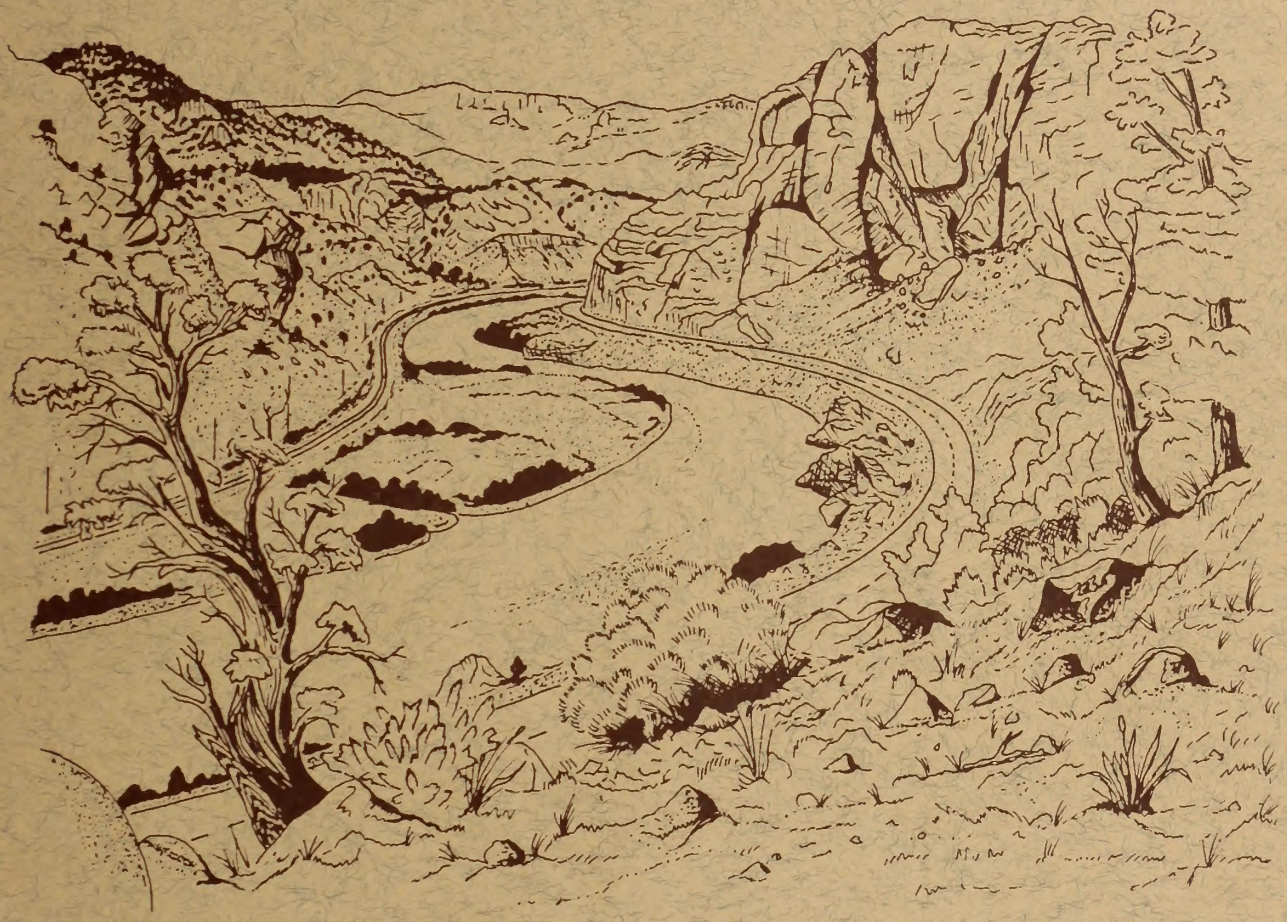
FINAL
ARKANSAS RIVER RECREATION MANAGEMENT PLAN



AND
ENVIRONMENTAL ANALYSIS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
CANON CITY DISTRICT OFFICE
P.O. BOX 311
CANON CITY, COLORADO 81212

TAKE PRIDE IN AMERICA

8372
(CO-057)

November 18, 1988

Dear Reader:

Enclosed is the Final Arkansas River Recreation Management Plan and Environmental Analysis, also called the Final Plan and EA. This document addresses river related recreation management along the Arkansas River between Leadville and Pueblo, Colorado.

The Final Plan and EA should be used in conjunction with the Draft Arkansas River Recreation Management Plan and Environmental Analysis which was released on August 15, 1988. The Preferred Alternative in the Final Plan is derived from the Proposed Action and alternatives described in that Draft Plan. It reflects consideration of public comments and further analysis of the planning issues.

The Final Plan may be protested. This document serves as a Management Framework Plan (MFP) Amendment, so all protests must be in writing and sent to the Director (760), Bureau of Land Management, Room 909, Premier Building, 1725 I Street, N.W., Washington, DC, 20240. Protests must be received by January 3, 1989. The protest shall include the following information:

The name, mailing address, telephone number, and interest of the person filing the protest;

A statement of the issue or issues being protested;

A statement of the part or parts of the plan being protested;

A copy of all documents addressing the issue or issues that were submitted during the planning process by the protesting party, or an indication of the date the issue or issues were discussed for the record; and

A concise statement explaining why the decision is believed to be wrong.

At the end of the 30 day protest period and after the Governor's consistency review, the Final Plan, excluding any portions under protest, shall be implemented. Implementation of any portion of the Final Plan under protest shall be withheld pending protest resolution.

We appreciate your interest in the management of recreation along the Arkansas River.

Sincerely,

Donnie R. Sparks

District Manager

UNITED STATES

DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

Arkansas River Recreation Management Plan and Environmental Analysis/Plan Amendment to the Royal Gorge Management Framework Plan

Recommendation

L. Mac Serta — 11/17/88

Area Manager, Royal Gorge Resource Area — Date

Decision

Donnie R. Sparks — 11/17/88

District Manager, Canon City District — Date

Approval

[signature] — 11/18/88

State Director, Colorado State Office — Date

ENVIRONMENTAL ANALYSIS

EA NO. CO-050-RG-89-1

Royal Gorge Resource Area
Chaffee, Fremont and Lake County, Colorado

Arkansas River Recreation Management Plan and Environmental Analysis
(EA Title)

Along Arkansas River from Leadville to Pueblo Reservoir
(Project Location)

We have reviewed the environmental analysis prepared to analyze the environmental effects of the preferred alternative and have determined that the preferred alternative and approved mitigation measures produce a finding of no significant impact on the human environment. Therefore, an environmental impact statement is not required to further analyze the environmental effects of the preferred alternative.

Prepared by: Paul Trentych — 11-17-88 (Date)

Approved by: L. Mac Berta, Area Manager — 11/17/88 (Date)

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CHAPTER I

BACKGROUND AND ISSUES

A. INTRODUCTION

This planning effort began as a revision of the Bureau of Land Management's (BLM's) Arkansas River Recreation Area Management Plan for public land which front 40.4 river miles. The plan's scope was expanded to include 148.5 miles of river and public lands managed by the BLM, National Forest land, State land, and privately owned lands.

The Final Arkansas River Recreation Management Plan (Final Plan) is the product of a comprehensive public involvement effort. Sixteen government entities and two citizen groups were involved in the planning process. Recreational user groups, environmental organizations, conservation districts, industry associations, and area residents all participated. These parties have worked together to produce an integrated plan for the entire river system. The Final Plan specifies management for the river corridor and provides for development of a cooperative management agreement (CMA) that will serve as the implementing contract. DPOR will be the single on-the-ground recreation manager. BLM will continue to manage other multiple uses and work with DPOR to ensure compliance with the provisions of the Final Plan and CMA. Both agencies will function as joint administrators in evaluating the adequacy of the plan, its implementation, and the need for future amendments. See Illustration I-1 for a flowchart of the planning and plan implementation processes.

The Final Plan was jointly prepared by DPOR and the BLM. It outlines a new direction for management of the Arkansas River corridor and is responsive to growing recreation demand for this outstanding resource.

1. Location and Setting

The Arkansas River is the major drainage system in southeastern Colorado. The planning area includes the river corridor from Leadville near its headwaters to Pueblo Reservoir on the plains. It begins in a high valley surrounded by snow-capped peaks of the Collegiate Range and winds through Browns Canyon and the Arkansas River Canyon thereafter. The landscape is rugged as the river flows between narrow canyons and open parks. Below Canon City, the river enters the eastern plains landscape. Illustration I-2 shows the river's path.

The upper Arkansas River, from Leadville to Pueblo, is recognized as one of the premier recreation rivers in the United States. Enjoying an international reputation for the outstanding quality and diversity of its whitewater boating opportunities, the Arkansas is also widely known for its outstanding fishing and sightseeing. Much of it lies adjacent to Highways 50 and 24, primary tourism routes. Numerous roadside pullouts provide ready access for picnicking, undeveloped camping, and sightseeing.

This national whitewater resource lies within a two to three hour drive of over two million front range urban residents. The lower river lies immediately west of Pueblo and southwest of Colorado Springs. Denverites can reach the upper segment within approximately two and one-half hours via South Park.

ILLUSTRATION I-1

Planning and Implementation Process

Part I: The Plan Design

Part II: The Implementation Contract

STEP NO. 1

Management and Development Proposal

- Developed by 22-member Advisory Committee, appointed by State Parks Board
- Transmitted to BLM by State Parks Board

STEP NO. 2

Draft Recreation Plan/Land Use Plan Amendment & Environmental Assessment

- Proposed Action
- Draft Plan Includes Alternatives, and
- Prescribes Mitigating Measures* (8/15/88)

STEP NO. 3

Public Review of Draft Recreation Plan/ Land Use Plan Amendment & Environmental Assessment

- Includes 45-day Public Review Period (8/15-9/30/88)
- Hearings to be held at:
  - Denver (9/7/88)
  - Canon City (9/12/88)
  - Buena Vista (9/16/88)
- Then Respond to Public Comments, and: (10/1-10/30/88)
- Make Changes to Draft as Necessary* :

We Are Now Here!

STEP NO. 4

Approved Plan = Finding of No Significant Impact & Decision Record

- Documents Plan Decision & Summarizes Environmental Effects
- Includes last 45 days of 60-day Governor's Consistency Review* 11/21/88 - 1/3/89
- Includes 30-day Public Protest Period 12/2/88-1/3/89
- Make Changes to Plan if Necessary Resolve Any Protests*

Possible Protests to BLM Director*

STEP NO. 5

Enter Into Cooperative Management Agreement (CMA) & Any Leases

Possible Appeals to the to the Interior Board of Land Appeals (IBLA)**

STEP NO. 6

CMA Implementation

* Note: These items may/will change the plan.

** Note: This may change the CMA.

ARKANSAS RIVER RECREATION MANAGEMENT PLAN
Planning Area

Pueblo Reservoir

Segment #6

Canon City

Segment #5

Parkdale

Segment #4

Vallie Bridge

Segment #3

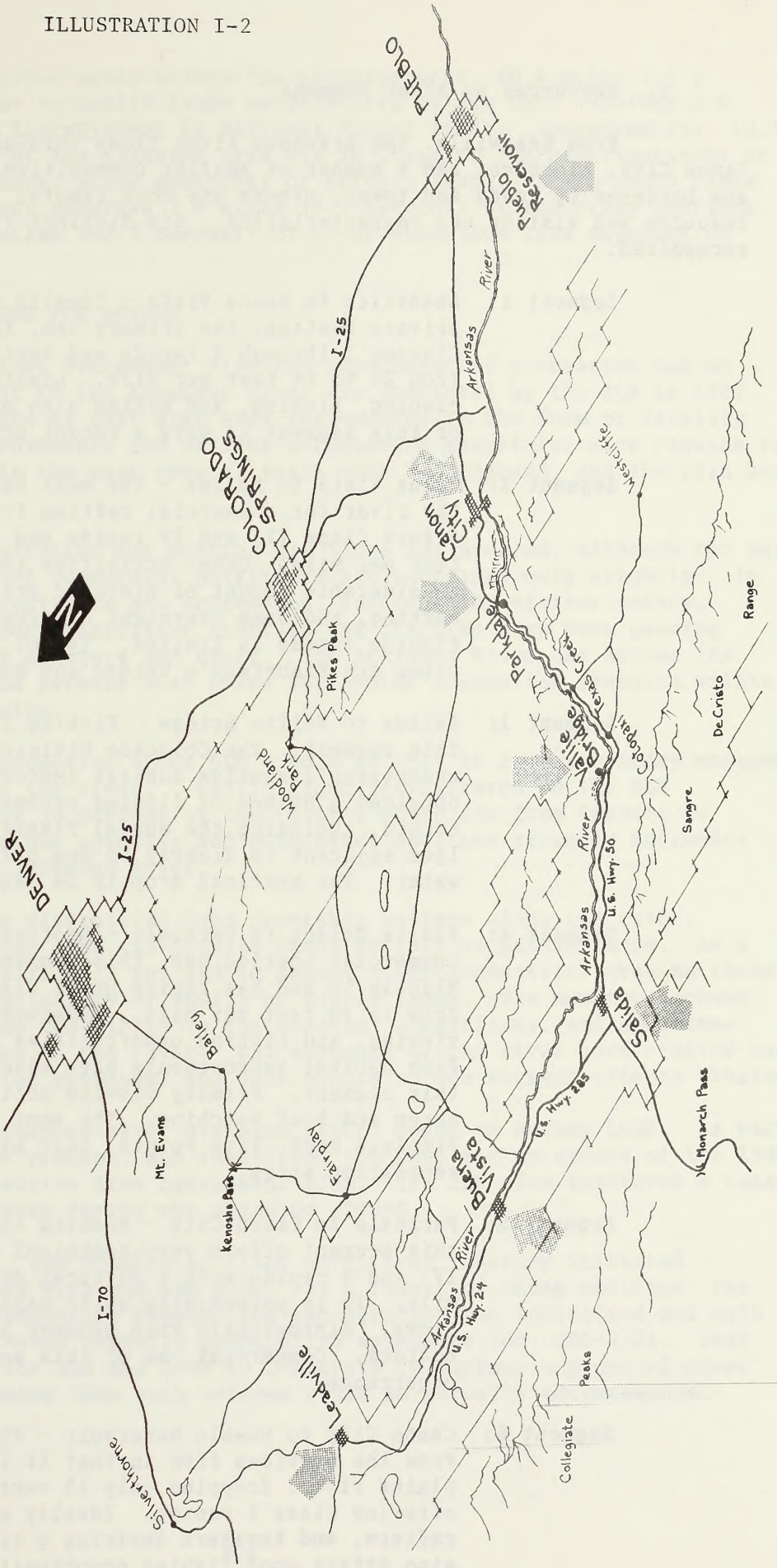
Salida

Segment #2

Buena Vista

Segment #1

Leadville



2. Resources by River Segment

From Leadville, the Arkansas River flows through Buena Vista, Salida, Canon City, Florence, and a number of smaller communities. While some sections are bordered by roads and towns, others are more remote. Each has different resource and visitor use characteristics. Six distinct river segments have been recognized.

Segment 1: Leadville to Buena Vista - Ideally suited for technical private boating, the primary use, this segment offers Classes I through V rapids and vertical drops ranging from 26 to 66 feet per mile. Limited commercial rafting, camping, fishing, and hiking also occur. Commercial use of this segment is only a recent occurrence.

Segment 2: Buena Vista to Salida - The most heavily used portion of the river for commercial rafting trips, this segment offers Class III and IV rapids and a vertical drop of 30 feet per mile. Other activities include fishing, a considerable amount of historic private kayaking and rafting, and some overnight camping trips. Boating and fishing access is limited. Two of the most heavily used sites are Fisherman's Bridge and Hecla Junction.

Segment 3: Salida to Vallie Bridge - Fishing is the dominant use in this segment. The Colorado Division of Wildlife has undertaken fisheries habitat improvement projects and obtained a number of fishing easements. Some boating occurs, including the annual FIBARK race. This segment lies adjacent to Highway 50 and offers mostly quiet water. The vertical drop is 24 feet per mile.

Segment 4: Vallie Bridge to Parkdale - Another heavily used area for commercial boating use, this segment lies adjacent to Highway 50 and has rapids up to Class IV. The vertical drop is 30 feet per mile. Numerous roadside picnicking, viewing, and fishing opportunities occur at pullouts. Fish habitat improvements have also been completed in this segment. Primary viewing activities involve bighorn sheep and boat watching. The most heavily used sites are Pinnacle Rock, Five Points, Salt Lick, and Parkdale recreation sites.

Segment 5: Parkdale to Canon City - Running through the Royal Gorge, this segment offers very technical whitewater, Class III, IV, and V rapids with a vertical drop of 50 feet per mile. It is potentially quite hazardous at high water flows. Historically this segment has been run by private boaters. Commercial use of this segment is only a recent occurrence.

Segment 6: Canon City to Pueblo Reservoir - This segment differs from the previous five in that it is characterized as a plains river, dropping only 15 vertical feet per mile and offering Class I rapids. Ideally suited for canoeists, rafters, and kayakers desiring a tranquil river trip, it also offers good fishing opportunities.

Of the 148.5 river miles within the planning area, 40.4 miles (27.2 percent) lie adjacent to public lands administered by the BLM. Another 1.6 miles (1.1 percent) lie adjacent to National Forest lands. Approximately 10.1 miles (6.8 percent) of the planning area lie adjacent to the municipalities or communities noted above, along municipal or private lands. State-owned lands including prison lands comprise 7.8 miles (5.2 percent) of the river corridor. The remaining 88.6 miles (59.7 percent) of river shoreline lies adjacent to private land.

B. PURPOSE AND NEED FOR ACTION

A Recreation Area Management Plan for management of recreation use on public lands adjacent to the Arkansas River was completed by the BLM in 1982. While several elements of that plan were implemented in the form of facility maintenance and improvements and visitor information materials, much remains to be done. However, in the past several years much has changed, and the plan has become outdated.

Recreation visitation for boating use alone has doubled, although the net increase in numbers of commercial outfitters has increased only slightly. In recent years, user conflicts and congestion, concerns for visitor safety, resource deterioration, sanitation problems and the like have been growing concerns of both BLM managers and users. The Arkansas River has become the most heavily used and perhaps best known whitewater recreation resource within Colorado and the region.

A common misconception about BLM's role is that it is the primary manager of recreation use on the river. Public lands administered by the BLM constitute only about 30 percent of the river's shoreline from Granite to Parkdale. Several other agencies and government entities strongly influence what happens on the Arkansas River.

Because of the diversified land ownership pattern along the river, boaters can access the area via private lands as well as public lands. As a result, it is very difficult for BLM to manage river recreation, even on those segments which lie primarily or wholly on public lands. The numerous access points on other lands contribute to the chaotic, competitive, and sometimes dangerous environment on the river. All segments of the river have visitor use or resource protection problems, and what occurs on one segment affects others.

The current Arkansas River planning effort began in Autumn 1986. As part of its normal budget process, BLM identified the need for an update of the 1982 Arkansas River Recreation Area Management Plan. The BLM also appointed a task force to provide advice during the planning effort.

Early in 1987, the commercial river outfitting industry initiated coordination meetings with BLM and DPOR. As a result of those meetings, the need for closer coordination between the two agencies was identified and both entered into a statewide umbrella cooperative agreement (No. CSO-232). That agreement provides for BLM and DPOR to cooperate in various aspects of river management and planning when such actions would be mutually advantageous.

The Arkansas River is one such area. In carrying out the intent of the statewide agreement, BLM's Royal Gorge Resource Area entered into a supplement agreement with DPOR's South Region and 14 other agencies and governmental entities during Spring 1987. As the new cooperators and BLM's task force met during 1987 to strategize and plan the future management of the Arkansas River, a recommendation was made that a single entity should manage the river. The task force recommended DPOR. During November and December, BLM and DPOR jointly conducted a series of public meetings in the upper Arkansas Valley and around Colorado. Those meetings registered public support for DPOR to be the one manager responsible for Arkansas River recreation. While some users and interest groups expressed qualified reservations, the overall tone of public comment was to proceed with the plan.

To further the process, on January 22, 1988, a memorandum of understanding (MOU) was signed by the BLM and the DPOR. The MOU committed both agencies to cooperate in developing a river recreation management plan and to participate in a public review process. The MOU provides for formulation of a proposed action consistent with DPOR's management and development proposal and formulated around BLM's multiple use resource management objectives. The plan was developed in light of identified user needs and preferences, and was to be evaluated in an environmental analysis. This combined plan and environmental analysis meets those requirements.

C. PRINCIPAL ISSUES

The following list summarizes the principal issues addressed in the Final Arkansas River Recreation Management Plan.

1. Access: The extent to which user satisfaction can be achieved is limited in part by a lack of legal and physical access to the river. Another aspect of access deals with the issue of user conflicts and crowding which could effectively block user access to some areas.

2. Allocation: This refers to direct regulation of use through the placement of limitations on numbers and types of recreation users, periods of use, use areas, and so forth. It consists of the allotment of use among competing types of users. In boating, allocation is generally between commercial and private users. Allocation is usually employed as a last resort when indirect management techniques become ineffective in keeping use within prescribed carrying capacity limits.

3. Boundaries: The size of the Arkansas River recreation area is related to the length of the river corridor and its width. The issue concerns the extent of public lands now included and the potential for additional public lands (e.g., municipal properties and other agency lands).

4. Carrying Capacity: Carrying capacity is the amount and type of recreational use an area can accommodate without altering either the environment or the user's experience beyond the degree of change deemed acceptable by the management objectives for the area. Management objectives adopted for the Arkansas River determine acceptable upper limits of use for which the river is to be managed. Often misunderstood, carrying capacities are not determined by the composition or volume of current use. Instead, they are determined by management decision as an expression of the type and amount of recreation to be provided.

5. Crowding: This is a subjective issue and relates to the feeling which users have about the actual presence of other users and the evidence of that use. It can only be measured by users themselves, most commonly through on-site user preference surveys.

6. Economic Development: The river is a significant recreation area and has the potential to make a greater contribution to tourism and economic development in the upper Arkansas River valley. Future management will have a direct bearing on both local and regional economies.

7. Enforcement: There is a need to integrate law enforcement activities of the government entities involved in providing for user safety and protection of the resource.

8. Funding: An adequate and stable funding mechanism is essential for implementing the plan's provisions including resource protection, visitor services, facility development and maintenance, access and easement acquisition.

9. Jurisdiction: Several government entities at various levels have jurisdiction over different segments and different aspects of the Arkansas River. None has complete jurisdiction over the entire area.

10. Legislation: During plan preparation, passage of Colorado House Bill 1253 filled a major jurisdictional void by granting the Colorado Division of Parks and Outdoor Recreation (DPOR) on-water recreation management authority for the length of river within the planning area.

11. Natural Resources : The BLM is the principal natural resource manager in the area. The Bureau of Reclamation, Colorado Division of Wildlife, U.S. Forest Service, and the DPOR also have significant roles in managing the area's natural resources. The natural resources of the Arkansas River corridor are the principal source of its beauty and appeal.

12. Private Lands: Much of the land along the Arkansas River is under private ownership (approximately 60 %). The preservation of private landowner rights is a major issue.

13. Public Lands: The term "public lands" in its narrowest context means that portion of the original public domain which is administered by the BLM. In a somewhat wider context, it includes all natural resource lands that are open to the public for outdoor recreation use and enjoyment. From an even broader perspective, it would include municipal lands open for public use and enjoyment. All three contexts are important in this plan.

14. Quality of Experience: The quality of the experience is determined in large part by the recreational character of the river and the types of activities available to users. The recreational character includes the physical resource itself (lands and facilities), social characteristics (recreational visitors and other users), and the management scheme (how the land and its visitors are managed).

15. Safety: Aspects of public safety on both land and water are addressed to ensure that this basic user need is provided for in the most effective and efficient manner possible. This issue addresses natural hazards and hazards created by visitors themselves.

16. Search and Rescue: Coordination of search and rescue efforts among agencies and local governments is addressed to ensure maximum service and benefit to the public and the maintenance of high quality outdoor recreation opportunities.

17. Threatened Species: Some species of plants and animals within the planning area are listed as endangered or threatened and need special attention.

18. Trash and Sanitation: Existing sanitation facilities are inadequate, both for refuse and human waste disposal. The need for litter control along the river corridor is also an issue.

19. Trespass: With the majority of shoreline under private ownership, users often find it difficult to know exactly where and how to legally access the river, and the shoreline from the river. This issue addresses ways of instilling a use ethic among visitors which respects landowner rights, providing appropriate signing and other information materials, and enforcement.

20. User Fees: This issue addresses how to assess and collect user fees efficiently and equitably. Also related is the question of proper disposal of resulting fee revenue.

21. Water Quality: River water quality affects all users. It involves mineral pollution, such as heavy metal contamination resulting from upstream historic mining operations, and biological contamination from the users themselves.

22. Wilderness: The Brown's Canyon Wilderness Study Area lies immediately adjacent to and east of the river near Ruby Mountain and Hecla Junction. Recommended suitable for wilderness designation, the area is now managed under interim management guidelines. These guidelines state that all activities within a WSA must be non-impairing to wilderness values.

D. ISSUES NOT ADDRESSED

Decisions on the following issues are not being made as part of the Arkansas River Recreation Management Plan.

1. Reservoirs: The issue of damming the Arkansas River is a major concern to most recreation users, since a dam would affect the nature of recreation opportunities. The issue of Reservoir development cannot be addressed within the scope or authority of this Plan. Reservoir development would be addressed only through specific proposals which would be subject to the NEPA process at the time they are formally proposed.

2. Water Flows: The level of flows in the Arkansas River affects all users and the resource itself. These flows are determined by the needs of water right holders including agricultural, industrial, and residential users. Manipulations of flows are not within the scope or authority of this Plan.

3. Wild and Scenic River Designation: Concerns have been expressed about the river's potential as an addition to the National Wild and Scenic Rivers Preservation System. It was identified in the National Park Service's National Rivers Inventory as having outstanding qualities. The question of the river's suitability for Wild and Scenic River designation will be addressed in the Royal Gorge Resource Management Plan which is scheduled to begin in 1989. The issue is beyond the scope and authority of this Plan. Implementation of this plan would not affect the rivers suitability or eligibility for future designation.

E. ROLE OF ADVISORY COMMITTEE

Concurrent with signing of the BLM/DPOR MOU, the Colorado State Parks Board appointed an 18-member Arkansas River State Recreation Area Advisory Committee. The committee was made of up organizations that had expressed substantial interest in the future of recreation management on the Arkansas River. The Advisory Committee recommended that four additional members be added, and the Committee was later modified to include 22 members. The organizations seated on the Committee are as follows:

Subcommittee A	Subcommittee B
Colorado River Outfitters Association	City of Salida
Western River Guides Association	Cities of Canon City/Florence
Colorado Wildlife Federation	City of Buena Vista
Colorado Trout Unlimited	Chaffee County Riverfront Landowner
National Organization for River Sports	Fremont County Riverfront Landowner
Colorado White Water Association	Colorado Water Congress
High Country River Rafters	Municipal Water Interests (Aurora, Colorado Springs, and Pueblo)
Colorado Environmental Coalition	Upper Arkansas Water Conservancy District
Rocky Mountain Boy Scouts of America	Chaffee County Cattlemen's Association
FIBARK, Inc.	Fremont County Cattlemen's Association
	Local Private Campgrounds
	Upper Arkansas Area Council of Governments

Ex Officio Members

Colorado Division of Parks and Outdoor Recreation
Colorado Division of Wildlife
Bureau of Reclamation
Bureau of Land Management
BLM Task Force

The Committee held its initial meeting on February 19, 1988 in Salida. At that meeting the Committee was organized into two subcommittees, one representing recreation-user organizations, the other representing valley residents, local government entities, business owners, and water interests. Subsequent meetings of either the full committee or the two subcommittees were held in Salida (March 2), Howard (March 9), Buena Vista (March 23), Salida (March 30), Canon City (April 6), Buena Vista (April 11), Pueblo (April 23), Salida (April 27), and Buena Vista (May 11). The management and development proposal assembled by the Committee represents a great deal of time, energy, and commitment by the members.

F. ALTERNATIVES CONSIDERED

The Draft Arkansas River Recreation Management Plan and Environmental Analysis addressed a Proposed Action and three alternatives. The Proposed Action was DPOR's Management and Development Proposal, developed by a DPOR-appointed advisory committee, and guided by BLM's multiple use resource management objectives while considering user needs. The Reduced Development, Land-Based, and No Action Alternatives were developed by BLM to allow consideration of a range of options based on a variety of assumptions.

1. Proposed Action

Under a cooperative management agreement, DPOR would manage river related recreation and BLM would continue to manage other multiple uses of the public lands involved. DPOR would have on-river management authority as specified in Colorado House Bill 1253. DPOR projected an increase in boating use from 132,000 visits in 1987 to 602,000 in 1997.

Objectives were to accommodate more intensive public recreation use on all river segments and to change the recreational characteristics of several segments to a more facility-dependent setting. Resource management activities would include reestablishment of quality fisheries, resource protection, rehabilitation of damaged recreation sites, and stream improvement. Visitor management would include indirect visitor management techniques, boating regulations and permit requirements for public land on-river use. Major facility developments would be provided at various locations to accommodate river boating, fishing, picnicking, other day use activities, and camping at some locations. Key acreage would be acquired to improve effective utilization of the river, reduce on-river congestion, and accommodate greater numbers of people. Interagency cooperation would be emphasized in administrative matters.

2. Reduced Development Alternative

This alternative assumed the same management authorities as the Proposed Action but provided for reduced carrying capacities and less intensive facility and visitor management. DPOR estimated that total boating use under this alternative would reach 359,000 annual visits by 1997. Nearly all river corridor and developed recreation site carrying capacities would be one-half that of the Proposed Action, and substantial reductions in boating capacities for the late summer season were incorporated. Greater tradeoffs under this alternative should help reduce user conflicts within the planning area.

3. Land-Based Alternative

There would be a cooperative management partnership between BLM and DPOR for the public lands, but on-river management authority would either not exist or not be implemented. The river corridor would be unmanageable without any on-river management authority. DPOR estimated boating use under this alternative would reach 323,000 visits by 1997. Recreation site capacities would be used the same as under the Reduced Development Alternative. Fewer public recreation visits could be accommodated, however, due to increases in peak use congestion from unmanaged river recreation use. The lack of on-water authority would greatly limit the ability to incorporate management of non-public lands.

4. No Action Alternative

This alternative assumed there would be no on-water management authority and no cooperative BLM-DPOR management partnership. This is what would happen if BLM were to continue to manage public land recreation use independent of DPOR. DPOR estimated boating use under this alternative at 215,000 visits by 1997. Site capacities for this alternative would be approximately one-third that of the Proposed Action or two-thirds that of the first two alternatives. The geographic extent of this alternative was limited to public lands. There would be agreements, such as with local governments, for law enforcement and search and rescue. While many of the same locations identified in the Proposed Action and the other alternatives were targeted for development, the number of facilities and the intensity of their development would be reduced under this alternative.

G. APPLICABLE MANDATES

1. Federal Land Policy and Management Act of 1976 (FLPMA)

The principal policy provision guiding all public land management is the Federal Land Policy and Management Act of 1976. Among other things, Section 102 of FLPMA provides that the public lands be managed on the basis of multiple use and sustained yield and be retained in Federal ownership. Section 202 of FLPMA provides that land use plans be developed with public involvement and in coordination with State and local governments. The plans must consider such things as present and potential public land uses, the relative scarcity of the values involved, short-term vs. long-term benefits.

2. National Environmental Policy Act (NEPA)

Compliance with the National Environmental Policy Act of 1969 is required for this effort and all amendments to it. This document is a combined recreation management plan and environmental analysis (EA). The purpose of an EA is to allow BLM managers to compare alternatives, analyze impacts, and determine whether to prepare an environmental impact statement or finding of no significant impact.

3. Conformance with Land Use Plan (Amendment Under FLPMA)

Recreation use and visitor use patterns along the Arkansas River have changed substantially since 1979 when the current land use plan, the Royal Gorge Management Framework Plan (MFP), was completed. Demand and need for facilities has greatly increased. The MFP included some general goals and objectives, and a few specific developments, but is insufficient from an overall guidance standpoint. Of particular concern is the growth in whitewater boating, including questions about allocating recreation use along the river. While the goals, objectives, and implementing actions set forth in this recreation management plan are not inconsistent with the MFP, there are numerous additions. Also, the Preferred Alternative set forth in this plan would change the recreational character of certain river segments from what was envisioned in the MFP. The MFP did not set specific recreation management objectives which are now required by BLM policy and are the basis for determining carrying capacities. The suitability of Recreation and Public Purposes (R&PP) leases must be determined through the land use planning process. For these reasons the MFP is in need of amendment. The MFP amendment is an integral part of this recreation plan and utilizes the same public participation process.

H. BLM RECREATION REGULATIONS AND POLICY REQUIREMENTS FOR PLAN CONTENT

Recreation regulations for the public lands are set forth in Title 43 of the Code of Federal Regulations, Part 8300. These regulations include the following objectives:

1) To provide access to the public lands for those who wish to use them, to minimize conflicts among users, and to prevent damage to natural resources by recreation activities (43 CFR 8300.0-2);

2) To protect the resources of the public lands, to promote safety of all users of those lands, and to minimize conflicts among various users of those lands (43 CFR 8340.0-2);

3) To ensure that public lands, including recreation areas, sites and facilities, can be used by the maximum number of people with minimum conflict among users and minimum damage to public lands and resources (43 CFR 8365.0-2); and

4) To establish a permit and fee system for certain recreation uses of lands and waters administered by the Bureau (43 CFR 8372.0-2).

Additional recreation management policy guidance provided is in the BLM manual. Public lands must remain open and available to all recreation uses except where incompatible uses need to be limited or closed because of resource degradation, visitor health and safety problems, or user conflicts. To provide for intensive management areas like the Arkansas River, recreation area management plans like this one must be prepared. Recreation management objectives must be stated in terms of Recreation Opportunity Spectrum (ROS) or recreation character classes and must include carrying capacities where necessary to resolve identified issues. Those carrying capacities are to be set in management plan decisions.

The Colorado State Director's policy supplements Bureauwide guidance by requiring that plans identify specific recreation activities and the character classes within which they are to be made available. State Director policy also requires that the adequacy and appropriateness of BLM's minimum fee structure be evaluated through the planning process, identifying a preferred user fee structure for both dispersed and recreation site use (BLM Manuals 8300, 8322, H-8372-1; Federal Register, Friday, February 10, 1984; and Colorado BLM Manuals 8300 and 8322).

I. MANAGEMENT AUTHORITIES AND H.B. 1253

BLM exercises its authority for management of recreational use by administering access to rivers on the public lands. As an adjacent landowner, it has no authority to manage on-water use of the rivers. This management approach is effective in those areas where BLM-administered lands form the principal ownership pattern. However, it is ineffective in areas of fragmented ownerships. Along the Arkansas River corridor, the BLM administers less than 30 percent of the shoreline acreage. The remainder of the lands are mostly in private ownership. Therefore, BLM's ability to comprehensively manage recreational use of the river is greatly diminished.

Under Colorado law, shoreline owners do not manage the river surface itself; their authority stops at the water's edge. Moreover, Colorado law does not authorize the owners of adjoining property to prohibit boating use on rivers and streams flowing over their property. The BLM issues permits for commercial use of public lands adjoining the river. Such permits cannot control total river use, because nonpublic lands do not fall under BLM's jurisdiction.

Others also manage and influence the recreational character of the Arkansas River. The Bureau of Reclamation exercises a major influence in the river's recreational character by controlling periodic upstream water releases from the Fryingpan-Arkansas water storage project. The Colorado Division of Wildlife influences river recreation opportunities through wildlife and fisheries management actions. Both Chaffee and Fremont counties play major roles in providing for river search and rescue. In addition, these counties work cooperatively with the Colorado Division of Parks and Outdoor Recreation (DPOR) in administering the river closure provisions of the boating safety regulations. DPOR administers the licensing of commercial river outfitters and guides and provides for on-river boating safety.

Numerous private landowners influence the recreational character of the river by independently managing the majority of river shoreline. Some provide fee access to and from the river for commercial outfitting companies. In other instances, commercial outfitters or associations are the shoreline administrators.

Due to the growing economic contributions of Arkansas River recreation, most cities, towns, and communities adjacent to the river are becoming increasingly interested in meeting the needs of river recreationists. Efforts are now underway by these municipalities to enhance boaters' experiences by improving public access to the river and providing support services, facilities, and other amenities.

Numerous management authorities, often independent and unrelated, exert some kind of influence on the recreational character of the Arkansas River. Some of this influence has a positive impact on the public (e.g., facilities to accommodate use, promotion of user safety, etc.), and some has a negative impact (e.g., congestion and crowding, litter and noise, private land trespass, etc.). Prior to House Bill 1253 none of the managing entities could independently or cooperatively ensure that this important river resource would provide quality recreation to Colorado and its visitors.

With the passage of Colorado House Bill 1253 on April 21, 1988, the DPOR has authority to regulate the manner, type, time, location, and amount of recreational use on the Arkansas River from its confluence with the Lake Fork to Pueblo Reservoir.

J. PLAN IMPLEMENTATION

Section 307 of FLPMA provides that cooperative management agreements (CMAs) may be entered into for the management, protection, and development of public lands. Under a CMA, ownership and jurisdiction of the public lands would remain with BLM; no interest in the Federal estate would be transferred. The DPOR would provide recreation management services while BLM continues managing other multiple use resources. Lands would remain open to operation of the public land laws, including those for mineral location and leasing. All uses provided for in the CMA would remain subject to existing rights.

Section 212 of FLPMA amended the Recreation and Public Purposes Act (R&PP) of 1926 which provides for long term leases of public lands for recreational uses. Under a R&PP lease, jurisdiction for management of recreation use of the public lands would be leased to the DPOR. A detailed plan of development would be required, specifying the type and level of development, improvements, and management. Ownership of the public lands involved would remain with BLM. Should the land not be used in a manner consistent with the plan, the lease could be revoked and jurisdiction of affected lands would revert back to the Federal government. The lease would authorize DPOR to collect state-authorized user fees on leased lands. BLM would not retain any authority to collect fees. Under the terms of the CMA, DPOR would be obligated to expend user fee revenue collected within the planning area on management of the Arkansas River. DPOR could assess additional user fees based on surface management responsibilities for the river under H.B. 1253, irrespective of the lease's other fee provisions. The R&PP lease would be subject to all valid land or mineral interests (e.g., grazing, locatable mineral, withdrawals, and rights-of-way). The area would not be segregated from further appropriation. The lease would be subject to concurrence by agencies already having withdrawals in the area (e.g., Bureau of Reclamation and Federal Energy Regulatory Commission). The lease period would provide time over which DPOR could amortize investments.

Recreation and Public Purposes lease regulations are found at 43 CFR 2740 and 2912. Issuance of a R&PP lease must satisfy the objective of meeting "the needs of certain state...agencies...for public lands required for recreational and public purposes". Approval of leases is not made unless the public lands are to be used for an established or definitely proposed project. No public lands having national significance can be conveyed (transfer of legal title), but leases may be entered into. Lease terms and conditions to assure proper development, protect Federal property, and protect the public interest, are required.

The Final Plan calls for a combination of a CMA and R&PP leases. This combination would best provide effective management of the river and associated public lands resources through a partnership arrangement between BLM and the DPOR. It would provide DPOR with needed authority and responsibility to manage river-related public lands recreation in the planning area without encumbering that agency with multiple use management responsibilities. This combination ensures that the public is not disenfranchised from the public lands management process as provided for in the FLPMA. The BLM-DPOR partnership arrangement and a combination CMA/R&PP lease allows both agencies to work together.

Under the plan, R&PP leases would be entered into at identified developed recreation sites. These include the following potential sites.

Segment 1: Leadville to Buena Vista

- Railroad Bridge

Segment 2: Buena Vista to Salida

- Fisherman's Bridge
- Centerville
- Ruby Mountain
- Hecla Junction

Segment 3: Salida to Vallie Bridge

- Rincon

Segment 4: Vallie Bridge to Parkdale

- Lone Pine
- Pinnacle Rock
- Five Points
- Salt Lick
- Parkdale
- Spikebuck
- Bootlegger

Segment 5: Parkdale to Canon City

- Parkdale South

K. PLAN AMENDMENTS

Depending on visitor use monitoring efforts provided for in the plan, this plan may need to be revisited and amended. This does not mean that only actions specifically identified in the plan may be implemented. The type and degree of use envisioned in the plan, plus management objectives and recreation character class prescriptions will guide implementation actions. Management actions outside the scope of that framework will require a plan amendment. Such things as changes in carrying capacities; changes to the use patterns and volumes specified in this plan; and resulting changes in the type, location, or degree of resource, visitor, or facility management would require an amendment.

L. DEVELOPMENT OF REGULATIONS BY DPOR

Colorado's Administrative Procedures Act does not make specific provisions for coordination with other agencies. The CMA will outline a process for coordinating the development of such regulations with BLM and affected publics. The process will ensure their input in advance of DPOR's initial filing of the proposed regulations with the Office of Regulatory Reform and the Secretary of State.

M. CONTINUING ADVISORY/TASK FORCE INVOLVEMENT

The CMA will specify minimum acceptable requirements for the composition, size, and function of an advisory task force. It will also address the specific relationship of that group to BLM and DPOR.

N. PROCEDURES FOR IMPLEMENTING ALLOCATIONS

BLM policy already sets forth specific guidance on how to make use allocations, once carrying capacities have been reached and all indirect measures to accomplish intended management objectives have been exhausted. While the plan specifies carrying capacities and the percentages of use to be allotted to commercial and private boaters, it does not address the rationing process. Public land policy requires that all allocations adhere to the following criteria:

1) Manageability: Allocation methods must be workable, implementable, defensible to users, and within legal and budgetary constraints;

2) Flexibility: The method used must be responsive to the relative amount of use and to demand shifts;

3) Fairness and Equity: The method must be equitable and fair to the greatest extent possible and to all concerned;

4) Maximization of experiences and allowable use; and

5) Minimization of resource impacts and user conflicts.

The Handbook also specifies that methods for allocating use may include, but are not limited to:

1) Lottery: After applicants are screened to meet minimum standards, such as safety and past performance, those remaining applicants may be awarded a permit by a lottery system;

2) Historical Use: Assign the number of user days according to historic use records. This is defined as the average of the highest two seasons in the preceding 5-year period; and

3) Competitive System: After standards for desired services are established, invitations to submit proposals (either by open bid or matching bid) are extended to all operators. The proposals are then evaluated against the standards. Standards include, but are not limited to: financial capability, management experience, employee's experience, safety experience and training, previous performance evaluations, type and condition of equipment, and ability to meet desired user service needs. Those who rank the highest are awarded a permit and a specific number of user days.

Other BLM policies which must be adhered to when making allocation decisions are set forth in BLM Handbook H-8372-1 and Instruction Memorandum No. 87-690.

CHAPTER II

PREFERRED ALTERNATIVE

A. INTRODUCTION

The Preferred Alternative, a mix of the management options presented in the Draft Plan, sets the course for future recreation management on the Arkansas River. The Final Plan was developed under the premise that existing uses would be recognized and accommodated to the extent possible. It assigns management prescriptions and carrying capacities for all segments of the river corridor and for developed sites.

Due to the increase in Arkansas River recreation use, a major issue addressed by the Final Plan is the issue of direct management controls, including how much and what type of recreation use will be accommodated at what time. The plan provides for optimum levels of a variety of recreation uses on the Arkansas River while minimizing recreation user conflicts. This requires placing limits on activities which have the potential to eliminate other uses. When coupled with the other management prescriptions, the carrying capacities in this plan specify the maximum boating volumes which will allow other recreationists to continue enjoying the river.

The BLM and DPOR will ensure that a careful assessment is made of how visitor use dynamics interrelate with plan design prior to initiating direct use regulations. Elements of plan design (boating season dates, launch windows, etc.) that can be directly implemented by all commercial river outfitters will be implemented right away. They will be included "boiler plate" stipulations within each of DPOR's individual outfitter concession contracts (similar to BLM's Special Recreation Permits). River corridor and developed recreation site carrying capacities cannot be directly implemented in this way. Instead, use would be monitored use to be sure plan objectives are being met.

Before use allocation is undertaken, BLM and DPOR will carefully review all appropriate data to ensure that such regulations is not undertaken prematurely. If DPOR and BLM determine that it is necessary to raise or lower use limits prescribed by the carrying capacities in this plan, the plan will be formally amended and capacities will be adjusted. All amendments of the plan will require public involvement consistent with provisions of the Federal Land Policy and Management Act.

If it is determined that direct regulation is needed, specific procedures for allotting use within the prescribed capacities will be developed in accordance with BLM policy and with input from an Advisory Task Force, to be appointed. Those procedures would not require a plan amendment, rather they would be an addendum to this plan.

The Final Plan specifies management for the river corridor and provides for development of a CMA that will serve as the implementing contract. The plan will be implemented as a partnership between BLM and DPOR. Upon signing the CMA, the partnership agreement becomes effective and the plan becomes fully implementable. DPOR will be the single on-the-ground recreation manager, providing on-water and land-based recreation management throughout the planning

area. BLM will continue to manage other multiple uses and work with DPOR to ensure compliance with the provisions of the Final Plan and CMA. Both agencies will function as joint administrators in evaluating the adequacy of the plan, its implementation, and the need for future amendments.

B. AREAWIDE MULTIPLE USE GOALS

1. Livestock Use: Provide for continued utilization of forage, water, livestock fords, and trailing areas at current use levels through the planning area, except at intensively developed sites where enclosures are needed to prevent user/livestock conflicts. Meet allotment management needs for livestock watering.

2. Wildlife Management: Provide for continued wildlife habitat protection and improvement projects. Mitigate conflicts between recreation users and wildlife species to ensure their continued existence. Protect bighorn sheep habitat, and prevent user conflicts between bighorn sheep and recreation users.

3. Fisheries Management: Provide for continued protection of fisheries and aquatic habitat. Provide for improvement projects to reduce impacts from increasing river recreation use, existing heavy metals problems, potential sedimentation stemming from developments, and possible changes in water quality. Ensure compatibility of sports fishermen with other recreation users.

4. Threatened and Endangered Species: Provide for the conservation of Federal and State-listed plants, animals, aquatic ecosystems, and plant associations that are rare endemic, or threatened. Ensure that crucial habitats of threatened, endangered, and sensitive species are managed and/or conserved to maintain or expand their existence.

5. Wilderness Management: Protect the primitive values of adjacent wilderness study areas (WSA), and maintain existing opportunities for primitive and unconfined types of recreation. Ensure that all activities within WSAs are non-impairing to wilderness values.

6. Forestry: Maintain existing forestry resources to enhance recreation opportunities, not for consumptive uses.

7. Cultural Resources: Protect cultural resources from vandalism and development, both within and immediately adjacent to the planning area. Build an awareness and appreciation of cultural and natural history resources through visitor services (e.g., interpretation, information, etc.).

8. Visual Resources: Ensure that all facility developments are designed to be visually harmonious with adjacent environs.

9. Minerals: Minimize conflicts between fishermen, river boaters, and recreational gold panners and suction dredgers so that these uses can co-exist. Recognize valid existing and future commercial mining operations.

10. Land Use/Realty: Provide for existing rights and accommodate public needs for new rights-of-way within the planning corridor. Retain public lands within the corridor in Federal public ownership. Allow leases, permits, and easements as necessary to accomplish management objectives outlined in this plan. Acquire parcels which are needed to accomplish objectives through exchange or direct acquisition.

11. Soil and Vegetation: Stabilize natural and man-caused soil erosion and vegetation loss at developed recreation sites and other high-use areas. Incorporate wise soil and vegetation conservation practices into all new development projects.

12. Water: Protect in-stream water quality by providing adequate human and solid waste disposal facilities at all intensively used recreation sites.

13. Air: Maintain air quality standards throughout the corridor and maintain visibility standards adjacent to Browns Canyon Wilderness Study Area.

C. AREAWIDE RECREATION GOALS

The following goal statements reflect agency policies and mission statements. They also project a picture of what the future character of the river and its associated recreation opportunities will be.

1. Instill a wise river and public land use ethic in all users regarding river etiquette, respect for private lands, outdoor ethics, etc.

2. Develop an educational/interpretive program (for use at developed sites) to instruct users about resource use, special or unique aspects of the resource, outdoor ethics, and/or user etiquette.

