	54,306	47,000
2	2,003	1,500	705	800	53,912	71,000
3	217	200	162	200	5,512	11,000
4	492	300	425	300	21,534	23,000
Totals					135.264	152.000

Segment 1 has relatively intense use, especially on summer weekends. The established uses in this section are fishing and whitewater floating trips. While the railroad runs along much of this segment, it is generally unroaded and therefore offers the least chance for encountering a motorized craft or vehicle. Its inaccessibility and isolation also mean that it is difficult and expensive to maintain facilities necessary to accommodate high use levels.

For Segment 2, there is general support for increasing overall use from 1988 levels. This segment of the river bisects the City of Maupin and day use raft trips are a significant factor in the local economy. Available evidence indicates that high user levels are positively enjoyed by some of the users for whom the social atmosphere is an attraction. However, this atmosphere has also resulted in bank damage and traffic control problems and law enforcement problems. The LAC standard is below the observed user peaks in July and August and we believe this will encourage user dispersion to other weekends and to weekdays, allowing for an overall increase.

For Segment 3, we believe that increased overall use can be accommodated. This section is now used for fishing, camping and some recreational whitewater trips in much the same way as Segment 4. There is general agreement that encouraging use here may alleviate some of the user conflicts in Segment 4, without adverse social and environmental impacts. Also like Segment 4, the observed use pattern does not demonstrate a large differential between weekend and weekday use. While people now using this area may be attracted by the lower use levels, much of it is accessible by road and it is therefore not as primitive as the experience available in Segment 1. The LAC daily limit of 200 boaters per day will accommodate most of the observed weekend peaks and allow for increased use during the week.

For Segment 4, we believe that overall levels of use should be maintained at about the current level. Public comments establish that crowding is a significant problem on this section, both because of the absolute user numbers and because of the competition for fishing and camping spots between bank anglers, drift boat anglers and jet boat anglers. This section is used primarily



for fishing and camping and it is the section that receives most jet boat use. Peak use times here are driven more by fishing opportunities than by a weekday/weekend pattern. We have established a uniform daily limit of 300 boaters per day to accommodate the existing pattern of use.

# Decision of the Deschutes River Executive Review Board on Motorboat Scheduling and Permit Allocation

### December 3, 1990

### Background

The current Deschutes River planning process began in 1987, following the Oregon Legislature's establishment of the Deschutes River Management Committee which was directed to develop a management plan for the Lower Deschutes River Scenic Waterway. In 1988, Congress passed the Omnibus Oregon Wild and Scenic Rivers Act which designated the Lower Deschutes as a Federal Wild and Scenic River. In order to integrate the existing state planning process with Federal requirements, and meet the Congressional intent that the State process should continue, a Memorandum of Understanding was signed by the managing agencies, local governments, and the Deschutes River Management Committee. Under the terms of that Memorandum, when the Policy Group (the managing agencies, local governments and the Deschutes River Management Committee) is unable to reach consensus on a specific issue, that issue and all relevant information is to be forwarded to an Executive Review Board comprising representatives of the Governor, the Bureau of Land Management, local governments and the Confederated Tribes of the Warm Springs Reservation. The Board is to negotiate the final resolution of the issues brought to it by the Policy Group and is to base its decision on alternatives considered by the Policy Group. The resolution is to be documented in writing with a discussion of the rationale of the decisions made.

Previously, the Board decided two issues; powerboat management and levels of use. Now, the Policy Group has forwarded two more issues for resolution; how to implement the Group's decision to provide an opportunity for a nonmotorized experience during the peak use season and how to allocate permits between the outfitted and non-outfitted public should a permit system become necessary. Gail Achterman, Natural Resources Assistant to the Governor; Richard Allen, Jefferson County Commissioner; D. Dean Bibles, State Director of the Bureau of Land Management; and Louie Pitt, Jr., of the Confederated Tribes of the Warm Springs Reservation of Oregon, met on December 3, 1990, at the State Capitol in Salem. The Board's decisions and their rationale follow. The decisions will be incorporated into the draft Preferred Alternative, which, along with the Federally-required range of management alternatives and the accompanying economic and environmental impact analyses, will be presented to the public for review and comment. Revisions to the draft Preferred Alternative are expected, depending on public response.

### Motorboat Scheduling

The Policy Group had previously agreed to address the public complaints about jet boat operation on Segment 4 by removing motorboats periodically during the peak use season (July 15 to September 30). They were unable to agree on two questions; the length of time for the removal and whether nonmotorized craft should also be removed periodically. Three alternatives were presented. The Alternating Weekend alternative would require both motorized and nonmotorized craft to alternate their use. On motorboat weekends, nonmotorized boats would be prohibited and on nonmotorized weekends, motorized craft would be removed. Both kinds of craft could operate at any time during the rest of the week. The Restricted Jet Boat Alternating Week alternative would remove motorboats from the river on alternate weeks, but would not remove nonmotorized craft to alternate their use; during motorboat weeks, no nonmotorized boats would be allowed and during nonmotorized weeks, no motorboats would be allowed.

Formal position papers were submitted by the Deschutes River Management Committee, Oregon State Parks & Recreation Department, Oregon State Marine Board, the Confederated Tribes of the Warm Springs Reservation, the Prineville District of the BLM, and Oregon Guides and Packers. In addition, there were several letters from interested individuals and groups. In general, those addressing the length of the removal period centered their arguments on whether a weekend period was sufficient to resolve the social conflicts; those addressing the removal of nonmotorized craft as well as motorboats centered on fairness.

On a 3-1 split, with Rick Allen dissenting, the Board agreed that the Preferred Alternative should restrict jet boats to alternating weeks between July 15 and the Tuesday after Labor Day, with nonmotorized craft allowed any time.

The majority position was supported by following points.

The effective dates for this regulation should be from July 15 to the Tuesday after Labor Day. The social conflict is less severe after Labor Day.

The use statistics for Segment 4 do not reflect a large difference between weekends and weekdays. Therefore, applying the alternation to weekends is probably insufficient to resolve the conflicts.

The two types of boats have very different capabilities. Motorboats can travel upriver and therefore may be present on most of the river within a very short time, while floating craft can only move downstream and take longer to "populate" the river. A weekend would not give those who wish a nonmotorized experience enough time to float the entire river.