3. Minimize adverse effects of recreation use and reduce conflicts between recreationists, other land users, and public and private landowners.

4. Reduce problems of river recreation user trespass on private lands, especially trespass related to river access.

5. Protect the rights of public land users to utilize public resources for a variety of multiple uses within and adjacent to planning area boundaries.

6. Gain a better understanding of the needs and requirements of public and private landowners along the river.

7. Protect the rights and property of the railroad where the line is within planning area boundaries.

8. Protect consumptive water users' rights and structures (e.g., work with irrigation districts, municipalities, etc.).

9. Ensure existing and future water uses consistent with the Colorado State Constitution and statutes.

10. Recognize that Federal and state highways and county and city roads provide the primary, and in some cases the only, means of access for residents, recreationists, and others who use the area.

11. Work with the Highway and Road Departments to recognize all Federal, state, county, and city roads as important components of the planning area; recognize that road design and condition are vital to the area's operation.

12. Improve coordination among local communities, the Governor's office, DPOR, and the Highway Department to integrate the management of state and Federal Highways with recreation management in the planning area.

13. Recognize the important role of Federal, state, county, and local government entities in road maintenance for visitor access and use.

14. Provide law enforcement capabilities and visitor services that are adequate to protect natural resources, private property, and visitor health and safety; fulfill management prescriptions in the plan in cooperation with local law enforcement agencies.

15. Provide adequate on-ground and on-river law enforcement authority and manpower to ensure that visitor management actions are properly implemented consistent with the objectives established for each river segment.

16. Pursue and implement cooperative agreements with local, county, Federal, and state agencies to provide adequate visitor services (wildfire control, emergency medical services, search and rescue operations).

17. Provide facilities in the amount, location, and character needed to provide for visitor health and safety and to facilitate use of the resource; provide facilities appropriate to the types of recreation being provided.

18. Protect the environment while allowing for a diversity of recreation opportunities.

19. Monitor the environmental effects of recreation use along the river and take corrective actions as needed.

20. Protect water quality through proper sanitation maintenance (sewage control) and facility design.

21. Protect Federal and state-listed threatened, endangered, and other species of concern.

22. Implement and collect user fees, based on a user pay philosophy, and return them to the recreation area for on-the-ground management.

D. SEGMENT-SPECIFIC RECREATION MANAGEMENT OBJECTIVES

Illustration II-1 is a summary of river corridor carrying capacities. Illustration II-2 displays river recreation management objectives specific to each of six river segments. The first column depicts the primary use or uses on each river segment. The differences from segment to segment represent tradeoffs made to provide for a variety of recreation uses and to reduce user conflicts. (Not all segments are equally suited for all kinds of recreation uses, and not all competing forms of recreation can occur with equal intensity without some severe user conflicts). Illustrations II-3 through II-8 graphically depict land status and the location of sites described in Illustration II-2.

Illustration II-1
CARRYING CAPACITIES BY SEASON BY SEGMENT

Segment	Primary Use	Location: From-To	Capacities BPD Priv.	Capacities BPD Comm.	Seasons	Windows
1A	FISHERIES REHABILITATION	Leadville-Granite	0	0	--	--
1B	PRIVATE BOATING	Granite-RR Bridge	350	30	5/15-L.Day	All rafts launch 8:30-11:00 am
			(200)	(10)	(LD-5/14)	All rafts launch 8:30-11:00 am
1C	MIXED BOATING	RR Bridge-Buena Vista	150	150	5/15-L.Day	--
			(100)	(50)	(L.Day-5/14)	--
2A	COMMERCIAL BOATING	Buena Vista-Big Bend	150	450	5/15-L.Day	--
			(100)	(50)	(L.Day-5/14)	--
2B	MULTIPLE USE RECREATION	Big Bend-Salida	150	150	5/15-8/14	Comm. Off River by 5:00 pm
			(30)*	(10)**	(8/15-5/14)	Comm. Off River by 5:00 pm
3	FISHING	Salida-Vallie Bridge	150	150	5/15-7/14	Comm. Off River by 5:00 pm
			(30)*	(10)**	(7/15-5/14)	Comm. Off River by 5:00 pm
4A	MULTIPLE USE RECREATION	Vallie Bridge-Texas Creek	100	150	5/15-8/14	Comm. Off River by 5:00 pm
			(30)*	(10)**	(8/15-5/14)	Comm. Off River by 5:00 pm
4B	MULTIPLE USE RECREATION	Texas Creek-Parkdale	150	300	5/15-L.Day	Comm. Off River by 5:00 pm
			(40)	(30)	(L.Day-5/14)	Comm. Off River by 5:00 pm
5	TECHNICAL WHITEWATER BOATING AND FISHING	Parkdale-Canon City	150	150	5/15-L.Day	--
			(75)	(30)	L.Day-5/14	--
6	SPECIALTY QUIET WATER w/ FISHING	Canon City-Pueblo Reservoir	35	35	Year-Round	--

Notes: River-wide commercial launch window is 8:30 am to 3:30 pm;
* numbers include private floatfishing trips.
** designates floatfishing capacities only.
( ) designates off-season.
L.Day is Labor Day weekend.

Segment	Primary Use with Subsections/Location	Recreation Character 1/ Class Prescriptions: On River Corridor	At Intensively Developed Sites	River Corridor Carrying Capacities 2/: Main Season	Off Season	Developed Recreation Site Capacities 2/: Site Name	BPD	BPH	BAOT	PAOT
1	Subsection A--FISHERIES REHABILITATION:									
	Leadville to Granite: - Recognize the need to reestablish/ improve fishing quality. - Do not allow commercial boating in this subsection.	Phys. - HR Soc. - ROC Mgrl. - ROC	Phys. - HR Soc. - ROC Mgr. - ROC	No Boating	No Boating	Spring Ck./Holmes Gulch Colo. Hwy. 82	-- --	-- --	-- --	25 ea. 50
1	Subsection B--PRIVATE BOATING:									
	Granite to Railroad Bridge: - Recognize value as prepmier technical white water run for private boaters; limit all raft use; recognize potential value for fishing; accommodate use while protecting resource character and quality.	Phys. - HR Soc. - ROC Mgrl. - ROC	Phys. - HR Soc. - ROC Mgrl. - ROC	5/15-Labor Day Total BPD: 380 - Priv.: 350 - Comm.: 30 Launch Windows: - All rafts 8:30-11:00 am - All other boats, None	Labor Day-5/14 Total BPD: 210 - Priv.: 200 - Comm.: 10 Launch Windows: - All rafts 8:30-11:00 am - All Other boats, None	East Clear Ck. Res. Pine Creek (USDA FS) Scotts Bridge (private) Above Rapid #4 Below Otero Pump Sta. Above RR Br. (TO only)	50 75 300a/ 205 175 125	7 10 48 28 23 16	7 10 48 14 12 8	12 15 175 100 84 56
	Subsection C--MIXED BOATING:									
	Railroad Bridge to Buena Vista: - Recognize value for both private and commercial boating. - Recognize private residences' and livestock operators' concerns. - Recognize economic development concerns of Buena Vista in the management of this segment.	Phys. - HR Soc. - ROC Mgrl. - ROC	Phys. - HR Soc. - ROC Mgrl. - ROC	5/15-Labor Day Total BPD: 300 - Priv.: 150 - Comm.: 150 Launch Windows: - Comm. Standard** - Pvt, None	Labor Day-5/14 Total BPD: 150 - Priv. 100 - Comm. 50 Launch Windows: - Comm. Standard** - Pvt, None	*Railroad Bridge Frog Rock (USDA FS)	265 245	33 31	16 16	180 125
2	Subsection A--COMMERCIAL BOATING:									
	Buena Vista to Big Bend: - Recognize value for a variety recreation uses; recognize con- - Recognize private property, livestock owners' concerns and associated quality of life concerns. - Accommodate increased use while protecting resource character/ quality. - Recognize the unique nature and requirements of the Browns Canyon WSA, and maintain public access to it. - Recognize premier recreational character and value of subsection. - Accommodate use while protecting resource character.	Phys. - ROC Soc. - HR Mgrl. - ROC	Phys. - HR Soc. - HR Mgrl. - HR	5/15-Labor Day Total BPD: 500b/ - Priv.: 150 - Comm.: 450 Launch Windows: - Comm. Standard** - Pvt, None	Labor Day-5/15 Total BPD:150 - Priv.: 100 - Comm.: 50 Launch Windows: - Comm. Standard** - Pvt, None	Buena Vista Johnsons Village *Fishermans Br.(public) Fishermans Br.(private) *Ruby Mountain: - boat access - lunch stops - campground - other rec. users Lunch use within Browns Canyon WSA *Centerville: - lunch stop campground Ten lunch stops from RR Bridge-Hecla Jct. (ea.) *Hecla Junction: - boat access - campground - other recreationists Seidels/Stone Bridge	400 75 100 225 125 75 -- -- 170 persons/day 36 40 14 350 -- -- 200	40 8 10 23 13 NA -- -- NA NA 35 -- -- 20	10 5 3 6 4 25 -- -- 12 40 5 9 -- -- 5	70 45 40 42 50 144 240 50 69 230 30 126 240 25 100

For Footnotes, see last page.

ILLUSTRATION II-2

Segment-Specific Objectives

Segment	Primary Use with Subsections/Location	Recreation Character 1/ Class Prescriptions: On River Corridor	Recreation Character 1/ Class Prescriptions: At Intensively Developed Sites	River Corridor Carrying Capacities 2/: Main Season	River Corridor Carrying Capacities 2/: Off Season	Developed Recreation Site Capacities 2/: Site Name	BPD	BPH	BAOT	PAOT
2	Subsection B--MULTIPLE USE RECREATION:									
	Big Bend to Salida: - Recognize private residences' and livestock operators' concerns. - Accommodate increased use while protecting characteristics of prime fishing resource with quiet-water boating potential. - Recognize economic development value for Salida.	Phys. - HR Soc. - ROC Mgrl. - ROC	Phys. - HR Soc. - HR Mgrl. - HR	5/15-8/14 Total BPD: 300 - Priv.: 150 - Comm.: 150 Launch Windows: - Comm. off river by 5:00 pm - Pvt, None	8/15-5/14 Total BPD: 40 - Priv. 30c/ - Comm. 10d/ Launch Windows: - Comm. off river by 5:00 pm - Pvt, None	Big Bend	175	18	5	66
3	No Subsections--FISHING:									
	Salida to Vallie Bridge: - Recognize high quality of trout fishery and wildlife values; primary focus is on non-boating river recreation use. - Recognize economic development concerns of Salida in the overall management of this segment. - Allow boating but with restrictions that will enhance the quality of fishing recreation opportunities. - Improve public access for fishing, boating, day use, sightseeing, and other shoreline recreation uses.	Phys. - HR Soc. - HR Mgrl. - ROC	Phys. - HR Soc. - HR Mgrl. - HR	5/15-7/14 Total BPD: 300 - Priv.: 150 - Comm.: 150 Launch Windows: - Comm. off river by 5:00 pm - Pvt, None	7/15-5/14 Total BPD: 40 - Priv.: 30c/ - Comm.: 10d/ Launch Windows: - Comm. off river by 5:00 pm - Pvt, None	Salida Salida East Private Land Launches *Rincon Alkali Gulch (camping)	475 150 75 75 50	48 19 10 10 NA	12 5 3 3 50	320 50 16 50 290
4	Subsection A--MULTIPLE USE RECREATION:									
	Vallie Bridge to Texas Creek: - Accommodate all recreation uses to the maximum degree possible so as to accommodate both commercial and private boating, high quality trout fishing, wildlife values, and other recreation opportunities.	Phys. - HR Soc. - HR Mgrl. - HR	Phys. - HR Soc. - HR Mgrl. - HR	5/15-8/14 Total BPD: 250 - Priv.: 100 - Comm.: 150 Launch Windows: - Comm. off river by 5:00 pm - Pvt, None	8/15-5/14 Total BPD: 40 - Priv.: 30c/ - Comm.: 10d/ Launch Windows: - Comm. off river by 5:00 pm - Pvt, None	Vallie Bridge Private Land Launches Short Creek *Lone Pine Fernleaf Gulch	275 225 -- 125 --	35 28 -- 16 --	9 7 -- 4 --	65 50 10 50 25

For Footnotes, see last page.

Segment	Primary Use with Subsections/Location	Recreation Character 1/ Class Prescriptions: On River Corridor	At Intensively Developed Sites	River Corridor Carrying Capacities 2/: Main Season	Off Season	Developed Recreation Site Capacities 2/: Site Name	BPD	BPH	BAOT	PAOT
4	Subsection B--MULTIPLE USE RECREATION:									
	Texas Creek to Parkdale: - Same as above in Subsection A, but recognize comparatively greater - boating potentials on this segment due to stream characteristics, greater amount of public lands, and more river access points. - Recognize that these features also make for greater capabilities for other recreation activities, notably for fishing, wildlife viewing, and roadside recreation.	Phys. - HR Soc. - HR Mgrl. - HR	Phys. - HR Soc. - HR Mgrl. - HR	5/15-Labor Day Total BPD: 450 - Priv.: 150 - Comm.: 300 Launch Windows: - Comm. off river by 5:00 pm - Pvt, None	Labor Day-5/14 Total BPD: 70 - Priv.: 40 - Comm.: 30 Launch Windows: - Comm. off river by 5:00 pm - Pvt, None	Texas Creek Maytag Devil's Hole Campground *Pinnacle Rock *Salt Lick *Five Points: - boating access - other day-use rec.e/ - campground Lower Floodplain *Spikebuck *Bootlegger	25 25 20 175 215 20 -- -- 8 42 15	3 3 NA 22 27 3 -- -- 8 7 6	3 3 20 22 14 2 -- -- 8 7 6	21 21 112 160 160 14 200 120 56 100 75
5	No Subsections--TECHNICAL WHITE WATER AND FISHING:									
	Parkdale to Canon City: - Recognize high quality/technical boating recreation within this segment. - Focus on improving fishing access.	Phys. - ROC Soc. - HR Phys. - ROC	Phys. - HR Phys. - HR Soc. - HR	5/15-Labor Day Total BPD: 300 - Priv.: 150 - Comm.: 150 Launch Windows: - Comm. - Standard** - Pvt, None	Labor Day-5/15 Total BPD: 105 - Priv.: 75 - Comm.: 30 Launch Windows: - Comm. - Standard** - Pvt, None	*Parkdale *Parkdale South	430	54	14	250
6	No Subsections--SPECIALTY QUIET WATER WITH FISHING:									
	Canon City to Pueblo Reservoir: - Provide for quietwater boating, floatfishing, birdwatching, and other recreation opportunities. - Focus on the need to protect the area's wildlife and resource characteristics, even if restrictions on recreation use are necessary. - Emphasize day use; protect the resources and area solitude by providing facilities to accommodate overnight use.	Phys. - ROC Soc. - ROC Mgrl. - ROC	Phys. - HR Soc. - ROC Mgrl. - ROC	Year-Long Total BPD: 70 - Priv.: 35 - Comm.: 35 Launch windows: - Comm. - Standard** - Pvt, None		Canon City Florence Campsites near Beaver Creek Pueblo Reservoir	345 60 2 35	43 6 NA 4	11 2 2 2	125 50 14 14

Footnotes:

1/ Phys. = Physical, Soc. = Social, and Mgrl. = Managerial recreation characteristics.
ROC = the Roaded Open Country character class; HR = the Highway Rural Character Class.

2/ BPD = Boats Per Day, BPH = Boats Per Hour, BAOT = Boats At One Time, and PAOT = Persons At One Time (may include other non-boating recreationists such as fishermen, roadside users, etc.).

a/ Estimated use.

b/ The synergistic effect of these component capacities are such that the resulting combined capacity is less than their sum. This segment will tend to self-regulate private boating use; at maximum commercial use levels, only a few private boaters will run. At lower commercial use, private boating use may even approach its component capacity ceiling.

c/ Numbers include private floatfishing trips.

d/ Designates floatfishing capacities only.

e/ Both north and south of highway.

* R&PP Sites

** Unless otherwise specified, all commercial launches must occur between the hours of 8:30 a.m.-3:30 p.m., there are no launch time limitations for any private boats on any segment except rafts in subsection 1B.

SEGMENT #1 — Leadville to Buena Vista

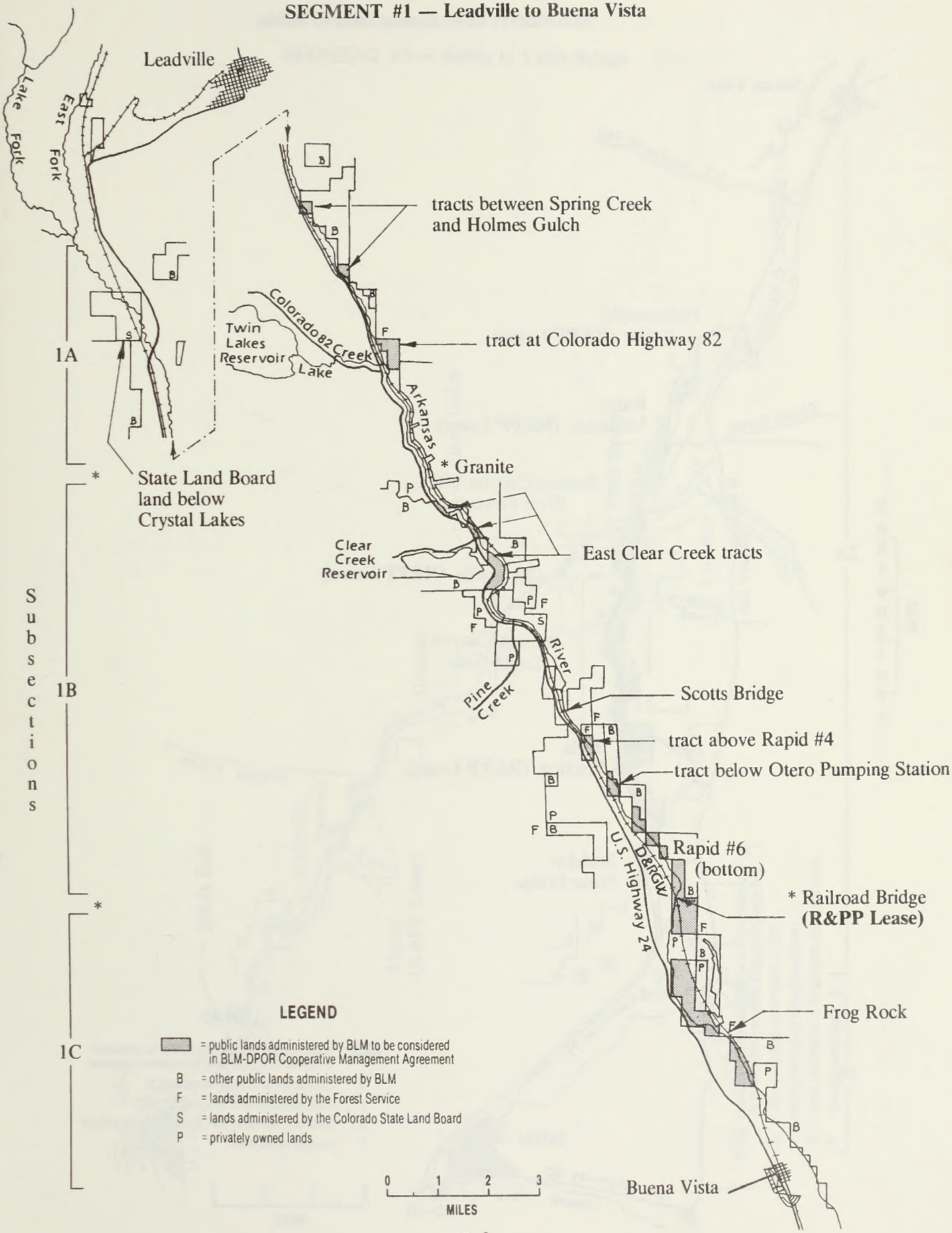


ILLUSTRATION II-4

SEGMENT #2 — Buena Vista to Salida

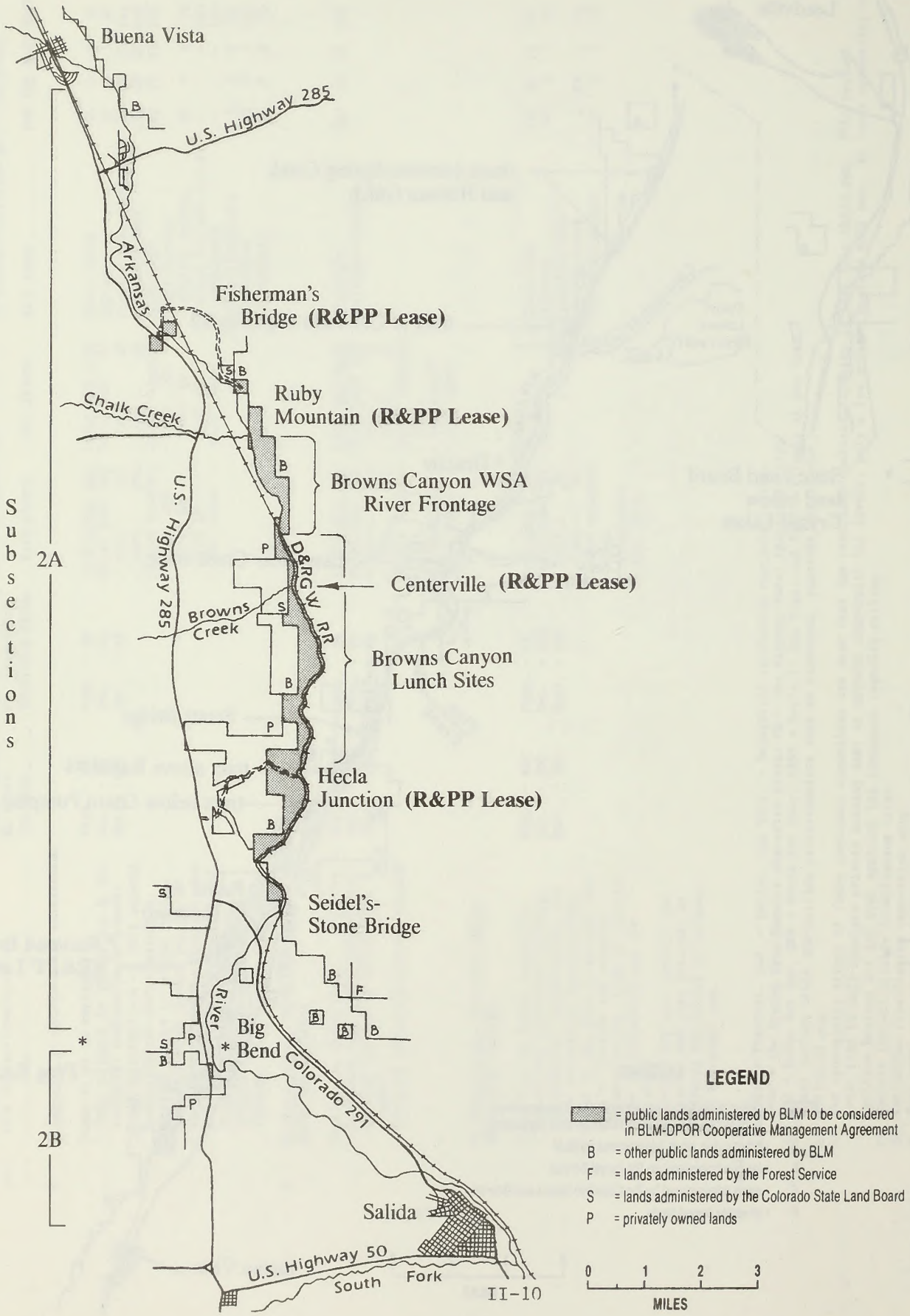
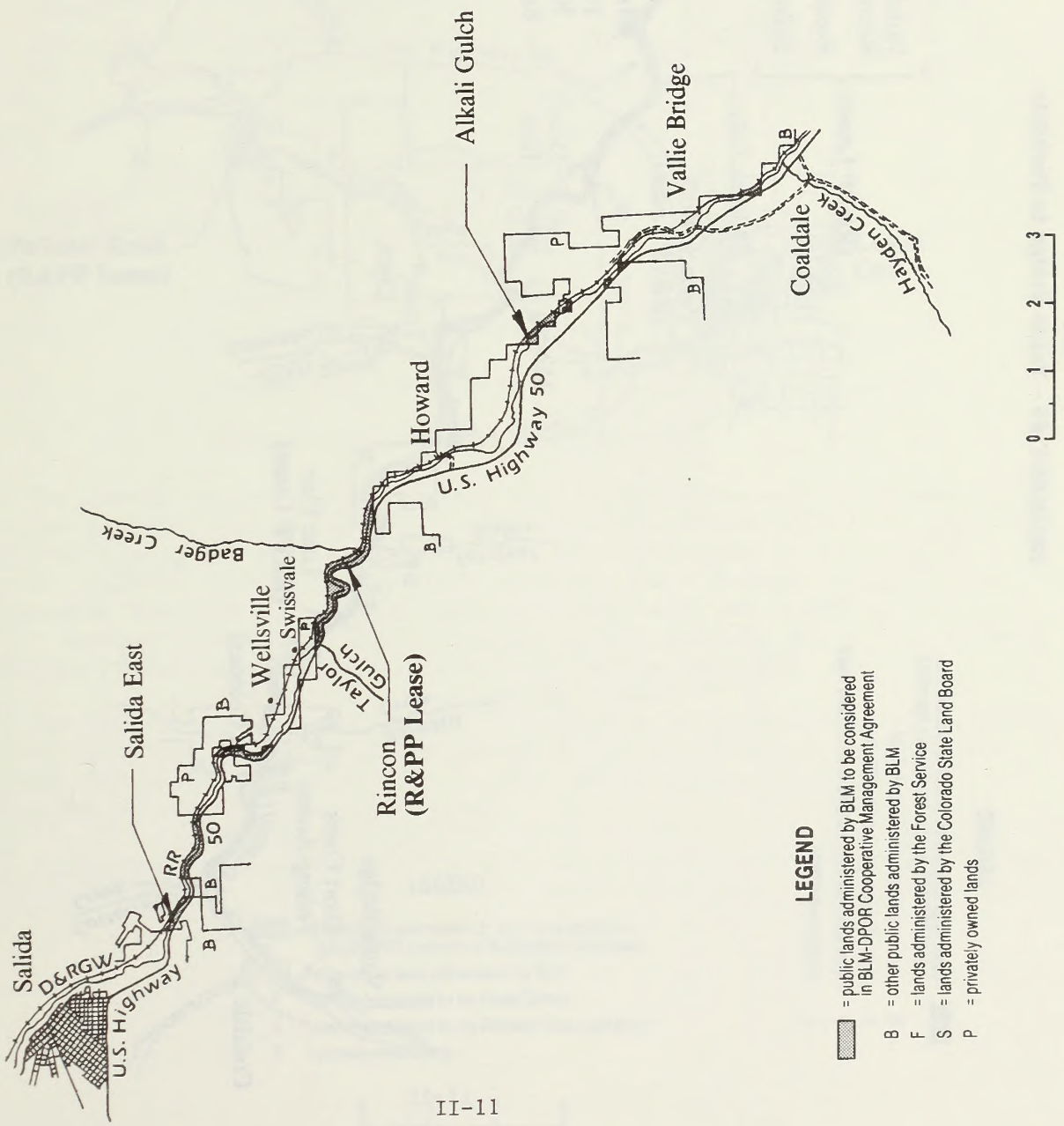


ILLUSTRATION II-5

SEGMENT #3 — Salida to Vallie Bridge



SEGMENT #4 - Vallie Bridge to Parkdale

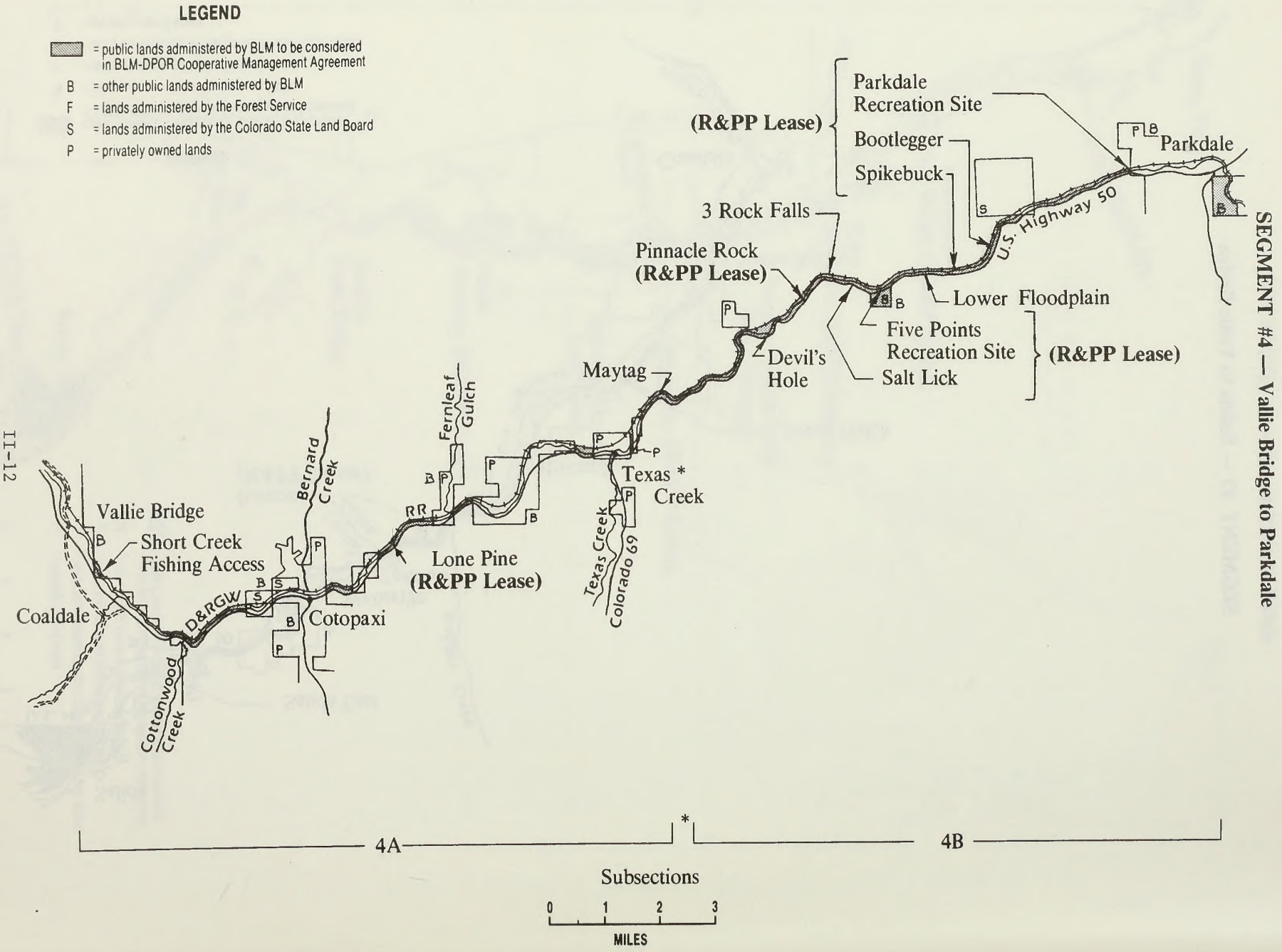
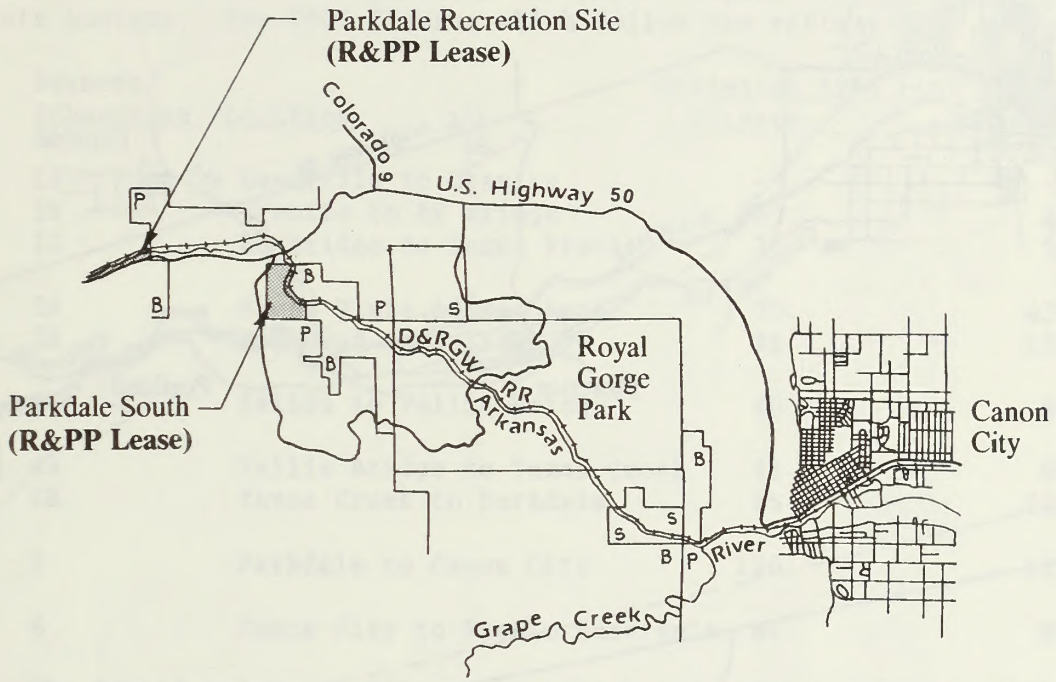


ILLUSTRATION II-7

SEGMENT #5 — Parkdale to Canon City



LEGEND

- = public lands administered by BLM to be considered in BLM-DPOR Cooperative Management Agreement
- B = other public lands administered by BLM
- F = lands administered by the Forest Service
- S = lands administered by the Colorado State Land Board
- P = privately owned lands

0 1 2 3

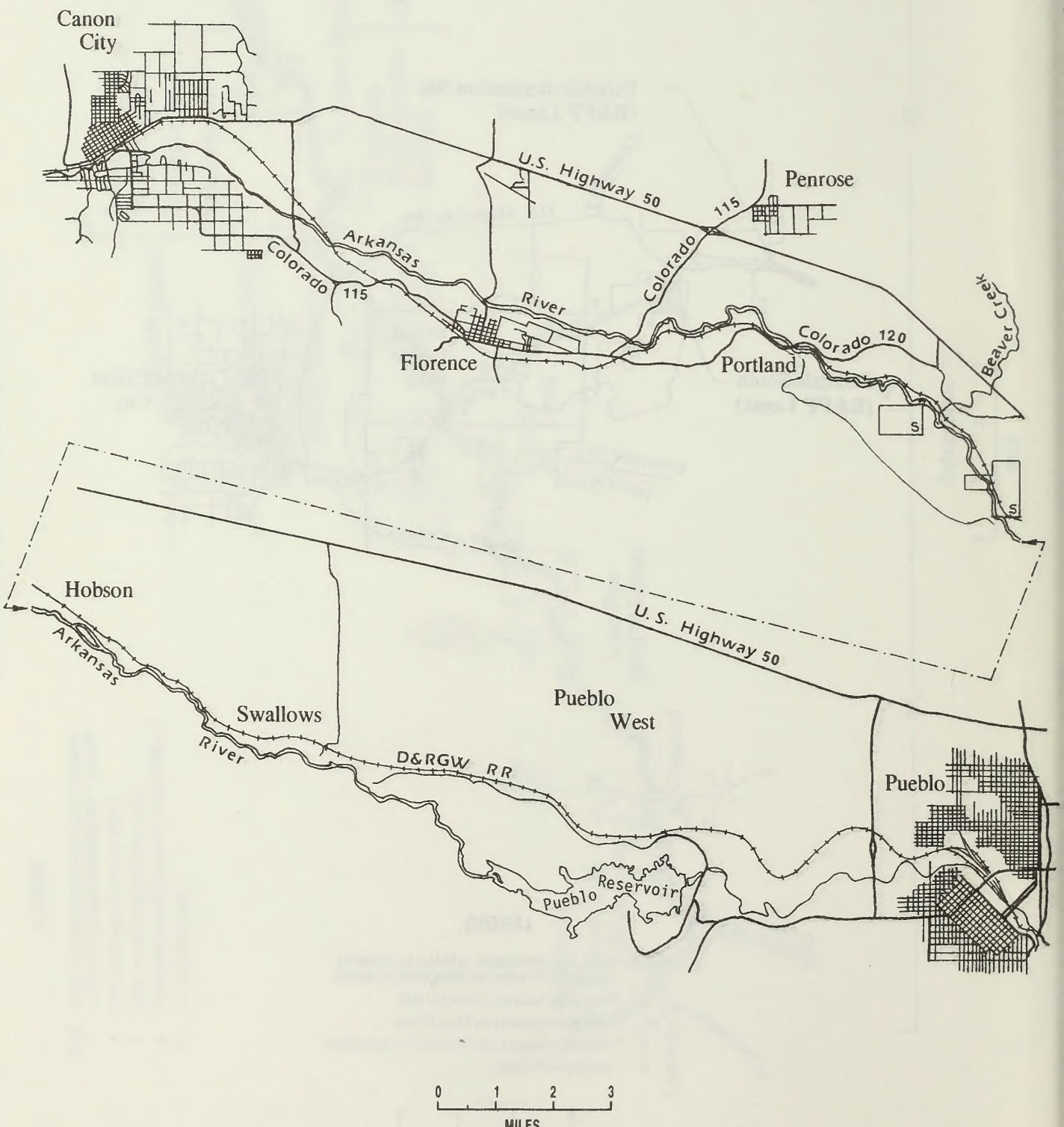
MILES

ILLUSTRATION II-8

SEGMENT #6 — Canon City to Pueblo Reservoir

LEGEND

S = lands administered by the Colorado State Land Board



The second column of Illustration II-2 depicts recreation character class descriptions. These are management objectives describing recreation settings to be provided. When used as management objectives, these classes prescribe intended characteristics of the land itself, its use by people, and how it is to be managed. See Illustration II-9 for a tabular description of the six standard recreational character classes. See Illustration II-10 for a graphic representation of the recreation character classes prescribed by the Preferred Alternative.

The third column of Illustration II-2 depicts boating carrying capacities for the river corridor. Capacities are listed separately for commercial and private boaters. The DPOR figures which follow are estimates of current use.

Segment/ Subsection	Location	Estimated 1988 Peak Use in BPD Private	Commercial
1A	Leadville to Granite	--	--
1B	Granite to RR Bridge	250	25
1C	RR Bridge to Buena Vista	75	50
2A	Buena Vista to Big Bend	75	430
2B	Big Bend to Salida	25	125
3	Salida to Vallie Bridge	40	90
4A	Vallie Bridge to Texas Creek	45	80
4B	Texas Creek to Parkdale	85	229
5	Parkdale to Canon City	120	125
6	Canon City to Pueblo Reservoir	NA	NA

The fourth column of Illustration II-2 establishes capacities for developed sites on public lands. It estimates the boating volume at other sites (municipal, private, etc.) needed to achieve boating capacities, boats-at-one-time (BAOT), on the river corridor. The passage of boats over time is also depicted in terms of boats per hour (BPH) and boats per day (BPD). Persons-at-one-time (PAOT) figures reflect all recreation use, boaters as well as fishermen and other shoreline recreationists.

The first two columns of tabular information in Illustration II-11 show the best available estimates of the amount of use which occurred during the 1987 and 1988 boating seasons. Assumptions and guidelines used in the development of these projections follow.

Projections of boating use from 1987 to 1997 were developed using a time series logistic model (Mahi and Thompson, 1973). The model takes the general form:

$$Y = \frac{M}{1+Be^{-Mkt}}$$

Recreational Character Classes

Intensively Managed/Very Heavy Visitor Use/Very Accessible, Facilities Dominate

I. Back Country	II. Walk-In	III. Semi-Primitive Motorized	IV. Roaded Open Country	V. Highway-Rural	VI. Developed-Urban
PHYSICAL CHARACTERISTICS (Land and Facilities):					
An undisturbed natural environment with few to no facilities.	A largely undisturbed natural environment with few facilities, hardly noticeable.	A largely undisturbed natural environment, providing few facilities, hardly noticeable.	A modified landscape, retaining its natural appearance and providing rustic facilities to protect the land and to ensure visitor safety.	A substantially modified landscape having both manmade and natural features, providing several facilities to manage and accommodate greater numbers of users.	Landscape dominated by roads and recreation facilities which are numerous and accommodate more intensive and specialized types of recreation activities.
SOCIAL CHARACTERISTICS (Visitor Use and Its Evidence)					
Very few to no contacts with other people and very little evidence of others.	Few but some contacts with other people and little but some evidence of other users.	Few but some contacts with other people and little but some evidence of other users.	Moderate use occurs so that contact with others is expected but not continual, with neither common nor dominant evidence of other users.	Moderate concentration of users and frequent, even continual, contact with others, with the evidence of other users being common.	High concentration of users and large numbers of people within the area and nearby, with evidence of other users being dominant.
MANAGERIAL CHARACTERISTICS (Management of the Land and Facilities, the Visitors and Other People):					
Almost no visitor management controls or regulations. Free of all land uses that noticeably affect the landscape. No motorized use is allowed.	Only a few visitor management controls or regulations are noticeable. Free of most land uses that noticeably affect the landscape. No motorized use is allowed.	Only a few visitor management controls or regulations are noticeable. Free of most land uses that noticeably affect the landscape. Motorized use occurs, usually only off-highway vehicles.	A moderate amount of visitor management controls and regulations are noticeable. Law enforcement personnel are sometimes visible. Land uses like grazing may be evident. Regular auto use as well as off-highway vehicle use occurs.	Several visitor management controls and regulations are very noticeable. Law enforcement personnel are moderately visible. Land uses like grazing, mining, and water developments may be present. Regular highway vehicles are allowed and common.	Numerous visitor management controls and regulations are in effect. Law enforcement personnel are highly visible. Intensive land uses may dominate the landscape. Regular highway vehicle use is allowed and is a dominant feature of the landscape.

Almost no Management/Extremely Low Visitor Use/Very Remote, No Facilities

RECREATION CHARACTER CLASS PRESCRIPTIONS FOR PREFERRED ALTERNATIVE

River Segment	Subsection		I. Back Country			II. Walk-in			III. Semi-primative Motorized			IV. Roaded Open Country			V. Highway-Rural			VI. Developed-Urban		
			P	S	M	P	S	M	P	S	M	P	S	M	P	S	M	P	S	M
1	A	River Corridor																		
		Developed Sites																		
	B	River Corridor																		
		Developed Sites																		
	C	River Corridor																		
		Developed Sites																		
2	A	River Corridor																		
		Developed Sites																		
	B	River Corridor																		
		Developed Sites																		
3	—	River Corridor																		
		Developed Sites																		
4	A	River Corridor																		
		Developed Sites																		
	B	River Corridor																		
		Developed Sites																		
5	—	River Corridor																		
		Developed Sites																		
6	—	River Corridor																		
		Developed Sites																		

Legend: P=Physical Characteristics (Land & Facilities)
S=Social Characteristics (Visitors & Others)
M=Managerial Characteristics (Management of the Land & Facilities. Visitors & Others)

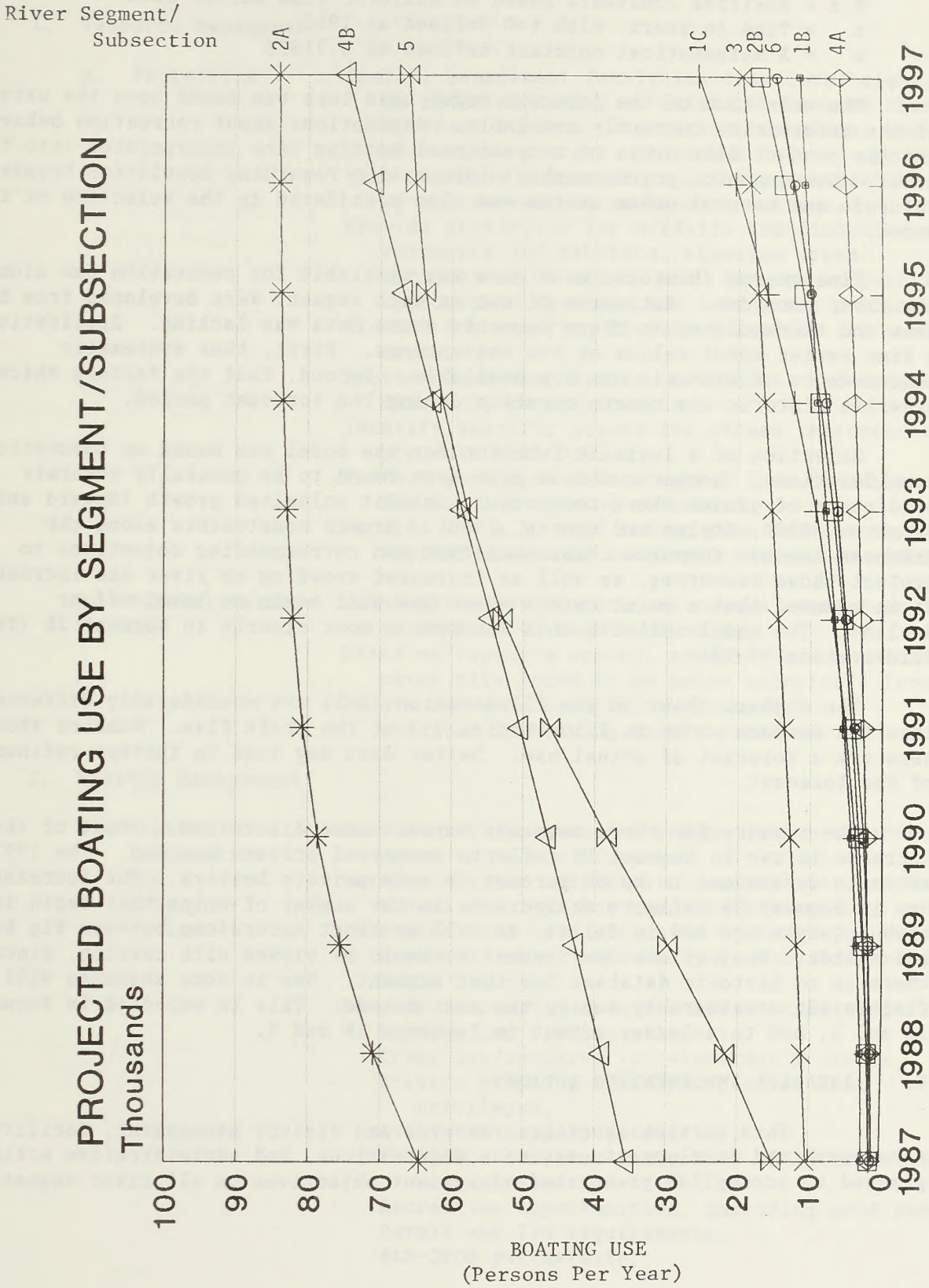
ILLUSTRATION II-11

Projected Boating Use in Persons by Segment/Subsection

Segment/ Subsection	Location	Year										
		1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
1A	Leadville-Granite	--	--	--	--	--	--	--	--	--	--	--
1B	Granite-RR Bridge	2,500	2,911	3,489	4,292	5,342	6,582	7,867	9,031	9,981	10,714	11,279
1C	RR Brdg.-Buena Vista	1,400	1,944	2,690	3,706	5,074	6,890	9,259	12,274	15,998	20,434	25,492
2A	Buena Vista-Big Bend	64,500	70,878	75,483	78,634	80,712	82,050	82,898	83,430	83,761	83,967	84,094
2B	Big Bend-Salida	1,500	1,947	2,522	3,259	4,197	5,382	6,866	8,702	10,939	13,619	16,761
3	Salida-Vallie Bridge	10,300	11,071	11,876	12,715	13,585	14,483	15,407	16,353	17,316	18,294	19,281
4A	Vallie Br.-Texas Ck.	1,500	1,721	1,974	2,263	2,592	2,967	3,393	3,877	4,425	5,045	5,743
4B	Texas Creek-Parkdale	35,500	39,009	42,690	46,518	50,466	54,500	58,585	62,684	66,757	70,768	74,682
5	Parkdale-Canon City	15,000	21,708	29,718	38,217	46,176	52,804	57,804	61,303	63,624	65,109	66,038
6	Canon City-Pueblo Res.	1,200	1,629	2,201	2,952	3,924	5,157	6,680	8,503	10,603	12,919	15,353
Totals:		133,400	152,818	172,643	189,556	212,068	230,815	248,759	266,157	283,404	300,869	318,723

ILLUSTRATION II-12

Projected Boating Use by Segment/Subsection



Y = Boating use
M = The overall capacity of the corridor or segment
B,k = Positive constants based on historic time series data
t = Time in years, with t=0 defined as 1982
e = A mathematical constant defined as 2.71828

The selection of the forecast model used here was based upon the nature of the information currently available. Assumptions about recreation behavior and the product life cycle of recreational boating were incorporated into the model. Demographic (psychographic) information regarding population trends in Colorado and several other states was also considered in the selection of the model.

Time series (historic use) data was available for recreation use along the river corridor. Estimates of use in each segment were developed from BLM data and extrapolated to those segments where data was lacking. Application of a time series model relies on two assumptions. First, that systematic measurements of historic use are available. Second, that the factors which underlie historic use remain constant during the forecast period.

Selection of a logistic function for the model was based on theoretical considerations. Logistic models have been found to be generally accurate predictors of growth where constraints inhibit unlimited growth (Howard and Crompton, 1980, Styles and Spotts, 1980). Growth constraints along the Arkansas include resource characteristics and corresponding objectives to protect those resources, as well as increased crowding as river use increases. It is assumed that a point exists where use will begin to level off or decline. The model reflects this assumption most clearly in Segment 2A (See Illustration II-12).

The numbers shown in the Illustration II-11 are considerably different than the numbers shown in Illustration V-3 of the Draft Plan. Numbers shown here are a forecast of actual use. Better data may lead to further refinement of the forecast.

The numbers for three segments warrant some discussion. Most of the increase in use in Segment 1B reflects increased private boating. The 1997 estimate is assumed to be 85 percent or more private boaters. The increase in use in Segment 2B reflects an increase in the number of trips that begin in Browns Canyon and end in Salida, as well as short excursions between Big Bend and Salida. Projections for Segment 6 should be viewed with caution, since there is no historic database for that segment. Use in some segments will flatten out considerably during the next decade. This is expected in Segments 2A and 5, and to a lesser extent in Segments 1B and 3.

E. AREAWIDE IMPLEMENTING ACTIONS

This section describes resource and visitor management, facility management and development, easement acquisitions, and administrative actions planned to accomplish prescribed management objectives on all river segments.

Component, Measure, Location	Area-Wide Actions
1. Resource Management	
a. Protection	Install management facilities (barriers, signs, etc.) at sites as needed to maintain resource character (prevent erosion, vegetation trampling, and littering, protect wilderness values, etc.) Make resource protection a primary consideration of all recreation management actions. Provide protection for wildlife and fisheries resources and habitats, riparian areas, archaeological sites, etc. through cooperation with appropriate agencies and interested publics. Provide for existing livestock fording and watering areas. Protect landowner fences, headgates, and wingdams from damage by recreationists. Identify specific points for stream improvement projects with DOW. Protect peregrine falcon eyries from disturbance using fencing and signing as needed. Provide for a 50-yard buffer zone between sheep habitat areas and developed recreation sites.
b. Rehabilitation	Rehabilitate vegetation and natural resources at sites identified through monitoring. Based on resource survey, rehabilitate or close any river site found to be below acceptable levels. Remove man-made hazards that have resulted in boating safety problems.
2. Visitor Management	
a. Visitor Information and Interpretation	Post recreation area and public land boundaries along river to reduce trespass. Develop visitor information, interpretive, and educational displays for resource protection, outdoor ethics, and user etiquette at developed sites and high use areas (especially at Ruby Mountain, and Hecla Junction). Develop recreation area brochures explaining: Boating and fishing etiquette, River use/conservation/stewardship ethics, Private property rights/recreation user privileges, Available support facilities, Available services and points of interest in communities, Recreation opportunities, including gold panning, Permit and fee requirements, BLM-DPOR partnership,

Component, Measure, Location	Area-Wide Actions
	Historic/cultural/ geological points of interest, Fisheries and wildlife features, Multiple use resource management highlights, and Recreation and wildlife regulations. Include in all visitor information brochures suggestions on how to minimize the negative effects of noisy, rowdy boaters and other user groups on-river and at public and private campgrounds. In areawide users guide, provide maps showing recreation prescriptions for each segment, including available types of recreation and the settings in which each occurs. Post information signs/displays at access sites discussing: Boating and fishing etiquette, River use/conservation/stewardship ethics, Private property rights/recreation user privileges, Available support facilities, Available services and points of interest in communities, Recreation opportunities, including gold panning, Permit and fee requirements, BLM-DPOR partnership (at highway entrance signs to major recreation sites), Historic/cultural/geologic points of interest (work with local organizations to identify those points), Fisheries and wildlife features, Multiple use resource management highlights, and Recreation and wildlife regulations. Initiate an interpretive ranger program for the area focusing on resource, user, and area management interpretation and user ethics (e.g., Browns Canyon). Provide warning signs for boaters about dangerous rapids and river dangers (especially Seidels, Three Rocks, and rapids below Parkdale within the Gorge), re-bar in Devil's Hole and in the Gorge, and the low head dams at the Pink House and near Florence; Provide for portage and/or scouting at these locations where feasible. Post signs warning of flash flood dangers, especially at Chalk Creek, Badger Creek, Bernard Creek, and Texas Creek. Provide user ethics information on wildlife viewing to prevent human disturbance of wildlife.

Component, Measure, Location	Area-Wide Actions
b. Indirect Controls	Treat management problems through education and cooperation with user groups (including self-policing); develop and enforce specific regulations if problems persist; enforce standard public lands and State Recreation Area regulations. Provide information to recreationists about individual property rights and the location of public facilities and services. Provide easy access to rules and regulations for river users; distribute through brochures, bulletin boards, information boxes, ranger stations, local chambers of commerce, and tourist information centers. In addition to studies (see below), when use in any segment reaches 75 percent of prescribed capacities on more than five days per season, initiate a user education effort explaining that capacities are being reached and encouraging use of other river segments offering similar types of recreation in order to postpone direct use regulation as long as possible. Ensure that adequate facilities exist to accommodate both commercial and private boater needs at high use areas. Employ selective facility design at developed sites to keep use within established capacities before resorting to direct regulation. Phase-in facility development as needed to achieve resource protection and to accommodate user needs. Ensure that facility design of roads, parking areas, and campgrounds in particular accommodates only the types and amounts of uses planned at specific sites, so as not to create overuse problems. Locate and design additional sites concurrently to disperse use along the corridor (in space and time) and to reduce crowding at key sites. Use signs and brochures to educate boaters to use one channel (to allow fisherman use along one bank) where feasible. Encourage users to respect quiet zones in residential areas.
c. Direct Controls	Authorize established events (those that have occurred prior to this plan) by special permit (e.g., FIBARK, World Cup, moonlight trips): they may exceed carrying capacities. Decisions on new event proposals are discretionary, must be consistent with management objectives, and must fit within established carrying capacities.

Component, Measure, Location	Area-Wide Actions
	Require all commercial outfitters, as a condition of obtaining river permits, to send all boatmen/guides to an annual DPOR-sponsored user ethics workshop dealing with noise and other environmental quality issues; include noise prevention stipulations as part of all State River Outfitter Licenses for the Arkansas.
	Enforce regulations to prevent animal/wildlife harassment along the river; enforce dog leash regulations within developed recreation areas; implement special regulations to address firearm use at developed sites.
	Do not allow camping in floodplain areas.
	All commercial boating launches on all dates will be between the hours of 8:30 a.m. to 3:30 p.m., except as provided in segment-specific objectives and for after hours floatfishing below.
	Authorize after hours commercial floatfishing only under the following conditions: A special DPOR permit, The required fishing outfitters registration, A maximum of four licensed (fishing) clients per boat, and No such trips to be allowed on Segment 1A, 20 BPD on Segment 2, and 10 BPD on all remaining segments.
	Whenever use on any one river stretch exceeds 75 percent of capacities established for the commercial or private sector five times in any one season, BLM and DPOR will begin to determine how allowable use will be assigned within that sector. This determination will be made: According to then current BLM public lands policies, As an addendum (not amendment) to this plan, With opportunity for public and Advisory/Task Force review and comment provided, Including assignment of launch times and group/party size specifications as appropriate.
	Exceeding prescribed carrying capacities more than five times in a season will trigger use allocation the following year for the affected stretch of river.
	The allocation system may be discontinued at the discretion of BLM and DPOR: If demand falls short of available capacity for two consecutive seasons for any river stretch, or If, through improved utilization of key access sites or the river corridor itself, it is determined that capacities established in this plan need to be raised and the plan is amended.

Component, Measure, Location	Area-Wide Actions
	At the time use allocations are implemented on each segment, place limits on maximum numbers of boats per group and on launches in each segment to reduce crowding and congestion, promote visitor safety, and enhance resource appreciation.
	Incorporate as minimum requirements to all outfitter permits or concession agreements the list of standard stipulations under which outfitters have been operating on the public lands in the past.
	When one sector of the boating population (i.e., private or commercial) reaches its prescribed carrying capacity ceiling, it will not be allowed to take over unused capacity from the other sector.
	Allow access for hunting on all public lands except developed sites.
	Motorized watercraft use by special permit only.
	Lands managed by the Colorado DOW remain subject to specific regulations; no camping or boater ingress/egress allowed.
	Minimize the threat of hazardous material spills by working with Highway Department, railroad, and other responsible agencies.
d. Permits and Concessions	The user fee structure will be reviewed annually by BLM & DPOR, and a new fee structure will be devised if necessary to comply with BLM management and Parks Board policies.
	Commercial fees for public lands use will be consistent with BLM fee policies (the determination of this amount may use a more simple formula).
	Fees will be charged at developed (R&PP) sites, consistent with Parks Board policy; this will include an entrance fee (daily vehicle, annual, or walk-in pass) and in addition may include camping fees, special use fees (e.g., group sites), and other standard fees (e.g., reservations).
	Fees for private boating will not be charged for use of the river surface, nor will fees be required for use of sites that are not designated as fee areas.
	Whether or not additional fees will be charged commercial users (e.g., on-water use) will be studied by DPOR; if warranted, new or additional fees may be charged.
	All fees collected for the use of public lands will be used for recreation management of the public lands.

Component, Measure, Location	Area-Wide Actions
e. Emergency Services	Develop an emergency communication system between DPOR, BLM, and county/local agencies to alert them of wildfire emergencies. Develop an emergency communication system between DPOR, BLM, and county/local agencies to alert them of search and rescue operations. Work with Highway Department, railroad, county, and local government concerning transport of hazardous materials; especially work with the four counties involved in potential hazardous material emergencies (i.e. HAZMAT Contingency Planning). Develop an emergency communication system between DPOR, BLM, and county/local agencies to alert them of emergency medical service operations. Identify all floodplains; rate recreation area flood hazards; manage to minimize danger to the human environment. Implement a flood prediction and early warning system coupled with evacuation plans and identification of "safe" areas. Cooperate with responsible agencies/entities (emergency preparedness, law enforcement, etc).
3. Facility Management and Development	
a. Site Development	
1) Corridor	Develop hiking and biking trails on public lands and other lands administered by DPOR. Develop new fishing access points and facilities necessary to accommodate use; cooperate with DOW, etc. If separate sites/facilities for commercial and private users are developed, ensure those facilities are equitable. Maintain Class II VRM zone prescriptions in all site development plans; ensure facilities blend with the adjoining landscape. Conduct cultural inventories of areas subject to increased use and physical disturbance; mitigate adverse impacts.
b. Maintenance	Regularly maintain all developed and undeveloped public lands areas; meet public health and safety standards.
4. Access and Easement Acquisition	Acquire properties and easements to improve public river access for fishing and other recreation. All acquisitions will be with willing sellers. No eminent domain or right of condemnation authority will be used by DPOR.

Component, Measure, Location	Area-Wide Actions
5. Administration	DPOR intends to manage all river related public lands recreation on a user funded basis as much as possible. This means they will rely principally on user fee revenues to cover administrative costs. If these revenues are inadequate, they will seek to acquire supplemental funding through the lottery or general appropriations.
a. Coordination	
DPOR	Ensure fee schedule and special regulations are coordinated with BLM and all affected publics before they are established or promulgated.
BLM/DPOR	Annually review plan implementation with DOW for consistency with plan prescriptions; annually evaluate the adequacy of plan prescriptions. Review resource monitoring methodology annually.
DOW	Cooperate with DOW with respect to wildlife and wildlife management considerations. Work with DOW to reestablish/maintain fisheries and fishing access.
Advisory/ Task Force	Review resource trends, visitation, conflicts, and plan implementation.
Other	Work with other agencies to make water quality improvements. Work with railroad to reduce pedestrian/train incidents. Work with local law enforcement agencies to address problems with trespass, lewd behavior, animal harrassment, illegal use of firearms, etc.; cooperate fully to assist local law enforcement efforts with recreation problems. Work with local government organizations to keep them appraised of changes in area management and recreation use and to keep abreast of actions and developmental work they might be undertaking. Work with Highway Department to provide information signing about services, facilities, special rules, opportunities, that are available in communities along the river or elsewhere, etc. Work with the Highway Department to develop and improve road access at appropriate sites.

Component, Measure, Location	Area-Wide Actions
	Work with the Highway Department and counties in using standard safety highway engineering principles to reduce the probability of accidents, traffic congestion, blind spots, slow moving vehicles, and pedestrian traffic near highways. Developed recreation sites should be accessed by acceleration/deceleration and turning lanes. Road realignment and widening U.S. Highway 50 to four-lanes in Segments 3 and 4 should be considered where feasible to eliminate blind spots and increase visibility. Pedestrian trails and wildlife turnouts should be located so through traffic is not impeded and visibility is not reduced (i.e., R&PP lease areas). Implement cooperative arrangements with local, county, Federal, and other state agencies to provide for adequate visitor services and to identify the responsible agency for initial attack and fire suppression on public land wildfires. Pursue and implement cooperative agreements for response to search and rescue emergencies with appropriate local, county, Federal, and state agencies. Pursue and implement cooperative agreements for the provision of emergency medical services with appropriate local, county, Federal, and state agencies/organizations. Cooperate with Highway Department to solve highway safety problems.
b. Studies/ Monitoring	On an annual basis develop user counts for established sites and on-surface use of the river. Build a user preference survey into the monitoring program for the river; monitor visitor preferences and perceptions regarding public visitation. Provide for a fish creel census and electrofishing study to determine fish biomass, density, growth, and condition factors for the river corridor; work with DOW. Incorporate fish creel census, electrofishing, and bighorn sheep evaluations into the overall monitoring program. Request that DOW establish appropriate procedures for monitoring bighorn sheep and fish population effects. Inventory all riparian areas; identify those that require special protection; establish appropriate protective measures. Identify areas where erosion/water quality problems can be alleviated (e.g., Segment 1A and Badger Creek). Inventory for T&E plant species that are known to occur in the river corridor prior to surface disturbing actions (e.g., Big Bend).

Component, Measure, Location	Area-Wide Actions
	Replicate representative sampling of boaters, fishermen, and other shoreline users (using the 1981 and 1987 National River Recreation Study Methodology) during the first three years of plan implementation.
	Work with Colorado Department of Local Affairs, local governments, and other appropriate entities (academic, etc.) to monitor and analyze economic and population impacts of recreation use on the local area.
	Work with Colorado Department of Local Affairs to help local communities obtain assistance in order to minimize impacts of recreation on the area's infrastructure.
c. Supplemental Staffing/ Special Programs	Seek volunteer help in completing stream improvement projects.
	Work with local service groups/schools in cooperatively developing and placing signing/interpretation.
	Monitor sanitation problems and, if necessary, require commercial operations to provide on-river sanitation facilities.
	DPOR's target Table of Organization will include a permanent workforce of up to four people and an estimated 10-15 seasonals by 1997.

F. SEGMENT-SPECIFIC ACTIONS

This section presents segment-specific implementing actions for each of the six river segments. These segment-specific actions are prescribed in addition to the areawide actions. Asterisk (*) indicate potential R&PP lease sites.

Component, Measure, Location	Segment-Specific Actions
Segment 1: LEADVILLE TO BUENA VISTA (See Illustration II-3.)	
1. Resource Management	
a. Protection	Protect large cottonwood trees along the river corridor for use as bald eagle perch/roost sites.
b. Rehabilitation	Work with DOW/EPA to reduce heavy metal pollutants. Reestablish a quality fishery in Segment 1A.
2. Visitor Management	
a. Visitor Information and Interpretation	Post informational signs.

Component, Measure, Location	Segment-Specific Actions
b. Indirect Controls	(See Areawide Actions).
c. Direct Controls	From Railroad Bridge to Buena Vista, limit all lunch stops to designated sites.
3. Facility Management	
a. Site Development:	
Crystal Lakes	Develop fishing access & toilet facility.
Between Spring Creek/Holmes Gulch	Provide fisherman access.
At Colo. Hwy. 82	Develop fisherman access and toilet facility.
East Clear Creek	Develop fisherman access.
Pine Creek Rapid	Develop boater access points.
Above Rapid #4	Develop boater/fishing access and sanitation (toilet and trash) facilities.
Below Otero Pumping Station	Provide fisherman and boater access and support facility development.
Railroad Bridge* 65 ac	Develop boater/fishing access, sanitation, walk-in Class D camping, 30+ tent sites, 30 car parking area.
Frog Rock	Develop boater/fishing access, toilet, and 15 car parking area (on National Forest).
b. Maintenance	(See Areawide Actions).
4. Access and Easement Acquisition	Acquire land near Pine Creek and other appropriate areas for boating/fishing access.
5. Administration	
a. Coordination	
Forest Service	Work with Forest Service to ensure uniform river recreation management strategies on the parcels of National Forest adjacent to the river.

Component, Measure, Location		Segment-Specific Actions
	Others	Work with the EPA/other agencies on Superfund cleanup of the river and tributaries. Work with agencies/organizations (EPA, USGS, DOW, Department of Health, etc.) for water quality improvements and to monitor water quality consistent with appropriate statutes.
b.	Studies Monitoring	(See Areawide Actions)
c.	Supplemental Staffing Special Programs	(See Areawide Actions)

Segment 2: BUENA VISTA TO SALIDA BRIDGE (See Illustration II-4.)

1. Resource Management

a.	Protection	All river-related use bordering Browns Canyon WSA will be managed in accordance with BLM's wilderness study area interim management guidelines. Within the Browns Canyon WSA, protect resources consistent with BLM's management prescription (e.g., prevent erosion, vegetation trampling, littering, etc.). Neither areas nor facilities within the Browns Canyon WSA will be developed; emphasize use dispersion and pack-out of all waste. Establish quiet zone in areas where great blue herons are concentrated. Protect large cottonwood trees along the river corridor for use as bald eagle perch/roost sites. Eliminate livestock/recreation conflicts at Hecla; maintain stock access for river watering; complete boundary fence when needed to avoid user-livestock conflicts. Identify other areas for special protection. Conduct Class I paleontology inventory prior to surface disturbing activities, especially in the Big Bend Area (Dry Union Formation). In Browns Canyon, restrict public use east of the river to the areas between the river and railroad tracks to avoid sheep disturbance (May 15-July 14). Conduct inventory for Eriogonum brandegei prior to surface disturbance (e.g. Big Bend Area).
b.	Rehabilitation	Maintain and improve fisheries quality; coordinate with DOW. Identify specific points for stream improvement projects with DOW. Revegetate/rehabilitate areas at Hecla and other sites, consistent with developments shown below. Develop/implement drainage control plan at Hecla.

Component, Measure, Location	Segment-Specific Actions
2. Visitor Management	
a. Visitor Information and Interpretation	Post informational signs. Develop interpretive program about Browns Canyon WSA. Distribute BLM brochures and information about the WSA and other BLM lands/recreation resources. Inform public of BLM's responsibilities within the WSA and on other BLM lands. Provide information about dispersed/low impact use of WSA, (i.e., pack-in/pack-out).
b. Indirect Controls	Improve traffic flow at Hecla by signing and providing ranger assistance on heavy use days (weekends and holidays during boating season).
c. Direct Controls	Limit overnight river use to developed sites. From Ruby Mountain to Seidels/Stone Bridge, limit all river lunch stops to designated sites.
3. Facility Management	
a. Site Development	
Corridor	Develop scouting locations where appropriate, without trespassing on RR/other private property.
Buena Vista	Assist with completion of boat chute. Work closely with community to make Buena Vista a river access site. Provide boater/fishing access, sanitation (toilet and trash) facilities, changing facilities, picnicking, hiking/biking/nature trails, other day uses, parking, and traffic controls. Assist in the development of Cottonwood Creek/Marquard Nature Area.
Fishermans* Bridge 40 ac	Improve site; add more sanitation; upgrade access; provide change facilities.
Ruby Mountain* 40 ac	Upgrade access road; develop rockhounding/boater/fishing access, sanitation (toilet and trash) facilities, changing facilities, Class C camping 40+ sites (no sewer dump/electric hookup), drinking water, picnic facilities, hiking/nature trails, other day uses, parking, traffic controls, and vehicle barriers to protect WSA. Maintain fee-free WSA access consistent with BLM management policy. Protect private property owners' rights.

Component, Measure, Location		Segment-Specific Actions
	Browns Canyon below RR Bridge	Provide 10 lunch stops on west side of river (toilets but no camping), site hardening as necessary to accommodate use and reduce environmental degradation, and fire rings; pack-in/pack-out all trash, etc.
	Centerville* 2 ac	Provide river/shoreline access to site; provide Class D campsite on west side of river with 40+ sites, toilets, hiking trails, picnic tables, and lunch areas; pack-in/pack-out trash. Acquire public vehicle access for fishing.
	Hecla Junction* 90 ac	Improve resource protection, boater/fishing access, and sanitation; develop changing facilities, Class C camping 40+ units (no sewer dump/electric hookup), drinking water, picnicking, hiking/nature trails, parking, and handicap accessible nature trail; provide for picnicking and traffic controls.
	Seidels/Stone Bridge	Develop boater/fishing access, sanitation, changing facilities, parking, and provide for other day uses.
	Big Bend	Develop fishing/boating access; provide sanitation, parking, and picnicking facilities; provide traffic controls.
	Other Sites	Support DOW efforts to develop better fisherman access along this segment below Seidels/Stone Bridge, especially access contiguous with existing DOW leases.
b.	Maintenance	(See Areawide Actions).
4.	Access and Easement Acquisition	
a.	Segment 2A	Identify and acquire lands for additional public river access; coordinate with Buena Vista. Acquire an additional site either above or below Fishermans Bridge for public access and day use. Acquire additional lands for public recreation use (day use, rock hounding, etc.) near Ruby Mtn. Acquire public fishing/administrative easement to Centerville. Acquire access to public lands in the Seidels'/Stone Bridge area.
b.	Segment 2B	Acquire site near Big Bend for public access. Work with DOW to develop new fishing access/easements.

Component, Measure, Location	Segment-Specific Actions
5. Administration	
a. Coordination	
DPOR/BLM	Ensure river management and use consistent with Browns Canyon WSA management and prescriptions.
DOW	Work with DOW for fishing access, fishing quality, and fisherman needs. Work with DOW on other hunting/fishing/wildlife considerations.
Others	In Segment 2A, work with county law enforcement officers to correct problems with boaters changing clothes at Johnsons Village. In Segment 2B, work with county to improve safety problems at Stone Bridge.
b. Studies Monitoring	Annually monitor resource quality in the portion of the WSA used by river recreationists. Monitor the quality of fisheries; cooperate with DOW. Complete an inventory for Eriogonum brandegei in the Big Bend area to determine distribution prior to surface disturbance.
c. Supplemental Staffing/ Special Programs	Seek volunteer help for campground hosts at sites such such as Ruby Mtn. and Hecla Junction; seek volunteer help for trail work in this segment. Seek volunteer help in completing stream/fishing improvement projects.
Segment 3: SALIDA TO VALLIE BRIDGE (See Illustration II-5.)	
1. Resource Management	
a. Protection	Protect quality of fishing resource while working to maintain resource character. Conduct Class I survey for paleontological resources prior to surface disturbing activities (Dyer Dolomite, Parting Quartzite, Sangre de Cristo and Dry Union Formations).
b. Rehabilitation	Restore Gold Medal fisheries status of segment. Maintain and improve fishery quality; work with DOW. Identify specific points for stream improvement projects with DOW.
2. Visitor Management	
a. Visitor Information and Interpretation	Post informational signs. Post information signs warning of flash flood dangers (e.g., Badger Creek).

Component, Measure, Location	Segment-Specific Actions
b. Indirect Controls	Provide on-the-ground visitor awareness information and education through signing, brochures, etc. Allow unlimited private boater use between Salida boat ramp and Salida East as an exception to corridor capacities; no restrictions on season, and no launch windows.
c. Direct Controls	Allow only private boater take-out at the Salida East recreation site.
3. Facility Management	
a. Site Development	
Corridor	Provide vehicle pullouts for viewing watchable wildlife; identify with assistance from DOW. Do not develop river accessible wildlife viewing areas in critical habitat areas; work with DOW to identify.
Salida	Work closely with community to develop Salida as river access site. Provide fishing/boater access, sanitation (toilet and trash) facilities, changing facilities, and picnic facilities; provide for hiking, biking, and other day uses; provide parking, and traffic controls.
Salida East	Provide fishing access and private boater takeout only (no commercial use), and sanitation facilities.
Rincon* 8 ac	Develop and manage the Rincon area to provide non-boating river-related Class C camping and day use in the general area to accommodate fishing use. Work with Highway Department for acceleration/deceleration lanes, more passing lanes, and road realignment to reduce blind spots and poor visibility.
Alkali Gulch	Develop and manage the Alkali Creek area for fishing access and to accommodate limited river accessible Class D camping.
Vallie Bridge	Develop fishing/boating access and sanitation facilities.
Other Sites	Support DOW efforts to develop better fisherman access, especially access contiguous with existing DOW leases. Develop additional day-use site along this segment (not yet identified). Cooperate with Highway Department to improve highway access at Salida East, Rincon, and Badger Creek.

Component, Measure, Location	Segment-Specific Actions
b. Maintenance	(See Areawide Actions).
4. Access and Easement Acquisition	Promote new fishing easement north of Vallie Bridge; work to acquire access to Alkali Gulch and at other sites. Acquire site at Vallie Bridge for fishing and boating. Work with DOW to develop new fishing access/easements.
5. Administration	
a. Coordination	
DOW	Work with DOW on fishing access, fishing quality, and fisherman needs. Work with DOW on other hunting/fishing/wildlife considerations.
Others	Work with Salida to provide parking, day-use, and changing facilities. Solicit recommendations from Highway Department on solutions to safety problems.
b. Studies/ Monitoring	Monitor the quality of fisheries; cooperate with DOW.
c. Supplemental Staffing Special Programs	Seek volunteer help in completing stream/fishing improvement projects.
Segment 4: VALLIE BRIDGE TO PARKDALE (See Illustration II-6.)	
1. Resource Management	
a. Protection	Protect wildlife resources within this segment.
b. Rehabilitation	Maintain and improve fishery quality; work with DOW. Stabilize river erosion at recreation sites, particularly at Lone Pine and Spike Buck.
2. Visitor Management	
a. Visitor Information and Interpretation	Post information signs. Inform public of proper use of McIntyre Hills WSA. Provide information about low impact use of WSA (i.e. pack-in/pack-out).

Component, Measure, Location	Segment-Specific Actions
b. Indirect Controls	Reduce traffic safety problems near developed sites along highway. Restrict recreation pedestrian traffic all along the highway, except where absolutely no alternative exists. Convert Parkdale to fishing access but only after buying/leasing downstream site for all users.
c. Direct Controls	Reduce pedestrian/vehicle conflicts along highway at at Cottonwood Rapid during special events (i.e., FIBARK). Require all commercial boaters to use rocket boxes for human waste disposal at the Devil's Hole day use site. Allow only private boat launching at the Five Points recreation site.
3. Facility Management	
a. Site Development	
Corridor	Develop watchable wildlife pullouts identified with assistance from DOW. Maintain parking facilities for non-boater recreation in cooperation with the Highway Department.
Short Creek	Improve physical fishing access if feasible.
Cotopaxi	Maintain fishing access.
Lone Pine* 30 ac	Improve highway ingress/egress for safety, provide for fishing and boating access, picnic tables, toilets, and boat launch areas.
Fernleaf Gulch	Maintain fisherman access.
Texas Creek	Improve physical vehicle access for fishing.
Maytag	Provide picnic and sanitation facilities, vehicle pull-outs for viewing watchable wildlife,; improve physical fishing and boating access; provide additional parking facilities.
Devil's Hole	Develop portage around rapid on south side of river. Manage primarily as day use area and if feasible develop river accessible Class D campsite at the Devil's Hole area; provide toilet facility at campsite. If not feasible (feasibility factors include floodplain, wildlife, and railroad), explore alternative sites in the Devil's Hole to Maytag area.

Component, Measure, Location	Segment-Specific Actions
Pinnacle Rock* 11 acres	Provide picnicking and sanitation facilities, vehicle pull-outs for viewing watchable wildlife, improve physical fishing & boating access, provide additional toilet and parking facilities.
Three Rocks	Improve portage around rapid and scouting routes while enforcing railroad track trespass restrictions; improve roadside vehicle parking area.
Salt Lick* 2 ac	Improve physical vehicle access for commercial launch commercial launch facilities and provide toilets.
Five Points* 40 ac	Continue managing site north of highway as day-use, south as overnight; retain existing toilets and picnic areas; improve private launch facilities; if feasible (check floodplain) develop site south of the highway for overnight Class C camping; develop scouting routes for rapid on south side of river and improve fisherman access.
Lower Floodplain	Manage for river-accessible day use boating; provide lunch stops; maintain toilets; no parking provided.
Spikebuck* 7 ac	Provide vehicle pullouts for viewing watchable wildlife; improve launch facilities; improve existing and develop additional toilet facilities; maintain parking for fishing and boating; fees for commercial use only at this site.
Bootlegger* 2 ac	Improve launch facilities; improve existing and develop additional toilet facilities; maintain parking for fishing and boating; fees for commercial use only at this site.
Parkdale* 2 ac	Provide toilet facilities if feasible; manage site for boating access until downstream site is acquired; manage for fishing access thereafter. Develop new site as the major put-in/take-out on Segments 4 & 5; provide private and commercial launch, vehicle access for fishing and boating, changing facilities, sanitation facilities, parking, and picnic tables.
Other sites	Support DOW efforts to develop better fisherman access along segment, especially access contiguous with existing DOW leases.
b. Maintenance	(See Areawide Actions).
4. Access and Easement Acquisition	Buy or lease property downstream from present Parkdale site (see Segment 5).

Component, Measure, Location	Segment-Specific Actions
5. Administration	
a. Coordination	Work with landowners and counties to alleviate safety problems at pedestrian bridges. Cooperate with Highway Department to improve roadside parking at 3-Rocks Rapid. Ensure river management and use does not result in impacts to McIntyre Hills WSA which are inconsistent with IMP guidelines.
b. Studies Monitoring	Monitor bighorn populations and reaction to public use. Implement habitat improvement measures for bighorn sheep to reduce sheep dependance on habitats adjacent to the river. Form a partnership with BLM, DPOR, DOW, and the Rocky Mountain Bighorn Society to fund research and habitat improvement projects. The primary objectives would be to: 1) determine home ranges, lambing grounds, winter ranges, and other critical habitat features; 2) determine how bighorn sheep react to boating recreation and how it effects the populations; 3) identify potential habitat improvement projects (e.g. prescribed burning, range fertilization, water developments) and locations which most directly benefit sheep and reduce conflicts. Annually monitor resource quality in the portion of the WSA used by river recreationists (5 Points).
c. Supplemental Staffing/ Special Programs	Seek volunteer help in completing stream improvement/ bighorn watering projects.
Segment 5: PARKDALE TO CANON CITY (See Illustration II-7.)	
1. Resource Management	
a. Protection	Conduct Class I paleontology inventory before surface disturbing activities (Morrison Formation, Parkdale Area).
b. Rehabilitation	Reduce manmade dangers and unsightly structures in this segment.
2. Visitor Management	
a. Visitor Information and Interpretation	Post informational signs. Provide warnings about the "expert" nature of the river below Parkdale, manmade hazards, and the absence of any takeouts.

Component, Measure, Location	Segment-Specific Actions
b. Indirect Controls	(See Areawide Actions).
c. Direct Controls	Enforce railroad right-of-way restrictions.
3. Facility Management	
a. Site Development	
Parkdale	(See Segment 4.)
Parkdale South* 140 ac	Provide walk-in fishing access with parking, sanitation facilities and trail access for river users.
Royal Gorge	Develop scouting/portage routes at Sunshine, Sledge Hammer, etc. to assist boaters. Accommodate boating, fishing, and other day uses; develop boater/fishing access, sanitation (toilet and trash) facilities, changing facilities, picnic facilities, hiking/biking/nature trails, parking and traffic controls. Assist in the development of river-related recreation facilities in Canon City.
b. Maintenance	(See Areawide Actions.)
4. Access and Easement Acquisition	Acquire lands in the Canon City area for additional recreation access.
5. Administration	
a. Coordination	(See Areawide Actions.)
b. Studies/ Monitoring	Work with city to improve/develop boat chute.
c. Supplemental Staffing/ Special Programs	(See Areawide Actions.)

Segment 6: CANON CITY TO PUEBLO RESERVOIR (See Illustration II-8.)

1. Resource Management	
a. Protection	Protect resources (especially at dispersed use sites).
b. Rehabilitation	Protect avian and other wildlife from human disturbance.

Component, Measure, Location	Segment-Specific Actions
2. Visitor Management	
a. Visitor Information and Interpretation	Include information in park brochures to educate users about private lands. Develop interpretative signing at the heron rookery requesting low noise levels from May 1 through July 15 to avoid disturbance to nesting birds.
b. Indirect Controls	Recommend and encourage maximum group size limits (affecting both numbers of people per group and boats per group) on all boating parties using this segment below Florence to maintain solitude and protect area birdlife; make specific criteria and rationale available in brochures and post it at key ingress points throughout the entire segment.
c. Direct Controls	Establish other restrictions on recreation if warranted to protect heron rookeries and other wildlife.
3. Facility Management	
a. Site Development	
Florence	Develop Florence as river access site; work closely with community. Provide boater/fishing access, sanitation (toilet and trash), changing, and picnic facilities; provide hiking/biking/nature trails, other day uses, parking, and traffic controls.
Beaver Creek	Develop Class D campsite/picnic area south of the river to protect resources and preserve solitude; limit to small discontinuous units with a maximum occupancy of six people per site; provide toilets; pack-in/pack-out trash.
Pueblo Reservoir	Provide fishing/boating egress and sanitation sanitation facilities; take out above or below wildlife area only. Ensure that on-river overnight facilities are of a small enough size and located so as not to impact heron rookeries; locate campsite units far enough apart to maintain visual and auditory separation in order to maintain the area's solitude.
b. Access and Easement	Acquire lands for campsite development off County Road 112 on the south side of the river near Beaver Creek, and ensure legal access to the site for management.

Component, Measure, Location	Segment-Specific Actions
5. Administration	
a. Coordination	
DOW	Consult with DOW on fishing access areas and heron rookery/wildlife considerations.
Other	Explore feasibility of building boat chute/portage through the CF&I dam below Canon City.
b. Studies/ Monitoring	Monitor great blue heron rookery(s).
c. Supplemental Staffing/ Special Programs	(See Areawide Actions.)

G. IMPLEMENTATION PHASING

The management actions listed in this chapter are somewhat generalized. DPOR's ability to carry them out depends on a number of factors, including available funding (e.g., user fee revenue), dependence on other cooperators (e.g., Highway Department), successful negotiations with the private sector (e.g., access and easement acquisitions), and so forth. For these reasons, only the highest priority management actions are displayed. The table in Illustration II-13 displays two priority categories, short term and long term. A two-year timeframe is necessary for issues requiring immediate attention. The six-year timeframe maintains management flexibility for needs which are less pressing. Working as partners, BPOR and BLM will direct management attention to needs that are surfaced through on-going resource and visitor use monitoring.

IMPLEMENTATION PHASING

Component	Short-Term (1-2 Years)	Long-Term (3-8 Years)
1. Resource Management	1st: Install management facilities to maintain resource character at Hecla/ Ruby/Pinnacle/Five Points/RR Bridge/ Big Bend. 2nd: Vegetative rehabilitation on segments 2 & 4/stabilize Lone Pine & Spike Buck recrecation sites. 3rd: Identify points for stream/fisheries habitat improvement projects.	- Continue work on remaining sites as identified through monitoring studies.
2. Visitor Management	1st: Continue commercial/competitive public user fee collection. 2nd: Initiate individual user fees at R&PP sites as developed. 3rd: Post all public land boundaries. 4th: Develop, display, and provide signs, brochures and maps, especially on segments 2 & 4 for user ethics, resource protection and management. 5th: Install highway SRA information signs, especially on segments 2 & 4 and at municipalities. 6th: Begin posting hazard warning signs on segments 4 & 5.	- Continue fee collections. - Update/upgrade signs, brochures, maps, and complete SRA signing. - Initiate interpretive ranger program.
3. Facility Management	1st: Develop municipal facilities in major communities. 2nd: Develop boat chutes in Buena Vista and Canon City. 3rd: Begin major/R&PP access site developments: a) Parkdale/Hecla b) Ruby Mountain/Browns Canyon lunch sites c) Railroad Bridge/Big Bend/Pinnacle/ Five Points	- Develop boat chute/portage at CF&I dam. - Complete developments on remaining R&PP and other recreation sites.
4. Access and Easement Acquisition	- Acquire sites at: 1st: Parkdale 2nd: Seidels/Canon City/Ruby Mountain 3rd: Big Bend/Centerville - Acquire fishing easements: 1st: Segments 2, 3, & 4 2nd: Segments 1, 5, & 6	- Acquire sites at Pine Creek, Fisherman's Bridge alternate, and Beaver Creek. - Continue acquiring fishing easements.
5. Administration	1st: Develop methodologies for resource/visitor monitoring. 2nd: Build a resource condition and trend data base, river-wide, through resource/visitor monitoring efforts. 3rd: Develop agreements with local governments and other agencies for SRA management and resource/visitor protection. 4th: Begin cooperative efforts to improve visitor safety (especially with Highway Department turnouts, etc.).	- Continue resource/visitor monitoring work. - Continue to evaluate viability fo the plan and need for plan amendments. - Upgrade agreements and continue cooperative work. - Continue visitor safety work on all segments.

CHAPTER III

ENVIRONMENTAL ANALYSIS

A. BACKGROUND

This chapter includes an environmental analysis (EA) of the Preferred Alternative only. (Refer to the Draft Plan for an EA covering the original Proposed Action and three alternatives.) The Preferred Alternative incorporates many of the mitigation measures identified in the Draft Plan. Because of this, the environmental consequences of the Preferred Alternative are less than those of the Proposed Action.

The Council on Environmental quality requires a minimum of four sections in an EA. These sections are listed below.

Section	Location
Purpose and Need	Final Plan, Chapter I
Description of Alternatives	Draft Plan, Chapters IV & V; Summarized in Final Plan, Chapter I
Environmental Impacts	Draft Plan, Chapters VI & VII; Final Plan Chapter III
Consultation List	Final Plan, Chapter IV

This EA analyzes the environmental consequences of the plan as a whole. Additional, more site specific analyses may be required prior to surface disturbing activities.

B. AFFECTED ENVIRONMENT

1. Critical Elements

a. Threatened and Endangered Species

1) Wildlife

The only two Federal and State listed endangered species that have the potential to occur in the area are the bald eagle and peregrine falcon.

a) Bald Eagle

The bald eagle is a common winter (December through February) visitor to the upper Arkansas River valley. Up to five birds can be found from Leadville to Canon City, and up to five more birds from Canon City to Pueblo Reservoir. Use by eagles is so incidental that preferred or critical areas such as roosting or feeding sites have not been identified. In general, the eagles use the cottonwood riparian area and frequent the area from Fishermans Bridge to the mouth of Browns Canyon.

b) Peregrine Falcon

Peregrine habitat includes nesting sites, hunting sites, and migration and wintering areas. Typical nesting sites are cliffs over 200 feet high which overlook water and permit extensive views of the surrounding

area. Prey abundance and diversity provided by these situations are major factors in eyrie selection. Peregrines may travel up to 17 miles from nesting cliffs to hunting areas. Preferred hunting habitats include cropland, meadows, riverbottoms, marshes, and lakes which provide an abundance of avian prey. Birds are occasionally reported in Colorado during the winter, but most peregrines migrate to Central and South America.

In the last two years, three new eyries have been established in the Arkansas River valley. In 1987 a pair successfully fledged young at Chalk Cliffs west of Nathrop and in 1988 pairs became established in the Royal Gorge near Canon City and in Beaver Creek near Victor. These sites were historic eyries which are typically the first to be reoccupied as populations recover. It is likely that new eyries will be established in the valley in the next several years.

The hacking of young falcons (placing month old birds in hack boxes on cliffs) has been a successful method of restocking peregrines to suitable habitats. The Peregrine Fund of Boise, Idaho has primary responsibility in operating the hack sites which are funded by cooperating Federal agencies.

The availability of suitable hack sites and the large amount of public land in the upper Arkansas River valley has made this area attractive for peregrine reestablishment. In 1988, four hack sites were active in and around this area. These were Adobe Peak (USFS), Big Hole (BLM), Twin Mountain (BLM) and a site near Buena Vista (USFS). This concentrated effort to reestablish birds in this area is likely to continue until the recovery goal is attained. The peregrine falcon is still relatively rare, however the likelihood of encountering peregrines in the Arkansas Valley is increasing each year. Birds from the hack sites and eyries use the river canyon as hunting territory and may frequent areas near the river.

2) Plants

The Colorado Natural Areas Program identifies plant species that are rare, endemic, threatened or endangered throughout their range or in Colorado. Four species, Eriogonum brandegei, Penstemon degeneri, Panthenium tetraneuris, and Mentzelia densa are on State List 1. These are Federal threatened or endangered plant species and species that are rare throughout their range, including a number of species which only occur in Colorado. Aquilegia chrysantha and Haplopappus fremontii are on State List 3. These are plant species which appear to be rare but for which conclusive information is lacking.

Following is a discussion of the current status, range, significance, habitat, and management of each these species which are known to occur in and around the Arkansas River valley.

a) Eriogonum brandegei Rydb.

Brandegee wild buckwheat is listed as Federal Status 2 (under review for formal listing) and State List 1. It is found in the valley of the upper Arkansas River in Chaffee and Fremont Counties, Colorado. Chances of other populations not yet discovered is great. The Colorado Natural Areas Program in cooperation with the Nature Conservancy has proposed to designate a

site in Chaffee County as the Droney Gulch State Natural Area. The site, consisting of 294 acres, is located in T. 50 N., R. 8 E., Sections 16, 17, 20, and 21. It lies immediately west of Highway 285 near Big Bend. The Droney Gulch site represents the best known occurrence in the world for this U.S. Fish & Wildlife Service Category 2 candidate species. The site contains approximately 3000 individuals of the species. Although most of the site is on public land administered by BLM, some plants occur on private land. The Nature Conservancy has proposed to buy the private lands thereby transferring them to BLM to be managed as a State Natural Area.

b) Penstemon degeneri Crosswhite

Degener penstemon is listed as Federal Status 2 (under review for formal listing) and State List 1. The known populations are concentrated in the area of the Royal Gorge, with one outlying population found in a similar habitat near Five Points picnic site in the Arkansas canyon. This species has a broad range of adaptability. Heavy tourist traffic should be considered a negative interaction that may reduce its viability.

c) Parthenium tetraneuris Barneby

Barneby feverfew is listed as Federal Status 2 (under review for formal listing) and State List 1. It is found in the Arkansas River Valley in eastern Fremont County, Chaffee County and in western Pueblo County; it is also reported in southwestern El Paso County.

d) Mentzelia densa Greene

Royal Gorge stickleaf is listed as Federal Status 2 (under review for formal listing) and State List 1. It is restricted to a small portion of Arkansas River drainage in Fremont and Chaffee Counties.

e) Aquilegia chrysantha var. rydbergii

Golden Columbine is listed as Federal Status 3C (former candidate for federal listing) and State List 3. It is found in Fremont County.

f) Haplopappus fremontii spp. monocephalus

Singlehead goldenweed is listed as Federal Status 2 (under review for federal listing) and State List 3. It is found in Pueblo and Fremont counties.

b. Wilderness

There are two Wilderness Study Areas (WSA) within the planning area. They are the McIntyre Hills WSA and the Browns Canyon WSA.

The McIntyre Hills WSA is located in Fremont County approximately 12 miles west of Canon City. The WSA lies approximately ¼ mile south of the Arkansas River and U.S. Highway 50 in T. 18 S., R. 72 W., 6th P.M. It contains 16,800 acres.

The Browns Canyon WSA is located in Chaffee County approximately 6 miles south of Buena Vista and 7 miles northwest of Salida, Colorado. The WSA is bounded on the southwest by the Denver and Rio Grande River Railroad right-of-way (which parallels the Arkansas River for this stretch). Travelling north, the western boundary is the Arkansas River (for 2 miles). Just over ½ mile of private land forms the remainder of the western boundary at Ruby Mountain, which is the northwest corner of the WSA. The WSA contains 6,614 acres all located east of the river in T. 51 N., R. 8 and 9 E., N.M.P.M. and T. 15 S., R. 77 and 78 W., 6th P.M.

Although the Arkansas River is not inside the WSAs, it has an obvious relationship with them. The naturalness of the WSA enhances the recreation experiences of those using the river.

Both WSAs were studied under Section 603 of FLPMA and are included in the Canon City District Wilderness Final Environmental Impact Statement published in December 1987. The Preferred Alternative recommends inclusion of the entire 6,614 acres of the Browns Canyon WSA into the National Wilderness Preservation System. It recommends that McIntyre Hills WSA not be designated as wilderness.

In 1993 the President will present the wilderness recommendations to Congress. In the interim, the BLM is mandated by FLPMA to manage all WSAs in a manner so as "not to impair the suitability of such areas for preservation as wilderness".

c. Visual Resources

The planning area consists of about 1/3 mountainous terrain, 1/3 canyon topography and the remaining 1/3 rolling hills and broad valleys. All of the area is located in the Southern Rocky Mountain physiographic province. The character of the landscape is determined by relationships between four basic elements: color, line, form, and texture.

The dominant colors in the area vary with the weather, time of day, and year. They include the browns, reds, and greys of soils and rocks and the greens, yellows, reds, and browns of vegetation. Occasional blues, greens, and browns are added by water.

Lines are distinct in soil layers, changes in vegetation types, along ridgetops, and in drainage patterns. Topography varies from sheer-walled canyons to flat-topped mesas. Texture results from the different vegetative types and erosion patterns. The area has a natural ruggedness, remoteness, and openess.

The area is vulnerable to visual modifications resulting from the activities of man. The greatest visual impacts stem from early mining activities, development of ranches and farms, recent energy exploration and development and related facilities, and railroads. Fences are the most common intrusion, and fences built with bulldozers are the most obvious. Sharp lines have also been created by vegetation manipulation along powerline rights-of-way. Clearings and associated powerlines are noticeable near Canon City, Wellsville, Salida, and Leadville. The magnitude of visual intrusions on public lands is low. This is due primarily to the ruggedness and remoteness of the public lands, management restrictions, population distribution, and the vast acreage involved.

Visual resource management (VRM) classes have been established for the public lands. The manner in which they are determined is explained in BLM Manual Section 8400 on file in the Canon City BLM Office. Each VRM class describes a different degree of acceptable modification in basic elements (form, line, color, and texture) of the landscape. The classes are the basis for determining whether or not a modification would result in a visual impact and, if so, what appropriate mitigating measures would be required.

All of the proposed development sites on public lands are in a Class II VRM zone. Management objectives in a Class II zone require that any changes in the basic elements not be evident in the landscape. Contrasts may be seen but must not attract attention.