In other instances where motorized users are segregated in response to social conflicts, the nonmotorized users are not restricted (i.e. motorized traffic on trails may be restricted, but foot traffic is not). This is also consistent with many of the public responses to this issue.

### Permit Allocation

Early in the planning process, the Policy Group decided that the draft Preferred Alternative/Environmental Impact Statement should address limited entry and permit allocation, even though implementation of a permit system if needed at all is not expected for several years. The entire management plan is based on the Limits of Acceptable Change model, which outlines the specific management actions that will be taken, and describes the conditions that will trigger those actions. While the group reached agreement on the circumstances that would trigger a permit system, they were unable to agree what mechanism, if any, should be used to divide available permits between commercial outfitters and private boaters. Four alternatives were presented to the Board. The 100% Common Pool alternative would not allocate a specific number of permits to either group. Boaters either individually, as groups or through a guide, would obtain their permits. The Historic Split alternative would allocate permits to each group depending upon their historical use. For instance, if 20% of the river trips in a given segment were found to use a commercial outfitter, then 20% of the total permits available would be allocated to commercial guides. The other two alternatives were mixed systems; a portion of the available permits would be allocated to outfitters, a portion to private boaters, and the remainder would be available to either group through a common pool.

Formal position papers were submitted by the Deschutes River Management Committee, Oregon State Parks & Recreation Department, Oregon State Marine Board, the Confederated Tribes of the Warm Springs Reservation, the Prineville District of the BLM, and Oregon Guides and Packers. Most of these papers advocated some variation of one of the Policy Group alternatives. In addition, there were several letters from interested individuals and groups. The main issue was whether and to what extent a split allocation system, which reserves portions of the available permits for commercial outfitters and private boaters, would create a private property right to a public resource. If the decision is made to institute a split allocation system, subsidiary issues also arise: whether to impose an overall limit on the number of guides; what process will be used to qualify guides to operate on the Deschutes; how to devise a permit distribution schedule that will accommodate boaters who plan in advance and those who prefer to make more spontaneous decisions; how to ensure that neither group permanently captures more than its "fair share" of the available permits; whether specific proposals were administratively reasonable and/or readily comprehensible to the boater; whether individual guides should be guaranteed a certain number of permits; and whether guides should be able to transfer their permit allocations along with their other business assets.

After thorough discussion, on a 3-1 split, with Louie Pitt dissenting, the Board agreed to accept a split allocation system. Our Preferred Alternative is a modified version of the Prineville District's proposal. Sixty percent of the available permits will be allocated between guides and private boaters, based on historical use, to be readjusted every five years. There would be a guide ceiling of 80, to be reached by attrition, and each guide would receive a prorated share of the guides' allocation, based on individual historical use. Permits would be distributed to outfitters on March 1 of the year preceding the trip, to private boaters

by lottery on December 1 of the year preceding the trip, and to the common pool on April 1 of the year of the trip. Unallocated permits and cancellations would be available after April 1 to those at the top of an established waiting list, or on a first come-first served basis. Permit allocation will be based on the use patterns for each segment. Guides will be allowed to transfer their allocations subject to agency approval and established criteria.

The main decision, whether to allocate the available permits between commercial outfitters and private boaters, is a complex public interest question. The strongest argument against a split allocation system is the perception that it creates private property right to a public resource. Private boaters point out that split allocation systems on other permitted rivers have resulted in the selling of the right to use the resource, reduction in service quality caused by larger businesses crowding out the smaller, an allocation to guides of more permits than they can actually use while private boaters are denied access, and a situation where boaters who choose not to use a commercial service may wait much longer for a river permit than those who choose to pay. On the other hand, outfitters strenuously oppose the 100% Common Pool alternative. They contend that because there is a public demand for their services, it is in the public interest to provide them with some predictability, and they cannot stay in business if they don't know what they can expect to sell.

The Board majority gave considerable weight to the argument that commercial services play a critical role in attracting tourists, especially those traveling from outside the Pacific Northwest. Central Oregon is aggressively marketed as a tourist destination, and one of the attractions is boating and fishing on the Deschutes River. Allocating a specific number of permits to outfitters will make it easier for these travelers to get on the river. Periodic readjustment of the permit allocation should control the potential for abuse, and the common pool allows either private boaters or commercial services to increase their allocation in response to market demand.

On the subsidiary issues, the Board majority also agreed that individual guides should be guaranteed a specific number of the permits allocated to guides as a group, based on their individual share of the commercial use. The same arguments for predictability advanced on behalf of guides as a group also apply to individual guides. It would be difficult for guides to continue in business if getting their share of the available permits is a matter of luck. The majority also agreed with the contention that if individual guides are to be guaranteed a specific number of permits, then a ceiling on the total number of guides is necessary. Otherwise, it would be difficult to determine an individual guide's share. A related issue was the transferability of permit allocations. In a limited access system, part of the value of a business can be attributed to the permit allocation. On other permitted rivers, allocation transfers are allowed subject to the administering agency's approval. The administering agency should set standards for new guides receiving an established allocation. Allocation systems for other natural resources, such as timber sales and gas leases, require that permitholders certify their qualifications and agree to abide by specific rules, at the time that their permit application/bid is submitted. Applications are rejected if bidders can't supply acceptable evidence of their qualifications, and operating permits are revoked if the rules aren't followed.

One of the arguments advanced against a split allocation system is the complexity of the safeguards required to ensure that each group gets no more than its rightful share of the permits available. The Board discussed a number of points. Some of the



questions raised were technical issues best left to the administering agency, but others were clearly policy questions. Permit distribution dates are significant; for the administering agency, a complex system requires more staff; for boaters, the dates may allow or preclude short-term planning.