The remainder of the planning area lies in either Class III or Class IV VRM zones. Class III zones which are located along the river and mountain sides, are not areas of proposed development. Within Class III VRM zones, contrasts to the basic elements caused by management activity are evident but remain subordinate to the existing landscape. The towns and residential areas lie within the Class IV VRM zone, where contrasts attract attention and are a dominant feature of the landscape.

d. Socio-Economics

1) Social Values

The economic study area (ESA) includes Chaffee, Fremont, and Lake counties. Residents within and immediately adjacent to the ESA constitute one population group that would be affected by the Final Plan. Two social characteristics of this group, population trends and social attitudes, are described in this section. Social attitudes of the users and potential users of the ESA are also discussed. It is estimated that 98 percent of these users are from outside the ESA.

a) Population Trends

The overall population trend for the area is an increase of 17.6 percent between 1980 and 2020 or a growth rate of .5 percent per year (see Appendix A). Chaffee County expects to increase 21 percent during that period, Fremont County is expected to increase 40 percent, and Lake County is projected to decrease 64 percent.

b) Social Attitudes

The BLM public comment record and selected interviews form the basis for this section.

The residents within and adjacent to the ESA have a variety of concerns and attitudes. Some do not want any change in the area, while others look forward to change and growth. Some see a positive affect on the local economy if management of the river changes, and it appears that most people in the area support and want economic growth for the area. Some residents feel there are too many people using the river and there is too much trespassing and crowding. Some want to return the river to the way it used to be: quiet, and without noisy rafters. Some feel that the development of lands by the State Parks Board would hurt the quality of their life, others feel just the opposite.

There are many different users of the ESA river: Boaters (commercial and private), fishermen, picnickers, hunters, hikers, ORV users, campers, rock hounders, wildlife watchers, nature viewers, and people who may not use the area but are nonetheless concerned about the river environment. Each has concerns about how the river should be used for each activity. Some see rafting as being too large a part of the river's use, while others feel more rafting should be allowed. There are some who feel that better management of conflicts would lead to more use opportunities for all.

Conflicts exist between and among the different river users. For example, some fishermen feel that the growth of rafting has caused a reduction in fishing opportunities on the river. In general, and it varies by type of fishing (fly, bait, and tackle fishing), fishermen cannot tolerate boating use in the same area where they are fishing. Boats sometimes get entangled in fishing lines, and the noise of the rafters and their boats is disruptive to the fish and the fishermen.

2) Economic Conditions

Economic data is available only in county units. Economic data for Pueblo County was not included in this analysis for the following reasons: 1) Lake, Chaffee, and Fremont represent one State Planning and Management Region while Pueblo County is part of another planning region, 2) over 90 percent of economic uses on the Arkansas River occur in the ESA, 3) since Pueblo County is larger than the other three counties, it could distort the impacts if included in the ESA.

a) Employment and Income

Employment figures for 1975, 1980, and 1986 for the ESA reflect an overall growth rate of 1.2 percent per year for that period (see Appendix A). Looking at the individual counties presents a different picture. Chaffee County's employment increased 38 percent or 3 percent per year, and Fremont County's increased 41 percent or 3.2 percent per year. Lake County's employment decreased 55 percent or 7.1 percent per year over this period. The Lake County decline in employment is largely attributable to the closure of the Amax Mine at Climax.

The unemployment rates for Chaffee, Fremont, and Lake Counties have generally exceeded the unemployment rate for the State as a whole. Higher unemployment is likely because of the area's dependence on mining, and seasonal influences in the tourism industry.

Labor income has increased for Chaffee and Fremont Counties, but has declined for Lake County.

Government employment was the principal employment for all three counties in 1986. However, much of the employment data for Lake County was not released so it is difficult to draw conclusions based on its employment distribution. A Transit Development Program Study prepared for Lake County found that the largest areas of employment are mining, government, and retail trade and services. With the idling of the Amax mine, Lake County has begun to turn more to its recreational resources as a means of maintaining the economy of the area. A large group of employees in Lake County work in the

recreational industry, however, most now work outside of Lake County. Wholesale and retail trade and services sectors make up 47 percent of Chaffee County's employment in 1986 and 39 percent of Fremont County's employment.

Economic indicators for the ESA are presented in the following Retail Sales table.

Retail Sales
(millions of dollars)

County	1976	1980	1986
Chaffee	47.33	94.61	114.39
Fremont	77.28	135.11	172.93
Lake	27.57	52.74	37.72

Retail sales for Chaffee and Fremont Counties have increased over the 1975-1986 period. Lake County retail sales increased from 1975 to 1980 but declined from 52.7 million in 1980 to $37.72 million in 1986, a decrease of 28.5 percent. This decline is attributable to the county's high degree of dependence upon mining employment.

b) Local Finances

Counties, communities, and school districts usually have two types of budgets: operating and capital. Operating budgets consist of the expenditures needed for day to day functions. Funds to pay for operating expenses are obtained primarily from local revenue sources. Capital budgets consist of major expenditures required for new or expanded buildings, water and sewer systems, fire fighting equipment, etc. and are generally funded by means of bond issues or grants from Federal or state governments.

Determination of the future fiscal position of a jurisdiction requires projections of operating revenues, operating expenditures, bonding capacities, and capital requirements. Data was not available to make these projections for the ESA. However, trends in assessed valuations can give an indication of an areas ability to finance new capital expenditures that might be needed to accommodate growth.

Assessed valuation by county and entity are shown in Appendix A. Chaffee and Fremont counties and the local areas of Buena Vista, Salida, and Canon City have experienced increasing assessed valuations. Assessed valuations for the Lake County jurisdictions show an increase from 1975 to 1980 followed by a decline from 1980 to 1986. Leadville, on the other hand, has experienced increases in assessed valuations for the period from 1980 to 1986.

c) Housing

Housing vacancy rates were all over 10 percent for 1980 and 1986. Vacancy rates less than 10 percent are indicative of a housing shortage (see Appendix A). Thus it would appear that most communities could absorb light to moderate growth with existing housing stock. Vacancy levels shown in Appendix A, Housing Units by County, should be read with caution because the housing stock does not indicate either physical condition or whether they are year round or seasonal units.

d) Hotels and Motels

Since much of the tourist use occurs during the summer season, it is important to look at the area's capacity to handle overnight visitors. The DPOR surveyed users on the Arkansas River. The survey indicated that of the 46 percent of the users from outside Colorado 82 percent stay in the valley one or more nights; 54 percent of the users are Colorado residents, of which 56 percent plan to stay in the valley one or more nights.

Buena Vista hotels and motels can accommodate about 833 people and are usually at 100 percent capacity on season weekends and near that during the week. Salida can accommodate 1635 people and is usually at 100 percent capacity most of the season. Lake County can accommodate about 1120 people, and there is no data on the occupancy rate during the season. Data for Canon City was not available. (Campground capacities are discussed in the Recreation Section.)

e) Travel

Appendix A shows the impact of travel on ESA counties in 1984. Travel generated employment represents about six percent of ESA employment. Ten percent of Chaffee County employment is related to travel, four percent of Fremont County employment, and five percent of Lake County employment.

f) Local and Regional Contributions of Arkansas River Activities

There are no up-to-date models specific to the ESA which could be used to measure total employment and income changes by alternative. However, RIMS II multipliers for Colorado were used to make estimates. The multipliers used were developed by looking at multipliers for the following sectors: transportation, hotels, lodging places and amusements, and eating and drinking places.

The expenditures per user were developed from studies on the Colorado River (Public Information Corporation, 1987) and from 1980 U.S. Fish and Wildlife surveys. It is estimated that $60 per day is spent in the area by persons rafting on the Arkansas River, and the average fisherman spends $18 per day in the area. It was also assumed that the activity use represents users from outside the area. Also, the number of campers on the Arkansas River who do not also raft is unknown, and expenditure information was not estimated.

About 2 percent of the ESA's employment and income is related to recreation and fishing activities on the Arkansas River. The following table shows the contribution of recreation and fishing activities in 1986. Expenditure information for bighorn sheep hunters is unknown and not estimated.

Contribution of Recreation and Fishing Activities on the Arkansas River to the ESA, 1986

Activity	Total 1/ Expenditures	Total Labor Income 1/ Generated	Total Employment 1/ Generated	% of BLM Lands	% of Total ESA Employment	% of Total ESA Labor Income
Boating	16,073,136	5,225,288	416	88.0	2.0	2.0
Fishing	888,593	288,877	23	90.0	.1	.1
TOTAL:	16,961,729	5,514,165	439		2.1	2.1

1/ Includes multiplier effects.

g) National Values

Expenditures are important to local and state economies, but they do not reflect the total recreation value of the resource, which includes the personal benefits one receives from participating in that activity. National values measure these additional benefits. For example, the national value of a recreation activity is what the recreationist is willing to pay over the actual costs to participate in that activity. "Willingness to pay" (wtp) is easy to determine when goods and services are bought and sold in well-defined markets. However, recreation wtp values usually have to be estimated from secondary sources.

The willingness to pay values used in this analysis are from the Colorado BLM SAGERAM computer price files for 1986. The file contains wtp prices for AUMs, hunting, fishing, and recreation days. The wtp value for boating per day is $13.20, fishing is $4.15 per day; and each bighorn sheep is $216.00 per day.

The following table shows the total national value estimated for activities on the Arkansas River in the ESA. The value is a little under $1.9 million per year for existing uses. Because of the lack of good information on camping and other on-site recreation, wtp estimates for these activities were not made.

National Values by Recreation, Hunting and Fishing Activity, 1986, for Arkansas River ESA

Activity	Unit	Estimated Annual Value
Boating	day	1,671,120
Fishing	day	96,820
Bighorn Sheep	number	115,560
TOTAL:		1,883,500

e. Cultural and Paleontological Resources

1) Cultural Resources

Evidence for man's existence in Colorado reaches from the present era back to the latter days of the last Ice Age. Throughout this time, the Arkansas River and its immediate environs have provided an ecological constant for human, flora and fauna communities: a subsistence refuge during periods of climatic hardship, and an area of abundance during more favorable times. As prehistoric groups adapted and changed through time, the record of these dynamics is reflected in archaeological sites scattered along the river corridor. Relatively few of these sites are recorded. They are a fragile and irreplaceable resource.

The Arkansas River figured prominently in modern history from the early days of Spanish explorers and French fur trappers to the present industrial era. Many characteristics attractive to aboriginal inhabitants - permanent water, minerals, rich earth, etc., have contributed to recent growth in mining, agriculture, ranching, transportation and communication. Some important sites have been recorded and determined to be nationally significant. Many more have not been recorded and/or evaluated.

Type of Site	Physical Remains of Recent History
Transportation	Stagecoach road from Denver to Leadville; stagecoach road up the Arkansas to Buena Vista; Denver South Park and Pacific Railroad; Colorado Midland Railroad; Denver and Rio Grande Railroad, Santa Fe, Atchinson and Topeka Railroad; DeReemer Forts of the "Railroad War."
Mining	Ghost towns, historic mining districts, kilns, and other remains from the extensive coke industry supporting mineral smelting.
Agriculture	Early farms, herding camps, ranches.

Opportunities exist to interpret these sites "in-situ" and to gain additional information through further inventories.

2) Paleontological Resources

The following information is derived from a paleontological inventory and assessment prepared for the Royal Gorge Resource Area (Lindsey and Westlye, 1982). This report was limited to areas where the BLM has management responsibilities (mineral or surface estate).

Geologic formations in the resource area are grouped into three categories: Class 1, 2, and 3. Class 1 areas are those having a high potential for scientifically significant fossils. Class 2 areas are those with evidence of fossilization, but the presence of fossils of scientific value has not been established and is not anticipated. Class 3 areas have little probability of finding fossils of use.

Class 1 formations in the area include the following: Dry Union, Morrison, Dyer Dolomite, Parting, Fremont Dolomite, Harding Sandstone, and the Sangre de Cristo in some areas. Some formations have a higher degree of concern in one area as compared to another. For example, the Morrison formation in the Parkdale area has not produced any significant vertebrate fossil finds when compared to the Garden Park area. Specific areas of concern are as follows.

Segment	Area of Concern	Formation
2	Big Bend	Dry Union
3	Bear Creek to Wellsville	Dyer Dolomite, Parting Quartzite
3	Railroad Tunnel to Howard	Sangre De Cristo
3	South of Howard near West Creek	Dry Union
3	Howard Cemetary to Vallie Bridge	Sangre De Cristo
5	Parkdale South	Morrison
6	Tunnel Drive to edge of Canon City	Morrison, Fremont Dolomite, Harding Sandstone

f. Water Quality

1) Chemical Quality

The chemical quality of water in the Arkansas River is influenced by ground water inflow, direct runoff from snowmelt or rainfall, mine drainage, diversions, return flows, variations in natural flow, reservoir releases, and water imported via transmountain diversions.

Specific conductance (commonly called conductivity) is a measure of how well the water conducts electricity, which reflects the amount of dissolved minerals (total dissolved solids or TDS) in the water. Specific conductance does not indicate what type of minerals are in the water.

The headwaters of the Arkansas River are very pure, having conductivity readings of less than 100 micromhos per centimeter (umhos/cm). Acid mine drainage near Leadville increases the conductivity of affected tributaries to around 900 umhos/cm. Dilution by nonpolluted water reduces the specific conductance of the river to about 230 umhos/cm below Leadville. At this point, much of the conductance is due to heavy metals and sulphates in solution. Several tributaries containing bicarbonates further dilute and buffer the river until it reaches a conductivity to 170 umhos/cm at Granite. The buffering action of the bicarbonate water lowers the heavy metal and sulphate concentrations.

Although the conductivity drops to 145 umhos/cm by the time the river reaches Buena Vista, it gradually increases again downstream from this point. However, the conductivity now reflects increased concentrations of lighter metals including calcium, magnesium, and sodium, which are normally much less harmful to the environment than heavy metals.

The increase in conductivity from Buena Vista to Pueblo can be attributed to irrigation and municipal return flows, inflowing ground water, and storm runoff from lower elevation perennial and ephemeral tributaries. Note that the conductivity figures quoted above are averages, and do not reflect the large variations that occur from low to high flows. For example, during 1986, specific conductance of the river at Pueblo varied from 726 umhos/cm at 1120 cfs, to 223 umhos/cm at 2,230 cfs.

Between Granite and Pueblo, the river water is chemically suitable for municipal supplies, irrigation, stockwater, and recreational purposes.

2) Sediment and Turbidity

Sediment and turbidity are generally not noticeable in the river upstream from Buena Vista, except during the annual peak snowmelt period. Downstream from Buena Vista, sediment and turbidity can be observed during snowmelt and after summer rainstorms. Sources of sediment during the summer include runoff from numerous ephemeral drainages and from perennial streams such as Trout Creek, Badger Creek, Bear Creek, and Texas Creek.

Colorado has no water quality standards for sediment or turbidity levels. However, turbidity in the Arkansas River below Salida is often sufficient to be objectionable to tourists, fishermen, and boaters. Also, sediment in the river is detrimental to aquatic life and adversely affects fish production.

3) Biological Quality

All natural surface waters contain coliform bacteria, which are used as indicators of biological contamination. The presence of fecal coliform bacteria indicates recent contamination from the feces of warm blooded animals. Common sources of fecal coliforms in water include beaver, muskrats, feedlot runoff, and sewage discharge. Although water quality standards exist for total and fecal coliforms in recreational waters, there is insufficient data to determine whether these standards are being met in the Arkansas River.

g. Hazardous Waste

Federal Superfund Amendments Reauthorization Act (SARA) Title 3 Legislation, enacted in 1986, requires all states to designate districts and have each district prepare a Hazmat Contingency Plan by October 17, 1988. Most counties in Colorado prepared a Local Emergency Operation Plan (LEOP), which addressed all major disasters. As a result of SARA, Colorado designated its counties as districts and required the Hazmat Contingency Plan be submitted as an annex to the county's LEOP. Committees were formed in each county in Colorado to identify and control storage, use, and transport of hazardous materials within their jurisdiction. The LEOP now includes all phases of emergency operations and responses for hazardous materials incidents as well as major flooding, accidents and other disasters.

Transportation of hazardous materials along the Arkansas River between Leadville and the Pueblo Reservoir occurs on both the railroad and highway systems. U.S. Highway 50 parallels the Arkansas River from Parkdale to Salida, U.S. Highway 285 intermittently parallels the Arkansas River from

Salida to Buena Vista, and U.S. 24 runs from Buena Vista to Leadville. Colorado Highway 291 crosses the Arkansas River twice between Salida and its intersection with U.S. Highway 285. Transport of hazardous materials can also occur over bridges that cross the Arkansas River to access U.S. Highway 50, U.S. Highway 285, U.S. Highway 24, and Colorado 291.

Distances between highways and the river vary, but along over half of the distance, the river and highway are close enough that a spill would reach the river. The distance between the Denver and Rio Grande railroad tracks and the river also varies, but is usually less than the distance between highways and the river. Spills of hazardous materials on the railroad system could also reach the river. The merger of the Denver and Rio Grand Railroad and the Southern Pacific Railroad has the potential to increase the number of freight trains from two per day each way to 6 per day each way, probably increasing the frequency of hazardous materials being transported.

Of the hazardous materials being transported along the Arkansas River from Leadville to Pueblo, the largest quantities are of gasoline, diesel fuel, propane, and various acids, such as sulfuric. Although not treated as a hazardous material, human waste is also transported and is a concern for health reasons. Some human waste is chemically treated to reduce bacteria counts. Human waste not deposited in a portable toilet or other facility for disposal is not treated and is often deposited directly on the land along the Arkansas River. Concentrations vary with the number of people present and facilities provided.

2. Other Affected Resources

a. Realty

None of the public lands in this planning area are identified for disposal in the Royal Gorge Management Framework Plan, however, other properties in the general area are. There are numerous withdrawals and classifications of the public land under consideration. They are identified by segment in Appendix B, and a brief discussion of their purpose, effect, and restrictions is included, as well as the holder of each. The Arkansas Canyon has long been utilized as a transportation and utility corridor. The public lands are encumbered by many rights-of-way and one lease. Each is identified and discussed in Appendix C. There are also periodic unauthorized uses on public lands within the planning area. Preventiion and resolution actions are performed by the BLM.

Acquisition of property and easements along the river is identified as a goal and objective in the Royal Gorge Management Framework Plan. The following parcels are identified for acquisition for recreation.

Potential Acquisitions

T. 11 S., R. 80 W., Sec. 2, 11 (80 acres) east of the river

T. 14 S., R. 78 W., Sec. 5, 9, and 167 (115 acres) east of the river

T. 15 S., R. 78 W., Sec. 11, 13, 24, and 25; and
T. 15 S., R. 77 W., Sec. 30 all east of the river (200 acres)

T. 51 N., R. 8 E., Sec. 34 (35 acres) east of the river

T. 48 N., R. 11 E., Sec. 3; and T. 49 N., R. 11 E., Sec. 33 (45 acres) all north of the river.

Site specific realty records showing key inventory data on public lands are available in the Canon City BLM office. The following is a tabulation of the approximate total acres within the proposal. The public land under consideration and the potential R&PP sites are depicted in Illustration II-3 through II-8.

Segment	Acres	Potential R&PP Sites on Public Land & Acres
1	1154	Railroad Bridge 65 acres
2	2678	Fishermans Bridge 40 acres, Ruby Mountain 40 acres, Centerville 2 acres, and Hecla Junction 90 acres
3	396	Rincon 8 acres
4	593	Lone Pine 30 acre, Pinnacle Rock 11 acres, Saltlick 2 acres, Five Points 40 acres, Spikebuck 7 acres Bootlegger 2 acres, Parkdale 2 acres.
5	184	Parkdale south 140 acres.
6	0	None
TOTAL:	5005	480 acres

b. Minerals

The Arkansas River from Pueblo to Leadville cuts through some of the most interesting and complex geology anywhere. Geologic formations ranging in age from 1.8 billion years (Precambrian) to recent are exposed in various locations along the canyon. Various rock lithologies in combination with faults and folding are present. Numerous universities and other educational institutions use the region as a study area. In addition, several areas are of interest to mineral collectors. Most notably, the Ruby Mountain area was recommended for acquisition and inclusion into the overall plan.

The area has a history of mineral development and has a low to high potential for mineral development depending on location. Rocks and minerals including fluorite, industrial building stone, perlite, placer gold, sand and gravel, feldspar, pegmatites, and others have been discovered and mined in the Arkansas River Canyon.

Suction dredging currently accounts for the largest amount of mineral activity in the Arkansas River corridor. Approximately 10-15 dredging operations per year are reported along the river. There is also an undetermined amount of unreported activity. Usually only one or two people operate the equipment, and most dredging is considered recreational. The number of people conducting this activity has remained constant over the last 5-6 years. Most operators work on weekends or vacations. The operation generally includes use of a suction hose, a sluice or riffle box that floats or is stationary along the shore, an engine and pump, and several other pieces of equipment. Suction dredging is regulated primarily by the U. S. Army Corps of Engineers, although this responsibility is scheduled to be transferred to the

State of Colorado Water Quality Control Division and the EPA. The most popular area for dredging appears to be from Granite to Buena Vista although activity has also occurred in other segments. The only public lands that would be closed to this activity would be within the Browns Canyon Protective withdrawal area, reservoir withdrawals, and other special withdrawals.

A significant portion of the river corridor between Leadville and Pueblo is bordered by terrace deposits of sand and gravel. These deposits have varying production potential depending on their quality and accessibility. In general, sufficient quantities of sand and gravel exist outside the area, and there is little demand for development of river corridor deposits. High visibility and amplified environmental concerns make these deposits less attractive than those outside the river corridor.

Terrace deposits along the river have been extensively explored for placer gold. Some of these deposits have been mined in the past leaving behind areas in need of reclamation. This is particularly true in Segment 1 from the Twin Lakes area to Buena Vista. Present day activities in the terrace deposits have been restricted primarily to digging test pits and trenches that are subsequently reclaimed. This type of activity is regulated by the BLM and the Colorado Mined Land Reclamation division.

Mining claims are regularly located along the river; some are maintained and others are abandoned. Approximately 70 mining claims exist in various key areas along the river. Other than the limited activities of placing claim corners and location notices, surface disturbance does not result from locating mining claims. Recreational gold panning also occurs along the Arkansas River. There is no data on the amount of this activity.

Additional mineral development activities within the corridor have included fluorite mining near Hecla Junction, small-scale perlite mining in the Ruby Mountain area, and other minor development. None of this activity is occurring now. Some of the older shafts and adits in the area have been identified for closure and reclamation.

c. Recreation

The three basic components of natural resource outdoor recreation settings described here are: recreation resources (physical), visitor use (social), and current management (managerial). Each influences the quality, nature, and kinds of recreation activities and experiences that are available to the public.

Physical: relates to the resource itself; considers the area's remoteness and accessibility, its degree of naturalness, and both the amount and type of land improvements and developed facilities.

Social: refers to people that use the area; includes both numbers and types of contacts with others, and evidence of their use.

Managerial: defines how the area and its recreation visitors are being managed; includes on-the-ground visitor management controls, regulations, multiple-use management practices, and types of vehicles allowed.

Any area of natural resource lands can be classified into one of six standard recreational character classes based on the above three components (see Illustration II-9). This framework can be used to describe existing resource character (as is done in this chapter) and to prescribe management objectives (as is done in Chapter II).

In Segment 1, from Leadville to Buena Vista, increasing use has changed the area's social characteristics. The same is true in Segment 2, from Buena Vista to Salida. Recreational characteristics of Segment 3, from Salida to Vallie Bridge have remained virtually unchanged. More intensive management of the increasing recreation use on Segment 4, from Vallie Bridge to Parkdale, has resulted in a different classification of the managerial setting. Neither the physical, social, nor managerial characteristics of Segment 5, from Parkdale to Canon City, and of Segment 6, from Canon City to Pueblo Reservoir, appear to have changed appreciably since 1981. These trends are described in detail in the following sections. For additional data, refer to Appendix D.

1) Recreation Resources (Physical Characteristics)

a) Characteristics

The Arkansas River corridor is very diverse. It includes world class whitewater, slow-flowing flatwater, and about everything in between. See Illustration III-1 which graphically describes recreation resource character classes.

b) User Preferences

Physical resource preferences for Segments 2A and 4B are depicted graphically in Appendix D. This section summarizes user preference data obtained from four studies (Knopf and Lime, 1981; Knopf and Virden, 1988; Haas and McCombe, 1987; King, 1988). The studies focused on a variety of uses in several segments.

Visitors were asked if they felt the river environment was being damaged by recreation use. Results show that nearly twice as many users felt such damage was occurring in 1987 as compared to 1981.

Resource Damage	% Visitors			
	Segment 2A		Segment 4B	
Ocurring	1981	1987	1981	1987
Yes	14.8%	26.7%	14.1%	27.5%
No	85.2	73.3	85.9	72.5

The kinds of damage noted most are shown below. The most dramatic increases concern soil damage on Segment 2A.

RECREATION CHARACTER CLASSES ON THE ARKANSAS RIVER: 1981 to 1987-88

River Segment	Subsection		I. Back Country			II. Walk-in			III Semi-primative Motorized			IV. Roaded Open Country			V. Highway-Rural			VI. Developed-Urban		
			P	S	M	P	S	M	P	S	M	P	S	M	P	S	M	P	S	M
1	A	River Corridor																		
		Developed Sites																		
	B	River Corridor																		
		Developed Sites																		
	C	River Corridor																		
		Developed Sites																		
2	A	River Corridor																		
		Developed Sites																		
	B	River Corridor																		
		Developed Sites																		
3	—	River Corridor																		
		Developed Sites																		
4	A	River Corridor																		
		Developed Sites																		
	B	River Corridor																		
		Developed Sites																		
5	—	River Corridor																		
		Developed Sites																		
6	—	River Corridor																		
		Developed Sites																		

1/ 2/
1/ 2/

Legend: P=Physical Characteristics (Land & Facilities)
S=Social Characteristics (Visitors & Others)
M=Managerial Characteristics (Management of the Land & Facilities, Visitors & Others)
1/ Buena Vista — Fisherman's Bridge
2/ Fisherman's Bridge — Big Bend

Recreation Character Classes

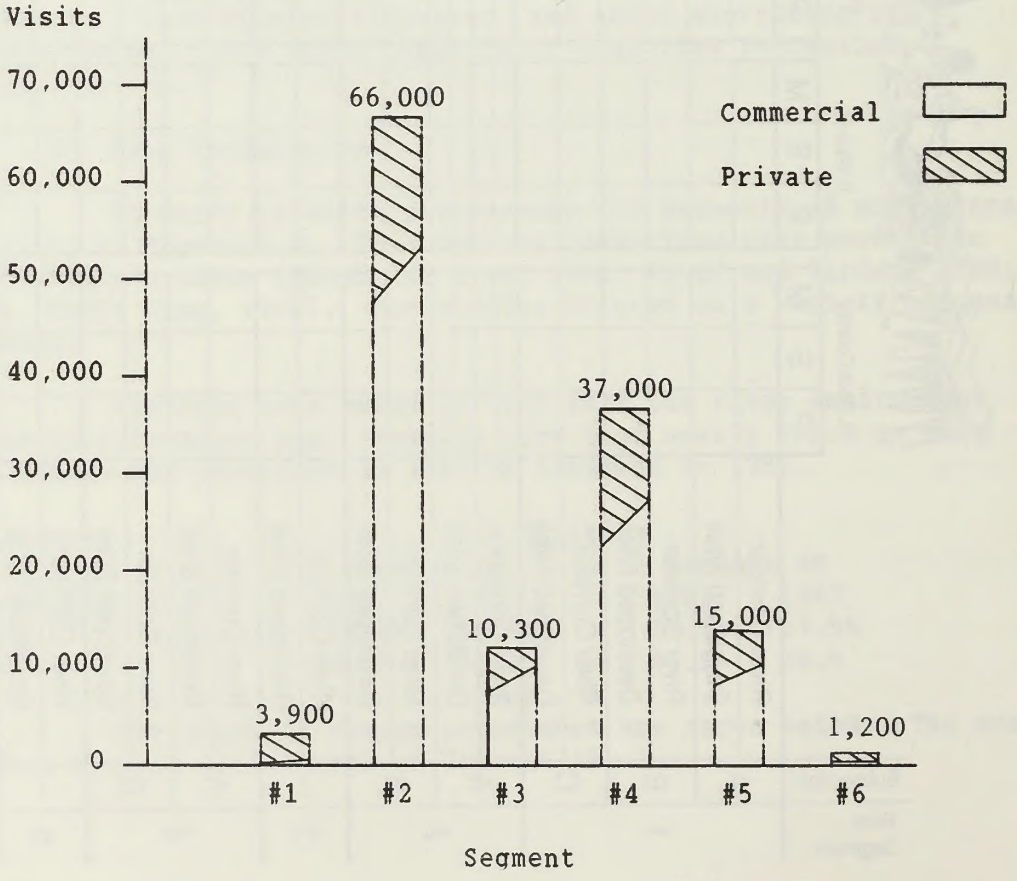
	in 1987-88	if different in 1981
On River Corridor		
At Intesively Developed Recreation Sites		

ILLUSTRATION III-1

ILLUSTRATION III-2

1987 BOATING USE ESTIMATES

Segment Number	Segment Name	Total No. Visits (%)	% Commercial	% Private
1	Leadville to Buena Vista	3,900 (3)	5-10	90-95
2	Buena Vista to Salida	66,000 (49)	70-80	20-30
3	Salida to Vallie Bridge	10,300 (8)	60-75	25-40
4	Vallie Bridge to Parkdale	37,000 (28)	70-80	20-30
5	Parkdale to Canon City	15,000 (11)	65-75	25-35
6	Canon City to Pueblo Reservoir	1,200 (1)	10	90
		133,400 (100)	67-74	26-33



	% Visitors			
	Segment 2A		Segment 4B	
Damage Identified	1981	1987	1981	1987
Litter/Trash/Garbage	32.8%	40.5%	23.1%	35.0%
Soil Damages/Erosion	8.2	20.0	5.8	5.5
Vegetation Destruction	4.9	--	7.7	15.0
Overuse/People Pressures	--	14.0	7.7	10.8
General Deterioration	3.3	5.6	7.7	10.8
Human Waste	6.6	8.5	5.8	10.8

2) Visitor Use (Social Characteristics)

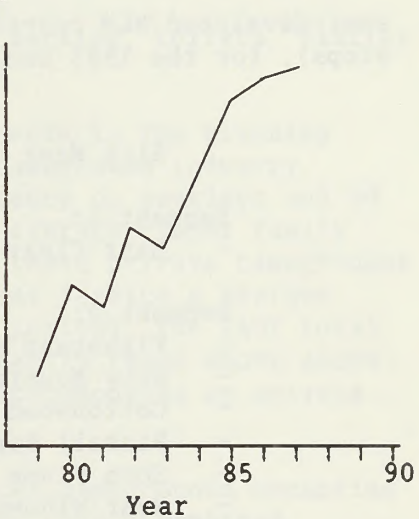
a) Characteristics

i. Types and Volumes

Recreation visitation by commercial boaters has undergone tremendous growth during the past decade. Several developed recreation facilities along the river are stretched beyond capacity. Undeveloped areas are also being intensively used. Conflicts between competing recreation users and between recreation users and local residents are increasing, especially those involving commercial boating. Use of river front lands administered by BLM between Buena Vista to Parkdale has increased from 22,000 user days in 1979 to 116,000 user days in 1987. The following table and graph illustrate this growth.

	Number of User Days On Public Lands 1/		
Year	Total	Commer-cial	Private
1979	22,220	18,518	3,704
1980	48,953	40,794	8,159
1981	43,415	36,179	7,236
1982	67,175	53,741	13,435
1983	63,791	51,033	12,758
1984	84,695	67,756	16,939
1985	105,750	84,600	21,150
1986	111,392	89,114	22,278
1987	116,488	93,190	23,298

1/ A user day is defined as one person recreating all or part of a day.



Total boating use on all segments for 1987 is estimated at 133,400 visits. Sub-totals for present boating use are depicted in Illustration III-2.

Total use of all public lands within the planning area including boating, fishing, picnicking, and camping was estimated by BLM at 226,730 visits for 1987. Most of this visitor use is boating (59 percent), fishing (10 percent) and motorized use (22 percent).

Fishing use estimates from the Colorado Division of Wildlife (DOW) show a total of 23,330 fishermen user days per year along the river planning corridor. (A fisherman user day averages about four hours). The most intensive fishing use occurs on Segments 3 and 4. The following table provides a breakdown of fishing use by segment.

River Segment	Fishermen User Days/ Mile	Accessible # Miles	User Days/ Year
1-A	400	3.0	1,200
1-B	400	5.5	2,200
1-C	440	.2	880
Sub-total:			4,280
2	650	6	3,900
3	740	7	5,180
4-A	700	4.1	2,870
4-B	485	13.0	6,300
Sub-total:			9,170
5	100	4	400
6	100	4	400
TOTAL:			23,330

In addition to 133,400 annual boating visits and 23,330 fishing user days, there were 50,000 motorized use visits, 7,500 camping visits, and 12,500 other visits such as picnicking and sightseeing.

Commercial boating use of developed and semi-developed BLM recreation sites and other commercial use sites (e.g., lunch stops), for the 1985 use season is shown below.

Site Name	1985 Commercial Boating Visits
Segment 1:	
- East Clear Creek	474
Segment 2:	
- Fisherman's Bridge	8,144
- Ruby Mountain (closed to comm. boating)	0
- Cottonwood Creek	5,526
- Pinball Rapid	2,661
- Zoom Flume	3,868
- Near Widowmaker Rapid	1,765
- Hecla Junction	50,691
Segment 3:	
- Salida East	3,353
- Rincon	895

Segment 4:	
- Lone Pine	3,443
- Gosh Awful Rapid	475
- Maytag Rapid	3,070
- Pinnacle Rock	8,981
- Salt Lick	15,522
- Five Points (closed to comm. boating)	0
- Floodplain	1,129
- Spikebuck	2,529
- Parkdale	29,247

Total recreation visits (all activities combined) at the five most heavily used public land sites along the river in 1987 were as follows.

Segment Number	Recreation Site Name	Total No. Visits	Facilities
2	Fishermans Bridge	15,900	Boat ramp, parking, toilets, visitor information
2	Hecla Junction	65,870	Boat ramp, parking, toilets, camping, visitor information
4	Pinnacle Rock	10,540	Boat ramp, parking, toilets, visitor information
4	Salt Lick	21,200	Boat ramp, parking, toilets, visitor information
4	Parkdale	28,300	Boat ramp, parking, toilets, visitor information

There are 41 private campgrounds in the planning area, with an average of 62 units each. The private campground industry reports that these facilities average 40 percent occupancy on weekdays and 80 percent on weekends. Using the campground industry's average camper family size of 2.8 people per unit, the combined capacity of these private campgrounds is 7,118 persons at one time (PAOT). If the USDA Forest Service's average campsite capacity figure of 5 people per unit is used instead, the PAOT total increases to 12,710. Based on current use and the capacity range shown above, between 372,868 and 665,860 additional people can be accommodated by private campgrounds during the 110-day summer use season.

The 32 public (Forest Service) campgrounds occurring in or immediately adjacent to the Arkansas River Valley have a combined overnight capacity of 4,255 PAOT. Total 1987 use was 231,820 visits or 22.5 percent of site design capacity. The Forest Service estimates that when a site reaches 40-50 percent of total capacity, it is usually full during the peak summer use season. Thus an additional 282,570 overnight camping stays can be accommodated on Forest Service campgrounds.

Hecla Junction is the only BLM developed camping facility along the river. Current use is estimated at 22 percent of its 50 PAOT capacity, leaving an average unused capacity of 7,020 people for the season.

In addition to the above figures, there is an undetermined amount of undeveloped site or dispersed camping that occurs in the area.

ii. The User

The ratio of resident to non-resident boating use has remained virtually unchanged since 1981. For example, on segment 4, 57.8 percent of 1987 boaters were Colorado residents compared to 59.7 percent in 1981. Non residents contribute about 40 percent of the total river boating use. See Appendix D for a more complete breakdown of user origins.

Study data (Knopf and Lime, 1981) indicates that users are becoming more experienced. Nearly three-fourths of all Segment 2A boaters were first-time users in 1981 compared to about one-half in 1987. On segment 4B, the proportion of first-time users decreased from over two-thirds in 1981 to one-half in 1987. The number of boaters on Segment 2A who have made more than ten float trips on other rivers rose from 2.5 percent in 1981 to 20 percent in 1987. On Segment 4B this number rose from 2.8 percent in 1981 to 25 percent in 1987. Most shoreline recreationists (Haas and McCombe, 1987) were either first time (35.7%) or had made more than four such recreation trips on the Arkansas (42.8%).

iii. The River Trip

Nearly all boating use is day use. However, a number of visitors spend at least one night somewhere in the valley. From 44 percent (on segment 2) to 37 percent (on segment 4B) of boaters spent no nights in the area. The CSU shoreline study indicates that about one-half of the principally non-boating users along segment 4B spent no nights in the valley (see Appendix D).

iv. Other Visitors Seen

Between 1981 and 1987, visitors reported seeing greater numbers of people at put-ins, take-outs, and along the river. In 1981, from 2 to 16 percent of Segment 2A boaters saw more than 75 other people, compared with 28 to 37 percent in 1987. In 1987, approximately one-third of all Segment 2 users saw in excess of 75 people at these locations and at their take-out. The same situation has occurred on segment 4B. However, most people reported seeing fewer large groups on Segment 4B than on segment 2A.

b) User Preferences

i. Reasons for Visiting the River

Reasons why people recreate on the Arkansas River relate to the kinds of activities they seek, recreational characteristics of the setting, and the kinds of experiences desired. Almost all boaters came to run the rapids and to view the scenery. From one-third to one-half of the boaters also came to camp. Shoreline users were principally interested in sightseeing. About half came for picnicking, and the remainder were divided equally between desires for fishing and camping. Activities boaters want to participate in are depicted in the following table.

Want to Participate (% Boaters)

Activity	Segment 2A Dis-agree	Neu-tral	Agree	Segment 4B Dis-agree	Neu-tral	Agree
Run Rapids	0%	1.5%	96.4%	2.5%	0%	97.5%
View the Scenery	.8	7.8	91.5	1.3	10.4	88.3
Do some Camping	31.8	31.8	36.4	22.4	31.6	46.0
Do some Hiking	52.0	27.9	20.2	46.8	29.9	23.4
Do some Fishing	66.9	27.7	5.3	65.0	31.2	3.9

The DPOR studied on-river users and shoreline recreationists to determine which activities they pursued. The results for Segments 1 through 5 are combined below.

Activity	Percent Participating	Percent Not Participating
River Running	84.7%	15.3&
Fishing	16.9%	83.1%
Camping	36.9	63.1
Sightseeing/ Driving for Fun	42.5	57.2
Picnicking	17.1	82.9

Want to Participate (% Shoreline Users)

Activity	Segment 4B Agree
Sightseeing	70.6%
Picnicking	54.1
Fishing	37.6
Camping	37.6
Photography	28.2
Other	22.4

Users feelings concerning the recreational character of the land, visitors' use of it, and how it is managed are depicted on three graphs in Appendix D. Refer also to Illustration II-9 for a description of the six recreation character classes depicted. While there are no areas along the river corridor as remote and undeveloped as the Back Country and Walk-In classes, boaters still expressed greatest preference for these kinds of areas. For all other classes except Developed Urban, boaters either felt neutral or expressed a slight dislike. Moderate dislike for the physical and social characteristics of Developed Urban areas was expressed, however, boaters favored the more intensive management provided in those areas. Shoreline users expressed their strongest preference for Roaded Open Country and Highway Rural areas. For all other types of areas they felt neutral, however, a noticeable dislike was expressed for the number of people present in the Developed Urban class.

Substantial changes in boater experience preferences may be observed by comparing changes in recreation motives from 1981 to 1987. On Segment 2A, desires to develop skills and experience peace and calm appeared to be unimportant in 1981 but were significant motivators in 1987. Likewise, on both Segments 2A and 4B, the desire for physical exercise shows up in 1987

but was not present in 1981. Two additional items became important motivators between 1981 and 1987. On Segment 2A people were indicating their desire to escape crowds, while on Segment 4B there was a substantial desire to meet new people. Neither of the motives were present in 1981. The following list includes only those experiences desired by more than 50 percent of boaters studied.

	% Motivated			
	Segment 2A		Segment 4B	
Experience	Comm. Out-fitted	Priv. Out-fitted	Comm. Out-fitted	Priv. Out-fitted
Viewing Scenery	88.0%	87.8%	89.7%	78.9%
Thrills & Action	71.5	80.9	76.9	85.5
Developing Skills	--	72.0	74.4	73.7
Being with Friends	58.3	66.7	59.0	65.8
Peace and Calm	--	61.4	71.8	55.3
Learning New Things	61.2	58.8	61.5	52.6
Physical Exercise	--	53.0	--	64.9
Escaping Crowds	--	58.8	--	--
Meeting New People	--	--	--	54.0

The following table compares visitor responses to crowding (1981 figures are in parentheses; 1987 figures are not).

		Segment 2A			Segment 4B		
		Would Like to Have Seen More People	Neither Too Many Nor Too Few People	Too Many People	Would Like to Have Seen More People	Neither Too Many Nor Too Few People	Too Many People
At Put-Ins	Comm.	6.2%	52.1%	41.7%	9.9%	65.6%	24.6%
		(3.3)	(75.8)	(20.8)	(8.0)	(78.5)	(13.5)
	Priv.	0	54.3	45.7	12.6	50.0	37.3
		(4.8)	(66.1)	(29.0)	(6.9)	(86.2)	(6.9)
On River	Comm.	4.2	43.2	52.6	13.3	60.0	26.7
		(5.0)	(65.7)	(29.2)	(13.3)	(65.4)	(21.3)
	Priv.	2.9	37.1	60.0	5.9	41.2	53.0
		(1.6)	(36.1)	(62.3)	(6.9)	(69.0)	(24.1)
At Take-Outs	Comm.	5.2	41.7	53.2	6.7	73.3	20.0
		(3.8)	(72.5)	(23.6)	(6.9)	(67.4)	(25.7)
	Priv.	0	48.6	51.4	5.9	52.9	41.2
		(3.2)	(36.1)	(60.6)	(3.4)	(72.4)	(24.1)
While Camping On River	Comm.	17.5	65.0	17.5	7.2	78.6	14.3
		(11.2)	(66.7)	(22.2)	(4.5)	(68.2)	(27.2)
	Priv.	4.3	56.5	39.1	7.7	53.8	38.5
		(0)	(73.9)	(26.0)	(0)	(75.0)	(25.0)

On Segment 2A, in 1987, more than half of all boaters studied felt crowded while on the river and at take-outs. Nearly half felt the same way at put-ins. More that one-third felt crowded at all three

locations and while camping. This is not a substantial change for private boaters. Commercial boaters have substantial concerns about crowding which were not present in 1981.

Perceptions of crowding are much more varied among users of segment 4B. While more than one-third of all 1987 private boaters felt crowded at all four locations, none of the commercials felt that crowded. Also, over half of all private boaters felt crowded while on the river. As in Segment 2A, this still represents a significant change from 1981. In 1981, both commercial and private boaters indicated about the same degree of concern about crowding with only about one-fourth of them expressing concern about crowding, while on the river, at take-outs, and while camping.

Similar concerns about crowding are observed when comparing first time with repeat boaters. Approximately half of both first time and repeat users felt crowded at put-ins, on the river, and at take-outs on Segment 2A. On segment 4B, 25 percent or fewer of all first time boaters felt crowded; one-third to one-half of repeat boaters felt that way.

ii. General Visitor Satisfaction

Nearly 75 percent of all visitors on Segments 2A and 4B were satisfied with their trip. The same situation applies to satisfaction with management. Most boaters (two-thirds) feel that river managers are doing a good job, as shown below.

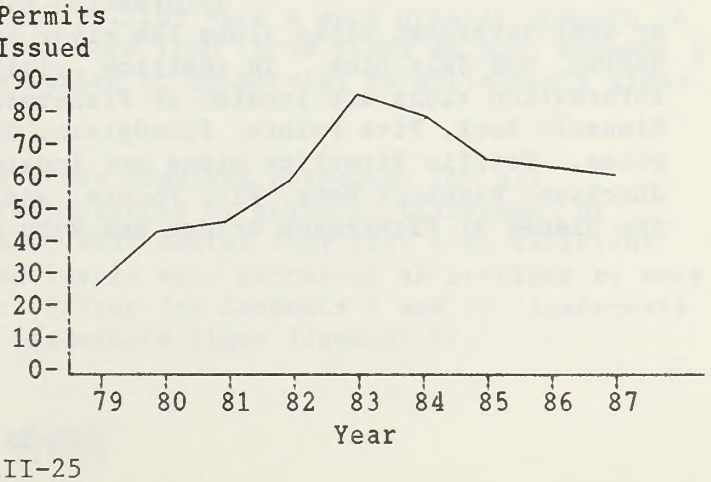
	% Boaters	
Response	Segment 2A	Segment 4A
Strongly agree	22.5%	22.8%
Agree	44.2	44.3
Feel Neutral	23.3	24.1
Disagree	9.3	8.9
Strongly disagree	0.8	0

3) Management (Managerial Characteristics)

a) Characteristics

The BLM began to require Special Recreation Permits (SRPs) for all commercial river outfitting on public lands along the Arkansas River in 1979. The following table depicts the growth of commercial river running up to 1987.

Year	Permits Issued
1979	27
1980	42
1981	45
1982	59
1983	86
1984	78
1985	66
1986	64
1987	62



Growth in the number of operators continued until it reached a peak of 86 permittees in 1983. Since that time the number of commercial outfitters has generally declined, and it now appears to be stabilizing.

Initially, commercial SRP user fee revenues were returned to the BLM for use in on-the-ground river management. This funding was used for initial construction of resource protection facilities at both Fishermans Bridge and Hecla Junction. In 1981 Congress stopped returning user fee revenues to the field for on-the-ground management. As of December 22, 1987, user fees are again being deposited into a special account where they are available for appropriation by Congress and can be used for on-the-ground management in subsequent years.

In 1984 the Colorado Division of Parks and Outdoor Recreation (DPOR) began a statewide outfitter licensing program. The license has been required by BLM as a prerequisite for obtaining commercial permits for use of public lands adjacent to the river. In 1988, the DPOR Parks Board was given additional authority to regulate the manner, type, time, location, and amount of recreation and commercial use on the Arkansas River from the confluence of the Lake Fork and the East Fork to Pueblo Reservoir. The DPOR also administers Colorado's boating safety regulations, some of which apply to on-river use.

i. Recreation Resource Management

The BLM's present management involves a number of resource protection projects on public lands along the Arkansas. On some heavily used sites resource stabilization work to curtail soil erosion is underway. For example, intensive foot use at the Five Points recreation site threatened some of the large Cottonwood shade trees, exposing their roots. Replacement soil was hauled in and stabilizing structures were added. Riparian vegetation in boggy areas at Fishermans Bridge was protected by installing a French drain. At Hecla Junction, several gabions were installed along the drainage to help protect the loop road, which serves the boat landing area, from major damage during flash floods.

ii. Visitor Services

Each summer, three to five BLM seasonal personnel and volunteers are assigned to work on public lands along the river. They provide visitor information and perform maintenance functions.

Information signs are maintained at major developed or semi-developed sites along the river including Ruby Mountain, Lone Pine, Maytag, and Salt Lick. In addition, visitor information boards and other information signs are located at Fisherman's Bridge, Hecla Junction, Rincon, Pinnacle Rock, Five Points, Floodplain, Spikebuck, and Parkdale recreation sites. Traffic direction signs are located at Fishermans Bridge, Hecla Junction, Pinnacle Rock, Five Points, and Parkdale. Public land boundary signs are placed at Fishermans Bridge and Ruby Mountain.

The BLM developed a small-scale river map of the area which is available from the Royal Gorge Resource Area office and from a dispenser at Fisherman's Bridge. The DPOR distributes a general purpose river running brochure dealing with visitor safety.

iii. Facilities Management

Developed recreation facilities provided by BLM along the river include four camping/picnicking units at Hecla Junction and eleven picnicking units at Five Points. The units include picnic tables and grills. A potable water system, trash pickup, and two permanent toilets are provided at Five Points.

Boat launching/take-out ramps are located at Fishermans Bridge, Hecla Junction, and Parkdale. The BLM has also constructed a boat ramp and beach area at Pinnacle Rock and has installed a drain in the parking area. The parking area at the Salt Lick recreation site has been enlarged approximately 50 percent, and a boat launching/landing beach has been cleared. A heavily-used portage trail has been built at Three Rocks Rapid. Vaults for seasonal portable toilets were installed at seven locations including Fisherman's Bridge, Ruby Mountain, Hecla Junction, Pinnacle Rock, Rincon, Spikebuck, and Floodplain.

b) User Preferences

i. Problems Encountered

When visitors were asked what problems they encountered, 18 different problems were noted by more than one-third of the boaters on either segment 2 or segment 4 during the 1987 season. Comparative data for both the 1981 and 1987 seasons are presented in Appendix D.

On both segments, the inadequacy of the existing toilet facilities at put-ins and take-outs, the few toilet facilities between put-ins and take-outs, and the large number of people on the river were the three problems most often considered serious. Over half of all users surveyed expressed those concerns. While the seriousness of several of these issues remained relatively unchanged from 1981 to 1987, some changes were rather dramatic.

The proportion of users studied who felt the number of people on the river was a serious problem doubled on segment 2 and increased nearly six-fold on segment 4. Though the problem does not concern a majority of boaters, inconsiderate behavior and yelling were a much greater concern in 1987 than in 1981 on segment 2. Also, more than three times as many segment 2 boaters expressed concern about the number of commercial establishments along the river in 1987 than in 1981.

The DPOR study combined responses for all recreationists studied without differentiating by boaters, fishermen, or others. It asked all users studied to what degree they felt nine different issues were problems. The following issues were perceived as problems by more than 50 percent of those contacted: litter (on Segments 1 and 3), inadequate toilets (on Segments 1 and 3), and inadequate signs (Segment 1).

The only problem identified by 50 percent or more of Segment 4 shoreline users was litter. In addition, from one-third to one-half of all Segment 4 shoreline recreationists indicated that the inadequate number of toilets and too many people on the river were problems.

ii. Possible Management Actions

When boaters were asked about restricting the number of people using the river at any one time, most supported the idea, as shown in the following table.

	% Boaters	
Response	Segment 2A	Segment 4B
Oppose	26.7%	30.4%
Feel Neutral	22.9	26.6
Support	50.4	43.0

When shoreline users were studied, only 14.8 percent indicated that they would like more controls to keep conflicts from occurring.

Boaters favored management controls more than shoreline visitors. Two-thirds or more of all boaters on Segments 2A and 4B support requirements to carry out all trash, prohibit motorized watercraft, restrict wood fires, prohibit ORVs except on roads, and develop short hiking trails along the river. In addition, more than half of all Segment 2A and 4B boaters support restricting camping to designated sites.

On Segments 2A and 4B, commerical boaters are far more supportive than private boaters of actions to restrict the number of people on the river at any one time, require permits to protect the land or avoid user conflicts, assign launch times, and limit group size.

d. Soils

To simplify the description of soils along the river, two or more types of soil are grouped into mapping units called soil associations. This data is not detailed enough for specific site planning, but it is suitable for planning on an area-wide basis.

Most of the soils in the area present no particular management problems. Only the Penrose soils are classed as being highly susceptible to erosion. However, any soil will erode if a good vegetative cover is not maintained. The eight soil associations along the river from Leadville to Pueblo Reservoir are described below. Detailed descriptions of these soils can be found in various soil survey reports kept in the BLM Canon City Office.

1) Association 68, Pierian-Poncha

This association is on nearly level to steep river terraces from Leadville to Clear Creek Reservoir. The soils are very permeable and are only slightly susceptible to erosion.

2) Association 63, Troutville - Leadville

This soil association is on mountain slopes, river terraces, and alluvial fans between Clear Creek Reservoir and Pine Creek. The soils are deep, well drained, moderately permeable, and moderately susceptible to erosion.

3) Association 66, Dominson - San Isabel

The Dominson soils are on the tops of high terraces and their strongly sloping side slopes, while the San Isabel soils are on the lower terraces adjacent to the river. This association is on the west side of the river from Pine Creek to Buena Vista, on both sides of the river from Buena Vista to Brown's Canyon and on both sides of the river from the mouth of Brown's Canyon to Salida. The soils are generally deep and very permeable. The Dominson soils are moderately susceptible to erosion, while the San Isabel soils are only slightly so.

4) Association 64, Rockland - Rock Outcrop

This association is on steep and very steep mountain slopes east of the Arkansas River from Pine Creek to Buena Vista, on both sides of the river through Brown's Canyon, from Salida East recreation site to Howard, from Cottonwood Rapid to Fernleaf Gulch, from Texas Creek to the mouth of the Arkansas Canyon, and through the length of the Royal Gorge. The association is mainly outcrops of igneous rocks, intermingled with very shallow soils.

5) Association 70, Wet Alluvial Land - Gas Creek

This association is on low terraces and bottomlands along the river from Buena Vista to about a mile above Fisherman's Bridge. The soils are poorly drained and formed in gravelly alluvium. Wet alluvial land is in the river bottom. It consists of gravel and sand bars, and wet, stratified, medium to coarse textured soil materials that are subject to overflow. Gas Creek soils are on the slightly higher terraces. They have a surface layer of gravelly sandy loam that is over gravelly sand, cobbles, and gravel. The Gas Creek soils are very permeable, and the susceptibility to erosion is slight. Wet alluvial land soils are not rated for permeability or erosion susceptibility.

6) Association 116, Haploboralls - Agriborolls

This association is along the river from Howard to below Coaldale, and from Fernleaf Gulch to Texas Creek. The soils are fertile, fairly deep, and well drained. Native vegetation is grass, but these soils are generally cultivated. The permeability is moderate and the susceptibility to erosion is moderate.

7) Association 7, Las-Glenberg-Apishapa

This association is found on the floodplains of the Arkansas River below Canon City. The Las series consists of nearly level, limey, moderately saline soils. These soils make up about 35 percent of the association and occur on bottomland and low terraces. Las soils are generally poorly drained. The water table is at a depth of 30 to 40 inches. There is no significant hazard of erosion. The response to management is good.

The Glenburg series makes up about 30 percent of the association. These soils are nearly level to gently sloping, limey, and deep to moderately deep sandy loams over sand and gravel. Glenburg soils are easy to work and are naturally well drained. Runoff is slow. Natural fertility is moderate. Erosion is a hazard in sloping areas.

The Apishapa series consists of nearly level, deep, limey, soils. They are found on bottomlands and low-lying terraces. Apishapa soils are generally poorly drained. Generally the water table is within a depth of 40 inches. There is no significant hazard of erosion. The response to management is poor. The Apishapa series make up about 20 percent of the association.

8) Association 4, Penrose-Minnequa

This association is along the river below Florence. The Penrose soils are on the uplands, while the Minnequa soils occupy the river bottom. About 25 percent of this association is rock outcrops, forming cliffs along the river's edge. Penrose soils are shallow, well drained, and contain fragments of thin, flat limestone. Permeability is moderately rapid and the erosion susceptibility is severe. Minnequa soils are moderately permeable, and the hazard of erosion is slight.

e. Vegetation (other than T&E Species)

The variable climate, elevation, and topography of the affected environment are conducive to extremely varied vegetation. The vegetation can be placed into three major groups: grassland, shrubland, and forestland. Other important types found within this affected environment are riparian zones and cropland.

Current recreational use is preventing the successful re-establishment and natural reproduction of all vegetative types near recreation sites. The condition of vegetation types near these sites is poor. Unrestricted foot traffic near put-ins, take-outs, lunch stops, recreation sites, and highway pull-offs from Texas Creek to Parkdale has, over the past ten years, resulted in a proliferation of paths and concentrated use areas. The grassland, shrubland, and riparian types have a low capability to support recreational uses such as vehicle and pedestrian traffic. This is due to the presence of a sandy granitic soil with a poorly developed soil profile which is relatively infertile and difficult to retain. In Segments 2 and 4, riparian grasses have partially disappeared because of trampling. In other segments, riparian condition is fair to excellent and natural stands still remain.

Forest types have changed only slightly in the past ten years due to recreational use. The loss of woody vegetation has been due to facility construction, vandalism, limbing of trees, and soil compaction by foot traffic. Forest lands possess a high capability to support recreational use and are more readily reclaimable.

1) Grassland Group

The grassland group includes the grass and meadow types. At least one of these types is found in each of the river segments. Dominant

species in the grass types are Arizona fescue and mountain mulhy in Segment 1. Grasslands in Segments 2 through 6 are dominated by blue grama, western wheatgrass, and needle-and-thread. The meadow type is found in small areas in Segment 1. This type is dominated by sedges and rushes.

2) Shrubland Group

The shrubland group includes the mountain shrub, sagebrush and saltbush types. The mountain shrub type is dominated by Gambel oak and mountain mahogany. It exists in Segments 2 through 5 as pockets within the pinyon-juniper type. The sagebrush type is dominated by sagebrush and rabbitbrush and is found in Segments 1 and 2. The saltbush type is found in Segment 6 and is dominated by fourwing saltbush and greasewood.

3) Forestland Group

This group consists of conifer and broadleaf tree types. Major species are ponderosa pine, lodgepole pine, Douglas fir, aspen, cottonwood, pinyon pine and juniper.

Two Forest Management Plans (FMPs) have been developed for the forested public land within the Arkansas River Drainage: the Mt. Elbert FMP (EA CO-050-1-131) and the Kerr Gulch FMP (EA CO-050-8-82). No active timber sales are located within the river corridor. Four timber sales in Segment 1 are located where people using the river may see evidence of harvest activities. In Segment 4 one sale will result in occasional trucks with forest products using river access routes.

The planning area includes one stand of productive forest land. This stand objective in the Mt. Elbert FMP is: "to thin stagnated stands and remove diseased trees from 28 acres of lodgepole pine in T. 12 S., R. 79 W., Sections 8 and 9 to help preserve the timber resource on a proposed recreation development site". This stand is in Segment 1B at the intersection of Clear Creek and the Arkansas River.

4) Riparian Zones

Riparian areas exist on the entire length of the Arkansas River. Riparian bands occur along the river through the other vegetative types. The dominant species are cottonwood, willow, cattails, sedges, and rushes. The only vascular aquatic species that exists is cattail.

5) Croplands

Croplands occur in Segments 2, 3, 4, and 6. The most common crop is alfalfa and grass hay. These crops are flood or sprinkler irrigated.

f. Animal Life (except livestock and T&E Species)

Wildlife species associated with the Arkansas River valley vary greatly. A complete list of these species is located in the Royal Gorge Unit Resource Analysis (URA), Step 4, and also in Appendix B of the Arkansas Canyon Habitat Management Plan (HMP). Both documents are on file in the BLM Office in Canon City. This EA discusses those species that have some recreational or economic value, or depend on the Arkansas River for some crucial habitat component.

1) Bighorn Sheep

The bighorn sheep (Ovis canadensis) is Colorado's State animal and is found throughout the Arkansas Valley where suitable habitat exists. The topography of the river valley is rough, rocky, and relatively "open" which makes it attractive to bighorn sheep. The need for rock outcroppings, precipitous cliffs, and rough topographic features is a part of the physical habitat of bighorn sheep. The juxtaposition and interspersion of these features with foraging areas influence the value of the habitat for sheep. Escape cover, especially during the lambing season, is critical.

In 1977, two herds (the Buffalo Peaks and Arkansas Canyon herds) consisting of approximately 200-250 sheep occupied habitats adjacent to the Arkansas River. Since 1977, eight sheep transplants have taken place adding 160 transplanted sheep to the population. These transplants have resulted in two new herds becoming established, the Grape Creek and Browns Canyon herds. The bighorn sheep population in the valley now numbers 500-550 sheep which spend all or a portion of the year adjacent to the Arkansas River. Additional transplants may take place as sites are inventoried and animals become available. These low elevation bighorn sheep herds have become an integral part of bighorn sheep management in Colorado.

The bighorn sheep is relatively rare (in terms of total numbers) and difficult to view. Opportunities to observe bighorn sheep in their natural habitat are excellent along the Arkansas River in several areas. It is vital that these opportunities continue to be available to the general public. In order to better describe the current status of bighorn sheep along the Arkansas River, herds along each river segment are described.

a) Segment 1 - Leadville to Buena Vista

Bighorn Sheep are found in the Collegiate Peaks west of the river valley but do not spend any time along the Arkansas River. The Buffalo Peaks herd (Game Management Unit S-12), which numbers about 150 animals, is located east of the river in the East and West Buffalo Peaks area. These sheep summer and lamb on the peaks and are generally not found along the river during this time. Some winter use is made of the rocky slopes east of the river from Clear Creek to Langhoff Gulch on BLM and USFS lands. Less than 20 sheep use this area during the winter months. The Colorado Division of Wildlife issues 20 hunting permits for this unit each year.

b) Segment 2 - Buena Vista to Salida

The Browns Canyon herd (Game Management Unit S-47) is located in this river segment. Until 1980 this historic habitat was not occupied by sheep. Three transplants of 20 sheep each in 1980, 1982, and 1985 formed the nucleus of this herd. The herd now numbers approximately 125 sheep. The main herd (50-60 head) is located primarily in the Turret, Long Gulch, Railroad Gulch, and Stafford Gulch area on BLM and USFS lands east of the Arkansas River. Use along the river in Brown's Canyon itself is limited. A small herd of about 30 animals that inhabits the lower end of Browns Canyon on the east side of the river. This herd is found at the mouth of the canyon and uses the area throughout the year.

A second portion of the herd is found in the Sugarloaf-Ruby Mountain area where they were transplanted in 1985. Half this herd has moved to the west into the Castle Rock Gulch area, and half (8-10) have remained in the transplant area. These sheep use this range year-round and are occasionally seen during the summer months.

The third area of use for the herd (40-45 head) is the south facing slopes along the north side of the river from one mile west of Longfellow Gulch downstream to approximately Maverick Gulch. Sheep can be found in this area year-round but are most commonly seen during the winter months up until lambing season. Migration and movements of this herd from the Turret area to the winter range are common. Five hunting permits are issued for this unit every year.

c) Segment 3 - Salida to Vallie Bridge

Sheep use in this segment is limited to the Browns Canyon herd which was described in the previous segment. No other bighorn sheep herds are found in this segment.

d) Segment 4 - Vallie Bridge to Parkdale

This segment contains two large sheep herds which spend a considerable amount of time along the Arkansas River. The Arkansas Canyon herd (Game Management Unit S-7), which numbers approximately 120 animals is located north of the river with the primary range being the south facing slopes between Big Hole and Parkdale. Sheep can be seen in this area year-round but are more common in the winter. Ewes generally move onto midslopes in rough terrain to lamb in the spring. Since the area is extremely dry with few natural springs, sheep are often seen along the river watering in mid-morning and mid-afternoon.

The Grape Creek Herd (Game Management Unit S-49) consists of approximately 115 animals and is located south of the Arkansas River. Prior to 1983 no bighorns existed in this area. Transplants of 20 sheep to 3 sites (one southeast of Texas Creek and two in Grape Creek) between 1983 and 1985 established this herd. Presently the herd is split equally between two major use areas, one being the lower Grape Creek area between Temple Canyon and Bear Gulch. The second use area is along Highway 50 south of the river from just west of Texas Creek east to Baker Gulch. Water does not appear to be limiting as these sheep seldom cross the highway to access the river. However, a few vehicle/sheep accidents have been documented, and on occasion sheep will move across the river and mix with the Arkansas Canyon herd. For management purposes, the herds are considered as two separate populations. Eight hunting permits are issued for Game Management Units S-7 and S-49.

In January of 1988 an additional sheep transplant was completed within this segment. Twenty sheep were released in Cedar Springs Gulch north of Coaldale on public lands. Poor habitat is available along the river and these sheep will most likely select a home range one to two miles north of the river. However, it is still too early to determine where these animals will settle. Newly transplanted bighorn often wander around for several months.

The success of bighorn sheep transplants in the river canyon over the last several years has prompted the Division of Wildlife and BLM to look at other possible transplant sites. An area under consideration is the public lands south of the river between Cotopaxi and Texas Creek. Other sites may be examined as time and resources allow.

e) Segment 5 - Parkdale to Canon City

No bighorn sheep are found in this segment.

f) Segment 7 - Canon City to Pueblo Reservoir

No bighorn sheep are found in this segment.

2) Mule Deer

Mule deer are the most common big game animal found in the Arkansas Valley. They inhabit all the vegetation types at all elevations including the riparian zone adjacent to the river. The riparian zone is used for feeding, bedding, watering, as hiding cover, and as travel lanes. The habitats along the river are used heavily during winter months when snows push deer to lower elevations. During spring, summer, and fall, the majority of deer move to upper elevation ranges. However, where suitable habitat exists, such as wide riparian areas adjacent to hay meadows, some deer remain year-round. These animals are generally accustomed to the presence of humans and associated disturbances.

The components that make the river valley attractive to wildlife also make it important for highways, housing developments, recreation and other uses. To survive in these areas, deer must be secretive, resulting in strictly nocturnal activities. This is evident by the large numbers of animals seen in the evening and early morning along the highways throughout the year. The highways themselves can be a serious problem for mule deer. The Division of Wildlife has identified major deer crossing points where deer/vehicle accidents are common. They estimate approximately 400 deer are killed annually in the Arkansas Valley from Leadville to Canon City.

Mule deer provide an important source of economic benefit to the area. Thousands of deer hunters, resident and nonresident alike, converge on the valley in the fall to pursue mule deer. Likewise, tourists throughout the year enjoy viewing mule deer and other wildlife species.

3) Raptors

Several species of raptors can be found in the valley along the river. Only one, the osprey, depends on the river as an important part of its habitat. Osprey are uncommon in Colorado and are found in the valley only during spring and fall migration periods. They do not inhabit the valley year-round. Being fish eaters, they stop along the river to feed as they migrate north.

Golden eagles are a common bird during most of the year. Nest sites in the cliffs and rock faces are abundant in the river canyons. Prairie falcons also frequent the same habitat sites. Other species in the area include red-tailed hawks, Swainson's hawks, and kestrel.

4) Waterfowl

Various species of waterfowl are found along the Arkansas River. The most abundant duck in the valley is the mallard, followed by widgeons and green-winged teal. Canada geese are common but not numerous. In terms of numbers of ducks and geese, the lower river from Canon City to Pueblo Reservoir harbors the most birds. The habitat there is more suited to waterfowl and is located closer to the Central Flyway. The river from Leadville to Browns Canyon has moderate numbers of birds whereas Browns Canyon and the area between Canon City and Texas Creek are less suitable for ducks. The number of broods raised in the valley is small and relatively insignificant on a statewide basis. Their use is concentrated in the river and nearby ponds, ditches, and sloughs. These riparian zones are extremely important to these species, especially during the spring and summer when broods are being raised.

5) Nongame Wildlife

An abundance of nongame species inhabit the Arkansas River valley from Leadville to Pueblo. Most are associated with the riparian zone along the river. Great blue herons are known to nest along the river near Florence, however actual numbers of birds occupying the rookery are unknown. An additional area receiving heavy heron use is the area from Salida to the mouth of Browns Canyon.

6) Fisheries

The upper Arkansas River begins at the confluence of the East Fork of the Arkansas and Tennessee Creek. The cold water fishery extends downstream to Pueblo Reservoir about 148 miles. The fishery contained within most of the Upper Arkansas is resident brown trout, with density and biomass varying greatly due to local effects. The 1979 stream and lake evaluation map of Colorado classified river drainages according to the existing fishery resources. The Upper Arkansas River was given a Class I rating, which designates it as a high-valued fishery resource.

The water quality of the Upper Arkansas basin is generally relatively good. Tributary streams in the basin show high levels of dissolved oxygen, and low levels of organic material, nitrogen, phosphorus, fecal coliform counts and total dissolved solids. Despite the high quality water in tributaries feeding the Arkansas River, water quality in the river itself is generally poor due to discharges from mines in Leadville. High levels of heavy metals enter the river, and this has a detrimental impact to the fishery in the upper reaches.

Fishery resources on the river are managed by the Colorado Division of Wildlife, primarily for the benefit of users on public lands. About 30% of the river is managed by the BLM, mostly located in Browns Canyon and below Texas Creek. The DOW also leases a number of miles for fishing access. A variety of fish management strategies have been used, including stocking of catchable (9-11") and fingerling (3-4") trout, special harvest restrictions, and habitat improvement.

Throughout much of the Arkansas, brown trout, and in some areas, rainbow trout are able to sustain their population by natural reproduction. To denote such areas the DOW classifies these stretches as Wild Trout Waters. No supplemental stocking of fish is conducted in these areas. Where fishing pressure is higher, some sections of the river have been stocked with catchable rainbow trout (Elephant Rock to Clear Creek, and near Fernleaf Gulch) to maintain good catch rates.

To monitor the effects of various management practices, the DOW conducts sampling of the fish populations in several different sections of the river. The fish populations are categorized by the species of fish, and the size range, density and abundance of trout. Anglers are also contacted as a part of statistical creel census. From this information, fishing use, catch composition, and catch rate are determined.

The Arkansas River is extremely important as a trout sport fishery. Of the 148 miles of fishery, approximately 90 miles is considered good to excellent trout fishing. The low elevations and generally mild winters allow for fishing year-round on 60 miles of river. The proximity of the river to large metropolitan areas including Colorado Springs and Pueblo make it attractive to day fishermen. The Arkansas is noted for its excellent fly fishing with natural hatches common, the most notable being the caddis fly hatch in the spring.

Late spring and summer bring higher runoff flows that in most years makes fishing difficult and often unproductive. The duration and intensity of runoff varies. When flows exceed 1800 cfs, fishing is extremely difficult. Fishing improves as flows reach 1200 cfs, and is considered excellent at 800 cfs or lower. However, at low flows, intense summer thunderstorms can increase turbidity and significantly impact fishing for short periods of time.

A fisherman averages about four hours of active fishing per day. Fishing pressure in terms of fisherman days of use is designated for the six segments of the river from Leadville to Pueblo on the Fisherman User days table in the Recreation Section of this chapter. These figures are derived from DOW creel census data where available or by extrapolating figures from one segment for use in another. When analyzing the figures, it is important to take into consideration the variability of the numbers due to differences in flows, weather, turbidity, etc. In addition, these figures are for accessible miles i.e, public lands and public easements, etc. These figures may vary by 10-15 percent depending on fishing conditions from year to year. Fishing pressure on private lands may increase these figures by 10%. Given these factors, total fisherman user days on the river fall between 21,000 and 28,000 in any given year.

The river varies greatly within this segment in physical, chemical, biological and recreational characteristics. This is primarily due to the influence of tributaries such as Lake Fork Creek, Lake Creek, and Clear Creek. This segment is subdivided into two reaches (one above Lake Creek and the other below) based on these differences.

a) Segment 1, Reach One - Above Lake Creek

i. Physical

Above Lake Creek the gradient is about 1%. The bottom material is primarily large cobble to gravel, but an area with sand bottom occurs in a flat area just above Lake Creek. The channel is generally about 60 feet wide and the mean flow for the Malta gage is 248 cfs (cubic feet per second). As with most of the river, the channel is confined between the railroad and the highway and has few meanders. Habitat for trout is limited as a result of this confinement and channelization. There is little instream cover except bank rip rap and bridges.

ii. Chemical

Most studies have found toxic levels of heavy metals in the river from California Gulch to Lake Fork Creek. All studies have stressed the importance of dilution flows from Lake Fork Creek and Lake Creek in maintaining viable fish populations. Two of the most severe heavy metals pollution sources on the Upper Arkansas River are the Leadville Drainage Tunnel and California Gulch. These discharges drain large areas of abandoned mines. Discharges from these sources continue to have a major role in the degradation of water quality in the upper section of the river.

iii. Biological

The East Fork of the Arkansas River above the Leadville Drain, and Tennessee Creek both have healthy populations of brown and brook trout. Below the Leadville Drain the trout population numbers are about 30% of those immediately above. From California Gulch downstream to the confluence with Lake Fork Creek, the river is almost devoid of fish (Finnel, 1977; Roline, 1981; and Anderson, 1985). After the Arkansas is diluted with good quality water from Lake Fork, trout are again able to inhabit the river.

Heavy metal pollution has also affected the invertebrate populations of the river. Finnell (1977) compared insect populations above and below California Gulch. Total abundance and mean diversity indices of aquatic macroinvertebrates were significantly lower immediately downstream of both the Leadville Drainage Tunnel and California Gulch. Predominately clean water species were found above the California Gulch inflow and heavy-metal-tolerant species were found below.

iv. Recreational

There is virtually no public access to the river above Balltown. However, fishing activity does commonly take place for about 2.3 miles above Balltown. Results of electrofishing surveys made in the Upper Arkansas System in 1986 and 1987 (only trout >5" length) are listed in the following table.

Station	Estimated Trout Population	Location of Station
1	3,249	East Fork above Leadville Drain
2	2,949	Tennessee Creek
3	924	East Fork below Leadville Drain
4	880	Arkansas 0.5 mile below Confluence
5	1,294	Arkansas just above California Gulch
6	0	Arkansas just below California Gulch
7	586	Arkansas just below Lake Fork Creek
8	520	Arkansas just above Lake Creek
9	2,019	Arkansas at Granite

b) Segment 1, Reach Two - Below Lake Creek

i. Physical

At the Granite gage the mean flow for the river for the period of record (POR) (77 years) is 384 cfs, and is exceeded 31% of the time. Median flow (50%) is 160 cfs. The average peak discharge for the 77 year period is 1,982 cfs, but the peak discharge flow from 1978 to 1986 averaged 2,613 cfs. The last ten years have been much wetter than long term records show. Peak flows usually occur in mid-June, and the average minimum flow of about 100 cfs occurs in winter.

The following table shows mean annual flow for the last ten years, and average flow and ranking for the period of record.

	Granite		Salida		Parkdale	
Year	Mean	Rank	Mean	Rank	Mean	Rank
1987	321	57	630	45	?	?
1986	508	9	823	9	1060	4
1985	573	3	858	8	1090	3
1984	687	1	1010	2	1270	1
1983	647	2	909	4	1220	2
1982	492	11	672	36	839	13
1981	342	49	410	67*	518	30
1980	545	4	776	11	1040	5
1979	538	6	707	25	910	11
1978	463	17	556	51	662	25
MEAN	512		735		957	
POR MEAN	384	(77 years)	630	(78 years)	818	(32 years)
Ratio	1.33		1.17		1.17	

*Extrapolated based on Wellsville gage for 1981.

The wet cycle of the last ten years applies to the entire river. For the 77 year period of record, five of the highest flow years have occurred during the past eleven years. Most recreation activities on the river are intimately associated with flow. High water years have benefitted white water rafting but have probably repressed fishing. In an average or below average year, fishing use would be higher.

Stream profile measurements were taken at two sites, one approximately one-quarter mile above Granite and the other about midway between Granite and Buena Vista. The channel width was 103 and 107 feet respectively and gradient in the riffles averaged about 0.5%. The fishery habitat between Balltown and Buena Vista is much improved compared to upstream. Boulders are more dominant and have created many deep pools.

ii. Chemical

Water quality appears to be good for most of the year. Water quality deteriorates during the runoff period or following thunderstorms, due to leaching from the mine tailings around Leadville. Most of the heavy metals have combined and are not in a free state that would be readily absorbed by the aquatic life. Yurczyk and Windell (1985) found very high levels of zinc, lead, and copper in the substrata. This is a fair description of the general water quality in the rest of the river. Nehring (1986) found very high concentrations of metals in the liver and kidneys of trout. Factors such as angling mortalities, quality of forage, and habitat quality may also be contributing to the lack of larger trout.

iii. Biological

This reach supports more trout than the upper reach, although it is still considered below potential. Electrofishing at the Granite Bridge in 1987 found about 2,020 trout/mile. In 1985 a station sampled about 1.5 miles below the Otero pump station had about 930 brown trout per mile. The Otero station was also sampled in 1980 (Nesler, 1982) and about 900 trout/mile were found. No trout were found over 14 inches, which suggests that heavy metals may be impacting the life expectancy of the trout.

iv. Recreational

Fishing has commonly taken place between Balltown and Clear Creek, despite the fact that all of the river is privately owned. There is about 4.0 miles of BLM land in the Elephant Rock area and fishing is popular there. The DOW regularly stocks catchable rainbow trout in the segment between Clear Creek and Elephant Rock.

c) Segment 2 - Buena Vista to Salida

i. Physical

There are three stream gages in this segment, Buena Vista, Nathrop, and Salida. The mean annual flow for these gages is, 506 (1965-80, 16 years), 645 (1964-82, 18 years) and 630 (1910-87, 78 years), respectively. Flow patterns are similar to Granite; peak discharge usually occurs in mid-June. In only 3 of ten years has flow exceeded 1,200 cfs before May 20 or after July 22. In an average year like 1987, flows dropped below 1,200 cfs by July 3. In wet years this occurred by July 30 and as late as August 15.

Channel width varies from 104 to 170 feet and gradient averages 0.5%. The minimum flow based on profile measurements was 270 to 300 cfs. The fish habitat is considered excellent in most of this segment. In general, most of the cover is provided by boulders and there is very little cover associated with the bank. Habitat does not appear to be limiting for any life stage, except for fry when the runoff exceeds 2,000 cfs in May. It has been documented that high runoff flows reduce the amount of fry habitat and increase mortality on small fry. Since the river generally does not freeze in the winter, winter mortalities are unlikely to occur.

ii. Biological

Only one station has been electrofished in this segment. A two mile reach was sampled from Big Bend to County Road 166 bridge. The population for trout over 6 inches was estimated at about 2,000/mile and about 1,210 pounds per mile in April 1988. This station had fewer fish compared to downstream stations, but the brown trout were larger (average weight per fish was 0.61 lbs) compared to the Salida (0.49) and Howard (0.45) stations. This is an indication of better quality habitat and/or better forage availability.

iii. Recreational

About 8 miles of the river flow through BLM land between Buena Vista and Big Bend. Access is poor and mainly at Ruby Mountain and Hecla Junction. To fish Browns Canyon it is necessary to park at Hecla Junction and walk downstream.

A lease obtained in 1988 opened two miles to fishing downstream of Big Bend. This area was very popular in the Spring of 1988. There has been no stocking of catchables in this segment since 1976. In 1981 the Arkansas River from Gas Creek to Fourmile Creek (Browns Canyon) was designated a WILD TROUT area. There were no regulation changes or any kind of follow up regarding this designation. The wild trout designation has been dropped and a catchable stocking program will start for Browns Canyon, Big Bend, and State property near the hatchery. Also, a wild strain of Colorado River rainbows will be introduced in Browns Canyon.

Special restrictive fishing regulations are being considered for the area between Big Bend and County Road 166. In 1985 the BLM cooperated with the DOW and Chaffee County on a small habitat improvement project in the Ruby Mountain area. Approximately 15 large boulders were placed in a flat, calm stretch of the river to provide cover and resting areas for trout.

d) Segment 3 - Salida to Vallie Bridge

i. Physical

Records from the gage at Wellsville show the mean flow (24 years) is 730 cfs. Only 30% of the time has the flow exceeded 1,540 cfs by May 21, and 1,500 cfs by July 22 at Wellsville. In years when mean annual flow exceeds the long term mean by 200 to 400 cfs, fishing use is light in the summer. However, in an average year, fishing recreation is much greater.

Many aspects of flow are related to population dynamics of trout. Comparisons have been made between flow levels and fry habitat availability, fry survival, summer mortality, winter mortality, and spawning success. The maximum and minimum flows impact the population, and the timing of high and low events is very important. For example, a flow of 3,000 cfs would cause a much higher mortality on brown trout fry in May than in July. It appears that the early runoff of 1987, when flows were 3,300 cfs in mid May, hit the fry when they were most vulnerable.

Two stream profile measurements were taken in 1987, one below the South Arkansas confluence and the other at Howard. Channel width was found to be 118 feet. Near Swissvale, the river slope is reduced and the river is flat and deep.

Badger Creek, about midway in this segment, can profoundly impact the river. The sediment load to the river has been estimated as high as 42,043 tons per year. The sediment from Badger Creek is often responsible for muddy conditions on the river below its confluence. The effects of this tremendous sediment transport on aquatic life on the Arkansas River have not been determined. However, excessive sediment can reduce aquatic insect abundance, smoother trout fry and eggs and reduce adult trout habitat through filling of pools. Increased suspended sediment reduces fishability and aesthetics. The Badger Creek watershed problems and rehabilitation are being addressed through a cooperative plan with BLM, USFS, Trout Unlimited, and private land owners within the basin.

ii. Biological

Population surveys have been made on two reaches of this segment. In 1988, 3,340 trout over 6 inches per mile were found between Stockyard Bridge and Badger Creek: 2,900 per mile were brown trout and 440 per mile were rainbow trout. Also in 1988 the estimate for brown trout was 2,823 per mile between Howard Cemetery and Vallie Bridge. A research project was conducted from 1981 to 1985 to assess the effects of special regulation management on the brown trout population. This area had the highest trout density of the areas surveyed on the river and had the only self-sustaining rainbow trout population. The protective fishing regulation has been effective in increasing the trout density for fish under 16 inches.

iii. Recreational

This segment, from Salida to Vallie Bridge, is a very popular fishing area. A special regulation that allows for a two trout bag limit for trout over 16 inches, with flies and lures only, was established from Stockyard Bridge to Badger Creek in 1982. Wild rainbow introduced below the Stockyards have also been popular with the fishing public. Fishermen use is expected to increase in this segment because a 1988 fishing lease has opened about 2 miles of river for fishing.

In contrast to fishing, this has not been a high use area for commercial rafting. Flat water probably accounts for low boater use. This segment could see an increase in rafting as the more popular whitewater areas fill.

This area was dropped from the Gold Medal program in 1988 because it no longer met minimum standards. The special regulation now in place will continue. Catchables will be stocked at Howard and wild rainbow will be planted between Salida and Badger Creek.

Approximately $35,000 has been spent on fish habitat improvements in this segment since 1981. The BLM using Federal Aid money coordinated through the Division of Wildlife placed large boulders in the river to provide fish habitat. Two areas of public lands were selected and 330 boulders were placed in the area from Stockyard Bridge to the Fremont/Chaffee County Line and from Swissvale to Badger Creek.

e) Segment 4 - Vallie Bridge to Parkdale

i. Physical

Most of this segment is sandwiched between the highway and the railroad. The mean annual flow for the period of record (32 years) is 818 cfs at the Parkdale gage. The year 1981 was the only year that the mean annual flow (518 cfs) was less than the long term mean. The records show that flows dropped below 1500 cfs by August 1 in 6 of the last 8 years.

Below Texas Creek the channel is very confined. The habitat alternates from swift current runs, large deep holes, to wide shallow glides. Good trout habitat exists in localized areas. Texas Creek also provides spawning habitat. Brown trout typically prefer to spawn in shallow, gravelly side channels in the main stream or in tributaries. This type of habitat is uncommon in this segment.

ii. Biological

Electrofishing stations were set up and samples taken from Coaldale to Canyon Liquor (1), KOA to Fernleaf Gulch (2), and on Tezaks, from the A frame cabin to the Texas Creek Store (3). These stations were sampled in 1981, 1982, and 1983. Population numbers for this segment show a brown trout density (age 2+ and older) of 1,500 to 3,060 per mile at Station 1, from 1,500 to 2,920/mile at Station 2, and from 2,110 to 3,250/mile at Station 3. There were no trout sampling stations on the river below Texas Creek.

The macroinvertebrate community in this segment of the Arkansas River appears to be stressed. The dominance of sediment tolerant species indicates sedimentation is a problem and may be detrimental to the aquatic ecosystem. Winters (1988) reported that brown trout growth is limited by unavailability of large forage items.

iii. Recreational

About 5 miles of the river between Vallie Bridge and Texas Creek is open to the public. Fishing pressure varies with the runoff and turbidity of the water. For example, in the high flow year of 1980 there were only 750 hours in June, but in 1981, a low runoff year, use was 1,560 hours for the same time period.

Public access is available from Texas Creek to Parkdale on BLM land and totals about 14 miles of river. Fishermen utilize the numerous vehicle pullouts to fish the river. Much of the river is not fished because of access or parking problems.

Cooperative habitat improvement projects between BLM and DOW using Federal aid money have been completed in this segment. Over $88,000 has been spent placing 1000 boulders in the river in five major areas. Rocks have been placed on public lands in the river from Big Cottonwood Creek to Kuntz Gulch, Loma Linda to Fernleaf Gulch, Tezak to Texas Creek, Pinnacle Rock to Spikebuck area, and near Parkdale.

f) Segment 5 - Parkdale to Canon City

i. Physical

The river in this segment runs through the Royal Gorge, a steep-walled canyon over 1,000 feet deep. The river is restricted and narrow through this stretch. Flow information is not available for this segment.

ii. Biological

The physical nature of this segment precludes doing any biological measurements or surveys. Generally, trout habitat in the gorge is limited. The lower river from the Tunnel Drive area to Canon City is good trout habitat with conditions similar to Segment 4.

iii. Recreational

Access to the river is available from Tunnel Drive near Canon City. Creel census surveys have not been completed in the area and use projections are unavailable.

g) Segment 6 - Canon City to Pueblo Reservoir

i. Physical

The river from Canon City to Pueblo Reservoir is generally slow and wide with a low gradient. Water temperatures increase and result in fish species composition changes. No flow data is available.

ii. Biological

Boat electrofishing was conducted by the DOW on two occasions in 1983. Only game fish were netted. From Highway 115 near Florence to the Portland Cement plant, 44 rainbow trout and 60 brown trout were collected. Rod VanVelson sampled the river in 1981 by electrofishing four times in this segment. Two stations were sampled in April and again in September and were 1,100 feet in length. The fish collected by VanVelson are depicted on the following table.

Species	Number of Fish			
	Upper Station		Lower Station	
	4-15-81	9-30-81	4-15-81	9-30-81
Rainbow Trout	25	0	9	0
Longnose Dace	91	39	0	29
White Sucker	22	15	108	20
Longnose Sucker	34	1	107	1
Flathead Chub	3	0	5	0
Fathead Minnow	2	0	1	0
Black Bullhead	3	1	7	0
Channel Catfish	0	1	0	1
Green Sunfish	22	4	4	15
Orange Spotted Sunfish	1	--	30	--
Stoneroller	--	1	1	--
Yellow Perch	--	--	--	2
Red Skinner	--	--	--	5

iii. Recreational

No public land is available for public use with the exception of DOW property on the west end of Pueblo Reservoir. No creel census work has been completed and use figures are unavailable.

g. Access and Transportation

1) Access

The access situation for the Arkansas River is complicated by four major impediments: 1) private land, 2) the river, 3) topography, and (4) railroad tracks. For the purpose of this section and the access maps, "access" is defined as "public land which is physically and legally capable of being reached by the public".

The access situation for the river and to each individual parcel of public land under consideration and to some sub-portions of parcels is depicted on the Realty & Access Maps. Foot access on public land is unlimited except by one's desire and ability. The river itself is a legal (State Law) means of transportation by boat to public land. With this in mind, every acre of public land under consideration has legal access of some type. Although some parcels are accessed only by boat, and others must be reached by foot trails, the majority of parcels are easily and legally accessible by vehicle.

2) Transportation

The transportation system serving the Upper Arkansas Valley (above Canon City) has remained largely untouched by the large changes in the nation's transportation facilities over the last twenty years. For the most part, multi-lane interstate highways and modern air passenger terminals have not been constructed in the area. Rather, the region's transportation system has developed in a manner commensurate with the valley's low-intensity agricultural, mining and recreational economy. This section focuses on the two major segments of the transportation system: highways and railroads.

a) Description of Existing Roadways

Highway access to the Upper Arkansas River is provided by a system of two-laned high-speed rural roadways. Access to and from the north is provided by U.S. 24, and to and from the east by U.S. 24 and 285, which serve Segments 1, 2, and 3 of the Arkansas River. During the summer and early fall months, access to Aspen and Glenwood Springs to the west is provided by State Highway 82. To the east and south, U.S. Highway 50 provides access to Canon City, Pueblo, and Colorado Springs. From these two cities, I-25 serves the major Front Range cities in Colorado. Highway 50 also provides access to the west to Gunnison, Montrose, and Grand Junction.

U.S. Highway 24 serves as one of the three major highways in the Upper Arkansas Valley (Segments 1, 2, and 3). At Johnson Village, U.S. Highway 24 turns east and provides the primary link to Colorado Springs. At Johnson Village, U.S. 24 also intersects with U.S. 285, which provides access to U.S. 50. As it passes through Buena Vista, U.S. 24 is a four-lane arterial, with a traffic signal at the intersection with Main Street. Between Buena Vista and Leadville, U.S. 24 is a high-quality rural two-lane highway, with a 55-mph posted speed limit over most of the distance. Travel lane width is typically 12 feet, with 4 to 8 foot shoulders. Design speed is high, with the exception of several curves and one short grade approximately three miles to the south of Granite.

Highway 285 provides access to the Upper Arkansas Valley from Denver. U.S. Highways 24 and 285 descend from Trout Creek Pass to the east at Johnson Village. From Johnson Village, U.S. 285 turns south to Salida and the San Luis Valley. It provides access to river segments 1, 2, and 3. U.S. Highway 285 is a high quality rural two-lane highway, with a 55-mph posted speed limit. It contains several passing lanes and numerous turn lanes. The travel lane is typically 12 feet, with 4 to 8 foot shoulders. This stretch of highway serves two of the most frequently used recreation sites on the entire River, Hecla Junction and Fisherman's Bridge.

U.S. Highway 50 serves as the third major highway in the Upper Arkansas Valley. The highway runs primarily east and west and parallels the River from Parkdale to Salida. It provides access to Colorado Springs via State Highway 115, and to Pueblo and points east on U.S. Highway 50 and the front range via I-25 South. East of Canon City, U.S. Highway 50 is a four-lane highway, with a 55-mph posted speed limit.

The section of U.S. Highway 50 through the Arkansas Canyon is a gentle rise with short grades of 4 percent. Many sharp curves result in slow travel speeds and short sight distances from Parkdale to Salida. The travel lane is typically twelve feet wide but in some areas has shoulders of only 2 feet in width. Numerous pullouts which facilitate river recreation use present additional obstacles to smooth traffic flow. Overflow parking lots south of the highway necessitate pedestrians crossing the highway to access the River. There are numerous climb lanes located in the canyon. This highway segment is the weak link in the transportation system.

There are nine county roads that serve as access routes to proposed or present recreation sites. Seven roads are located in Chaffee County, one in Fremont, and one in Pueblo. Maintenance is provided by the county.

Chaffee County Road 371 (Fourmile Road) consists of 9.5 miles of maintained gravel providing recreational access to segments 1 and 2, east of the river and north of Buena Vista from U.S. 24. This road averages 18 feet in width and has one recently constructed one-lane bridge crossing the Arkansas River.

Chaffee County Road 301 (Fisherman's Bridge) consists of one mile of gravelled road accessing Fisherman's Bridge recreation site from U.S. 285. This segment also serves Ruby Mountain recreation site via Chaffee County Road 300. Road 301 averages 24 feet wide and has one bridge (Fisherman's Bridge) which is scheduled to be rebuilt with Federal Aid sometime after 1990. Road 300 (Ruby Mountain Road) averages 20 feet in width and is 3.5 miles in length. It accesses Ruby Mountain Recreation Site on the east side of the River. There are no structural developments on this road.

Chaffee County Road 194 (Hecla Junction Road) consists of 2.75 miles of gravelled road accessing Browns Canyon via U.S. Highway 285. This road averages 20 feet in width and does not receive maintenance in winter when it is closed to traffic. Turning lane and parking areas at the junction of Road 194 and U.S. 285 have recently been completed to facilitate a smoother, safer traffic flow off of U.S. 28 onto Road 194.

Chaffee County Road 191 (Stone Bridge Road) consists of about 0.40 mile of maintained gravelled road from Highway 291 to Stone Bridge. Traffic across the bridge is estimated at 10 ADT (Average Daily Traffic). The bridge is noted as an Historic Bridge and has weight limitations. Chaffee County would like to remove this bridge and provide alternative access to private landowners.

Chaffee County Road 165 consists of 0.56 mile of 20 feet wide maintained gravelled road. Access to this road is provided by U.S. 285 from the west. In 1986, ADT was estimated at 40.

Chaffee County Road 193 consists of 1.45 miles of 22 feet wide gravelled road. It is a shortcut between Highway 291 and U.S. 285 and lies on the old highway grade. No current estimate of ADT is available.

Fremont County Road 112 consists of 1.1 miles of gravelled road accessing the Arkansas River near Beaver Creek confluence. This road averages 20 feet in width. County responsibility ends four miles from the proposed Beaver Creek recreation site. Road construction and maintenance funds would be needed to render this site functional.

The Swallows Road located in Pueblo County consists of 3.5 miles of 24 feet wide gravelled road. This road connects to a 0.5 mile long gravelled road maintained by the Colorado Division of Wildlife which goes to the proposed Swallows recreation site.

b) Existing Roadway Capacity

Many factors influence a roadway's ability to accommodate traffic, including grades, design speed, roadway width, percentage of trucks and other heavy vehicles, and the availability of shoulders. The following data, from the Colorado Department of Highways, is a list of maximum capacities for the major highway segments, in terms of vehicles per hour (VPH), for one direction travel only: U.S. Highway 24 from Twin Lakes to Buena Vista (Segment 1) 1,600 vph; U.S. Highways 24 and 285 from Trout Creek Pass to Johnson Village (Segments 1 and 2) 1,450 vph; U.S. 285 from Johnson Village to Poncha Springs (Segment 3) 1,600 vph; and U.S. Highway 50 from Salida to Parkdale (Segment 4) 1200 vph. Maximum roadway capacity currently is constrained by topography and traffic congestion rather than manmade features such as stop lights.

c) Highway Traffic Activity

Highway traffic activity is evaluated in terms of traffic volumes, vehicle classifications, and accident frequency.

i. Traffic Volumes

Average Daily Traffic count programs are maintained both by the Colorado Department of Highways (for state roads) and the Chaffee County Road Clerk (for Chaffee County roads). Traffic counts are highest in the vicinity of Leadville, Buena Vista, Salida, the Royal Gorge, and Canon City.

The volume of traffic using the highway system is a reflection of recreational activities being carried out in the region. During the summer (mid-May to Labor Day) recreationists floating the Arkansas River and travelling through to western and southern destinations dominate the highway system. During October another smaller peak of traffic volume results from big game hunting. The ski industry also produces a peak of traffic volume during the period December through March. According to traffic counts made at Five Points Campground in 1987-88, summer carries the greatest volume of traffic (1,655-1,870 vehicles per day one way), with October the next busiest period (1,140 vehicles), and winter the least busy of the three traffic peaks. November and April carry the smallest traffic volumes.

Arnold, Brown, and Driver (1981), conducted a dispersed recreation use study in 1978 in the Arkansas Canyon and found that traffic volume on U.S. Highway 50 averaged 3,629 vehicles per day for the 100 day period of May 28 to September 2. The rest of the system has similar traffic volumes. Twenty percent of the vehicles were recreationists (19 percent at Salida and 25 percent at Parkdale). The recreational use consisted of the following.

Activity	% Use
Sightseeing	29 percent
Fishing	24 percent
Camping	22 percent
River running	11 percent
Other	14 percent

Only near recreation sites adjacent to the highway system does traffic congestion cause notable traffic flow restrictions. These problems only exist during peak traffic volume hours on peak volume days (Saturdays).

The ADT volumes are averaged over the year and do not represent the markedly higher volumes present during the summer season. Volumes could average 3,000-3,700 vehicles per day at that time. Traffic volume is expected to be greatest over the midday period with the maximum hourly volume occurring between 2:00 p.m. and 4:30 p.m. (There is no estimate of maximum hourly volume).

Chaffee County Road traffic volume in 1985 was 220 vehicles per day (vpd) for Fisherman's Bridge Road, 250 vpd for Hecla Junction road, 100 vpd for Fourmile Road, and 190 vpd for the Ruby Mountain Road.

Volumes on the highway system near river Segments 1 and 2 have dropped over the last six years as a result of declines in the local economy (particularly in the Leadville area). Segments 3 and 4, Salida, and Canon City volumes have remained constant or slightly increased.

ii. Vehicle Classification

The class or type of vehicles utilizing a roadway influences capacity and operating conditions, particularly on two-lane rural highways. Vehicle classification counts within the system average 12 percent trucks or buses.

iii. Accident History

Accident rates on the three roadways varies from a low of 1.13 per mile per year on U.S. Highway 24 to a high of 1.60 per mile per year on U.S. Highway 50. This reflects the more hazardous driving conditions in the Lower Arkansas Canyon where there are more deer crossings, curves, blindspots, rocks-on-the-road, and more congested traffic conditions. There is no current data for accidents on Chaffee County roads but the number of accidents on all four roads is believed to be low. Information regarding highway accidents on major roadways is presented below. These data are computed from Colorado Department of Highways statistics.