Allocating commercial permits March 1 of the year preceding the launch allows guides to market their services to clients who make long-range plans as well as those who are more spontaneous, and to plan their equipment purchases. Once outfitters receive their share of the permits, they are free to book the trips whenever they choose. The Board recognizes that this early allocation date means that data for the most recent use year will not be included in the periodic readjustments. However, because the readjustment is based on five years of data, we don't think the omission will cause large errors in allocation. An allocation date of December 1 for private boaters is consistent with allocation dates for other permitted rivers. The common pool allocation date of April 1 allows a second chance at permits for members of both user groups. A substantial part (40%) of the available launches would be available for shorter term users, and both outfitters and private boaters would compete for them on an equal footing. Any unallocated permits or cancellations would be available following April 1 to those at the top of a waiting list. The waiting list system is preferred over a lottery system because it is easier to administer and it guarantees boaters a place in line.

# Appendix G. Comparison of Developed/Undeveloped Launch/Landing Areas by Alternative

Key: D = Developed U = Undeveloped - = No Launching or Landing

Launch/	Pref.				
Landing Area Name	Alt.	Alt 1	Alt. 2	Alt. 3	Alt. 4
Warm Springs	D	D	D	D	D
Mecca Flat	D	D	U	U	
Dry Creek	U	D	U	U	-
Trout Creek	D	D	D	D	D
South Junction	D	D	D	D	-
Locked Gate	U	U	U	U	
Nena Creek	D	D	D	D	
Devil's Canyon	U	D	U	D	-
Longbend	U	D	U	D	-
Harpham Flat	D	D	D	D	D
Wapinitia	D	D	D	D	
Maupin City Park	D	D	D	D	D
Surf City	U	U	U	U	
Sandy Beach	D	D	U	D	D
Sherars Falls		-	U	1.0	
Buckhollow					
(Little Sandy Beach)	D	D	U	D	-
Pine Tree	D	D	D	D	D
Beavertail	D	D	D	D	D
Macks Canyon	D	D	D	D	D
Heritage Landing	D	D	D	D	D
Deschutes State Park	-	D	-	-	-



# Appendix H. Mean Monthly Discharge in Cubic Feet/Second for the Deschutes River Near Madras, 1965-85.

Month	Discharge	Month	Discharge	
January	5,809	July	4,124	
February	5,517	August	4,020	
March	5,632	September	4,049	
April	5,297	October	4,258	
May	4,555	November	4,830	
June	4,357	December	5,265	

Source: USGS station number 14092500

# Mean Monthly Discharge in Cubic Feet/Second for the Deschutes River at the Mouth, 1965-85.

January	7,844	July	4,732
February	7,508	August	4,477
March	7,407	September	4,535
April	6,862	October	4,809
May	6,097	November	5,589
June	5,457	December	6,627

Source: USGS station number 1410300



# Appendix I. Water Quality Data for the Deschutes River

Parameter	Units	Station Location		
		Mouth	Warm Springs Bridge	
Nitrogen				
NH3+, NH4-	mg/1 as N	0.02	0.025	
NO2,NO3	mg/1 as N	0.02	0.13	
Phosphorus				
Diss., total	mg/1 as P	0.099	0.092	
Diss., Ortho	mg/1 as P	0.045	0.068	
Total Organic				
Carbon	mg/L	2.0	less than 1.0	
Calcium, Diss.	mg/L	7.7	76	
Magnesium, Diss.		4.8	5.1	
Sodium, Diss.		9.1	10.0	
Potassium Diss	<i>u</i>	19		
Chloride total	"	2		
Sulfate SO4	<i>ii</i>	2		
ounder our				

Note: All quantities are median values for 1986. Source: U.S. Environmental Protection Agency's Storet System

Physical Characteristics of the Deschutes River at the Mouth

Parameter	Fall	Winter	Spring	Summer
pH	8.1	7.7	8.2	8.4
Temperature (F)	49	43	55	64
Dissolved oxygen				
(mg/1)	11.8	12.5	11.0	10.5
Specific conduc-				
tance (US/cm)	130	128	127	126
Turbidity (NTU)	2.0	4.2	7.0	2.6
Alkalinity				
(mg/1 as CaCO3)	65	67	63	60
Hardness				
(mg/1 as CaCO3)	44	46	45	43

Note: All quantities are median values for the period October 1982 -January 1988. Source: USGS station number 14103000



## Appendix J. Plant Species in the Riparian Areas of the Lower Deschutes River Planning Area

**Trees and Shrubs** 

Alder Alnus spp. Mockorange Philadelphus lewisii Willow Salix spp. Big sagebrush Artemisia tridentata Oregon white oak Quercus garreyana Red cedar Libocedrus decurrens Rose Rosa spp. Chokecherry Prunus virginiana Hackberry Celtis douglasii Wax currant Ribes cereum Redosier dogwood Cornus stolonifera Juniper Juniperus occidentalis Ponderosa pine Pinus ponderosa Gland oceanspray Holodiscus dumosus Western serviceberry Amelanchier alnifolia

Grasses and grasslike

Sedge *Carex* spp. Bluebunch wheatgrass *Agropyron spicatum* Bluegrass *Poa* spp. Medusahead grass *Taeniatherum asperum* Timothy *Phleum pretense* Cattail *Typha latifolia* 

#### Forbs

Goldenrod Solidago spp. White clematis Clematis liquisticifolia Curly leaf dock Rumex crispus Klamath weed Hypericum perforatum Cocklebur Xanthium spp. Monkey flower Mimulus spp. Moth mullein Verbascum blattaria Woolly mullein Verbascum thapsis Poison ivy Rhus radicans Stinging nettle Urtica dioica Field mint Mentha arvensis Cow parsnip Mercaleum lanatum Elk thistle Cirsium foliosum Common teasel Dipsacus sylvestris Richardson's penstemon Penstemon richardsonii





# Appendix K. Threatened, Endangered or Sensitive Plant Species of the Lower Deschutes River Planning Area

Plant Name Habitat		Status* ONHDB	ODA	FED
Astragalus howellii v. howellii (Howell's milkvetch)	Sagebrush hills near Tygh Valley (suspected in Deschutes Canyon.)	Threatened throughout range		
<i>Astragalus tyghensis</i> (Tygh Valley milkvetch)	Sagebrush and oak near White River (known to occur near mouth of White River)	Threatened throughout range	Candi- date	SC- cat 2
<i>Cyperus rivularis</i> (shining cyperus)	Streambanks (known at mouth of river)	Review		
<i>Lomatium farinosum</i> v. <i>hambleniae</i> (Ham- blens lomatium)	Scabland near Tygh Ridge (Sus- pected in Deschutes Canyon.)	Endangered in Oregon but more common elsewhere		
<i>Mimulus jungerman- nioides</i> (hepatic monkey flower)	Moist rock cliffs crevices (known from Deschutes Canyon.)	Threatened throughout range	Candi- date	
<i>Talinum spinescens</i> (talinum)	Scabland near Trout Creek (sus- pected in Deschutes Canyon.	Threatened in Oregon, but more common elsewhere.		
*Status—ONHDB=Oregon Natura	1 Heritage Data Base			

ODA=Oregon Department of Agriculture FED=Federal candidate for listing as endangered or threatened

# Appendix L. Molluscs of the Lower Deschutes River Planning Area

The Lower Deschutes Planning Area has been surveyed for land and freshwater molluscs sporadically since 1986 (28). Some of the major tributary streams such as the Warm Springs River and White River along with various accessible springs were also examined. Species of molluscs which are of concern are listed below:

	Current
Species	Status
Freshwater:	
Juga (J.) hemphilli maupinensis (Henderson, 1935)	None
Juga (Oreobasis) bulbosa (Gould, 1847)	None
Juga (Oreobasis) n. sp. 1	None
Juga (Oreobasis) n. sp. 2	None
Juga (Oreobasis) n. sp. 3	None
Fisherola nuttalli nuttalli (Haldeman, 1841)	Candidate
Land snails:	
Oreohelix variabilis Henderson, 1929	None
Oreohelix aff. variabilis n. subsp.	None
Vespericola columbiana depressa (Pilsbry & Henderson, 1936)	None
<i>Vespericola columbiana</i> n. subsp.	None
Monadenia fidelis minor (Binney, 1885)	Candidate
Comments on Individual Species	

a) freshwater snails

*Juga* (*J.*) *hemphilli maupinensis* (Henderson, 1935) is found only in a few scattered sites in the Lower Deschutes and its main tributaries, and is endemic to the Deschutes drainage. Judging from the number of sites with dead specimens, it was until recently rather common in the river, but is now restricted to the least disturbed areas. Overutilization by humans, e.g. direct trampling of substrate, siltation from grazing and damage by boaters, appears to be the likeliest causes.



*Juga (Oreobasis) bulbosa* (Gould, 1847) probably was never very common in the Deschutes, and appears restricted to the mainstem river. It is now found live in very few areas, essentially only the most pristine rapids edges. Causes of its decline, noticeable in that recently dead shells are found in

many areas now lacking live specimens, are similar to the above. Despite early literature reports, it appears to have always been a Lower Deschutes endemic. The main distribution of the subgenus Oreobasis is Californian; but there is a largely undescribed disjunct endemic species cluster in the Columbia Gorge.

*Juga* (*Oreobasis*) n. sp. 1 has been seen so far only in one large spring complex. It appears to be a local ecological equivalent of the California species. *J.* (*O.*) *nigrina*. Diversion of water from this spring complex, plus railroad right-of-way clearing and spraying, have already affected the only known population.

*Juga* (*Oreobasis*) n. sp. 2 has been found at only one site in an area where most of the surrounding streams no longer have any native mollusc fauna due to lumber mill pollution.

*Juga (Oreobasis)* n. sp. 3 has been found in one spring complex on the Lower Deschutes. There are other populations in the Columbia Gorge, but the total number of sites is small, and all have been affected by grazing and other human-derived activities. The taxon is a Columbia Gorge endemic.

*Fisherola nuttalli nuttalli* (Haldeman, 1841) is a Federal candidate species. Several more populations have been located in addition to the sole site known in 1977 (in the Hanford Reach, Columbia R.), but the species remains uncommon. The Deschutes populations are few and scattered, as the species lacks both lungs and gills, and hence is found only in especially oxygen-rich relatively pristine but stable rapids edges. In the Lower Deschutes the species is locally abundant. The Deschutes sites have been ranked in the top three among the known populations.

At least two other freshwater mollusc species of uncertain affinities have also been identified. Both of these are most likely disjuncts from California, known in Oregon only from single Deschutes sites; however, there is a chance that they are a new species.

#### b) land snails

*Oreohelix variabilis* Henderson, 1929 is a Columbia Gorge endemic land snail, thus far found only at a few sites on the Oregon side. Only one of the Deschutes sites appears to be the typical form. The family Oreohelicidae as a whole is characteristic of the Rocky Mountains, and *variabilis* is a local endemic on the western fringe of the genus' occurrence. All known sites have been impacted by grazing (some have been extirpated), and others, including the Deschutes site, are degraded by road or railroad construction.

*Oreohelix aff. variabilis* n. subsp.: a few populations confined to a narrow area in the lower Deschutes appear to be distinc from the rest of the Columbia Gorge populations, and likely represent a new endemic species or subspecies. All but one known site have been badly degraded by road and railroad construction and are in need of careful protection. Grazing is also a problem at most sites.

*Vespericola columbiana depressa* (Pilsbry & Henderson, 1936) is a Columbia Gorge endemic reported from very few sites. We have recently found the subspecies in the Lower Deschutes. As might be expected for this dominantly coastal genus, sites are rare, and most have been impacted by the same causes as listed for the other land snails.

*Vespericola columbiana* n. subsp. is found associated with a single spring complex in the Lower Deschutes. This local endemic appears to be related to the California species *V. megasoma*. Railroad spraying and clearing, as well as diversion of spring water, appear to have degraded the only known site in the past.

*Monadenia fidelis minor* (Binney, 1885) is a Federal candidate species endemic to the Columbia Gorge. Sites in the Lower Deschutes have been found, however, the species remains quite rare. All surviving populations have been adversely affected by human activities. In particular, most are along road or railroad cuts.

The overall aspect of the Deschutes freshwater mollusc fauna suggests an ancient former California connection. It is thus unique among the major Columbia Gorge streams in the complexity of origin of its molluscan fauna. Among the more than 35 major Columbia Basin streams that have examined for molluscs in the past three years, the Lower Deschutes ranks either first or second in species diversity; second in number of endemics; and in the top five (possibly first or second) in quality of mollusc habitat. It is without question first among all of the Gorge streams in all three factors.