1986 Accident Summary

Roadway (Mileage)	Number of Accidents* (1986)				Total/
	PD	INJ	FAT	TOT	Mile
U.S. 24 Leadville to Buena Vista (32)	17	17	2	36	1.13
U.S. 285 Johnson Village to Poncha Springs (21)	19	12	1	32	1.52
U.S. 50 Salida to Parkdale (47)	36	35	4	75	1.60

*
PD - Property Damage only
INJ - Injury
FAT - Fatality
Total - Total of all types of accidents

d) Rail Service

Rail service to the Upper Arkansas valley is provided by the Denver and Rio Grande Western Railroad (D&RG) between Pueblo to the southeast and Dotsero (near Glenwood Springs) to the northwest. This single-track mainline is currently served by one freight train in each direction four days each week and two freight trains in each direction three days each week. As a result of a recent merger between the D&RG and the Southern Pacific Railroad the number of freight trains using the Arkansas Valley could increase to six trains per day each way in the near future. No passenger service is provided, and the D&RG does not envision future passenger service in the Upper Arkansas Valley.

h. Noise

Noise from river rafters is a public concern on the river. User preference surveys (Knopf and Lime, 1981; Knopf and Virden, 1987) indicate that in 1987, 32.6 percent of Segment 2 boaters and 16.3 percent of Segment 4 boaters felt that shouting and yelling was a problem (up from 1981 figures of 15.9 percent on Segment 2 and 12.5 percent on Segment 4). Private landowners adjacent to the river have also expressed concerns about boaters repeatedly disturbing their peace and quiet.

Reasons for these concerns may be seen in how boater responds to possible reasons for floating the Arkansas. More than half of all Segment 4 boaters, commercial and private, indicated a desire to experience peace and calm, and the same was true for private boaters in Segment 2. But fewer than 50 percent of all commercial boaters studied on Segment 2 were seeking peace and calm. Some Segment 2 concerns may be due to private-commercial boater conflicts over the noise issue.

Noise concerns are not limited to those on the river. The Forest Service indicates that parties of river rafters camping at National Forest campgrounds are particularly noisy and upset traditional family camping patterns at these sites.

i. Grazing Management

The affected environment includes portions of 30 grazing allotments, with 34 different grazing operators. There are also several tracts of land upon which no grazing authorization exists and which are considered vacant public lands.

Foraging areas along the river range from rocky sites with sparse or no vegetation to gently sloping or flat outwashes including some of the higher producing forage areas in the general area. Forage species include, but are not limited to, blue grama, western wheatgrass, needle and thread, sand dropseed, and bluegrass. The acreage available for grazing in the planning area versus the total area of the grazing allotments is less than .1 percent. The amount of forage harvested in the area is likewise quite small (no higher than 5 percent on any allotment).

Twenty of the allotments have an Allotment Management Plan (AMP) which includes a grazing plan to protect and enhance resource values. All twenty allotments are categorized as improved (I) which indicates that there are objectives to improve certain resource conditions somewhere on the allotment listed on the following table. None of the objectives in the AMPs deal with improvement of the riparian zone along the river. A 1980 Grazing Environmental Impact Statement concluded that livestock grazing (or lack of) along the river did not have a significant impact on riparian vegetation or fisheries.

There are nineteen known watering points along the river on public lands. Additional points may exist. At these points cattle have access to water on a daily basis. The number of points used in a year varies, but probably averages about 12.

Livestock access to the river is controlled by standard barbed wire fences. These fences are built along U.S. Highway 50 and 24 rights-of-way on the south and west. Gaps in the fence permit cattle to drink from the river while preventing them from going further. These water gaps are usually fenced, and the fences may extend a significant distance into the river. The number and location of these fences is unknown and varies from year-to-year.

One operator in Segment 2 trails cattle across the river in the spring and fall. The number of head trailed is usually less than 50 and trailing is completed in less than two hours. Crossings are done when water levels in the river are low to allow easier and safer crossings.

j. Safety

Safety along the Arkansas River corridor has been a concern since the BLM began managing recreational use on public lands in 1962. In Segment 4, the major safety concern is the closeness of the highway, river, and railroad tracks within the narrow canyon. As recreational use grows, the chance for car-pedestrian or train-pedestrian accidents also grows. The first place where this concern appeared was at the BLM Parkdale recreation site. Similar concerns surfaced at other heavily used sites. Floods also present hazards in the canyon. Flashflood warning signs and camping restrictions are placed in several recreation sites which are located, out of necessity, within floodplains.

Safety of recreationists and other people along the Arkansas River is also addressed in the sections on hazardous waste, recreation, and access and transportation.

C. ENVIRONMENTAL CONSEQUENCES

1. Critical Elements

a. Threatened and Endangered Species

1) Wildlife

a) Bald Eagle

Impacts to bald eagles would not be significant under the preferred alternative. No eagles nest in the Arkansas valley they stop here only to spend the winter. Recreational use is minimal along the river during this time.

b) Peregrine Falcons

Peregrines select areas where suitable cliff sites and prey are found, and appear unconcerned about closeness to man and his developments. Examples include the hacking of birds in major cities, heavily used national parks, and other areas where people are common. A pair is active in the Royal Gorge which hosts thousands of tourists daily.

Impacts to peregrines as a result of the preferred alternative would be insignificant. Existing hack sites are located well away from the river corridor. Natural eyries that have established in the valley have done so despite human activities nearby. Protection of these new eyries is critical. If peregrines establish new eyries in the river canyon, they would most likely be in areas of tall, inaccessible cliffs with adequate protection.

2) Plants

Negative impacts to the six listed species of plants in this area are difficult to assess due to the lack of site specific information on distribution and abundance. Very little is known about five of the listed plants. These species been located in the river canyon. Three, Penstemon degeneri, Parthenium tetraneuris, and Mentzelia densa occur in areas that would be impacted by the Preferred Alternative. The level of human use anticipated along the river could easily result in trampling of these plants and impacts to the populations. Two other species, Aquilegia chrysantha and Haplopappus fremontii occur in the area but appear to be fairly widespread. Adverse impacts to these two species are not anticipated.

The sixth species, Eriogonum brandegei, is found in the vicinity of Big Bend in Segment 2, within .25 mile of the proposed Big Bend Recreation Site. It is highly likely that this species occurs in the proposed development area. The level of use anticipated in the preferred alternative may impact the plants in this area. Should recreation use spread west of Highway 285 to the known populations, additional impacts could occur. Inventories may locate other populations in this area.

b. Wilderness

There would be no impacts on the McIntyre Hills WSA. Two actions would impact management of the Browns Canyon WSA: (1) the proposal to acquire additional land for public recreation use in the Ruby Mountain area, and (2) development of a 40-site campground.

Public access to Browns Canyon WSA would be maintained across public lands. In addition, brochures and information concerning the WSA would be distributed. Development and increased use of Ruby Mountain could adversely impact areas near the boundary of the WSA. Conversely, additional public exposure to the WSA might create a deeper appreciation and interest in maintaining the irreplaceable wilderness values. Some users might become more involved in demanding proper utilization to retain the wilderness values of the WSA.

c. Visual Resources

All development and impacts upon visual resources would occur in Class II VRM zones. There would not be significant impacts on any of the four basic elements (color, line, form, and texture). Visual contrasts in color and line could occur on a small scale from construction of facilities, parking lots, and other structures. The final result of facility development could be a positive impact as color, form, and texture blend better with the natural environment.

d. Socio-Economics

1) Social Values

a) Population Trends

Some population change would result from the preferred alternative. The magnitude of that change cannot be estimated given the lack of area data and models. However, if employment increases, then population may increase. Most of the employment impact would occur during the tourist season from the end of May to the beginning of September.

Likewise, where development occurs, there may be impacts on infrastructure demands (school, police, and health facilities). Chaffee, Fremont, and Lake counties are not accustomed to rapid growth but appear willing to plan for an infrastructure that would accommodate growth. Lake County in the last decade experienced a large drop in employment and income after the Amax mine closing and is looking at a transportation plan to encourage and facilitate growth.

b) Social Attitudes

Impacts from the preferred alternative tend to be segment specific and user specific. The decision produces trade-offs that have social advantages for some groups and social disadvantages for others. For example, private rafters who want to use a particular area may be upset if that area is closed to them but open to other user groups. Users who perceive that a segment provides more recreational opportunities for them would have a positive attitude toward that segment. Some individuals feel that fees collected and returned to the area is good, while others may not use the river because of the fees.

2) Economic Conditions

A temporary peak construction workforce of up to 20 individuals would be required the first year for construction of segment improvements and road improvements. There would be a permanent parks workforce of up to four people in the area, with up to 15 people working part time during the season. By 1997, $392,000 in fees would be collected and available to operate the park. Lack of area data and models prevents an analysis of population changes related to projected employment impacts. However, given the high rates of unemployment in the ESA, employment would likely be filled by local residents. Also, much of the employment and visitor use occurs during a three month period in the summer. Neither factor would tend to cause new people to move to the area.

For the purpose of this analysis, it was assumed that ESA employment would grow 1.2 percent per year during the 1987-1997 period. Moderately significant economic impacts are defined as having an average annual change of more than 2 percent per year in employment. A moderately significant impact is also defined as a change in employment of more than 10 percent from the no action alternative. Based on this criteria, the preferred alternative would not cause moderately significant impacts in the ESA as a whole. However, since impacts are not allocated to counties or local communities, it is impossible to predict whether specific areas would reach this threshold.

The Economic Study Area (ESA) Table presents local employment for 1997 for the preferred alternative. The percentage change from the 1997 baseline would be 1.3 percent for employment. The average annual percentage cumulative change from the 1986 base would also be 1.3. These impacts are not significant.

1997 Economic Study Area Employment

Alternative	Total Employment	Change From Baseline	Percent Change From 1997 Baseline	Cumulative Impact Change From 1986 Baseline	Cumulative Average Annual Change From Baseline 1986
Preferred Alt.	26,630	340	+1.3	3,296	1.3
Baseline	26,290	--	--	2,956	1.2

Most motels and hotels in the area tend to be at capacity on weekends and during the rafting season, and this trend is expected to continue. The number of visitors to the area who want hotel or motel accommodations would increase, and there would be a tendency for room rates to increase and new motels or hotels to be built. How many new motels or hotels would be built to meet this demand is unknown.

The increase in national values from the baseline would be 144 percent as shown in the following table.

Total National Values for Recreation, Hunting, and Fishing Activities by Alternative for Arkansas River ESA, 1997 1/

Alternative	Total of National Values	Change from Baseline	Percent Change From Baseline
Preferred Alternative	$4,434,210	+1,361,722	144.3
Baseline	3,072,488	---	---

1/ Includes boating, fishing, and bighorn sheep activities.

e. Cultural and Paleontological Resources

1) Cultural Resources

Increased use of the Arkansas River corridor would result in deterioration of cultural resource quality. Collecting and looting would increase in those locations already being vandalized and previously unknown sites would be similarly affected as they are discovered. Even "benign" interest and curiosity could result in adverse impacts to fragile stratigraphy and to the integrity of historic structures.

There are two areas of concern: Browns Canyon was identified in the Royal Gorge MFP as possibly qualifying as a National Archaeological District and is the object of an on-going, although low priority inventory. The DeReemer Forts are important structural remains of Colorado railroad history. They would probably qualify for the National Register of Historic Places and are currently under study by the Royal Gorge Resource Area.

2) Paleontological Resources

Impacts to paleontologic resources should be minimized because the Preferred Alternative requires a paleontology inventory prior to surface disturbance in Class I paleontologic areas. However, this would not totally eliminate damage to paleontologic resources as excavation could result in damage to undetected fossils. Properly monitored excavations in these areas could result in important discoveries.

Casual collecting of fossils in Class 1 and 2 areas would increase due to both newly created access to public lands and increased numbers of people along the river. Damage and gradual eliminaton of fossils in localized areas along the river would result because of this. Overall, the impact on the paleontological resource is expeced to be insignificant.

f. Water Quality

The preferred alternative would not change chemical water quality or the amount of sediment and turbidity. Runoff from parking lots would contain some hydrocarbons and associated heavy metals that result from oil and grease drips from motor vehicles. Some of this runoff would reach the river and pollute the water. However, this pollution would not interfere with existing uses of the water, or exceed water quality standards.

The amount of biological pollution resulting from human waste being deposited along the river is unknown. The additional sanitation facilities which would be provided should reduce existing biological water pollution caused by recreation use along the river.

g. Hazardous Waste

The severity of impacts caused by a hazardous materials incident would depend on the location of the spill, type of chemical involved in the spill, human and animal occupancy at the time, and site of the accident. The potential for a major disaster along the river would increase as traffic and human occupancy increase under the Preferred Alternative. Impacts caused by human waste should be reduced since the amount of sanitation facilities would increase.

2. Other Affected Resources

a. Realty

Withdrawal and classification establish a legal right to the holder for a specific use of public land. Any authorization (including a CMA or R&PP Lease) on the same land would be made subject to the withdrawal or classification. Any development under a withdrawal or classification would be subject to public input. By creating a Colorado State Recreation Area, public interest may make it more difficult to eventually develop some sites.

State completed exchanges would create more complex land ownership patterns and management. Acquisition of private land would have varied impacts on private landowners. They would lose their property, but the compensation should be acceptable. Adjacent landowners could be negatively affected should a recreation site be developed. Survey and boundary disputes would increase as property lines are established.

Unauthorized use investigation and resolution would be positively affected. Additional river rangers would prevent and discover trespass. Signing of boundaries should also prevent trespass.

There are 14 potential sites totalling 480 acres which could be classified for R&PP lease and segregated from the operation of the public land laws including the mining laws.

b. Minerals

As river rangers become aware of regulations and management practices controlling this minerals activities, reports of noncompliance to the Army Corps and BLM may increase resulting in improved management of this activity.

Two scenarios are possible in relation to aggregate production. Either the overall potential for mineral development would decrease, particularly in those areas with recreational developments, or an increased demand for aggregate would occur because of construction projects associated with the recreational development. In general, a decrease would not result from any regulatory or policy changes but could result from the impression that

the corridor is devoted primarily to recreational use. However, an actual decrease in mineral development would occur in those areas leased under the Recreation and Public Purposes Act. Areas which have moderate potentials for development (Segments 1B, 1C, and 4B) would most likely experience either the decrease or increase as previously mentioned.

Placer mining activity would likely be outside the river corridor, there is a possibility for a small scale operation in a few locations. Mining would most likely occur in Segment 1. This plan would not have any significant impact on this activity.

There would be no impact on the right to locate mining claims other than in those areas withdrawn from mineral entry such as an R&PP lease. These areas would be very limited in scope, therefore this impact would not be significant to the overall program.

c. Recreation

This narrative addresses impacts of the Preferred Alternative in terms of the same three components which were used to describe the affected environment: recreation resources (physical characteristics), visitor use (social characteristics), and management (managerial characteristics).

1) Objectives

a) Recreation Resources (Physical Characteristics)

Projected changes to land and facility developments would have no substantial adverse impacts on the average user. These facilities would help resolve most of the resource damage problems being observed by users, especially litter/trash/garbage pollution (both Segments 2 and 4), soil compaction and erosion (Segment 2), and vegetation destruction (Segment 4).

i. Segment 1 - Leadville to Buena Vista

Lands and facilities on the entire segment would be managed under Highway Rural character class guidelines. (See Illustration III-1 for a description of existing character classes.) Segments 1A and 1B of the corridor are already in this class.

Segment 1B, however, is best characterized as Roaded Open Country. Substantial changes to the land would occur at developed facilities; minor changes to streamside vegetation would occur at undeveloped access and day-use sites along the river. Facilities would be developed only as necessary to protect the resource and to keep up with demonstrated user demand. Adverse visitor-induced resource change is expected to be slight. Public Comments on the draft plan indicate that private boaters who find these changes undesirable would continue curtail their use of this segment.

ii. Segment 2 - Buena Vista to Salida

Physical characteristics vary within Segment 2A. U.S. Highway 285, several communities, and various developments render the upper portion Highway Rural in character. The lower portion (in Browns Canyon) is less altered and is Roaded Open Country in character.

Management objectives prescribe that river corridor within Segment 2A be managed under Roaded Open Country guidelines. This resource character would be maintained on both the upper and lower portions. The Roaded Open Country character of Browns Canyon would be maintained. For example, 10 lunch sites (not intensively developed sites) are planned from Railroad Bridge to Hecla Junction. Each would be developed to accommodate up to 30 people at one time, which is within these guidelines.

Intensive facilities would be improved or maintained at a limited number of sites in Segment 2A Highway Rural guidelines. Major recreation facilities are present on the lower stretch of Segment 2A. The existing Roaded Open Country character of these river access sites would change to Highway Rural. The effect on resources would be largely beneficial because a greater porportion of resource use would occur at developed sites.

Site capacities would be higher than what now exists. However, peak use of some sites would be reduced as redistribution of use occurs. For example, the design capacity of Hecla Junction is 200 persons-at-one-time (PAOT) for boat access, fishermen, and other recreationists. Estimated 1988 peak use at the Hecla Junctions site was approximately 340 PAOT. The Preferred Alternative would bring facility development into conformance with existing Highway Rural visitor use patterns. No adverse impacts to the physical character of the river are anticipated.

Of the two most heavily used segments (2 and 4), the lower reaches of Segment 2A are most remote. It is also the most heavily used portion of the planning area, indicating a user preference for resource-dependent recreation. Because most Browns Canyon boaters feel neutral about lands and facilities with Roaded Open Country characteristics and express slight to moderate dislike for Highway Rural areas, they would not be impacted in regard to their physical resource preference when floating the canyon.

Segment 2B's Highway Rural character class objective would maintain the existing character of the river. That same objective is prescribed for developed sites and facilities; no impacts are expected.

The greater numbers of boaters projected for Segment 2B would impact the great blue herons when they are scared from their nesting habitat. Wildlife viewing opportunities would consequently be lost.

Facilities to be developed by the town of Buena Vista (at the boat ramp) may be Developed Urban in character. Those plans are outside the scope of this effort, however, adverse impacts are not expected.

iii. Segment 3 - Salida to Vallie Bridge

Existing Highway Rural characteristics of the land and facilities would be maintained. Facilities to be developed by the town of Salida may be Developed Urban in character. Those plans are outside the scope of this effort, however, no adverse impacts are expected.

iv. Segment 4 - Vallie Bridge to Parkdale

Existing Highway Rural recreation characteristics for the land and facilities on the river corridor and at developed recreation sites would be maintained. No impacts are expected.

v. Segment 5 - Parkdale to Canon City

The river corridor's existing Roaded Open Country character would be maintained. The Highway Rural setting prescribed for intensively developed facilities along the Segment 5 river corridor already exists at primary ingress and egress sites. All public lands facility developments would be consistent with this character class. No impacts are expected.

vi. Segment 6 - Canon City to Pueblo Reservoir

The Roaded Open Country character class prescribed for management of land and facilities within the river corridor is generally consistent with what exists in this segment. Only near Canon City is the corridor more facility dependent. The management prescription for development of intensive recreation sites acknowledges this, being Highway Rural. It allows for intensive facility development at Florence and at the Pueblo Reservoir take-out to accommodate river access needs. Facilities to be developed by Canon City may be Developed Urban in character. Those plans are outside the scope of this plan, however, no adverse impacts are expected.

Through careful design and placement of overnight camping facilities on this segment, most impacts to the heron population and associated birdwatching potentials would be avoided.

b) Visitor Use (Social Characteristics)

The amount and character of recreation visitation is a major concern of users. The adverse effects of commercial boating on private boating, fishing, shoreline recreation, and private landowners is an important issue.

The Preferred Alternative is designed to help alleviate social impacts among competing recreation users. Management prescriptions on each segment are tailored to certain primary recreation uses; the result is that social user conflicts within each segment are reduced. The facility development scheme provides for greater distribution of visitor use, in both space and time. Restricted commercial launch windows help reduce user conflicts. In addition, the Preferred Alternative has several indirect visitor controls. Direct visitor controls (i.e., use allocation) are viewed as a last resort to resolve social conflicts between recreationists.

Not all conflicts would be eliminated. Commercial boating seasons and launch windows would be only partially effective. In some instances commercial boating seasons would extend beyond what already occurs and into other established use seasons.

i. Fishing Concerns

Impacts to fishermen can be defined in terms of sociological carrying capacity of the river. That is the level of use which is compatible with the user's definition of a particular recreational activity (Schoolmaster, 1986). Moeller and Engelken (1972) reported that water quality, natural beauty, and privacy while fishing were rated as the most important

factors influencing fishing enjoyment. Problems between river users and fishermen on the river stem from the excessive number and distribution of users, conflicting objectives among various types of users, and the behavior of users.

Impacts to fishermen from the preferred alternative vary depending on the type of fishermen utilizing the resource. Fishermen on the Arkansas River can be divided into three groups: fly fishermen (15%), lure fishermen (60%) and bait fishermen (25%). Each group prefers a different experience on the river and requires different circumstances to enjoy their trip. Generally, fly fishermen are intolerant of other uses which may detract from their quality experience. Lure fishermen are somewhat more tolerant, and bait fishermen are most tolerant. These groups often fish at different times of the year. Fly and lure fishermen prefer low flows and good wading conditions in which to fish. Bait fishermen generally fish year-around and are less concerned about high flows and other river users.

When river flows are low enough for fly and lure fishing and high enough for boating, both user groups may be on the river at the same time. This period occurs in late summer and lasts 1½-2 months (approximately July 15 - Labor Day). Flows range from 1000 cfs to about 300 cfs. During this time, fly and lure fishermen prefer to fish uninterrupted. According to Nehring and Anderson (1981 and 1982), approximately 40% of the year's total fishing pressure occurs during the primary boating season (May 15 - Labor Day). Approximately 15% of the year's pressure occurs during the July 15 - Labor Day period when boater fishermen conflicts are most likely to occur.

Projected fishermen user days are depicted in the following table. Each segment was analyzed individually, and a percentage increase was projected based on planned actions in each segment. Flow data from the Granite, Salida, Buena Vista and Wellsville gauges was examined for several years, and average flows were projected for each month to determine when boating and fishing use could conflict. Although flows vary greatly, the average flow for the period of record (77 years) was used for this analysis. On the average, the upper Arkansas becomes fishable (800 - 1000 cfs) between July 15 and August 1. The lower river becomes fishable between August 1 and August 15. The dates when flows normally drop to the level of potential conflict were compared to the dates outlined in the Preferred Alternative. This information along with boating capacities, segment goals and objectives, seasons, launch windows, recreation site development plans and access improvements, were factored into projections on fishermen user days. Adverse impacts to large numbers of fishermen are not anticipated due to the relatively small percentage of use that occurs during the period of low flows. However, a shift in the type of fishermen using the river may occur. Fly fishermen may abandon certain segments when boating use is intense; the tolerant bait fishermen may benefit in the long run.

Projected Fishermen User Days

Segment	1987 Current	1997 Preferred Alternative
1A	1200	1500
1B	2100	2100
1C	860	860
2A	2700	2700
2B	1290	1420
3	5180	7250
4A	2900	3480
4B	6300	6600
5	400	480
6	400	480
TOTAL:	23,330	26,870

ii. Visitor Use on Segment 1

Visitor use in this segment would be managed under Roaded Open Country guidelines, both on the river corridor and at intensively developed sites. This would result in no change in the social character of visitor use.

Private boating use would increase subtantially on the world class whitewater in Segment 1B. A 387 percent increase is expected by 1997. This private boating is largely self-regulating; as use increases, potential users automatically seek out other areas. Therefore, the existing social character of this segment would be retained.

While Segment 1B is targeted for private boating as the primary use, the Preferred Alternative does provide commercial use increases. This is done both by extending the main summer use season capacities through Labor Day and by providing for 10 commercial boats daily year round. While this is a small increase in the daily amount of commercial boating use allowed, it is an extension of commercial boating use into historic private use seasons where no commercial boating presently occurs. Corresponding impacts to private boating use are expected.

The existing Roaded Open Country social character of Segment 1C may not be retained given the 13-fold increase in use projected by 1997. Its 300 Boats Per Day (BPD) capacity is equivalent to that of Segment 3 and even greater than 4A, both of which have Highway Rural social class prescriptions. Likewise, carrying capacities of intensively developed sites on Segment 2C (Railroad Bridge and Frog Rock) are as high as the larger sites on Segments 3 and 4A. A change in the social setting (from Roaded Open Country to Highway Rural) would have a low impact on users in Segment 1C.

Small increases in fisherman user days are expected in Segment 1. This increase would occur primarily in 1A where no boating is projected. The long boating season and high numbers of boats projected would limit fishing opportunities in Segments 1B and 1C.

Conflicts between boaters and fishermen are expected to remain low as long as fishing potentials continue to be impacted by pollution from old mines near Leadville. The prohibition against boating use in Segment 1A precludes such user conflicts. In Segment 1B, and 1C, planned fisheries rehabilitation may result in impacts between new fishermen and boaters given the projected increases in boating use.

iii. Visitor Use on Segment 2

Browns Canyon is the focal point for recreation within this segment. The significance of its social character is underscored by the degree of user concern expressed about numbers of people on the river (Knopf and Lime, 1981; Knopf and Virden, 1987). In terms of user motivation, more than one-half of all private boaters on this segment indicated that one of their motivations for coming to this segment was to escape crowds. In terms of crowding, more than one-half of all boaters, commercial and private, feel there are too many people on the river and at take-outs.

The Highway Rural social characteristics of Segment 2A would be retained. Planned site developments would disperse existing site use and alleviate crowding problems at put-ins and take-outs. In addition, limited use increases could be accommodated while retaining the Highway Rural character of developed sites.

Total use within this most popular of all Arkansas River segments is near capacity. A 19 percent growth increase is projected through 1997 (see Illustrations II-11 and II-12). The extension of the river segment from Buena Vista to Big Bend, and accompanying greater numbers of put-ins and take-outs, would accommodate additional use within established capacities. An analysis of maximum anticipated boating traffic to and from intensive site developments included in the Preferred Alternative indicates that boater traffic on all of Segment 2A would not exceed 500 BPD. This approximates what presently occurs; peak daily use in 1988 was 505 boats, 430 commercial and 75 private.

The Segment 2A river corridor capacity (150 private boats and 450 commercial boats) is designed to total no more than 500 boats on any given stretch of the river. In 1988 private boating in Segment 2A reached 75 BPD, and commerical boating reached 430 BPD, so total use was 505 BPD. To stay within the Final Plan's total carrying capacity of 500 BPD, private boating would need to be reduced from the 1988 peak to no more than 50 BPD as commercial boats increase to the maximum 450 BPD. Private boaters sensitive to commercial crowding would continue to be displaced as commercial boating volumes steadily increase. An influx of new private boaters not as sensitive to commercial crowding is expected, so total Segment 2A boating volumes may continue to exceed 500 BPD.

On-river social crowding would be partly alleviated by more widely spaced boater put-in and take-out sites. The daily passage of 500 boats through Segment 2A would occur over a greater number of hours. Given the Preferred Alternative's assumption that all existing use must be accommodated, at least a moderate level of on-river crowding would continue.

The average Browns Canyon boater expresses slight to moderate dislike for social settings as intensive as Highway Rural. Those users would not be impacted because the level of crowding would remain the same. Highway Rural social characteristics are also prescribed for intensively developed sites. While average boaters on this segment feel somewhat adverse to this level of facility development, they would find some relief in the fact that intensive site developments would reduce crowding at those sites.

User preference data specific to Segment 2B are unavailable. The Roaded Open Country social character of visitor use would be maintained. Only one intensively developed recreation site is anticipated on this segment. Whether this is the existing AROA site or involves an acquisition, the prescribed Highway Rural character would be consistent with that at similar sites on adjoining segments. No impacts are expected.

More significant are the social effects of boaters on fishermen along the highly valued fisheries resource in Segment 2B. Prescribed capacities would allow total boating use to increase from an estimated 1988 peak daily use of 200 boats to the prescribed capacity of 300 BPD, a 50 percent increase. The Preferred Alternative also extends the primary boating season through August 14, leaving two weeks of the summer use season when reduced daily boating capacities would be in effect (i.e., 40 BPD). The requirement that commercial boats be off the river by 5:00 p.m. would substantially reduce impacts to off-hours fishermen. This would leave evening hours free of commercial boating impacts, except for specially permitted "moonlight" fishing float trips. Private boater and fishermen conflicts would still occur. Impacts to fishermen would be moderate through most of the summer.

iv. Visitor Use on Segment 3

The prescribed Highway Rural social character would maintain existing conditions. Fishing would be the primary activity; daily boating increases would also occur. Private boating would be allowed to increase from peak 1988 use of 40 BPD to 150 BPD, and commercial boating could increase from a 1988 peak of 90 BPD to 150 BPD. A 70 percent increase in total boating use is expected on this segment by 1997.

In addition, high boating use would occur only through July 14. Thereafter, total boating volume would not exceed a total of 40 BPD. Impacts on fishermen during the peak runoff season, when there is the least opportunity for successful fishing, would be greater than what now occurs. However, during the primary fishing season impacts on fishermen would be reduced substantially. The requirement that commercial boats be off the river by 5:00 p.m. would reduce impacts to off-hours fishermen; some private boater-fishermen conflicts would still occur. On the whole, fishermen would benefit and there would be low to moderate impacts to boaters.

v. Visitor Use on Segment 4

The Preferred Alternative would maintain the entire segment's Highway Rural social character, both for the river corridor and for intensively developed sites. The average user feels either neutral or has only a slight dislike towards these existing Highway Rural social characteristics.

Shoreline users, especially sightseers, picnickers, fishermen, and campers all feel neutral. More than half of all 1987 Segment 4 boaters indicated that a desire to meet new people was a significant motivator for floating this segment.

On Segment 4A, boating use is expected to triple by 1997. This would be a small fraction of what use is on Segment 4B (see Illustrations II-11 and II-12). By 1997, annual use of Segment 4 is expected to nearly double. The intensive nature of planned facility developments and of accompanying visitor management actions is expected to alleviate crowding at intensively developed sites. On-river crowding, however, would continue. Boaters' desires for increased affiliation with others would be enhanced.

Segment 4 supports the highest fishing pressure and has the most public lands. Fisherman user days would increase slightly, primarily in Segment 4A where boat numbers are lowered after August 14. Adverse affects on fishermen would be partially alleviated by requiring commercial boats to be off the river by 5:00 pm, but conflicts between private boaters and fishermen would occur. This segment is not targeted for primary fishing use. Day-time fishermen would experience conflicts with a large number of boats throughout the summer.

vi. Visitor Use on Segment 5

The Roaded Open Country social character would change to Highway Rural, both on the river corridor and at intensively developed sites. This reflects a projected three-fold increase in total boating use on this segment by 1997. Larger site developments are planned for the primary put-in and take-out, and prescribed capacities would increase by 50 BPD. Adverse impacts are not expected unless the greater number of boaters prevents achievement of challenge and risk motives. Accompanying safety problems in this relatively narrow river corridor are no greater than those presented by the river itself.

vii. Visitor Use on Segment 6

The social character of the river corridor would remain Roaded Open Country. (Some isolated segments may be semi-primitive motorized). An undetermined amount of use is presently occurring; nearly all of the projected 1997 annual use would be new. No adverse impacts are anticipated.

viii. Off-Site - Boater Camping

Boater camping projections are based on 1987 camping rates on the two most heavily-used river Segments 2 and 4. Under the Preferred Alternative, projected 1997 total boating increases in Segment 2 are 34,855 visits; those for Segment 4 are 43,425 visits. Those increases total 78,280 boating visits annually. Projected 1997 boating use increases for the remaining four segments total 107,043.

By applying camping participation rates from a 1987 user preference study in Segments 2 and 4, both public and private camping increases may be projected. This analysis assumes that boaters on the remaining four segments would camp at the same rates as they do in Segments 2 and 4. Total public camping increases would reach 162,875 overnight camping stays by 1997 (an overnight camping stay is defined as one person camping for one night). Likewise, total private camping increases will reach 175,126 overnight camping stays by 1997. Projected overnight camping stays attributable to private boaters exceed total projected boating visits. While not all boaters camp, the average boater camps more than one night.

Based on these projections, boater camping increases at private campgrounds projected by 1997, 175,126 overnight camping stays, would constitute only 50 percent of the presently unused campground capacity of 372,868 overnight camping stays. Moreover, the private campground industry estimates that if ever existing facilities are occupied to their present capacity, those capacities could be tripled using the existing acreage owned by industry members. No adverse impacts to private campgrounds are anticipated.

Projected boater camping increases at public campgounds (162,875 overnight camping stays by 1997) would constitute 58 percent of the presently unused capacity of 282,570 annual overnight stays at Forest Service campgrounds. These increases would occur regardless of any campground development along the river. On-river campgrounds are planned only to facilitate on-river use, not to meet boater's off-site camping needs. No adverse impacts to public campgrounds are expected.

ix. Off-Site - Other Camping

The above increases in camping are related to boating. Increases in off-river camping use would also occur related to fishing. Definitive user data depicting the camping participation rates of all fishermen is lacking except for Segment 4. Therefore, these rates (from the 1987 user preference study) are projected across all segments.

Of the 3,520 fishing user day increase projected for 1997, 48.8 percent would involve an overnight stay: 28 percent in public campgrounds, 7.3 percent in private campgrounds, and the remainder in commercial lodging facilities. Applying weighting factors for the number of nights stayed, there would be an increase of 660 annual overnight camping stays in private campgrounds and an increase of 2,836 stays in public campgrounds. Existing campground facilities would accommodate these camping increases. Camping participation rates for other tourists are assumed constant.

c) Recreation Management (Managerial Characteristics)

i. Segment 1 - Leadville to Buena Vista

The Roaded Open Country managerial character of this segment would be maintained, both within the river corridor and at intensively developed recreation sites. A moderate amount of visitor management controls and regulations would be noticeable, and law enforcement personnel would

sometimes be visible. Private boaters are the principle users of Segment 1B. One of this group's primary motivations is to boat in a climate free of management intervention. This objective would maintain that climate. (See following sections for an analysis of direct visitor controls, enforcement, and permits and fees).

ii. Segment 2 - Buena Vista to Salida

The Roaded Open Country managerial environment on the river corridor would be maintained on Segments 2A and 2B. Intensively developed recreation sites would conform to Highway Rural managerial prescriptions. The level of visitor control, regulation, and enforcement on the river corridor would be the same as on Segment 1. However, at intensively developed recreation sites the Highway Rural prescription allows for several visitor controls and regulations and a moderate level of law enforcement activity. Both managerial character class prescriptions would be achievable. Most direct visitor controls would be applied at intensively developed sites, helping to maintain a low management profile on the river. Given the high volume of use on this segment, users expect this kind of intensive management. The average boater in Browns Canyon either feels neutral or expresses a slight dislike for the kinds of management actions characterized as Roaded Open Country. Those same boaters express a slightly greater dislike for intensive management actions characterized as Highway Rural, No adverse impacts are expected, because there is good boating user support for even more intensive management actions.

iii. Segment 3 - Salida to Vallie Bridge

The Highway Rural character would be maintained at intensively developed recreation sites. On the river corridor, intensive management actions would meet Roaded Open Country specifications. This would maintain a less visible on-river management profile and is consistent with the primary fishing use for which this segment is managed. Impacts are not expected to occur, either on the river or at intensively developed sites.

iv. Segment 4 - Vallie Bridge to Parkdale

A Highway Rural managerial character class would be maintained in the river corridor and at intensively developed recreation sites. Several management controls and regulations would be in place and law enforcement activity would be moderately visible along the river. The average boater feels somewhat neutral or has a slight dislike for management actions as intensive as Highway Rural. Sightseers, picnickers, fishermen, and campers somewhat prefer Highway Rural managerial settings.

As is expected with the more facility-dependent river environment in segment 4, somewhat fewer boaters support restrictions on the number of people using the river at any one time than do in Segment 2, but support is still there. No substantial boater impacts are expected.

v. Segment 5: Parkdale to Canon City

Objectives prescribe a Roaded Open Country managerial character class for the river corridor and a Highway Rural class for intensively developed recreation sites. There would be a moderate amount of visitor management control and regulation, and an occasional law enforcement

presence on the river. There would be several visitor management controls and a moderate law enforcement presence at developed sites. Intensive visitor and facility management actions would be implemented at primary access sites on this segment. This is essential to accommodate the kinds of uses prescribed; and would likely have little adverse effect on boaters in the river corridor.

vi. Segment 6 - Canon City to Pueblo Reservoir

All management actions taken on the river corridor and at developed sites would follow Roaded Open Country prescriptions. This is consistent with what exists and should cause no adverse effects on users. Intensive facility development of a character that would accommodate projected use levels could occur.

2) Implementing Actions

a) Visitor Services

The beneficial effects of visitor services to be provided in all segments would be substantial. Existing visitor services are inadequate. At most locations, few to no visitor services are being provided, especially in relation to identified needs. Visitor services included in the Preferred Alternative would solve most identified problems, and be far more responsive to public needs than most current management. Beneficial effects would include a reduction in litter accumulations, an increase in visitor information, and clearer identification of picnic and campsite locations, all of which are user identified needs.

b) Visitor Regulation and Enforcement

On Segment 2A, the Preferred Alternative would partially alleviate heavy visitor use and crowding. Sixty four percent of all Browns Canyon boaters feel that there are already too many people on the river; 36 percent of segment 4 users feel that way. The Preferred Alternative would dispserse use by providing additional key river access site developments along a longer stretch of river. These measures may not completely resolve crowding, since existing commercial boating use and additional growth are accommodated in this plan.

The establishment of river corridor carrying capacities at levels higher than current use on segments would have beneficial effect on boaters who oppose regulation. These capacities are high enough to allow maximum river use and forestall direct regulation of use volumes for the longest possible time.

Separate management of prescribed carrying capacities (i.e., private and commercial use ceilings) could result in a problem. Boaters wanting to use the river in one sector (e.g. private boating) could be turned away when capacities are reached, even though unusued capacity exists in another section (e.g., commercial boating). Use amounts and ratios may be adjusted following plan implementation and monitoring if there is a need to do so. Such shifts would require a formal plan amendment and public participation.

c) Permits and Fees

Public concerns about having a voice in determining user fees and user fee structures on public lands have led to identification of a potential impact. User fee structures at developed sites would be consistent with the fee structure in other units of the State Park System. The public would not necessairly have a voice in determining the amount of fees charged by DPOR for use of public land.

Management of the area on a user funded basis would impact repeat visitors who want thing to remain as they are. These visitors would fee a double impact when they are required to pay fees for management and services they did not want in the first place.

d) Facility Management

Beneficial effects of recreation facilities on all segments would be substantial. Existing facilities are inadequate. At most locations of need, they are totally absent, insufficient to meet public needs, or in serious need of more maintenance.

These concerns are borne out by user-identified problems from a 1987 user preference study completed on Segments 2 and 4. More than one-half of all users have identified inadequate toilet facilities at put-ins and take-outs. Also, approximately half of all users pointed out that the same problem exists on the river between put-ins and take-outs on both segments. More than half of all users on both segments feel there are too few drinking water sources. Likewise slightly less than half of all users on both segments feel that poor quality picnic sites and campsites is a problem. On Segment 2, one third of all users identified the presence of too many commercial establishments as a problem, which is partly related to the present inadequacy of public management wherewithal to meet those users' needs.

Federal funding support for meeting the identified facility construction needs through the BLM on both Segments 2 and 4, prior to 1988, has been virtually nonexistent. Continued efforts by BLM to identify and obtain construction funds to provide improved and expanded facilities were unsuccessful for over five years. Only limited maintenance funding has been available during this same period. Capital improvements would be made possible by the BLM-DPOR Cooperative Management Agreement.

e) Administration

Reliance on user fees as the primary funding source could result in a greater emphasis on commercial recreation. Commercial users would contribute a relatively large proportion of those fees. Private users would contribute a smaller proportion. Private users, especially those who are not part of organized user groups, may find it difficult to have their administrative needs met.

d. Soils

In heavy use areas, some vegetation would be destroyed, and increased erosion would occur. Once such measures as site hardening, vegetative rehabilitation, and visitor controls are implemented; the amount of soil erosion would compare favorably with natural rates from unimpacted sites.

e. Vegetation (other than T&E Species)

Construction of new recreational facilities would result in the loss of some vegetation; i.e. under parking lots, roads, trails, beach areas, etc. Also, uncontrolled vehicular and pedestrian traffic adjacent to developed sites and at other locations where considerable use is expected to occur (Segment 4) would result in damage and destruction of vegetation.

There would be no impact on the forest resources since management practices would remain the same. The effect of removing 28 acres of lodgepole pine from the Canon City timber production base of 50,123 acres would not be significant.

There would be an overall improvement in vegetation condition as rehabilitation and protective measures were implemented in and around recreation sites and intensively used areas. Also, the increased presence of park rangers should help deter vandalism, off-site vehicular damage, etc.

f. Animal Life (except livestock and T&E Species)

In order to accommodate site development and people pressure, small areas of riparian habitat would be altered. Mid-seral stage species (shrubs, willows, small trees, etc) may be removed with larger trees remaining or removed depending on site plans. The various wildlife species, primarily birds, that utilize the mid-seral vegetative community would be displaced. Other species would also be affected. Fortunately, the total acreage of riparian habitat to be affected would be small, probably less than 40 acres.

1) Bighorn Sheep

Impacts to bighorn sheep can be very difficult to determine. Adverse impacts can be broken down into two general categories: (1) Direct loss and (2) Indirect loss. Direct losses include those actions which physically alter or change bighorn sheep habitat. Indirect losses of habitat involve areas that become unusable by sheep due to proximity to human disturbances. Direct losses of habitat are not likely to be significant, because sheep are not occupying the river banks to any great extent. Indirect impacts would be greater as a result of increased human activity along the river.

In order to more accurately predict responses of bighorn sheep to the types of activities proposed in the plan, an extensive literature search was conducted. Determining impacts to sheep is difficult and can only be based on literature search and personal observations by the public and agency professionals. This type of information is summarized below.

Bighorn sheep in the Arkansas Canyon have been influenced by mans activities for many years. Older herds, such as the Arkansas Canyon herd, have learned to adjust to human activities along the river. Several investigators have found that bighorn sheep will habituate to limited human activities. Sheep like most wildlife species, establish a limit within which they will allow intrusion. MacArthur et. al. (1982) found that point to be about 50 meters. Experience has shown that the Arkansas canyon herd will tolerate highway traffic, railroad traffic, and limited recreation on the river. However, when people cross the river, stop on the north bank while boating, or hike into sheep habitat north of the railroad tracks, the sheep become disturbed and move to escape cover. Sheep are habituated to vehicle traffic, moving trains, and moving boats, but not to people on foot in their habitat.

Sheep from the Grape Creek herd, south of Highway 50 are very tolerant of traffic on the highway and are often seen feeding within 25 yards of the road. However, when sightseers stop to look, sheep often become alert. They will consistently move away if people get out of their cars and move in their direction. In contrast these same sheep display no concern when people, stopped on the highway, focus their attention to river activities. Purdy (1981) found that behavior of bighorn sheep towards humans appeared to be a reflection of the way humans behaved towards sheep.

Water is a critical component of the bighorn habitat that is in some cases a limiting factor to sheep in the Arkansas Canyon. Natural springs and seeps common in the spring often dry up forcing sheep to obtain water from the river during hot summers. Leslie et al. (1980) found that sheep showed a dependency on permanent water sources and that ewes in particular displayed a high degree of fidelity to water sources. Construction activities in the vicinity of desert bighorn water sources affected their use of that water (Campbell et al., 1981). Sheep in the Arkansas Canyon have typically watered from 7 a.m. - 9 a.m. and from 3 p.m. until dusk. The ability to water undisturbed is critical to preventing stress. Undue stress may result in lower reproductive output and ultimately have a long term effect on the viability of the population.

Specific impacts to bighorn sheep from the preferred alternative vary greatly between segments. Impacts are described by segment.

a) Segment 1 - Leadville to Buena Vista

Bighorn sheep do not utilize the river canyon during the summer months and would not be impacted by the Preferred Alternative. No developments are planned for the winter range used by sheep between Clear Creek and Langhoff Gulch, and no impacts to sheep habitat are anticipated.

b) Segment 2- Buena Vista to Salida

Despite the adaptability of sheep and their ability to habituate to man, they are not likely to accept the use levels and associated disturbances of the preferred alternative in these areas. This segment is home to the Browns Canyon sheep herd. The main herd does not occupy the river canyon. Impacts to this portion of the herd would be minimal. As the herd expands, the amount of summer use projected under the Preferred Alternative would probably preclude use by sheep. The sheep would most likely occupy this habitat during the winter months when recreational use is minimal.

The small herd (~30) that presently utilizes the east side of the river near Seidels-Stone Bridge and the group of sheep (10) in the Ruby Mountain area would most likely abandon their habitats. Dawn to dusk activities and recreational developments, especially those designed to hold people overnight, would push sheep further away from the center of activity. It is unlikely that sheep numbers would be severely impacted as alternate habitat is available.

The third area of sheep habitat affected by the preferred alternative is the area located north of the river, along Highway 50 east of Salida, at the Chaffee/Fremont county line. The sheep (~40) that use this area are from the Browns Canyon herd and migrate back and forth from the Turret area.

Impacts to these sheep under the preferred alternative would not be significant. Although their habitat is accessible on the north side of the river, no recreational developments are planned in the area. In addition, sheep use in this area is restricted mostly to the winter months. The amount of river recreational use in this area is low compared to other segments.

In summary, impacts to bighorn sheep in Segment 2 are indirect and would not result in any physical disturbances to habitat. However, sheep would abandon some areas due to increased recreation use. Reductions in sheep populations are not anticipated. As sheep expand and increase in numbers, they would refrain from occupying habitats near heavy recreation use areas.

c) Segment 3 - Salida to Vallie Bridge

Impacts to sheep in this segment are limited to the Browns Canyon herd which was described in the previous segment.

d) Segment 4 - Vallie Bridge to Parkdale

This segment contains almost 50% (265 animals) of the total number of bighorn sheep located within the proposed recreation corridor. The Preferred Alternative could double yearly boating use. There would be 15 recreation sites in this segment, 5 of which would be major developed sites. This increase in recreational use and associated human impacts would have an effect on resident bighorn sheep.

The primary boating season is the most critical season for sheep to have free access to water. It is doubtful sheep would water undisturbed with rafts passing every minute. Studies have shown it takes 2-3 minutes for sheep to lower heart rate response after being disturbed (MacArthur et al., 1982). The constant stress associated with this disturbance likely could be detrimental. It is also likely that some habitats along the river would no longer be used as sheep attempt to disassociate themselves from the disturbances. An increase in road kills is also anticipated due to increased highway traffic. Sheep/vehicle accidents would impact the Grape Creek herd as they are the only sheep found along the highway right-of-way.

Actual losses of sheep or reduction in the herd are difficult to measure. With the exception of road kills and occasional poaching incidents, sheep would not be lost directly. More likely, stress would reduce reproductive potential thereby affecting lambing and lamb survival. It is probable that sheep in the canyon, despite their adaptability would react negatively to the numbers of people associated with the preferred alternative (see Illustration III-3). A cooperative study plan would be developed to identify critical sheep areas and actions necessary to ensure their survival. This is in accordance with the Arkansas Canyon Habitat Management Plan prepared in 1982.

e) Segment 5 - Parkdale to Canon City

No bighorn sheep are found in this segment.

f) Segment 6 - Canon City to Pueblo Reservoir

No bighorn sheep are found in this segment.

2) Mule Deer

Impacts to mule deer habitat from the proposed action would be minor. Developed sites would not be located in critical mule deer range. Mule deer use of the low elevation habitat along the river would occur mostly in winter when recreation use is lowest.

The highest impact to mule deer would be increased accidents involving deer and vehicles. The Colorado Division of Wildlife estimates 400 deer are killed annually between Leadville and Canon City. A traffic increase of 25 percent is projected under the Preferred Alternative. It is reasonable to assume that an additional 100 deer would be lost in accidents.

3) Raptors

Impacts to raptors from the Preferred Alternative would not measurable. Nest sites in the river canyon are located well away from the centers of activity, so impacts would be minor.

4) Waterfowl

The ability of ducks to nest undisturbed and successfully fledge young is affected by the amount of recreational use on the river. The peak boating season occurs during the nesting season. Given projected levels of use, waterfowl nesting along the river would affected. The number of duck broods raised along the Arkansas River each year is small; less than 100 pairs would be affected.

5) Non-Game Wildlife

Boating on the Arkansas River from Florence to Pueblo Reservoir may impact one known heron rookery. If a rookery is abandoned, all birds in the colony would leave. There is lack of suitable nesting habitats in the area, so this may affect the productivity of the species locally. An additional heron use area has been documented in Segment 2b near Big Bend. Herons have been seen in this area year-round, although no nesting sites have been found. Boating numbers projected in the Preferred Alternative may cause abandonment of these areas.

ILLUSTRATION III-3

Impacts to Wildlife and Threatened and Endangered Species

River Segments

Affected Species	1 A	1 B	1 C	2 A	2 B	3	4 A	4 B	5	6
Bighorn Sheep	N	N	N	M	N	L	L	H*	N	N
Mule Deer	L	L	L	L	L	L	L	L	L	L
Peregrine Falcon	N	N	N	N	N	N	N	N	N	N
Bald Eagle	N	N	N	N	N	N	N	N	N	N
Raptors	N	N	N	N	N	N	N	N	N	N
Waterfowl	H	H	H	H	H	H	H	H	H	H
Non-Game	N	N	N	M	M	N	N	N	N	M
Brown Trout	N	H	H	H	M	N	M	H	M	N
Eriogonum brandegei	N	N	N	H	H	M	N	N	N	N
Penstemon degeneri	N	N	N	N	M	M	M	M	M	N
Parthenium tetraneuris	N	N	N	N	M	M	M	M	M	M
Aquilegia chrysantha	N	N	N	N	N	N	N	N	N	N
Haplopappus fremontii	N	N	N	N	N	N	N	N	N	N
Mentzelia densa	N	N	N	N	N	M	M	M	L	L

N = No Impact
L = Low Impact
M = Moderate Impact
H = High Impact

*This would be a short term impact until studies are completed and habitat improvements initiated. In the long term, with improvements in place, impacts to sheep would be minimal.

6) Fisheries

Most direct impacts would be from disturbance of fish or the disruption of their normal activities (feeding, spawning, resting, etc.), by rafts. Indirect impacts on the biology of the river would result if riparian vegetation, water quality, or flows were affected. To document these impacts, studies would be needed to answer a variety of questions. For example, are trout feeding in primary boating lanes, do brown trout adjust to a constant presence of boats, what microhabitat do the brown trout select for feeding, what flow levels are critical, what is their summer diet, and what conditions influence overwinter mortality? These questions cannot be answered for the Arkansas River population at this time. However, other studies on brown trout habitat utilization, not concerned specifically with rafting, suggest that certain impacts could be associated with recreational boating.

Studies on the brown trout population of the Arkansas River have addressed special regulations (Nehring and Anderson 1981-1985), heavy metals (Nehring 1986) and the invertebrate community and brown trout diet (Winters 1988). These studies have led to a good understanding of the present fish population biology and structure. It is presently felt that low level accumulation of cadmium poses the greatest detrimental impact to brown trout. The analysis indicates that brown trout in the Arkansas River are being limited, particularly older spawning age fish. It is unusual to find brown trout older than four years of age in the river.

There are numerous accounts of 20 inch brown trout being caught in the river through the mid 1970's. Brown trout over 16 inches have been very rare in the river since 1980. Assuming that water quality (heavy metal pollution) was fairly constant for the past twenty years, several changes could partially account for fewer large trout. These changes include reduced forage due to termination of catchable rainbow stocking, and smaller caddisfly hatches. Also, 1978 started a 10 year period of above average runoff flows, which affect both trout and aquatic insects. In addition, commercial rafting became popular in the late seventies.

A literature review found no studies addressing biological impacts of rafting on fish populations. This does not necessarily suggest that impacts do not exist. Most whitewater rafting rivers do not support quality trout fishing, therefore no conflicts were identified. Many rivers support rainbow, steelhead, or salmon. These species have different habitat preferences and behavioral responses to disturbance than the brown trout, which occupy the Arkansas River. Also, many rivers do not receive the intensity of rafting which the Arkansas does.

Many studies have been made on the behavior of brown trout. Bachman (1984) in a direct observation study found that brown trout position themselves at focal points from which activities are originated (feeding, hiding, resting). Typically an individual brown trout defends a particular focal point from other fish. When disturbed, brown trout quickly seek cover. Bachman (1984) stated, "The overhead flight of a large bird... typically caused a wild brown trout to dart to one side or another and become motionless with its body pressed tightly to the substrata. With no further stimulus, the fish would usually return to its foraging site and resume feeding within 3 to 5 minutes. Repeated alarm stimulus or stronger initial stimulus (such as a

mallard landing) would cause the fish to flee to deep water and become motionless or to move under a bank, rock, or some brush. In such a case, the fish would usually return to a foraging site in about 20 to 30 minutes". This implies that visual contact with a raft could trigger a hiding response in the fish. Fishermen often note that trout "go down" after they are spooked by boats. Other fishermen report good catches of brown trout while floating the river. However, float fisherman usually fish to the side rather than behind rafts.

Trout feed visually and feeding originates from a focal point near the bottom (Wesche, 1980). Velocity is the primary factor in determining a focal point location. Brown trout usually avoid the deepest and fastest habitat for feeding (Shrivell and Dungey, 1983). Habitat preference is also a function of the size of the fish, with larger trout selecting deeper, swifter areas.

The feeding behavior of brown trout is important because it influences growth and mortality rates. Cunjak, et al. (1987) described energy deficits that lead to winter mortality. Poor forage in the early-winter results in a metabolic deficit. This leads to depletion of energy reserves and an inability to replenish body reserves. Mature trout are very susceptible to this since a lot of energy goes into reproduction; immature trout may not have an energy deficit. Past studies indicate that a situation like this exists on the Arkansas River. Temperature increases in spring also cause an increase in fish metabolism at a time when food availability is low.

Winters (1988), in his work on the Arkansas River in 1981, concluded that availability of prey is the leading factor limiting the size of brown trout and their condition during winter. Insect numbers are reduced during the summer runoff period when the environment is very harsh. In high flow years, there is not much time to build energy reserves. He also found that many trout come out of winter in poor shape and must feed efficiently to build up body condition.

Overwinter mortality is occurring on the Arkansas River (Nehring and Anderson, 1985). It would be beneficial for trout to have the longest possible growing season and the highest body condition before starting the winter season. Low runoff years like 1987 and 1988 add 4 to 6 weeks to the growing season and can increase trout growth by 1 to 2 inches compared to high runoff years.

A thorough understanding of habitat and flow characteristics would be needed to determine the flow associated with the above variables. An IFIM (Instream Flow Incremental Methodology) has been prepared at one site (Wellsville), but it is not representative of the entire river. Nonetheless, the estimated threshold flow that could cause direct impacts is 1,000 cfs. At higher flows, boats kept to the deepest and faster currents would not likely cause disturbance to feeding.

For rafting to disrupt feeding activities, the river flows would have to be fairly low and the water clear. Highest impact feeding areas are those with less than 26 inches depth and with velocities of less than 1.25 ft/sec. If brown trout in the Arkansas River react similarly to the population studied by Bachman (1984), a large boat full of people would cause the fish to

move to escape cover for two to three minutes. A frequency of disturbance equal to this duration could greatly limit their ability to feed efficiently. If 1000 cfs is considered the threshold or critical flow, then fish could be subject ot impacts for 1½-2 months of the year (late summer to early fall). Because of the tentative situation that brown trout already face in the Arkansas, this could lead to greater mortality.

Trout populations in each segment of the river would react differently to boating, depending on variables such as number of boats, boating season length, habitat quality, forage availability, and river flows, etc. No impacts are expected in Segments 1A, 3, and 6 due to low boating numbers at critical low flows. Moderate impacts could be expected in 2B, 4A and 5, where boating numbers are moderately high but reduced significantly after August 14, when river flows are reduced. High impacts are possible in Segments 1B, 1C, 2A and 4B. These four segments have the highest boat numbers for the longest period of time. These impacts are magnified in 1B, 1C and 2A because the upper river usually lowers and clears up much earlier than Segment 4B. On the average the upper river reaches critical low flows (800-1000 cfs) between July 15 and August 1, whereas the lower river reaches the same level between August 1 and August 15. High boating use would occur through Labor Day on these segments.

g. Access and Transportation

The Preferred Alternative would increase the probability of all types of highway accidents including vehicle/vehicle, vehicle/pedestrian/ and vehicle/train. The increase would be attributable to several sources: increased recreation traffic, a change in vehicle classification, more pedestrians, and a decrease in highway vehicle capacity. Not all of these changes would be present on all parts of the highway system at the same time. Additionally, average figures for traffic volumes may not accurately portray traffic congestion problems during peak volume hours on peak volume days during the summer rafting season.

The present highway system appears to be able to carry the recent increase in traffic volume due to boating. This is due to the concurrent decrease in ADT (Average Daily Traffic) in the upper Arkansas Valley, U.S. Highway 24 and 285 and the slight increases in the lower valley on U.S. Highway 50. Under the Preferred Alternative, the ADT volume on U.S. 50 would increase from 362,923 vehicles to 402,673. All of the increase would occur during a relatively short period (6 hours) of the day and most would occur between 2:00 p.m. and 4:30 p.m. Saturdays would remain the busiest day with up to 40 percent of the volume occurring on this day.

The most common vehicle type (bus with trailer) used by the commercial rafting industry is large, slow moving, and not very maneuverable. As the number of these vehicles using the highway system increased, there would be additional traffic congestion. The current estimate of these vehicle types would change from 12 to 20 percent of total traffic.

Additional vehicles bringing more recreationists into the area would increase the number of pedestrians from 142,000 to 318,724 by 1997 (a 124 percent increase). Many of these pedestrians would be in the vicinity of the highway system where the most serious accidents occur, and others would be found in or near parking lots or along the railroad tracks.

As traffic volume increases, the vehicle classification changes and the number of pedestrians also increases. These factors interact to decrease highway capacity, however, there is no way to predict the resulting accident rate. The accident rate probability would increase greatest along U.S. Highway 50, because of the number of change factors taking place along it; U.S. Highway 24 and 285 have fewer changes.

Highway capacity along U.S. 50 is currently estimated at 1200 vehicles per hour. This is under ideal driving conditions and assumes an even flow of traffic with no congestions, distractions, or unanticipated events such as wildlife or pedestrian crossings. Highway capacity would continue to fluctuate widely depending on the time of day and day of the week. Capacity would be reduced from 1200 vehicles per hour (vph) to an unknown lower volume. On the six busiest Saturdays of the year, during the busiest times at developed sites on U.S. Highway 50, capacity would be reduced resulting in traffic congestion. This situation would probably not occur on U.S. Highway 24 and 285.

The probability of train/pedestrian accidents would increase. The number of trains would increase from an average of two per day one way to six per day, and pedestrians would increase from 142,000 to 318,724. Overall, the number of train/pedestrian accidents would remain low.

Highway construction costs would increase. The Preferred Alternative calls for eight major highway modifications in Segments 2, 3, and 4 and numerous unidentified minor improvements. Estimated cost of the eight modifications would be $575,000-$800,000. The cost of other modifications would be in addition to this amount. Fremont County road construction costs to the Beaver Creek recreation site would be about $20,000.

Annual road maintenance costs average $2,000 per mile on gravelled roads and $3,500 per mile on paved roads. As traffic volume increases by 25-100 percent, road maintenance costs would increase, not necessarily proportionately. Annual maintenance costs to Chaffee County because of increased traffic would probably double from $32,000 to $64,000. Fremont County maintenance costs could increase from $2,000 to $20,000, and Pueblo County costs could increase from $7,000 to $14,000 per year. Maintenance costs on major highways would likewise increase (probably at a lower rate than that identified for gravelled roads).

The general increase in traffic volume would have negative impacts on roads which are currently at or near capacity. Narrow county roads and roads with pavement that is worn out or has irrigation facilities improperly underlain, would experience accelerated deterioration. As a result, fugitive dust, potholes, and mudholes would develop. Maintenance costs for these roads would be borne by the appropriate county Highway Department, or local residents.

Key access needs are identified and prioritized in the plan. Acquisition of easements to the river and acquisition of property for recreational use would benefit the public. Segment specific access acquisitions are shown in the following table.

Segment	Access Acquisitions
1	Improve fisherman access throughout. Improve boater access at Pine Creek Rapids, Railroad Bridge, and Frog Rock.
2	New access in Buena Vista. New site at Fishermans Bridge. Additional property at Ruby Mountain. One or two sites below Seidels. New boater site at or above Big Bend. New fishing easements from Big Bend to Salida.
3	New fishing easement north of Vallie Bridge. Improve fisherman access throughout.
4	New boater site below Parkdale.
5	New boater site in Canon City.
6	Improve fisherman access at Florence, Hobson, and throughout. New boater site above Pueblo Reservoir Wildlife Area. New boater site at Florence.

h. Noise

Prescribed "quiet zones" would alleviate some on-site user conflicts with private landowners, particularly commercial trips which are supervised. Given the differences between commercial and private experience preferences, especially on segment 2 where noise concerns are greatest and where commercial boaters are less concerned with peace and calm, it should be possible to reduce noise conflicts between private and commercial boaters. However, such zones cannot be established everywhere, and concern over noise among boaters themselves increase in direct proportion to crowding and user congestion (see Recreation section). That impact may displace boaters who reach their noise threshold to other rivers in the region.

In Segment 2 and 6, the noise from increased boating use may disturb the great blue heron colonies. If these birds are displaced, the outstanding wildlife viewing opportunity would be lost.

The proportion of noisy boaters in the primary public campgrounds operated by the Forest Service would increase. River-related camping would effectively use all available capacity, resulting in some displacement of family camping as noise increased.

Noise-related conflicts with fishermen would increase in direct proportion to increases in boating, particularly commercial use.

i. Grazing Management

Recreational developments would conflict with grazing at Fishermans Bridge, Hecla Junction and Five Points. With increased use and development of these sits, recreation/livestock conflicts would increase.

These conflicts consist of livestock bothering people and people stressing livestock. Generally, the conflicts are minor. Increased numbers of boaters and fishermen on the river could interfere with livestock watering points. Increased recreational use of the Arkansas River would increase recreational use on the allotments adjacent to the river and could stress livestock.

j. Safety

This plan is designed to provide as safe an environment as possible for human use. Although many safety measures have been incorporated into the plan, accidents would occur. Boating accidents, highway-pedestrian accidents, floods, falling rock, and mudslides are some of the risks that are inherent in the Arkansas River corridor and cannot be totally eliminated.

D. UNAFFECTED RESOURCES

The Preferred Alternative would not impact the following resources: climate, air quality, topography, geology, or prime or unique farmlands. No impact would occur to the current functions of any floodplain or wetland in the area, the local hydrologic cycle, established water rights, or ground water conditions. There are no designated Areas of Critical Environmental Concern within the planning area. Implementation of this plan would not affect the Arkansas Rivers' suitability or eligibility for future wild and scenic river designation.

E. UNAVOIDABLE ADVERSE IMPACTS

This section summarizes those impacts which were identified in the Environmental Consequences portion of this chapter. These include unavoidable adverse impacts, irreversible and irretrievable commitments of resources, and short term uses versus long term productivity.

The Preferred Alternative would result in increased employment, fee collections, and construction of travel accommodations in the long term. These impacts are not expected to be significant. Unavoidable intergroup conflicts would continue to occur on and along the river corridor.

Despite inventories, public education, and use supervision, some irretrievable losses of cultural and paleontological resources would occur due to increased visitation.

Water runoff from parking lots would introduce small amounts of hydrocarbons and heavy metals to the river, and some sedimentation would occur during facility construction. This would not be sufficient to adversely impact water quality to any significant degree.

The potential for an incident involving hazardous materials is always present, and the hazard increases unavoidably as the number of vehicles and people increase within the corridor.

Public lands would be encumbered by withdrawals, classifications and other prior rights. As increased public and private development occurs along the river corridor, it would become increasingly more difficult and expensive to obtain rights-of-way for transportation and utility facilities. The change in the recreation management entity from BLM to DPOR and the development of brochures, maps, signs, etc., may be perceived as an irreversible commitment of public land to State Park use.

Residual impacts to the character of the land and facilities, visitor use, and the managerial characteristics include changes to a more facility-dependent resource on a few segments. Slight adverse effects to recreationists would be unavoidable. A slightly expanded commercial boating season and increased commercial boating use would negatively impact private boating use in Segment 1B. Limited expansion of commercial boating use on Segment 2B would result in a negative impact to fishing. Residual crowding problems, particularly on Segment 2A and, to a lesser degree, on Segment 4, may lead to a displacement of private boaters sensitive to crowding and an influx of new private rafters who tolerate higher numbers, compounding crowding problems. Some loss of recreation experience is anticipated with the change in social characteristics of Segment 5 from Roaded Open Country to Highway Rural. The effects of increased boater-related camping on public camping facilities would increase USDA Forest Service management and maintenance costs, but existing site capacities would not be exceeded. Social conflicts would continue to occur between fishermen and boaters, especially in Segments 2B, 3, and 4B.

More intensive facility development and increased levels of commercial use would have a somewhat irreversible effect on the kinds of recreation which the river could provide. Primary reliance on a user-funded operation could result in greater emphasis on commercial recreation. Commercial users would contribute a relatively large portion of those fees. Private users, especially those who are not part of organized user groups, may find it more difficult to have their administrative needs met.

Management of the area on primarily a user funded basis would impact repeat visitors who want things to remain the way they are. These visitors would feel a double impact when they are required to pay fees for management and services they did not want in the first place.

Another unavoidable impact could result from separate management of prescribed carrying capacities. Boaters wanting to use the river in one section (e.g. private boating) could be turned away when capacities are reached, even though unused capacity exists in another sector (e.g. commercial boating).

Some slight soil erosion is unavoidable. Once the plan is fully implemented, the amount of soil erosion would compare favorably with natural rates from unimpacted sites due to site hardening and revegetation actions. Some damage to vegetation would occur given the amount of people in the corridor. However, the overall production of vegetation would improve over its present condition given stricter visitor controls and vgetative rehabilitation.

Some impacts to wildlife would be unavoidable. Increased stress would reduce sheep populations, and loss of usable habitat would reduce carrying capacity. There would be a loss of nesting waterfowl on the river. Deer/vehicle accidents would increase. One known heron rookery may be lost due to noise and other disturbance resulting from increased boating use. These birds establish colonies and are extremely social. If a rookery is abandoned, all the birds would leave, affecting the entire nesting colony. The lack of suitable nesting habitats in this area of Colorado makes this possible impact important, since it may adversely affect the productivity of the species in this area.

Conflicts between highway users and recreation area users should be reduced, and an improved recreational access situation should occur within ten years. In the interim, highway capacity would be reduced but would remain sufficient. In the short term, until highway modifications and safety features are constructed, the rate of vehicle accidents would increase. In the long term, the accident rate would probably return to current levels.

Increased boating use would result in increased noise levels which would tend to displace other uses along the river. Noise at public campgrounds would be especially noticeable to the quieter, more traditional family camper as the proportion of boater camping at these sites increases. Any loss of birdlife due to noise along the river corridor would detract from the river's wildlife recreation features.

Increased recreational development and use would result in some unavoidable adverse impacts to existing livestock use. A small amount of land would be removed from grazing, livestock would occasionally get into fenced recreation areas because of fences being down, and increased numbers of people could at times produce stress for livestock watering at the river. These impacts would be negligible.

Although implementing actions contained in this document should help minimize accidents, they can never totally eliminate them. Disabling accidents and fatalities would continue to occur and would rise proportionately with the number of people in the area.

F. CUMULATIVE IMPACTS

There is as a general trend in the upper Arkansas River valley away from agricultural and mining uses toward recreation and tourism. The result is a much greater human use and residence in the region on a short term (i.e. summer) basis. There is a growing trend in recreational use along the Arkansas River corridor. The cumulative effect of this plan would be to speed up that trend. One of the primary reasons why use would grow rapidly is the creation of a State Recreation Area. Along with this title would come a heightened public awareness of the river and its recreational opportunities. Also, as new and better facilities are constructed, more users may be attracted. Residents and potential home buyers may perceive the increase in tourists as an intrusion on their lifestyle.

An increasing burden would be placed on the transportaton system in terms of numbers of vehicles. There would also be more large and slow-moving recreational vehicles, including commercial rafting bus traffic. The cumulative increase in traffic would result in a greater safety problem and risk of a hazardous waste spill. Theoretically, the economic benefit from commercial river users would have an additive effect with other related business developments and increase employment and economic well being within the region. Increasing human encroachment and activity would adversely affect wildlife habitat, numbers, locations, and possibly the kind of wildlife present.

CHAPTER IV

CONSULTATION AND COORDINATION

A. PRE-DRAFT CONSULTATION

Consultation with various individuals, groups, and public agencies began in March 1987. The BLM formed a five-member task force to represent various constituencies and interest groups in the development of the plan. In April 1987, the BLM and DPOR jointly initiated a Cooperative Agreement with 14 counties, municipalities and agencies along the Arkansas River to provide a framework for maximum coordination of all public management actions along the river. A notice of intent to amend the Royal Gorge Management Framework Plan was published in the Federal Register on July 17, 1987. During November and December of 1987, approximately 450 people attended eight public scoping meetings. These meetings were held to receive public reaction to the proposal that DPOR be given authority to manage river related recreation on BLM-administered public land along the Arkansas River.

Since there was public support for this proposal, the Colorado Department of Parks and Outdoor Recreation appointed a 22-member Arkansas River State Recreation Area Advisory Committee representing various organizations, towns, and counties. The committee formulated a detailed management and development proposal which was given to BLM on May 20, 1988. This proposal became a part of the Draft Plan.

From November 1987 thru July 1988, 190 letters were received. These letters were recorded and were taken into consideration as the EA team prepared the Draft Plan. To keep the public informed on the planning process, a newsletter was sent out in July 1988. Over 400 copies were mailed to various agencies and individuals who had expressed an interest in the plan.

B. DRAFT CONSULTATION

The notice of availability and a public hearing announcement were published on August 11, 1988 in the Federal Register. The notice announced a 45-day public comment period, from August 15 thru September 30, 1988. News releases and radio announcements were also distributed. On August 12, 1988, a briefing was held for the DPOR advisory committee, the BLM task force, EA team, and the congressional delegation. Six hundred and fifty copies of the Draft Arkansas River Recreation Management Plan and Environmental Analysis were sent to interested agencies and individuals. During the comment period, six formal public hearings were held at 2 p.m. and 7 p.m. at the following locations.

Location	Date	Attendance	No. of Speakers
Denver, Colorado	9/07/88	98	27
Canon City, Colorado	9/12/88	109	25
Buena Vista, Colorado	9/16/88	143	61

Additional consultation was accomplished through various telephone conservations with public officials and private individuals.

During the 45-day public comment period, 260 letters were received. Responses to written and oral comments are included in this chapter. The following topics or concerns were mentioned by several commentators.

1. Developing an Arkansas River State Recreation Area would help the local economies by bringing in tourists to boat, fish, hike, camp, rockhound or do other recreational pursuits.

2. While attracting people to the area to recreate is important to the economic development of the local communities, a balance needs to be maintained between economic development and environmental protection.

3. While site development is needed, when practical it should be located near towns rather than in primitive or undeveloped area.

4. If Ruby Mountain could be acquired, it would be a great asset because of its potential value to tourism and to mineral collectors.

5. No facilities should be located in the Brown Canyon Wilderness Study Area and the wilderness values of this area should be maintained.

6. Physical access to the river should not be restricted.

7. The plan should consider many different types of recreational uses and not just focus on one type of use.

Letters received after the close of the comment period (September 30, 1988) did not become a part of the official record and are not responded to in this document. However, all comments were read and considered. The participation and input from each agency, organization and individual is appreciated.

C. LIST OF CONTRIBUTOR LETTERS AND ORAL STATEMENTS

Names of people who made an oral statement at a public hearing or who sent a letter which was received during the 45-day public comment period on the Draft Plan are listed below.

Written Comment No.	Commenter
	Congressional Representative
2250	U.S. House of Representatives, Honorable Edward F. Feighan, Cleveland, Ohio
2212	Colorado House of Representatives, Representative Mary Anne Tebedo, Colorado Springs, Colorado
	Federal Agencies
2019	U.S. Army Corps of Engineers, Albuquerque, New Mexico

Written Comment No.	Commenter
	State Agencies
2203 629	Colorado Division of Wildlife, Denver, Colorado
	County Agencies
2246 528	Fremont County, Board of County Commissioners, Canon City, Colorado
	Local Agencies
2240 596	City of Colorado Springs, Department of Utilities Colorado Springs, Colorado
2109 605	Town of Buena Vista, Buena Vista, Colorado
615	Town of Salida, Salida, Colorado
616	Buena Vista City Council, Buena Vista, Colorado
531	Canon City Area Recreation and Parks District Canon City, Colorado
	Individuals, Businesses, and Groups
2034	Alcorn, Robert, Lyons, Colorado
2222	Alesch, Richard, Lakewood, Colorado
2020	Allison, Dean, Carbondale, Colorado
2071	Anderson Beth, Austin, Texas
2012	Anderson, Fletcher, Glenwood Springs, Colorado
2238	Anderson, Rick, Poncha Springs, Colorado
2172	Andrews, Rick, Westminster, Colorado
2001	Armitaze, Jan, Lyons, Colorado
2069	Arnez, Bob, Boulder, Colorado
2244	Baker, Bruce, Peoria, Illinois
2127	Baker, K., Aspen, Colorado
2088	Banks, John and Doris, Sedona, Arizona
2009	Bartel, Clinton, Canon City, Colorado
2236	Bartey, Stella, Buena Vista, Colorado
2135	Bayard, John, Englewood, Colorado
2033	Becker, Bruce, Denver, Colorado
2043	Berteau, Paul
2155	Borden, Gladys and Kenneth, Lakewood, Colorado
2245	Boyle, Timothy, Vail, Colorado
2199	Brevnich, Tom, Salida, Colorado
2144	Brown, Margaret, Buena Vista, Colorado (representing Buena Vista Chamber of Commerce)

Written Comment No.	Commenter
2167	Brown, Mark, Canon City, Colorado
2242	Brown, Tom, Denver, Colorado (representing Rocky Mountain Bighorn Society)
2157	Buchanan, Buck, Golden, Colorado
2164	Burnside, Ron, Colorado Springs, Colorado
2113	Burrows, Ethelyn, Canon City, Colorado
2180	Callaway, Risa, Denver, North Carolina (representing American Whitewater)
2161	Campbell, Bob, Carbondale, Colorado
2068	Campbell, Jarvis and Verna, Canon City, Colorado
2173	Carbone, Pat, Lakewood, Colorado
2086	Carroll, Torrey, Boulder, Colorado
2090	Carter, Wendy, Port Crane, New York
2018	Chiras, Danial D., Evergreen, Colorado
2156	Christiansen, Richard, Canon City, Colorado
2178	Cialone, Dave, Longmont, Colorado
2104	Cipriano, Christine, Boulder, Colorado
2101	Clarke, Karen, Denver, Colorado
2148	Clifton, Chas, Florence, Colorado (representing Trout Unlimited, Arkansas Valley Chapter)
2051	Cockrell, Michael, Frisco, Colorado
2231	Cogan, Joe, Nathrop, Colorado
2202	Cowden, Thomas, Austin, Texas (representing Texas Whitewater Association)
2080	Crane, Cecil, Canon City, Colorado
2085	Crane, Gladys M., Canon City, Colorado
2239	Culhane, Marion, Denver, Colorado
2091	Czamecki, John, Lakewood, Colorado
2016	Davis, Earl W., Pueblo, Colorado
2074	Davis, John V., Boulder, Colorado
2059	Dayer, M., Boulder, Colorado
2117	Dickerman, Pat, New York, New York
2207	Dils, Reed, Buena Vista, Colorado
2037	Donoher, Karen, Leadville, Colorado
2055	Doty, Alfred, Twin Lakes, Colorado
2174	Doty, David, Taos, New Mexico
2176	Dougherty, Sean, Canon City, Colorado
2115	Dvorak, Bill, Nathrop, Colorado
2092	Dvorak, Jaculine, Nathrop, Colorado
2128	Dyer, Alida, Salida, Colorado
2235	Ehigut, Ruby, Salida, Colorado
2241	Emmer, Mark B., Salida, Colorado (representing Audubon Society/Heart of the Rockies)
2139	Erickson, Ken, Englewood, Colorado (representing Gates Rock and Mineral Club)
2193	Ermeling, Liza R., Lawrence, Kansas
2125	Eustis, Dick, Howard, Colorado (representing Colorado River Outfitters Association)
2042	Everett, Dan and Rita, Canon City, Colorado
2026	Fogel, Marshall A., Denver, Colorado
2002	Folger, William M., Denver, Colorado

Written Comment No.	Commenter
2197	Ford, L., Denver, Colorado
2218	Freema, Michael, Canon City, Colorado
2087	Fribush, Dacotah, Boulder, Colorado
2065	Froehlich, Kim, Westminster, Colorado
2171	Gagne, T. Elaine, Loveland, Colorado
2111	Galston, Nancy, Buena Vista, Colorado
2013	Garzoli, Dianne, Aspen, Colorado
2027	Gates, Johnathan, Paonia, Colorado
2140	George, Keith, Poncha Springs, Colorado
2041	Good, Russell, Livermore, Colorado
2166	Gordon, Joe, Boulder, Colorado
2170	Grall, Don, Colorado Springs, Colorado
2011	Green, Laura, Golden, Colorado
2077	Greiner, David E., Oklahoma City, Oklahoma
2023	Greiner, Joe and Susan, Buena Vista, Colorado
2228	Grey, Bob, Buena Vista, Colorado (representing Trout Unlimited)
2072	Handwork, Bryan, Boulder, Colorado
2201	Harding, Benjamin L., Boulder, Colorado
2216	Hart, Jerry, Aurora, Colorado (representing United Sportsmans Council)
2223	Healey, Thomas W., Denver, Colorado
2182	Hench, Marie, Canon City, Colorado
2183	Hench, Roy, Canon City, Colorado
2094	Hill, Carolyn, Boulder, Colorado
2138	Hilleman, Karl
2219	Hittle, T. J., Manhattan, Kansas (representing American Canoe Association)
2052	Holder, Sandra, Brighton, Colorado
2032	Hopp, Harley, Denver, Colorado
2038	Horan, Patty and Jim, Nathrop, Colorado
2015	Horejsi, Brian L., Alberta, Canada
2044	Hose, Jan and Don, Aspen, Colorado
2187	Hunewell, Eldon R., Wheatridge, Colorado
2028	Hunter, Trace, Arcola, Illinois
2122	Huss, Gary, Denver, Colorado
2169	Huss, Glenn, Westminster, Colorado
2159	Irwin, Bill and Barbara, Mosca, Colorado
2007	Jacobs, J. Michael, Pryor, Oklahoma
2103	Johnson, David, Pueblo, Colorado (representing Arkansas Valley Audubon Society)
2220	Johnson, James W., Manhattan, Kansas (representing Kansas Canoe Association)
2143	Johnson, Trudy Watkins, Evergreen, Colorado
2189	Kammerzell, Florence, Greeley, Colorado (representing Weld County Rock and Mineral Society)
2152	Kasal, Irene, Fort Collins, Colorado (representing Fort Collins Rock Hound Club)
2079	Kederich, Kit, Canon City, Colorado
2130	Kederich, M., Canon City, Colorado
2010	Keesey, James and Helen, Pueblo, Colorado

Written Comment No.	Commenter
2131	Keil, C. D., Fort Collins, Colorado
2060	Keller, Annette, Aspen, Colorado
2195	Kershaw, Clavdia, Buena Vista, Colorado
2062	Klimek, Norm, Boulder, Colorado
2021	Knox, Paul, Buena Vista, Colorado
2230	Koepsel, Kirk, Denver, Colorado (representing Colorado Environmental Coalition)
2112	Koss, Eleanor L., Denver, Colorado
2196	Krest, Audrey and Stephen, Golden, Colorado
2225	Kuzmiak, John M., Pueblo, Colorado
2100	Lambird, Laura J., Colorado Springs, Colorado
2232	Lasecki, Larry, Colorado Springs, Colorado
2179	Leaper, Eric, Colorado Springs, Colorado (representing National Organization for River Sports)
2208	Lee, Denny, Salida, Colorado
2150	Lippis, Anthony and Joan, Salt Lake City, Utah
2045	Lodenkamper, Lisa, Pueblo, Colorado
2053	Long, Cliff, Wichita, Kansas
2008	Long, Morris and Gene, Canon City, Colorado
2233	Lopez, Kevin Lee, Paonia, Colorado
2153	Lucas, Holly, Security, Colorado
2209	Makris, Diana, Buena Vista, Colorado
2149	Makris, Pete, Buena Vista, Colorado
2226	Maning, Lolita, Pagosa Springs, Colorado
2081	Martinex, W. and D., Canon City, Colorado
2215	Matsushima, B., Aurora, Colorado
2165	McCllan, Roz, Boulder, Colorado
2003	McVoy, Maggie, Aspen, Colorado
2186	Meads, Marie, Florence, Colorado
2224	Medrick, Rick, Cotopaxi, Colorado
2005	Meeks, Mark, Denver, Colorado
2073	Melton, Kaye, Woodland Park, Colorado
2146	Mertin, Tony, Lakewood, Colorado
2046	Milburn, Jeffrey, Colorado Springs, Colorado
2048	Miller, Karen, Lakewood, Colorado
2137	Mohr, Bruce and Yvonne, Canon City, Colorado
2057	Molaskey, Edward, Salida, Colorado
2099	Moran, Martha, Alma, Colorado
2181	Naslund, Dave and Lavern, Edgewater, Colorado
2251	Newell, George, Boulder, Colorado
2098	Nichols, Gary C., West Jordan, Utah
2082	Nichols, Jean, Canon City, Colorado
2227	Nicholson, D., Vail, Colorado
2243	Norris, Tyler, Snowmass, Colorado
2030	Nyhoff, Kenneth, Denver, Colorado
2050	O'Neill, Dennis, Leadville, Colorado
2066	Owens, Kenneth, Castle Rock, Colorado
2198	Peapples, Sarah, Boulder, Colorado
2129	Pearse, C. Kenneth, Durango, Colorado
2076	Pearson, Mark, Grand Junction, Colorado
2031	Plumb, Alan, Jeffersonville, Vermont

Written Comment No.	Commenter
2040	Ptacek, Lynne, Evergreen, Colorado
2194	Rampton, Thomas R., Buena Vista, Colorado
2058	Randall, Christopher D., Lakewood, Colorado
2213	Ransick, E. J., Highland Ranch, Colorado
2126	Rasmussen, Fred, Estes Park, Colorado
2067	Reich, Eric, Basalt, Colorado
2056	Ringler, Katharine, Salida, Colorado
2089	Robb, Connie, El Centro, California
2237	Robb, Patricia, El Centro, California
2004	Rowley, JoAnne, Lakewood, Colorado
2096	Rubin, Cathy M., Golden, Colorado
2177	Rutherford, V. A., Buena Vista, Colorado (representing Trout Unlimited)
2116	Sample, Jim, Salem, Missouri
2136	Sartorius, Fen, Santa Fe, New Mexico
2217	Scar, Dick, Buena Vista, Colorado
2054	Schenk, Tony, Canon City, Colorado
2108	Schettler, Leo, Denver, Colorado
2078	Schreiber, Craig, Leadville, Colorado
2105	Schroder, T., Denver, Colorado
2102	Schwarz, Ruth
2118	Scott, Joel, Pueblo, Colorado
2119	Scott, Mrs. Glenn, Pueblo West, Colorado
2093	Seitz, Chris
2006	Sikorowski, Linda, Denver, Colorado
2029	Simpson, Michael, Buena Vista, Colorado
2084	Simrall, Riley M., Canon City, Colorado
2132	Smallwood, David, Jefferson City, Missouri
2141	Smith, Drew, Salida, Colorado
2014	Snow, Lew, Pueblo, Colorado (representing Pueblo Rock Hounds)
2190	Snow, Lew, Pueblo, Colorado (representing Colorado Federation of Gem and Mineral Society)
2017	Spanjer, Paul, Boulder, Colorado
2107	Spezia, John, Steamboat Springs, Colorado
2097	Sprague, Cindy, Charlotte, Vermont
2110	Sprung, Gary, Crested Butte, Colorado
2114	Steffan, Freda, Canon City, Colorado
2168	Stein, Jody, Boulder, Colorado
2191	Stolzenburg, Lucy, Denver, Colorado
2133	Stoy, Stan, St. Louis, Missouri
2142	Straley, Janis, Littleton, Colorado
2221	Strohl, Larry, Aurora, Colorado
2049	Stuckholen, Peter, Boulder, Colorado
2205	Sudan, Stan and Cindy, Salida, Colorado
2120	Sullivan, Judy, Boulder, Colorado
2151	Summitt, Gregory, Buena Vista, Colorado
2095	Sussman, Deborah, Salt Lake City, Utah
2252	Tansil, John, Cape Girardeau, Missouri
2175	Taylor, Louis, Denver, Colorado (representing Western Interior Paleontological Society)

Written Comment No.	Commenter
2083	Tensley, Aaron and John, Canon City, Colorado
2154	Thompson, Donald, Denver, Colorado
2124	Tierney, Patrick and Robin, Fort Collins, Colorado
2039	Todd, Janet, Conifer, Colorado
2160	Todd, Robert, Conifer, Colorado
2075	Townslin, Deborah, Leadville, Colorado
2064	Trauner, Mary, Atlanta, Georgia
2070	Vanderryn, Judith, Boulder, Colorado
2147	Vermeeren, Larry, Colorado Springs, Colorado
2214	Wackowski, Sally and Ronald, Vernal, Utah
2106	Waddell, Ken, Salida, Colorado
2192	Watson, Ann, Aurora, Colorado
2210	Wehling, Carol, Denver, Colorado
2206	Wellman, Emely, Lawrence, Kansas
2121	Wesner, Margaret, Pueblo West, Colorado
2188	Wester, Marie, Durango, Colorado (representing Four Corners Gem and Mineral Club)
2163	Whalen, Dennis, Littleton, Colorado
2063	Whipple, Barbara, Buena Vista, Colorado
2134	Wiley, Nancy L., Durango, Colorado
2061	Wolfe, Tim, Durango, Colorado
2036	Wolfgang, Greg and Beth, Salida, Colorado
2234	Worrell, Gregory, Colorado Springs, Colorado
2200	Wynn, John, Vail, Colorado
2035	Young, Millicent, Paonia, Colorado

Oral Comment No.	Commenter
512	Alesch, Rick, Lakewood, Colorado
599	Allen, Bob, Buena Vista, Colorado
513	Baker, Bill, Littleton, Colorado
601	Baker, Joshua, Poncha Springs, Colorado
568	Battin, John, Canon City, Colorado
589	Benn, David, Buena Vista, Colorado
644	Block, Bill
624	Bornhorst, Bob, Salida, Colorado
641	Brejcha, John, Salida, Colorado
586	Brown, Margaret, Buena Vista, Colorado (representing Buena Vista Chamber of Commerce)
554	Brown, Mark, Canon City, Colorado
508	Buchanan, Buck, Golden, Colorado
558	Burch, Dave, Canon City, Colorado
502	Chiras, Dan, Evergreen, Colorado
646	Cichowikz, Chuck, Nathrop, Colorado
633	Clifton, Chas, Florence, Colorado (representing Trout Unlimited, Arkansas Valley Chapter)
584	Cogan, Joe, Nathrop, Colorado
560	Coss, Don, Canon City, Colorado
507	Dahlstrom, Tony

Oral Comment No.	Commenter
570	De Cook, Joseph, Canon City, Colorado
514	Dennis, David, Denver, Colorado
622	Dils, Karen, Buena Vista, Colorado
503	Dils, Reed, Buena Vista, Colorado
606	
642	
504	Dvorak, Bill, Nathrop, Colorado
588	Dyer, Alida, Salida, Colorado
643	Dyer, Douglas, Salida, Colorado
562	
602	Eby, Newt, Buena Vista, Colorado
583	Ericson, Maggie, Buena Vista, Colorado
551	Eustis, Dick, Howard, Colorado
607	
561	Foshee, Randy, Canon City, Colorado
631	Foster, Jeanne, Salida, Colorado
580	George, Keith, Poncha Springs, Colorado
529	Gomolchak, Leo, Denver, Colorado (representing Trout Unlimited Reg. Director)
595	Gray, Bob, Buena Vista, Colorado (representing Trout Unlimited)
521	Greiner, Joe, Buena Vista, Colorado
522	Greiner, Susan, Buena Vista, Colorado
591	Gruner, Steve, Salida, Colorado
566	Hamilton, Gordon, Colorado Springs, Colorado
524	Harding, Ben, Boulder, Colorado
550	Hartley, Mike, Manitou Springs, Colorado
590	Hierholzer, B. L., Howard, Colorado
527	Hobson, Charles, Pueblo, Colorado
523	Huggs, Chuck, Boulder, Colorado
557	Ireland, Judy, Howard, Colorado
635	James, Ray, Salida, Colorado
594	Johnson, Trudy Watkins, Evergreen, Colorado
621	
597	Jones, Jay, Leadville, Colorado
625	Keidel, Jeff, Buena Vista, Colorado
563	Kelly, Marcy, Penrose, Colorado (representing Colorado Wildlife Federation)
634	Kitson, Ray, Salida, Colorado
604	Knox, Paul, Buena Vista, Colorado
517	Koepsel, Kirk, Denver, Colorado (representing Colorado Environmental Coalition)
506	Leaper, Eric, Colorado Springs, Colorado
516	(representing National Organization for River Sports)
598	
619	
623	Lee, Denny, Salida, Colorado
559	Levy, George, Canon City, Colorado
628	Makris, Dianne, Buena Vista, Colorado

Oral Comment No.	Commenter
505	Makris, Pete, Buena Vista, Colorado
525	
600	
640	
620	Mallett, Jerry, Englewood, Colorado
638	Marquez, Debby, Vail, Colorado
565	McMullen, J. D.
617	McMurry, Frank, Nathrop, Colorado (representing Chaffee County Cattleman Association)
564	Medrick, Rick, Cotopaxi, Colorado
509	Meeder, Chuck, Lakewood, Colorado (representing Trout Unlimited, Colorado)
592	Mitchell, Dennis, Salida, Colorado
627	
526	Moss, Jim, Lakewood, Colorado
632	Nilles, Roy
511	Nyhoff, Ken, Englewood, Colorado
553	O'Dell, Hunter, Salida, Colorado
630	
500	
636	Osborne, Jim
501	Osburn, Irene, Englewood, Colorado
585	Palmer, Jim, Buena Vista, Colorado
608	Pappenfort, Stewart, Salida, Colorado
552	Phillips, John
618	Pyson, John, Salida, Colorado
510	Ragan, Doug, Englewood, Colorado
530	Rasmussen, Fred, Salida, Colorado (representing Trout Unlimited - Colorado Peaks)
515	Ravenhill, Don, Littleton, Colorado
520	Reece, Nancy, Arvada, Colorado
518	Reinbrecht, Jennifer, Wheatridge, Colorado
519	Rice, John, Denver, Colorado
569	Robison, Ken
593	Rutherford, Vern, Buena Vista, Colorado (representing Trout Unlimited)
556	Sbarbaro, Ed
645	Scalf, Crystal
603	Schoger, Dennis, Buena Vista, Colorado
582	Shaffer, Bob, Buena Vista, Colorado
587	Simpson, Mike, Buena Vista, Colorado
637	
626	Smith, Rick, Buena Vista, Colorado
555	Wade, John, Pueblo, Colorado (representing Colorado Mountain Club)
639	Wilder, Jim, Nathrop, Colorado
581	Wolfgang, Beth, Salida, Colorado
647	Woodson, Paul, Poncha Springs, Colorado

D. COMMENTS AND RESPONSES

Shown below is the comment number followed by the comment and response. Comment numbers correspond to the people listed in the previous section. In general, comments for which responses are included are those which asked specific questions or made statements that required clarification. Similar comments have been grouped together and summarized or paraphrased. In addition, comments are grouped together by category, for example wildlife, recreation, etc.

1. Threatened and Endangered Species

Comment No.: 2241

Fencing and signs should be placed to discourage people from disturbing falcon eyries.

Response:

This has been added to the Preferred Alternative.

Comment No.: 2241

A colony of herons exists in Segment 2B. Concerns for herons in segment 6 should be extended to this segment.

Response:

This information has been added to the EA in the Final Plan.

2. Wilderness

Comment No.: 2230

"...opposed to any part of the Cooperative Management Agreement being included in the Browns Canyon Proposed Wilderness area...joint management could lead to impairment of the wilderness resource."

Response:

The Cooperative Managment Agreement between the BLM and DPOR is only for river related recreational use. The BLM would continue to be the sole administrator of the Browns Canyon WSA. The BLM would administer and manage the WSA in accordance with BLM Interim Management Policy. The only authority DPOR would have in the WSA would be in the narrow corridor adjacent to the river. DPOR would have the ability to enforce regulations related to recreation use of the river in that area. This enforcement authority would in no way affect the wilderness values or management policies of the WSA.

Comment No.: 517, 555, 2002, 2003, 2005, 2006, 2010, 2018, 2026, 2027, 2035, 2040, 2043, 2044, 2045, 2051, 2054, 2056, 2057, 2058, 2076, 2091, 2101, 2103, 2107, 2110, 2118, 2119, 2121, 2128, 2137, 2142, 2146, 2159, 2165, 2166, 2168, 2181, 2191, 2194, 2197, 2198, 2210, 2225, 2226, 2233, 2241

These comments express a desire to protect and retain the wilderness characteristics of the Browns Canyon Wilderness Study Area (WSA). Some specifically opposed placing facilities within the boundaries of the WSA (below Ruby Mountain on the east bank of the river where the river is the boundary line). Some suggested a primitive trailhead near Ruby Mountain.

Response:

The Preferred Alternative states that neither areas nor facilities within the Browns Canyon WSA would be developed. All river-related use in Browns Canyon WSA would be managed in accordance with WSA interim management guidelines. Ten lunch stops would be provided on the west side of the river (Browns Canyon below Railroad Bridge). The west side of the river is outside the WSA. The intent is that all management actions are designed to protect wilderness values and lessen impacts (specifically at Ruby Mountain). Vehicle barriers would be constructed to protect against vehicular trespass into the WSA. Numerous actions to interpret and inform the user public about the WSA (such as the provision of brochures, maps, and low impact use techniques) would help lessen impacts while furthering knowledge of wilderness resource values.

3. Economics

Comment No.: 2241

The Draft Plan stated that State Parks should ensure economic assistance is provided to local counties and communities in order to minimize any impacts to the area infrastructure, such as road maintenance costs. How would this be guaranteed to happen or enforced?

Response:

The Final Plan specifies that DPOR work with appropriate agencies to minimize impacts to the area's infrastructure. It is beyond DPOR's authority to provide or guarantee such assistance, but every effort would be made to work with the local communities and the appropriate agencies.

Comment No.: 2128

Government owned and operated concessions, such as bike and boat rentals, would do more harm than good to the local communities. They may be seen as a threat to local business and to new business development.

Response:

There is no intent by either BLM or DPOR to own or operate any concession. BLM and DPOR do have concessions in recreation areas and state parks, but they are privately owned businesses operating under permits/concession agreements. An intent of the plan is to manage the area so that the local economic climate is improved.

Comment No.: 553, 598, 2007, 2060, 2064, 2132, 2161, 2162, 2202, 2211, 2227

Excessive regulation would lead to a reduction in boating use which would effect the local economy negatively.

Response:

While some people may be discouraged by regulation it is felt that more people, on the whole, more would use the river due to the variety of recreational opportunities provided and the reduced user conflicts which should result from the management emphases placed on the various river segments.

Comment No.: 521, 581, 623, 2022, 2024, 2033, 2036, 2052, 2065, 2066 2090, 2100, 2112, 2122, 2131, 2135, 2149, 2151, 2153, 2192 2208, 2209, 2213, 2214, 2229, 2237

Alternative A would cut commercial boating use back so much that it would result in a loss of jobs and income in the local communities. The limits placed on commercial boater use near Salida are unreasonable.

Response:

The Preferred Alternative has been changed to better reflect the economic needs of the area, and especially the area above Salida where the use season was lengthened and amount of commercial boating use was increased.