The Deschutes land snail fauna exhibits a pattern similar to that shown by the freshwater molluscs:

1) a far-disjunct California element of relatively ancient origins;

2) some genera that are basically coastal (Oregonian molluscan Province) that reach the easternmost limit of their distribution in the Gorge area;

3) a generalized Columbia Basin (Washingtonian molluscan Province) element.

Columbia Gorge endemics, including those in the Lower Deschutes River, can belong to any of the three categories. However, the California element is especially strong in the Lower Deschutes River, and the total number of endemic taxa is higher than that shown for any other individual drainage.



In general land snails in the Columbia Gorge area are restricted to the vicinity of springs, some of which also have endangered freshwater forms. Thus, factors affecting springs, including water quality problems, grazing, quarrying, diversion for irrigation, channelling, road and railroad

construction, and even urbanization have a dual impact. Inspection of topographic maps for springs in selected areas, followed by detailed collection of all springs in the areas selected, has shown that the native spring mollusc fauna has been completely extirpated from most sites. Thus, all spring endemics in the Columbia Gorge area have suffered major range reductions in the period of European settlement. In some cases, this habitat degradation has brought species to the point of extinction.

The managing agencies will request technical assistance from the U.S. Fish and Wildlife Service to ensure that no management actions contained in the final plan will adversely impact any of the candidate species to the point of causing them to become listed as threatened or endangered.

# Appendix M. Deschutes River Fish Spawning Distribution

River Section*	Percent of Total Spawn- ing Gravel	Condition of Gravel	Percent of Trout and Steelhead Spawning	Percent of Fall Chinook Spawning
1	31	3	40	12
2	19	3	35	14
3	30	2	22	57
4	20	1	3	17

Note:

Section 1, Pelton-Shitike Cr. Section 2, Shitike-Warm Springs Section 3, Warm Springs-White River Section 4, below White River

Gravel condition ratings: 4 = excellent 3 = good 2 = fair 1 = poor



# Appendix N. Catch, Harvest and Escapement, Deschutes River Summer Steelhead

Escapemer Sherars Fa	nt over lls			Catch and H	larvest <sup>2</sup>	Total Run
Wild	Hatchery		Wild		Hatchery	
5,367	Round Butte Strays <sup>1</sup>	9,209 8,367	Mouth Macks Canyon Sherars Falls	8,343 <sup>2</sup> 2,898 <sup>2</sup>	2,001 618	
			Sport Indian	402 <sup>2</sup> 972	226 1,800	
5,367		17,576		972	4,645	28,560

<sup>1</sup> Strays from other hatcheries.

<sup>2</sup>Regulations require release of all sport-caught wild steelhead. (Add 1988 and 1989 data to this.)

## *Appendix O. Wildlife Species Found in the Lower Deschutes River Planning Area*<sup>5</sup>

#### Opossom

? Merriam's Shrew ? Trowbridge Shrew ? Vagrant Shrew ? Duskry Shrew

Little Brown Myotis Yuma Myotis Long-Eared Myotis Long-Legged Myotis Small-footed Myotis Silver-haired Myotis Big Brown Bat Hoary Bat

Shorttail Weasel Longtail Weasel Badger Spotted Skunk Striped Skunk

Yellowbelly Marmot ? California Ground Squirrel ? Townsend Ground Squirrel ? Washington Ground Squirrel Belding Ground Squirrel Golden-Mantled Squirrel Least Chipmunk

#### Didelphis marsupialis

Sorex merriami Sorex gaspensis Sorex vagrans Sorex obscurus

Myotis lucifugus Myotis yumanensis Myotis evotis Myotis volans Myotis subulatus Lasioncycteris noctivagans Eptesicus fuscus Lasiurus cinereus

Mustela erminea Mustela frenata Taxidea taxus Spilogale putorius Mephitis mephitis

Marmota flaviventris Citellus beecheyi Citellus townsendii Citellus washingtoni Citellus beldingi Citellus lateralis Eutamias minimus



Northern Pocket Gopher Western Pocket Gopher

Ord's Kangaroo Rat

Deer Mouse Bushy Woodrat

? Sagebrush Vole

House Mouse Western Jumping Mouse

Porcupine

White-tailed Jackrabbit Black-tailed Jackrabbit Nuttail's Cottontail Brush Rabbit Pica

Common Loon Artic Loon

Horned Grebe Eared Grebe Western Grebe Pied-Billed Grebe

White Pelican

Double-Crested Cormorant Green Heron Snowy Egret Thomomys talpoides Thomomys mazama

Dipodomys ordii

Peromyscus maniculatus Neotoma cinerea

Lagurus curtatus

Mus musculus Zapus princeps

Erethizon dorsatum

Lepus townsendii Lepus californicus Sylvilagus nuttaillii Sylvilagus bachmanii Ochotona Princeps

Gavia immer Gavia arctica

Podiceps auritus Podiceps caspicus Aechmophorus occidentalis Podilymus podiceps

Pelecanus erythrorhynchos

Ardea herodias Butorides virescens Leucophoyx thula Black-crowned Night Heron Least Bittern American Bittern

#### **Turkey Vulture**

Goshawk Sharp-shinned Hawk Coopers Hawk Red-tailed Hawk Swainson's Hawk Sough-legged Hawk Ferruginous Hawk Golden Eagle Bald Eagle Marsh Hawk (Harrier)

#### Osprey

Gyrfalcon Prairie Falcon Peregrine Falcon Merlin (Pigeon Hawk) American Kestrel (Sparrow Hawk)

American Coot

#### Killdeer

Long-billed Curlew Spotted Sandpiper Greater Yellowlegs Lesser Yellowlegs Long-billed Dowitcher Nycticorax nycticorax Ixobrychus exilis Botaurus lentiginosus

#### Cathartes aura

Accipiter gentilis Accipiter striatus Accipiter cooperii Buteo jamaicensis Buteo swainsoni Buteo lagopus Buteo regalis Aquila chrysaetos Haliaeetus leucocephalus Circus cyaneus

#### Pandion haliaetus

Falco rusticolus Falco mexicanus Falco peregrinus Falco columbarius Falco sparverius

Fulica americana

Charadrius vociferus

Numenius americanus Actitis macularia Totanus melanoleusus Totanus flavipes Limnodromus scolopaceus



Western Sandpiper

#### Red Phalarope

- Glaucous Winged Gull Herring Gull California Gull Ring-billed Gull Thayer's Gull Franklin's Gull Bonaparte's Gull Foster's Tern Caspian Tern Black Tern
- Barn Owl Screech Owl Flammulated Owl Great Horned Owl Pygmy Owl Burrowing Owl Long-eared Owl Short-eared Owl Saw-whet Owl

Poor-will Common Nighthawk

Vaux's Swift

Rufous Hummingbird Calliope Hummingbird

#### Ereunetes mauri

### Phalaropus fulicarius

Larus flaucescens Larus argentatus Larus californicus Larus delawarensis Larus thayeri Larus pipixcan Larus philadephia Sterna forsteri Hydroprogne caspia Childonias niger

Tyto alba Otus asio Otus flammeolus Bubo virginianus Glaucidium gnoma Speotyto cunicularia Asio otus Asio flammeus Aegolius acadicus

Phalaeonoptilus nuttaillii Chordeiles minor

Chaetura vauxi

Setasphorus rufus Stellula callipe Belted Kingfisher

Common Flicker Lewis' Woodpecker Hairy Woodpecker Downy Woodpecker

Eastern Kingbird Western Kingbird Western Flycatcher Olive-sided Flycatcher

Horned Lark

Violet-green Swallow Tree Swallow Bank Swallow Rough-winged Swallow Barn Swallow Cliff Swallow Purple Martin

Gray Jay Steller's Jay Scrub Jay Black-billed Magpie Common Raven Common Crow Black-capped Chickadee Mountain Chickadee

White-breasted Nuthatch

### Megaceryle alcyon

Colaptes auritus Melanerpes lewis Dendrocopos villosus Dendrocopos pubescens

Tyrannus tyrannus Tyrannus verticalis Empidonax difficilis Nuttallornis borealis

Eremophila alpestris

Tachycineta thalassina Iridoprocne bicolor Riparia riparia Stelgidopteryx ruficollis Hirundo rustica Petrochelidon puyrrhonota Progne subis

Perisoreus canadensis Cyanocitta stelleri Aphelocoma coerulescens Pica pica Corvus corax Corvus brachyrhynchos Parus atricapillus Parus gambelie

Sitta carolinensis


#### Dipper

House Wren Winter Wren Bewick's Wren Canyon Wren Rock Wren

#### Sage Thrasher

Robin Varied Thrush Western Bluebird Mountain Bluebird Townsend's Solitaire

Golden-crowned Kinglet Ruby-crowned Kinglet

Bohemian Waxwing Cedar Waxwing

Northern Shrike Loggerhead Shrike

Starling

Solitary Vireo

Yellow Warbler Yellow rumped Warbler MacGillivray's Warbler Yellowthroat

#### Cinclus mexicanus

Troglodytes aedon Troglodytes troglodytes Thryomanes bewickii Catherpes mexicanus Salpinctes obsoletus

Oreoscoptes montanus

Turdus migratorius Ixoreus naevius Sialia mexicana Sialia currucoides Myadestes townsendi

Regulus satrapa Regulus calendula

Bombycilla garrulus Bombycilla cedrorum

Lanius excubitor Lanius ludovicianus

Sturnus vulgaris

Vireo solitarius

Dendrocia petechia Dendrocia coronata Oporornis tolmiei Geothlypis trichas

#### House Sparrow

Western Meadowlark Red-winged Blackbird Northern Oriole (Bullock's) Brewer's Blackbird Brown-headed Cowbird

Western Tanagers Lazuli Bunting Evening Grosbeak Purple Finch Gray-crowned Rosy Finch American Goldfinch Red Crossbill Green-tailed Towhee Rufous-sided Towhee Vesper Sparrow Dark-eyed Junco Chipping Sparrow

Brewer's Sparrow White-crowned Sparrow Golden-crowned Sparrow Fox Sparrow Lincoln's Sparrow Song Sparrow Rock Dove

? Long-toed Salamander Pacific Giant Salamander

Roughskin Newt

#### Passer domesticus

Sturnella neglecta Agelaius phoeniceus Icterus galbula Euphagus cyanocephalus Molothrus ater

Piranga ludoviciana Passerina amoena Hesperiphana vespertina Carpodacus purpureus Leucosticte tephrocotis Spinus tristis Loxia curvirostra Chlorura chlorura Pipilo erythrophthalmus Pooecetes gramineus Junco (oreganus) Spizella passerina

Spizella breweri Zonotrichia leucophrys Zonotrichia atricapilla Passerella iliaca Melospiza lincolnii Melospiza melodia

Ambystoma mocrodactylum Thyacotriton olympicus

Taricha granulosa



Tailed Frog Western Toad Pacific Tree Frog Bull Frog

Sagebrush Lizard Western Fence Lizard

Side-blotched Lizard Short-horned Lizard

Western Skink

Northern Alligator Lizard Southern Alligator Lizard

Rubber Boa Ringneck Snake Sharp-tailed Snake Racer Gopher Snake Western Terrestrial Garter Snake Western Rattlesnake

Mourning Dove Chukar Pheasant Hungarian Partridge Mountain Quail Valley Quail Mallard Canada Goose Pintail American Wigeon Ascaphus truei Bufo boreas Hyla requilla Rana catesbeiana

Sceloporus graciosus Sceloporus occidentalis

Uta stansburiana Phrynosoma platyrhinos

Eumeces skiltonianus

*Gerrhonotus coeruleus Gerrhonotus multicarinatus* 

Charina bottae Diadophis punctatus Contia tenuis Coluber tenuis Pituophis melanoleucus Thamuophis melanoleucus Crotalus viridis

Zenaidura macroura Alectoris graeca Phasianus colchicus Perdix perdix Oreortyx pictus Lophotryx californicus Anas platyrhynchos Branta canadensis Anas strepera Mareca americana Shoveler Blue-winged teal Cinnamon teal Green-winged teal Wood Duck Ruddy Duck Coot Snipe Redhead Canvasback Ringneck Scaup Common Goldeneye Barrow's Goldeneye Bufflehead **Common Merganser** Hooded Merganser Black-tailed deer Mule deer Elk White-tailed deer Antelope Cougar Bobcat Beaver

Mink

Otter

Muskrat

Raccoon

Coyote

Spatula clypeata Anas discors Anas cyanoptera Anas carolinensis Aix sponsa Oxyura jamaicensis Fulica americana Cepella gallinags Aythya americana Aythya valisineria Aythya collaris Aythya affinis Bucephala clangula Bucephala islandica Bucephala albeola Mergus merganser Lophodytes cucultatus

Odocoileus hemionus Odocoileus odocoileus Cervus canadensis Odocoileus virginianus (sp) Antilocapra americana

Felix concolor Lynx rufus Castor canadensis Mustela vison

Lutra canadensis Ondatra zibethica Procyon lotor Canis latrans

<sup>5</sup>Oregon Department of Fish and Wildlife. Note: a question mark indicates that the species may be present but has not been verified.

## Appendix P. Existing Developed and Semi-Developed Campgrounds

River Segment	Name	Approx. Location	Capa- city	Facilities & Features	General Condition
Developed O	Campgrounds				
2	Maupin	RM 52	129	in city park, launch, toilets	Good
3	Beavertail	RM 32	105	road, parking, toilets, drink water, garbage cans, traffic meter, waste water sumps	Good
3	Macks Canyon	RM 23	80	road, parking, launch, toilets, garbage cans, Native American prehistoric site	Good
4	Deschutes State Park	RM 0	216	road, landing (unimproved), toilets, garbage cans, drinking water	Good
Semi-Develo	oped Campgrounds				
1	Mecca Flat	RM 96	40	road, toilet, unimproved launch	Poor
1	Dry Creek	RM 95	80	on Tribally-owned land	Fair
1	Trout Creek	RM 88	125	road, parking, launch, toilets, garbage cans, waste water sumps, interpretive kiosk, pic- nic tables	Good
1	South Jct	RM 84	40	road, parking, toilets, garbage cans, waste water sumps, river access across railroad tracks, picnic tables	Fair



River Segment	Name	Approx. Location	Capa- city	Facilities & Features	General Condition
2	Nena Creek	RM 58	20	road, toilet, launch, picnic tables, garbage cans, parking	Fair
2	Devil's Cnyn	RM 57	20	road, toilet, unimproved launch, garbage cans	Poor
2	Long Bend	RM 56	35	road, toilet, unimproved launch, picnic tables, garbage cans, parking	Fair
2	Harpham Flat	RM 56	90	road, toilets, launch, garbage cans, parking	Poor
2	Wapinitia	RM 55	20	road, toilets, launch, garbage cans, parking, picnic tables	Fair
2	Wapinitia Overflow	RM 55	10	road, parking, garbage cans	Fair
2	Boxcar Rapids	RM 54	5	road, parking, garbage cans, rapids, scout trail	Poor
2	Oasis Flat	RM 51	55	road, toilets, garbage cans, picnic tables, waste water sump, good group area	Fair
2	Grey Eagle	RM 50	15	road, toilet, garbage cans, picnic table, interpretive kiosk	Fair
2	Moss Hole	RM 49	10	walk-in trails, garbage cans, good fishing	Fair
2	Rocky Flat	RM 49	10	road, good fishing	Fair

River Segment	Name	Approx. Location	Capa- city	Facilities & Features	General Condition
2	Handicap Ramp	RM 48	30	road, parking, toilet, day-use, picnic tables, handicap access ramp, garbage cans, waste water sump	Fair
2	Oak Springs	RM 48	30	road, toilet, garbage cans, picnic table, waste water sump	Poor
2	Surf City	RM 48	15	road, picnic tables, kayak launch, garbage cans, good rapids for kayak surfing	Fair
2	White River	RM 46	30	road, toilet, garbage cans, Tribally-owned land	Fair
2	Sandy Beach	RM 45	75	road, landing, toilets (day use only), Tribally- owned land	Fair
2	Sherars Falls	RM 44	60	road, toilets, garbage cans, landing, Tribally- owned land, dipnet fishing observation	Poor
3	Buckhollow	RM 43	10	road, parking, inter- pretive kiosk, garbage cans, day use, launch	Fair
3	Boulder Flat	RM 42	20	road, garbage can, good fishing trail	Fair
3	Pine Tree	RM 39	10	road, launch, picnic table, garbage cans, limited parking	Fair

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River Segment	Name	Approx. Location	Capa- city	Facilities & Features	General Condition	
3	Twin Springs	RM 38	30	road, toilets, picnic tables, garbage cans, waste water sump, good RV area	Fair	
3	Oak Brook	RM 36	15	road, toilets, picnic tables, garbage cans, waste water sump, good swim beach	Fair	
3	Jones Canyon	RM 35	35	road, toilets, picnic tables, garbage cans	Fair	
3	Gert Canyon	RM 34	20	road, toilets, picnic tables, garbage cans, waste water sump	Fair	
3	Upper Rattlesnake	RM 31	20	road, toilets, picnic tables, garbage cans, waste water sump, good shaded area	Fair	
3	Lower Rattlesnake	RM 31	20	road, toilet, picnic tables, garbage cans	Fair	
4	Kloan	RM 7	20	4WD road, walk-in trail (very remote vehicle access), toilet (Note: Kloan is included based on vehicle access.)	Fair	

Appendix Q. Boater Use Levels by Segment - 1988

## Segment 1 - Number of Boaters by Day — 1988 (Alternatives 3 & 4)



Segment 1 - Number of Boaters by Day — 1988 (Preferred Alternative)



Segment 1 - Number of Boaters by Day — 1988



## Segment 2 - Number of Boaters by Day — 1988 (Alternatives 3 & 4)



Segment 2 - Number of Boaters by Day — 1988



### Segment 2 - Number of Boaters by Day — 1988 (Preferred Alternative)



Segment 3 - Number of Boaters by Day — 1988



## Segment 3 - Number of Boaters by Day — 1988 (Preferred Alternative)



## Segment 3 - Number of Boaters by Day — 1988 (Alternatives 3 & 4)



Segment 4 - Number of Boaters by Day — 1988



## Segment 4 - Number of Boaters by Day — 1988 (Preferred Alternative)



## Segment 4 - Number of Boaters by Day — 1988 (Alternatives 3 & 4)





# Appendix R. Existing Launching and Landing Areas

	Approximate	
Name	Location	Features
1 Warm Springs	RM 97, Seg. 1	Improved launch, toilets, parking, grocery, restaurant, service station, no camping
2 Mecca Flat	RM 96, Seg. 1	Unimproved launching, toilet, camping
3 Dry Creek	RM 95, Seg. 1	Unimproved launch, not open to public
4 Trout Creek	RM 86, Seg. 1 camping	Improved launch, parking, toilets,
5 South Junction carry across railroad	RM 83, Seg. 1	Parking, toilets, camping-requires boat
6 Locked Gate	RM 59, Seg. 2	Unimproved launch, limited package
7 Nena Creek	RM 58, Seg. 2	Improved launch, toilet, camping, parking
8 Devil's Canyon	RM 57, Seg. 2	Unimproved launch, toilet, camping, difficult access, very limited parking
9 Long Bend	RM 56, Seg. 2	Unimproved launch, toilet, camping, difficult access parking
10 Harpham Flat	RM 56, Seg. 2	Gravel launch
11 Wapinitia	RM 55, Seg. 2	Gravel launch
12 Maupin City Park	RM 52, Seg. 2	Gravel launch, fee, camping, toilets
13 Surf City	RM 48, Seg. 2	Unimproved launch, day use, very difficult access, used by kayakers, parking



Name	Approximate Location	Features
14 Sandy Beach	RM 45, Seg. 2	Unimproved landing, NO LAUNCH
15 Sherars Falls	RM 44, Seg. 2	Unimproved landing, NO LAUNCH, Native American fishing platforms
16 Buckhollow	RM 43, Seg. 3	Unimproved launch
17 Pine Tree	RM 38, Seg. 3	Improved launch, difficult access, very limited package, no camping
18 Beavertail	RM 32, Seg. 3 toilets	Improved launch, parking, camping,
19 Macks Canyon	RM 23, Seg. 4	Improved launch, parking, camping, toilets, Native American prehistoric site
20 Heritage Landing	RM 0, Seg. 4	Improved launch/landing, parking, toilets, no camping
21 Deschutes State Park	RM 0, Seg. 4	Unimproved landing, camping, parking, toilets
4		tollets

## Appendix S - Grazing Allotments in the Lower Deschutes River Planning Area

Allot.	Name	Total	Riparian	Grazing	Current
No.		Acreage	Mileage	Period	AUMs*
Federal					
7501	Bird	4,737	5.4	3/1-11/16	265
7507	Clausen	1,760	3.5	3/15-7/15	133
7511	Connolly	2,494	5.85	3/1-2/28	373
7513	Conroy J.	375	1.5	3/1-2/28	48
7518	Delude	1,350	5.0	11/1-4/30	76
7519	Dick	740	0.0	3/1-5/31	35
7532	Hammel LE	425	0.6	5/1-9/30	32
7533	Hammel EW	1,577	0.55	4/1-8/15	120
7536	Kaskela Farms	342	1.3	5/16-10/15	28
7541	Kaskela Ranch	1,004	1.5	3/1-2/28	81
7542	Greenvalley Farms	279	1.15	3/1-4/30	50
7545	Kortge	438	0.1	3/1-6/30	.54
7547	Ferry Canyon	2,421	6.0	11/1-2/28	226
7549	McDermid	80	0.0	3/15-10/15	6
7551	Metteer	883	3.75	4/1-10/31	87
7553	Morelli	647	3.15	4/1-8/31	12
7556	Northrup	160	0.0	5/1-6/30 &	18
				10/16-12/15	
7562	Oak Canyon	4,068	11.0	11/1-2/28	324
7564	Reckman JP	3,194	9.85	3/1-12/5	198
7568	Sharp AJ	2,576	3.0	4/1-11/30	82
7570	Johnson	120	0.0	3/1-8/31	15
7577	Two Springs	1,534	1.1	3/1-2/28	116
7579	Webb WL	2,978	5.25	9/15-2/28	242
7583	Criterion	1,245	5.1	3/1-4/30 &	92
				1/1-2/28	
7584	Woodside	105	1.1	3/1-2/28	11
7593	Iribarren	800	1.5	3/1-2/28	58



Allot.	Name	Total	Riparian	Grazing	Current	
140.		Actenge	wineage	renou	AOIVIS	
State						
	Carlisle	313	2.0	11/1-4/30	80	
	Wagenblast	493	3.0	4/15-9/30	87	
	Johnson	175	0.2	4/1-8/31	29	
	McDermid	726	4.5	4/1-7/31	138	
	Sharp	6,800	11.0	4/1-11/30	929	
Warm Spi	rings Reservation					
6A		5,259	9.06	12/1-3/15	1,569	1
6B-North		4,374	3.0	1/1-3/15	1,350	
				(Even Years)		
6B-South		5,948	3.04	1/1-3/15	1,357	
				(Odd Years)		
Moody Pr	operty		1.71			
3E	1 .	1,034	0.87	1/1-3/15	169	
4E		56	0.50	1/1-3/15	11	
7E		746	1.86	1/1-3/15	239	
18E		17,988	8.02	1/1-3/15	4,350	

\*Current Animal Unit Months (One AUM equals the amount of forage necessary for the sustenance of one cow equivalent unit for one month.)

## Appendix T - Projected Increases in Boating Use Levels Under Alternatives 1 and 2

Recreation use projections can be tentative at best. Many factors need to be considered, and then even with the best information available, unforeseen circumstances such as the price or availability of gasoline can make the projects look unrealistic. It is best then to utilize a range of projections that would give a better representation of likelihoods than to rely on one projected level of use.

The boating use projections are based on boater pass data. It is better to concentrate on the relative range of change in use rather than the absolute numbers for the purpose of this analysis. Therefore projected boater use may be as high as 180,000 to 185,000 boater days by 1995 to a projected low of 145,000 boater days by 1995. Total boating use levels of 164,000 boater days by 1995 seems reasonable.





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