Comment No.: 2128

The local communities may not be economically able to handle the growth rate of boating expected under the Proposed Action.

Response:

The Preferred Alternative reflects a lower rate of growth in boating and should have less of an impact on local economies. In addition, an implementing action in the Final Plan calls for DPOR to work with Colorado Department of Local Affairs to help local communities obtain assistance, if needed, to minimize impacts on the area's infrastructure.

4. Water Quality

Comment No.: 616

Water quality studies are needed on the river.

Response:

Water quality studies on the Arkansas River were completed by U.S.G.S. in 1984 and 1987. A comprehensive water quality study by U.S.G.S. is underway and is expected to be completed by 1990. However, water quality is not expected to be affected.

5. Realty

Comment No.: 630

A recent court case determined that any navigable river in the United States of America is under the jurisdiction of the United States Coast Guard, not the BLM. So BLM does not have the authority to give it to DPOR.

Response:

A determination has not been made as to whether or not that portion of the Arkansas River within the planning area is navigable. The BLM has the authority to enter into a CMA with DPOR through Sec. 307 of FLPMA. H. B. 1253 gives DPOR authority to manage use on the surface of the water on the Arkansas River from about Leadville to Pueblo reservoir.

Comment No.: 631

During the scoping meeting held in Salida, the property ownership of public riparian lands along the Arkansas River was addressed. It was clearly stated that the land would be patented to the State of Colorado under this plan. Now we are hearing that the lands would not be patented to the state. When did this change?

Response:

During the early public meetings held in late 1987, the concepts of a cooperative management agreements and leases of public land were mentioned as potential methods for transferring recreation management to DPOR. The concept of R&PP lease was mentioned at the scoping meeting in Salida, and questions were asked about the possibility of patenting some of these public lands over to the state. Since those meetings, public comments and a magazine article pointed out that the Arkansas River was one of the top ten whitewater rivers in the nation and could, therefore, be of national significance. Guidelines under the R & PP act state that public lands having national significance shall be retained under federal ownership and not patented to other entities.

6. Energy and Mineral Resources

Comment No.: 2050

No improvements were being made specifically for gold panning.

Response:

The overall plan calls for numerous improvements in public access and use of the river. Even though panning was not specifically mentioned, it is an authorized recreational use, and the opportunities to do this type of activity should improve.

Comment No.: 2050

Mineral exploration and development is being dismissed by withdrawing the public lands from mineral entry.

Response:

No withdrawals are being proposed other than at 14 potential R&PP recreational sites, a total of 480 acres. Of these proposed sites, seven are already withdrawn from mineral entry, so only seven potential sites (258 acres) could effect mineral entry. Prior to implementing any of these R&PP's, a mineral report assessing the mineral potential of the site would be prepared. The recommendations made in this report would impact the final decision to grant or deny the R&PP application.

7. Recreation

Comment No.: 518

All user fees charged beyond a Parks Pass entrance fee should be equitable across all user groups. Don't single out the boating community for additional user fee charges.

Response:

Minimum fee requirements for use of the public lands require all commercial uses and competitive events to pay user fees; in the past as well as in the forseeable future, these only involve boaters. The Preferred Alternative includes provisions for charging DPOR entrance fees at fourteen potential developed R&PP lease sites. Those fees would be charged to all users, boaters and other recreationists alike. Additional user fee charges provided for by the Preferred Alternative include camping fees, special use fees (e.g., group sites), and other standard fees (e.g., reservations); see Appendix H.

Comment No.: 518

No specific penalties are prescribed for noncompliance. The plan should say what would happen to those who choose to run the river in disregard for the limitations imposed by the plan.

Response:

Under DPOR management, penalties would be the same as prescribed for other units of the State Park System under the Colorado Revised Statutes, 1973. Depending on a future assessment of the need for additional regulations to implement the plan, other specific penalties may be developed.

Comment No.: 587

We question the extrapolation of numbers using one person staying overnight as one count on page VI-25 of the draft plan. We calculate that there are, using the 470,236 overnight stays, a total registration of only 1,768 campers (using a study population of 2.8 people per family). Spread throughout the industry, that is insufficient to run a business. If the numbers were true, the private campground industry does not need the competition of overnight camping; that is not a component of a rafting experience.

Response:

The number of overnight camping stays shown (470,236) in the draft is the total number of person-nights boaters would camp, irrespective of party size or family size (i.e., 2.8 people per family). Private camping use projections are based on both the projected increase in boating use and the average number of nights which the increased number of boaters would spend camping in private facilities.

The same approach and rationale is used in the analysis for the Preferred Alternative to project an estimated increase in private camping use of 175,126 overnight camping stays (i.e., one person camping for one night) by 1997. Under the boating use presented in the Preferred Alternative, the average boater would camp out an estimated .887 nights in private facilities. This would yield an annual increase in boater registration of 197,436 private campers.

Comment No.: 2115, 2128

Camping has always been allowed on Segment 3; there is no need to discontinue this use.

Response:

The prohibition against camping in Segment 3 was included by the Advisory Committee in response to an expressed need for protection of the commercial camping industry. Given the nature of recreation use along this segment, and the fact that camping is an integral part of the river experience, this prohibition has been removed in the Preferred Alternative. Provisions for Class C and D camping areas at Rincon and Alkali Gulch have also been included; see Appendix F for campground classification description.

Comment No.: 2128

The proposal would remove all commercial boating from Segment 4 during the period August 15 to May 15. This is overly restrictive in view of the greater potential for high water both earlier and later in the boating season.

Response:

The commercial boating season is extended from May 15 through Labor Day in the Preferred Alternative. Also, some commercial use has been accommodated for the remainder of the year in nearly all segments.

Comment No.: 2128

The proposal promises that commercial outfitter fees required for use of the public lands would not exceed three percent of gross receipts, but does not address what this fee would be in subsequent years. The final plan needs greater specificity regarding amounts and types of future fees, both for commercial outfitters and for individuals at intensively developed sites.

Response:

The three percent rate is based on current public lands policy and is subject to change at the discretion of the Director, BLM, and the Secretary of the Interior. It cannot be predicted. The Preferred Alternative provides for studies to determine whether or not commercial on-river user fees are to be charged. If State Parks becomes the recreational manager of the Arkansas, fees charged would be similar to the standard for all areas in the State Park System (see Appendix H) which are also subject to change. Public comment on changes to State Parks fee structure is provided for by the Colorado Legislative and Administrative Procedures Act. In addition, an areawide implementing action in Chapter II ensures public involvement in fee structure changes.

Comment No.: 2159

The plan is unclear on whether it would be illegal to put-in or take-out on private land...or on public lands other than those specified in the plan.

Response:

Neither the Draft Plan nor the Preferred Alternative contain any provisions which would in any way alter private landowner sovereignty. Boaters can use private land with landowner permission as before. Public land access is described in the Preferred Alternative.

Comment No.: 2241

The plan readily admits on page VII-17 that the Proposed Action is likely to increase conflict: "On all segments except 6, adverse effects would include increased crowding and user conflicts, especially between commercial and private boaters, and between boaters and fishermen." The plan does not minimize conflicts.

Response:

Correct. This is the reason for a scaled down Preferred Alternative in this Final Plan and for placing a management emphasis on each river segment to highlight the recreational use best suited to that particular segment.

Comment No.: 2241

By offering no specific "off-the-river" times, the Proposed Action cannot offer any guarantee to non-boaters that there would be "quiet time" on the river for other recreational activities.

Response:

To help resolve that problem, the Preferred Alternative provides that all commercial boats (which several have identified as the principal source of user conflicts and crowding) be off subsections 2B, 3, 4A, and 4B by 5:00 pm. This provides off-hours where private boaters can be free of conflict with commercials, but it does not alleviate off-hour conflicts between private boaters and other recreationists.

Comment No.: 2148

The chief failing of the Proposed Action is its failure to consider and to mitigate the negative effects of projected recreational boating increases on wildlife.

Response:

The environmental analysis in the Draft Plan acknowledged and documented negative effects of the proposal on area wildlife, particularly on fisheries and resulting recreational fishing use. The Preferred Alternative represents a compromise to help alleviate those negative effects. Residual effects which would occur are shown in this document.

Comment No.: 2159

The unique environment of Browns Canyon is in jeopardy of being damaged (as evidenced by trash all over the banks at Hecla and Ruby Mountain, human waste on the banks at Hecla, unattended fires at Hecla, accelerated soil erosion at Hecla and Ruby, car accidents on the Hecla road, loss of live trees for firewood at Hecla, traffic jams at both Hecla and Ruby) prescribed numbers in the proposal would benefit only commercial outfitters.

Response:

The Preferred Alternative would deal with these environmental problems on Segment 2 in several ways. Carrying capacity numbers have been reduced from what was in the proposal. Carrying capacity numbers would accommodate all the existing private boating use as well as substantial boating increases within the private sector. Additional put-in/take-out sites would be developed to relieve user pressure on the few access sites being used. Peak carrying capacities for the boating season are extended through Labor Day, for private as well as commercial boaters. Also a wide variety of indirect management controls) interpretive information, environmental education, increased on-the-ground visitor contact, and so forth) would occur on this segment.

Comment No.: 502, 2230

The inflated peak use limits for both private and commercial boats in Segment 2 create a potentially very dangerous river. While this averages out to about 600 people per hour, most people put on early between 9 and noon, so it really packs the river. The allocations allowed in the plan are too high and totally unrealistic for both groups, private and commercial, and would result in more crowding. It is absolutely absurd to even consider raising daily boater use levels beyond current high use days. The numbers and overall boating slant of the Proposed Action is very troublesome. It is clearly the work of self-interested economic groups, each demanding a larger share of a finite-sized pie; it overlooks the size and capacity of the pie, and the ability of managers to administer it.

Response:

The environmental assessment in the Draft Plan acknowledged the problems identified. To resolve them, the Preferred Alternative presents somewhat scaled down carrying capacities for several segments to alleviate impacts identified in the draft. In addition, developed site capacities of the larger sites have been reduced. These factors make for substantial reductions in crowding at put-ins and would help reduce on-river crowding, even though some additional growth beyond present levels is built into the plan design and is expected to occur. The Preferred Alternative is expected to resolve some, but not all, of the existing on-river crowding problems; it is not expected to aggravate them.

Comment No.: 509, 2178

The report seems to be lacking a rationing scheme. How do we distribute the river permits and control the number of boats?

Response:

Under the Preferred Alternative's carrying capacities, use is not yet at the point of being rationed on any one segment. Therefore it is premature to deal with that issue in the present management plan. However, if rationing is needed at some point in time, this plan specifies that applicable public lands policies would be followed and requires that opportunity for public comment be provided.

Comment No.: 512, 2201, 2202, 2222

If you show allocation ratios in terms of numbers of boats instead of numbers of people, you tend to skew the figures in favor of commercials because the average number of people per commercial raft is greater than for private boats, many of which are kayaks. There is a lack of data on types of boats and average numbers of people per boat.

Response:

Allocation ratios in the Preferred Alternative are still presented in terms of numbers of boats. For planning purposes, the average number of people per boat was calculated at seven for commercial boats (5 in Segment 1B, The Numbers) and two for private boats (1.5 in The Numbers).

Comment No.: 514, 518, 519

Alternative A's proposal to allow commercials to expand into private percentages would effectively relinquish the river to commercial outfitters and is way out of line with the Proposed Action. As usage does increase, one thing that is very important is that one group does not suddenly absorb the rights and allocations of another group.

Response:

This Final Plan reflects this concern. On any given river segment when use within one sector, commercial or private, exceeds established capacities before the other, only that particular sector would be allocated. The Preferred Alternative does not allow either sector to grow into the unused available capacity of the other. Established carrying capacities would be continually monitored to ensure plan objectives are being accomplished. If it becomes necessary to change allocation ratios set in this plan, the modification would be made through a formal plan amendment with public involvement.

Comment No.: 554

The Proposed Action's statement on IV-18 that a Segment 4 goal is to "...Accommodate the greatest increase in river recreation use in this segment..." is inconsistent with the proposed use limits. You cannot indiscriminately restrict use on one end and have economic development on the other.

Response:

This quote has been taken out of context. The goal also specifies that this would be "...consistent with the management prescriptions, and while providing a wide variety of recreation opportunities." It is a basic premise of the plan that commercial boating needs to be regulated to make it compatible with other important recreation uses. This is consistent with overall management objectives for Segment 4 and with the goal of providing a variety of recreation opportunities. BLM's river management policy encourages efforts of commercial permittees to maintain stable and viable enterprises and to ensure quality service to the public. However, the BLM is not obligated to guarantee financial success. The intentions of the plan are mutually compatible.

Comment No.: 2115, 2143

It is not in any group's interest for the plan to designate or reserve certain sections along the river for any one special interest group or grant exclusive use.

Response:

Neither the proposal nor any of the alternatives in the Draft Plan included provisions to designate or reserve certain sections along the river for the exclusive use of any one special interest group. The Preferred Alternative recognizes that certain primary recreation uses are best suited for each segment, while accommodating other uses to the maximum extent possible.

Comment No.: 2128

The limiting of Segment 3 to 300 boats per day from May 15 to August 1, and to 10 boats per hour from August 2 to Labor day, would be impossible to adequately monitor and would unduly limit exposure of potential commercial clients to downtown Salida merchants.

Response:

It is well within the capability of recreation managers to monitor boating capacities set forth in the Preferred Alternative. The number of commercial boating clients who may be exposed to Salida's merchants are not limited to those boating Segment 3. To this must be added boaters floating into town from Segment 2B plus commercial outfitters who exit Segment 2B a short distance upstream.

Comment No.: 2128, 2159

Launch windows are not the answer to crowding problems, particularly in Segments 2 and 4. They would concentrate use far beyond the occassional Saturday congestion presently seen. They would also cause overcrowding in the middle of the day and take away the privileges of users who put on early to enjoy early morning or evening solitude.

Response:

Public response to the crowding issue indicates that it is more than an occasional Saturday congestion problem, as evidenced by public comments received on the Draft Plan, expressed preferences of commercial clients, and comments of private boaters. Launch windows for Segments 2 and 4 in the Preferred Alternative allow as many commercial launch hours as on any segment of the river. Carrying capacities of affected developed recreation sites along Segment 2A indicates a reduction of crowding below present levels. Site capacities at the lower end of Segment 4 near Parkdale are greater than they are at present, but proposed expansion of facilities at this site is expected to reduce crowding. On-river crowding concerns would likely not go away since prescribed capacities on both segments allow for additional commercial boating growth. These factors would be partially offset by a more widely spaced distribution of users. Also, none of the launch widow restrictions in the Preferred Alternative apply to private boaters.

Comment No.: 2128

The proposal provides for no launches after 1:30 pm in Segment 5. This would put an end to afternoon half-day Royal Gorge trips as well as inordinately crowd mornings and early afternoons in this more dangerous and inaccessible class 4/5 run.

Response:

The Preferred Alternative provides for a standard river-wide commercial launch window from 8:30 am to 3:30 pm.

Comment No.: 2201

Page V-11 of the Draft Plan states: "While present use levels are already a concern to several visitors,..." This understates the level of concern displayed by users according to the analysis. The draft also states: "public support for restricting total use numbers below present levels appears to be lacking among most recreation user groups." The analysis contradicts this statement.

Response:

The understatement is acknowledged. However, we believe that no contradiction exists. While the present volume of commercial boating use is a serious concern to many users, an overall consensus of public support for limiting use appears to be lacking. Neither commercial outfitter representatives, nor private boating organizations, nor fishing organizations, nor the local communities want to see any reductions in their current use levels.

Comment No.: 524, 2201, 2222, 2230, 2241

What is missing from the Proposed Action is any substantial action for mitigating the impacts on the private boater by commercial overcrowding of the Arkansas River's public resources. This is not a management plan but a business plan for the exploitation and development of the Arkansas River by commercial outfitters. Private boaters should not be limited since they are not a problem. Pages VI-31 and VII-19 of the draft indicate that crowding and overuse is already a perceived problem by boaters in Segments 2 and 4, yet the proposal provides for substantial use increases.

Response:

A basic premise of the final plan design is that commercial boating needs to be regulated to make it compatible with other important recreation uses. Therefore, the Preferred Alternative resolves most impacts that would have occurred under the Proposed Action, particularly those due to crowding by commercial boating. However, the Final Plan would not resolve all crowding problems; impacts that would remain are identified in the environmental analysis. While the level of private boating is not the principal problem, the plan must still prescribe carrying capacities which specify the proportion of use to be alloted between commercial and private sectors.

Comment No.: 2201

The section on page III-10 of the Draft Plan on employing a competitive system to distribute alloted commercial use among outfitters constitutes a restraint of trade, creates a proprietary right, serves to increase prices to the public, and therefore should not be done. No part of the proposal incorporates such limitation nor analyzes it.

Response:

A rationing plan (to distribute available capacity use among the commercial sector) is not included within the Final Plan nor was it included in the draft. The competitive system referred to was one of several methods listed, any one of which may be used to allocate use if a rationing plan is devised. The various methods of allocating use were listed in the Draft Plan for information purposes, since they are part of BLM Policy. They were not intended to be considered a proposal.

Comment No.: 2201

There are no areawide goals dealing with the user conflicts issue on page IV-2 of the Draft Plan.

Response:

The second goal on page IV-2 of the Draft Plan does deal with the user conflicts issue.

Comment No.: 2202

All of your statistics only begin when commercial rafting became popular. Consequently, all of your quotas are unfairly tilted to favor commercial rafters; this unfairly restrict historical users, the private boaters.

Response:

Indications are that private boating is presently as high as it has ever been. Carrying capacities incorporated within the Preferred Alternative were developed in consideration of private as well as of commercial use.

Comment No.: 2207

A moratorium on new river outfitters should be placed on the river using 1988 as a base year; the public can be easily served by the 60+ outfitters currently permitted. This was done on the Dolores River in 1988 and was upheld on appeal.

Response:

Rationale for instituting a moratorium is lacking, since numbers of outfitters operating on the river are in a period of decline. A true moratorium not only places limits on numbers of outfitters but also freezes each permittee's use at base year levels; this is what was done on the Dolores River. To undertake such action would sharply contradict public concerns for economic growth on the Arkansas. There is even less rationale for limiting the number of outfitters on the river at this time. Public land policy directs that use limits are not to be imposed just to reduce or eliminate competition among commercial operators.

Comment No.: 2207

Site capacities on page IV-12 as well as other places in the Draft Plan are guesses and should be treated as such.

Response:

These site capacities are not intended to portray what is now occurring but instead express management intent. No guesses are involved.

Comment No.: 2207

You need to explain the difference between peak capacity and carrying capacity.

Response:

There is none; the terms are synonymous.

Comment No.: 2217

Just as important as carrying capacities is the spacing between boating parties. The plan should contain minimum time and distance specifications not only to enhance social quality but for purposes of safety.

Response:

While nearly one-half of boaters surveyed in 1987 on Segments 2 and 4 supported the assignment of beginning trip times to achieve better spacing, this action has not been incorporated in the Preferred Alternative. Managers would first rely on indirect methods for controlling visitor use; these have the least impact on users and are far more easily implemented. If public information efforts fail to achieve prescribed management objectives and visitor safety problems develop, then prescribed maximum boat launch intervals may have to be incorporated within the Final Plan through the plan amendment process.

Comment No.: 2222

Carrying capacity numbers are most inequitable in Segment 1, where about 90 percent is currently private use. While management objectives claim to favor private use in Segment 1B, calculations show that this would not be the case. The inequity would be even greater in segment 1C.

Response:

The Preferred Alternative shows private boating as a primary use in Segment 1B; mixed boating in 1C. Capacities have been adjusted in Segment 1B because of the identified impacts on private boaters. Calculations were made using 5 persons per commercial boat and 1.5 persons per private boat in Segment 1B.

Comment No.: 2241

On pages IV-17 and 18 the proposal provides explicit prescriptions to satisfy boating objectives but none to satisfy objectives for other uses (page IV-19). This same problem exists in all segments.

Response:

In the Segment 4 example cited, the statement of management purpose includes fishing, wildlife viewing, and picnicking. Maintenance of the area's Highway Rural character is generally favored by those users (it could not be reversed with the highway present). Provisions for highway pullouts for wildlife viewing, roadside facilities to accommodate roadside picnicking, etc. are geared to a wider spectrum of activities than boating. Site capacity prescriptions were also formulated to ensure that these uses are accommodated.

Comment No.: 508

Site drawings provided by DPOR need to be brought up to date to provide places for private boat launching. These drawings would lead to construction. There should be an equitable treatment between commercial and noncommercial Arkansas River users all the way from Buena Vista to Pueblo Reservoir.

Response:

DPOR emphasized that the drawings appearing on pp. IV-69 to IV-62 of the Draft Plan are purely schematic and do not necessarily depict what would actually be built. Specific site construction plans and drawings are beyond the scope of the Final Plan, but they would be guided by it. Actual site design would reflect equitable private and commerical facilities.

Comment No.: 2029, 2110, 2137, 2191, 2230

The major recreation site development proposed for Ruby Mountain is so close to the Browns Canyon Wilderness Study Area (WSA) that it could lead to too much use of the wilderness resource and end up causing resource deterioration. The Ruby Mountain site should be a trailhead to Browns Canyon rather than a major recreational development. The private campground industry is strongly opposed to the Ruby Mountain campground as described in the proposal; the Advisory Committee voted on a class "C" campground, no number of sites specified, but not this class "D" 40-unit site.

Response:

The Preferred Alternative calls for development of trails in the immediate vicinity of the Ruby Mountain site. From what is known about user preferences of boaters in Segment 2, only 20 percent indicate an interest in hiking--less than five percent strongly agree. The trails planned would serve the needs of most visitors to this site. At the same time, the site would allow access to the WSA since it is a public resource to be used under BLM's Interim Management Guidelines until such time as the Congress acts on study recommendations. Ruby Mountain recreation site development incorporated within the Preferred Alternative is considered necessary because of this site's juxtaposition on this most popular of all Arkansas River segments. Development of this site as one of several major access sites would help relieve pressure on and promote environmental protection of undeveloped downstream areas. It would also help reduce social conjestion at lunch sites within the canyon, at upstream put-ins, and on the river itself by promoting a more widely spaced distribution of launches. The campground at this site is to facilitate public use of the river and associated public lands recreation opportunities.

Comment No.: 2110, 2043, 2044, 2230

Picnic facilities proposed for boaters in that portion of the Browns Canyon WSA that lies immediately adjacent to the river are incompatible and therefore should not be built.

Response:

The Preferred Alternative targets no sites within the WSA for even limited facility development. Instead, it sets 170 persons per day as the peak capacity for river-related use of the WSA including lunch stops.

Comment No.: 2128

In Segment 3, the Proposed Action provides for both no camping allowed and a Class D semi-primitive campground for boaters, each of which is in conflict with the other.

Response:

The no camping provision has been removed, and provisions for Class C and D camping areas at Rincon and Alkali Gulch are included in the Final Plan.

Comment No.: 2128

The Proposed Action provides for development of a portage and rapid scouting routes on the south side of the river at Three Rocks in Segment 4. There is already a good portage at this location on the north side of the river, and there is simply no room for an adequate portage on the south side.

Response:

The Preferred Alternative has been changed to improve the existing portage route.

Comment No: 2128

The Proposes Action contains a strong contradiction in Segment 3. It emphasizes river accessible wildlife pullouts to protect wildlife on one hand, and provides hiking and biking trails within a very narrow corridor on the other. Those trails would interfere with wildlife and fishermen as well.

Response:

The Preferred Alternative contains provisions for construction of hiking and biking trails but as an area wide action, but not specific to Segment 3. Before any trails are located or constructed, the impact on other resources would be thoroughly considered.

Comment No.: 509, 2241

Estimated numbers of fishermen and other users on the river are low because on many stretches these non-boating users, and in some cases noncommercial boaters, have already been forced off the river. How do you propose to judge the demand of user groups that become dissatisfied and no longer come to the river?

Response:

Lacking any off-site user preference survey data, there is no objective way to assess the impact which recent sharp boating use increases have had in displacing people who no longer use the river. The displacement issue is identified in the environmental assessment.

Comment No.: 531

The plan should contain some identification of municipal and special district properties along the river within the town of Canon City that are currently available for river recreation.

Response:

Canon City is among the 16 cooperators involved in developing the Arkansas River Recreation Management Plan. Like all municipalities, it chose not to provide detailed information for this overall river management planning framework. Such detail is not essential, considering the scope of this planning effort.

Comment No.: 2134, 2222, 2246

Adequate studies have not been conducted concerning the number of commercial and non-commercial boaters using the Arkansas River. If it were, it would conclude that there is a disproportionately large number of commercial boaters on the popular stretches of the river. The plan lacks adequate data upon which to base capacity determinations. It is absurd to be "getting the largest number of boats", when in fact there has yet to be any credible data to substantiate the numbers which have been voted on. To speculate from pictures taken by a whitewater photographer or to estimate by talking to each company is not good enough.

Response:

The most popular stretches of the river are Segments 2 and 4 which predominantly lie adjacent to public lands administered by BLM. In addition to maintaining commercial permit files on all outfitted use that occurs on those public lands, BLM has compiled use estimates along those sections as well as on others. In addition, DPOR conducted its own analysis of the river and its use during the summer of 1988. These data have been incorporated in the Preferred Alternative. Final plan decisions (including carrying capacities) for management of the public lands would be based on available user data, physical carrying capacities for the land, public comments, and an attempt to balance wise use of all resources.

Comment No.: 2134, 2207

Because of the difficulty of the river stretches in question, trends indicate that these sections would never become overpopulated. Therefore, before the number of private boaters are unnecessarily limited, a much more thorough survey of commercial and private boating traffic should be conducted. There have been some questions on the validity of recreation user preference studies summarized in the Draft Plan. Is it true they were not well done?

Response:

User preference surveys conducted in 1981 and 1987 replicated the North Central Forest Experiment Station's Nationwide River Study procedure. The principal investigator on both studies played a lead role in the Nationwide Rivers Study, having completed dozens of similar studies on other rivers. Working with Arkansas River managers, researchers have substantiated the validity of these studies for planning and management purposes.

Comment No.: 2201

Page I-3 of the Draft Plan grossly understates the importance of Segment 2 for kayaking and the fact that it historically has been heavily used by kayakers, by stating that "...some private kayaking and rafting..." occurs.

Response:

The text has been changed in Chapter I of this document to reflect this.

Comment No.: 2201

Page I-4 of the Draft Plan is incorrect in stating about Segment 5 that "Only recently has this segment even been run." It was first run close to 40 years ago and has been constantly used since by non-commercial river runners. Only recently have commercial tour operations begun to run this segment.

Response:

This correction has been made in Chapter I of this document.

Comment No.: 2201

Use figures on Illustration I-2 page I-8 of the Draft Plan are too high. Only paying passengers should be considered here. The document should note that commercial use in Segment 1 is a very recent phenomena.

Response:

The illustration, now in Chapter III has been changed. Narrative changes have been made to the text in Chapter I.

Comment No.: 2201

Pages II-2 and III-6 explain how support for DPOR management of the river developed from the task force and from public meetings. Where is the record of those public meetings which supports management by DPOR?

Response:

Results of the public scoping meetings are on file in the Canon City BLM Office. They show that the vast majority of public input favored having DPOR be the Arkansas River manager. There is no formal record of the workings of the BLM task force.

Comment No: 2207

Data on page I-5 of the Draft Plan is not accurate as data for these sites was not collected in 1987 by BLM. How was this data determined?

Response:

These figures represent the best available data and are based on the most recent commercial trip logs, field reconnaisance, and outfitter compliance accomplished by the BLM.

Comment No.: 2207

The statement on page III-4 of the Draft Plan reading as follows is not true: "While BLM does issue permits for commercial use of the public lands adjoining the river, such permits cannot control total river use since use originating on non-public lands does not fall under BLM's jurisdiction." It should read, river users not using public lands.

Response:

Correct. No change has been made to the text since this material is not included in the Final Plan.

Comment No.: 2220

The management plan is turning into a battle of special interest groups, each attempting to exclude others. Until actual data can be obtained as to the use and impact of each of these groups on the river, it does not make sense to restrict any access.

Response:

Actual data have been obtained, both on present use of the river as well as on recreation users' preferences. These are included in the Draft Plan as well as in this Final Plan. Carrying capacities prescribed by the Preferred Alternative are an objective measure of maximum amounts of use that can be achieved while accomplishing the prescribed management objective.

Comment No.: 2240

There is a need to accurately describe the existing conditions on the river, particularly the Recreational Opportunity Spectrum.

Response:

Changes have been made to recreation character classifications to conform to the adjusted segments; they are specific to those segments to more accurately depict existing conditions.

Comment No.: 2241

The proposed launch schedules are confusing and probably unenforceable, with both private and public put-ins throughout each segment. The plan must show that it is implementable or else federal managers are selecting an alternative with no confidence of its being carried out.

Response:

Both BLM and DPOR managers share the same concerns, thus the season dates, capacity specifications, and launch windows have been greatly simplified in the Preferred Alternative. Likewise the number of subsections have been reduced.

Comment No.: 512, 2222

The alternatives need to be looked at again to evaluate the private/commercial allocation ratio. It should be at least on a 50/50 basis, preferably demand based, so that we do not get locked into this ratio which is hard to change as use changes. The alternatives fail to evaluate reasonable options on this key commercial/noncommercial use level issue; they do not include the possibility of using a demand-based allocation system with one overall capacity figure for each segment.

Response:

The premise of the carrying capacity numbers set forth in the plan is that they are in fact demand based. These figures specifically reflect differences in the character of use between segments and subsections. As a result, half of the river's subsections have a 50/50 private/commercial boat allocation ratio. If substantial changes in use or demand occur in the future, changes from the Preferred Alternative may be made by a formal amendment.

Comment No.: 516, 564, 647, 2218

BLM needs to come up with some sober projections of future use of the Arkansas River based on realistic comparisons with river recreation around the country because the figures on Illustration V-3, page V-4 of the draft, are based on a projection of the present trend. The planning process required that some maximum capacity for the river be projected for boating use. If you carry everything out to its greatest extreme that would amount to 1.7 million; the projected 600,000 in ten years is rather extreme. Another commentator indicated that it is not foolish to project 600,000, because if rafters can keep getting someone to buy trips down the river; more money puts more rafts and more people down the river.

Response:

The 600,000 boaters per year in the Proposed Action is an estimate of capacity that would have been available by 1997. This number was not based on a straight line use projection. It is based on a number of factors including an estimate of the effect which proposed site capacities would have in stiumulating new recreation use. If the projection of carrying capacity is played out to the maximum (100%), the figure would be 1.75 million boaters per year. The 600,000 represents 34% of capacity available in 1997. These projections are not a guess; the rationale for those included in the Preferred Alternative is outlined in Chapter II of this document.

Comment No.: 2112, 2213, 2215

The Proposed Action would allow private and commercial boaters to use the river in the same way it has been used in the past few years. Alternatives A, B, and C would result in no, poor, or restrictive management and have serious deficiencies. Alternative A considers neither environmental nor social factors. It would result in a 10-15 million dollar income loss and job loss. It would wreak economic havoc on the communities in the Arkansas River Valley and would result in significant price increases for river trips that would adversely impact both Colorado river enthusiasts and summer tourism.

Alternative B is unmanageable; no one is managing the water or activities on the river. Alternative C is unmanageable: fees paid by outfitters would not be returned to the resource; there would be no development at put-in or take-out sites; crowding would continue to grow as use expands on the river. This represents no effective action at all since it totally ignores the need for management of the river resource for the benefit of all concerned parties.

Response:

Alternative A was designed in recognition of economic concerns and to reduce the environmental impact associated with the proposal. Rather than stiffling economic growth, Alternative A would promote it, but at a slower rate. Alternative B includes more management than has occurred the past several years. While there would be no on-water management, BLM and DPOR working in partnership could resolve many of today's problems. Even Alternative C is more manageable than what has been happening the past few years. Recent amendments made to the Land and Water Conservation Fund Act allow the Congress to return all user fees collected to the field for on-the-ground recreation management. Alternative C would provide limited but increased boating access site development, but on-river crowding and other problems would continue. The Preferred Alternative is a blending of public comments, environmental concerns, and alternatives presented in the Draft Plan. It best to resolves the greatest number of issues.

Comment No.: 2115

Something not addressed in the plan which should be is that a certain percentage of the monies collected from recreation user fees should be used to pay for the transfer or acquisition of additional water flows in August to facilitate positive economic impact on local communities.

Response:

All user fee revenue generated on the public lands are to be returned to those lands to meet on-site recreation management needs for resource, visitor, and facilities management. The question of purchasing additional water releases for low flow periods is beyond the scope of this plan.

Comment No.: 2149

Alternative A would greatly increase crowding, would give fishermen the majority of daylight use, would take away the opportunity for many tourists to boat the Arkansas River, and would kill commercial outfitting on the Arkansas River.

Response:

Alternative A's day use limitations were incorporated to mitigate the adverse effects of uncontrolled commercial boating growth on fishing and other recreation uses. Even under Alternative A, overall growth of Arkansas River boating, including commercial, was projected to increase 172 percent by 1997. In response to concerns about the adverse effect any reductions in boating use would have on local economies and the commercial boating industry, the Preferred Alternative was written based on the assumption that most existing uses would be accomodated. Revised growth projections estimate that this alternative would still allow for a 138 percent increase in boating use by the year 1997.

Comment No.: 2159

Trespassing presently occuring is often due to ignorance or no legal alternative concerning access or scouting. Therefore as an alternative to registering all private boats and requiring a display of numbers, access points should be clearly mapped, scouting areas should be developed so as to make trespassing unnecessary, and public/private land boundaries should be clearly posted.

Response:

These suggestions are incorporated in the Preferred Alternative.

Comment No.: 2167

Alternatives on the segment from Pinnacle Rock to Parkdale that should be considered in the Final Plan are:

At Pinnacle Rock: enlarge bus turn around and post no parking/improve easterly put-in and make it boat launch area only/enlarge west end of area for public day use and fishing only/allow no more than 15 minute shuttle vehicle parking/remove boats per hour restriction.
Lone Pine: prohibit commercial outfitter use of this site.
Salt Lick: expand area to accommodate four double launch ramps, parking for eight busses/restrict use to launching only and for no more than 15 minutes for large trip use and transfer use from Pinnacle Rock to this site above 4000 CFS.
Five Points: allow no commercial outfitter use.
Floodplain: allow no commercial outfitter use until river is below 600 CFS.
Spike Buck: three current US 50 entrances should use middle drive for boat launch access/commercials use area between middle entrance and west exit/remaining 80 percent of area for privates and other public use.
Harvey's Beach: expand and use area 3/4 mi. down river from Spike Buck as emergency alternate Parkdale take-out.

Response:

Boats per hour specifications are design capacities. Public lands policy guidance requires determination of carrying capacities in recreation management plans. Allowance of commercial use at the Lone Pine and Floodplain sites is necessary to ensure proper distribution of increasing boating use on segment 4 and is therefore included within the Preferred Alternative. Floodplain would only be river accessible as is now the case. The Preferred Alternative continues the existing prohibition of commercial use at Five Points. All other comments are too specific for the nature of this plan, being more related to site plans than to the overall area management plan.

Comment No.: 2207

Neither alternatives A, B, nor C should be considered seriously, as adoption of them would render the work of the Advisory Committee meaningless.

Response:

From the start, the work of the Advisory Committee was to develop a Management and Development Proposal for the State Parks Board, as provided for by a BLM-DPOR Memorandum of Understanding. The product was only a component of the Draft Plan, not the plan itself as the final product was erroneously labeled. It was only one of several equally viable alternatives. The Preferred Alternative is a mix of all alternatives, considering associated environmental effects and public comments on each. None of this in any way diminishes the important work of the Advisory Committee.

Comment No.: 2229

Alternative A would restrict the use of Segment 3 during the low water off season, and daily use prior to 10:00 am and after 4:00 pm, to fishermen only. This is highly inequitable to other users. It would destroy the FIBARK kayak teaching program established for the youth in Chaffee County.

Response:

There is no inequity in the alternative since only in Segment 3 is a priority given to fishing. On all other segments other uses are given priority. The entire planning area must be viewed as a whole to obtain a proper perspective. Affected public lands are under a multiple use mandate which requires providing for a variety of uses, including a diversity of recreation. The Preferred Alternative would accommodate existing uses such as historical use of this segment by FIBARK.

Comment No.: 2229

A better plan to manage already conjested areas of the river needs to be developed. Current management proposals are inadequate in that they would under manage already congested river sections and over manage minimally used river sections.

Response:

The Preferred Alternative addresses congestion problems.

Comment No.: 2241

With the exception of boater use numbers and launch windows, the alternatives describe a range of management options, rather than a specific course of action. Consequently the environmental analysis is vague in places because the management action is not fully decided, offering only goals and objectives.

Response:

This is an overall river recreation management plan. It is written with the understanding that specific site plans would be developed at some locations as required by NEPA. The Final Plan portrays only the Preferred Alternative. The specific actions to be undertaken are shown in Chapter II. The environmental analysis (Chapter III) in this document addresses impacts to the environment from those actions.

Comment No.: 515

BLM has stated that it does not have authority to manage the Arkansas River, but legal research suggests that it does have the authority to regulate the amount and manner of commercial use.

Response:

Section 302 of the Federal Land Policy and Management Act (FLPMA) provides the authority for BLM to manage and regulate the use, occupancy, and development of public lands through permits, leases, etc. Title 43 CFR Part 8300 provides regulations. Under Colorado Law, shoreline owners (including BLM) do not manage the river surface itself.

Comment No.: 516

This river is a national resource, it should not be taken over by a State agency. All advisory committee meetings were held locally, and 18 of the 22 people on the committee were local residents.

Response:

There were no provisions within the Draft Plan nor are there any provisions within the Preferred Alternative to turn any of the public lands over to the State of Colorado. The affected public lands are a national resource and would remain in Federal ownership, consistent with the provisions of the Federal Land Policy and Management Act. Fourteen sites planned for intensive recreation facility developments could be leased to DPOR. They would not be patented to the State; they would remain Federal lands.

Comment No.: 518

The Draft Plan bounces back and forth between two notions of how the river is to be managed. Is the proposed Arkansas River State Recreation Area to be managed as a public resource or a private commodity? Equitable sharing of resources follows more easily if it is managed as a public resource. There can therefore be no sense in which the plan design regards these lands as a private commodity.

Response:

Public lands within the planning area are to be retained in Federal ownership to serve the national interest. The plan design ensures that these lands continue to be managed as a public resource.

Comment No.: 635

The Arkansas needs to be regulated, but the proposed plan would not work; it does not have enough support from enough people. Neither would the alternatives satisfy needs of people using the river. We need another approach: urge DPOR to let a management plan grow rather than trying to immplement it from the beginning without full knowledge.

Response:

Principle portions of the planning area are public lands. Public lands policy mandated by the Federal Land Policy and Management Act of 1976 as well as the National Environmental Policy Act precludes simply letting a plan grow. These laws require the development of specific plans, full public involvement, and full disclosure of environmental effects before on-the-ground management occurs. If the need arises, the Preferred Alternative may be formally amended.

Comment No.: 2180

An acceptable alternative to the proposed action would be to implement plans only for more intensive development and manage only the most highly used segments.

Response:

This planning effort started out as a BLM plan for management of the most intensively used public lands areas, Segments 2 and 4. Through coordination with affected local and other governments, it was determined that the complex and interrelated nature of the Arkansas River corridor requires a comprehensive treatment of the entire corridor. This still appears to be the wisest course of action, since what occurs on each segment is invariably related to all the others.

Comment No.: 2211

Take-over by the State Parks Division would delegate the BLM to a minor role in the management of these lands, thereby clearing the way for damming of the Arkansas.

Response:

Nothing within the Draft Plan or Preferred Alternative provides for any take-over of the public lands by DPOR. Instead, the Final Plan envisions a partnership between both agencies, BLM and DPOR. Questions of reservoir construction and water rights are beyond the scope of this plan.

Comment No.: 2216

Any Memorandum of Understanding should include the Colorado Division of Wildlife even though there has been legislation designating the Colorado Division of Parks and Outdoor Recreation as lead agency.

Response:

Colorado House Bill 1253 provides authority for the Colorado State Parks Board to regulate recreational and commercial use of the river, but it does not designate DPOR as the lead agency. The Cooperative Management Agreement (CMA) envisioned between BLM and DPOR would provide for DPOR to manage all river related recreation on public lands while BLM continues to manage other multiple uses. The DOW, along with 13 other entities, is formally involved in the planning process with BLM and DPOR. DOW would continue its regular coordination with both agencies rather than be a formal party to the CMA.

Comment No.: 2218

The more development occurs on the river corridor, the more it will be utilized. In fact, the DPOR plan may create the very problem that everyone is trying to avoid (i.e., over utilization of the river corridor).

Response:

Facility development, promotion of the area through brochures and naming the area as a State Recreation Area, would probably create additional demand. However, the Preferred Alternative is not the same as the original DPOR management and development proposal. There is no DPOR plan; the plan is a joint effort among BLM, DPOR, and 14 other cooperators. In addition, carrying capacity use limits are an essential component of the Final Plan. The stated assumption (that everyone is trying to avoid over-utilization of the river corridor) is not valid. This is evidenced by the high carrying capacities which the proposal set for certain river segments and public comments supporting even fewer restrictions.

Comment No.: 2221

The first criteria necessary for BLM to consider in developing the Final Plan/EA is that it should stand alone as a plan BLM could adopt and operate under if it were to continue to operate the river with appropriate resources.

Response:

The Final Plan relies on the ability of its 16 cooperators to provide comprehensive management of recreation use on the Arkansas River. Implementation of the Preferred Alternative is dependent upon both the on-water management authorities granted to the state by House Bill 1253 and the Cooperative Management Agreement (CMA) between BLM and DPOR. If there were no partnership agreement, the plan's design would be substantiallly different (see Alternative C of the Draft Plan).

Comment No.: 515, 517, 2222, 2230

The Draft Plan fails to identify the river's unobstructed flowing character as the primary resource, with a goal of preserving that character. Although the plan defers the determination of wild and scenic river suitability to the scheduled completion Royal Gorge Resource Management Plan, it makes no provision to protect the river's eligibility and present potential classifications. Sections of the river through Brown's Canyon and Royal Gorge qualify for scenic designation. Development scenarios for Ruby Mountain and Hecla Junction plus the incredible increase in boater use could affect river classification. The plan must show that no change in eligibility or classification would occur due to the Proposed Action.

Response:

The BLM follows a three-step process to determine eligibility, make potential classifications, and determine suitability of potential wild and scenic rivers. Portions of the Arkansas River were included on the Nationwide Rivers Inventory list. BLM policy specifies that USDI-USDA guidelines for

protection are to be applied to all identified study rivers to protect eligibility, once determined. Although formal eligibility and potential classification determinations have not yet been completed, portions of the river may meet the free-flowing and outstandingly remarkable eligibility criteria. Without this determination it is unclear which potential classifications may apply. Formal determinations will be made in the Resource Management Plan. Nothing in the Preferred Alternative would jeopardize wild and scenic river eligibility.

Comment No.: 2230

The plan does not address the issue of a visitor center. Is DPOR going to have such a facility? Where would it be built?

Response:

Indications are that, if constructed, such a facility would be centrally located in one of the communities, not on the river.

Comment No.: 2241

There have been reports that the Advisory Committee was forced to come up with numbers as their first activity, without any information on the river's carrying capacity, and before area-wide goals and objectives were determined. This seems completely backwards and may account for the absurd numbers and the contradiction between areawide goals for equitable usage by all recreation groups and the "boating park" proposed.

Response:

A first cut on areawide recreation and multiple-use goals was available at the second committee meeting. Others were developed as work progressed. The committee was to develop recreation character class prescriptions depicting types of recreation to be provided with carrying capacities being an outgrowth of that process. Both are objective measures of management intent. BLM's user data information (from 1979 to present) was made available to the committee from the beginning. Some committee members complained and resisted the idea of establishing capacities; yet public lands recreation planning policies require their determination as an integral part of all recreation management plans. So the work proceeded. Any contradiction between goals and actions of the Draft Plan is likely due to the sharply differing views of committee members and to the number of members representing each special interest. A review of other comments reveals that some commercial boaters still regard the outcome as a boating park, while other people feel that the Draft Plan reflects too great an emphasis on boating. The Preferred Alternative attempts to resolve those inconsistencies.

Comment No.: 2054

Overall the plan is heavily in favor of commercial interests. It practically ignores all other river users. This includes not only fishermen, but kayakers, hikers, campers, birdwatchers, backpackers and picnickers. Most of all it, ignores the animals which live in and around the Arkansas River.

Response:

The Preferred Alternative scales down the proposal to mitigate the identified adverse effects. Because the rapid and unconstrained growth of commercial boating in recent years has adversely impacted so many of the other recreation pursuits, many actions are still geared towards commercial boating. However, it also includes a number of provisions specific to other activities to bring about a better balance. Specifically, on-river carrying capacities provide a better tradeoff for private boaters, particularly on the world class kayaking waters in Segment 1B. Off-season and after-hours cutbacks on boating use serve to reduce impacts on fishermen, particularly in Segment 3. While care is excercised to ensure no encroachment on the private campground industry, a number of campsites are included to facilitate recreational use of the river. Roadside recreation sites, some limited trail development, and wildlife viewing pullouts further accommodate needs of picnickers, hikers, and sightseers.

Comment No.: 554

The Draft Plan does not allow flexibility in scheduling for outfitters. With outfitting, as in any retail operation you do not have the same number of people every day.

Response:

The Preferred Alternative simplifies and expands many of the launch windows included within the Proposed Action, giving more room for commercial outfitter flexibility. However, the Final Plan still constrains commercial outfitter operations. This is necessary to alleviate some of the adverse effects which sharp increase in commercial boating have had on the ability of other recreation users to use the river. The plan contains some definite tradeoffs. This is a multiple use resource and must continue to be managed as such under the public land laws.

Comment No.: 563, 2148

Boating should be restricted or not allowed on river sections that have been acquired by the DOW as fishing easements.

Response:

The greatest concentration of DOW fishing easements occur on the best fishing segments under private ownership: 2B, 3, and 4A. In an effort to accommodate the greatest public recreation benefit with the least adverse effect to the public, higher volumes of boating use are prescribed during the high runoff period when fishing opportunities are more limited. During the off-season when flows are reduced, boating is curtailed. Segment 3 would be most free of commercial boating conflicts for the longest period of the summer season. Boating use is restricted along Segments 2B and 4A for the last two weeks of the summer season.

Comment No.: 2124, 2141, 2149, 2151, 521, 522, 2106, 509, 2126, 2148

Too many boats on the river for too long would disrupt the fishing experience. There are boater/fisherman conflicts.

Response:

Boating numbers and dates are designed avoid the problem of these two groups being on the river at the same time, wherever possible. The boating season on all but three segments is defined as May 15 through Labor Day. On these segments, boater/fishermen conflicts would occur during the low water season. Conflicts would lessen on Segments 2B and 4A where boating ends on August 14. Few conflicts would be expected on Segment 3 because no boating occurs after July 14. DOW would continue gathering fishermen's opinions and doing creel census work.

8. Wildlife

Comment No.: 518, 563, 616, 628, 2242, 2207, 2241

Studies are needed to positively identify whether or not boating would have an impact on fish.

Response:

Creel census work would continue; DOW would gather additional information on brown trout. The DOW would also continue electroshocking portions of the river to gather data on possible impacts on fisheries from boating.

Comment No.: 563, 2148

The public should not be restricted from hunting on public lands along the Park corridor.

Response:

Chapter II of the Final Plan states "Allow access for hunting on all public lands except at developed sites."

Comment No.: 2168, 2137, 2230, 2229, 2209, 2196, 518, 646, 633, 2165, 2242, 517, 2126, 2148

Excessive boating through bighorn sheep habitat would disrupt sheep use of habitats adjacent to the river and prevent sheep from using the river as a water source.

Response:

Impacts to bighorn sheep were a concern for many people. Mitigating measures are included in the Preferred Alternative. These actions include educational signing to inform the public, permit stipulations forbidding stops on the north side of the river, 50-yard buffer zones around recreation sites, leashes on dogs, and all commercial boats off the river after 5 p.m. to permit sheep access to water. Despite these actions, the projected boating use in Segment 4 is considered to be a potential impact. The Preferred Alternative includes an action to initiate a study/monitoring program to identify impacts and measures to lessen or reduce those impacts.

Comment No.: 2142, 2137, 2229, 2209, 518, 510, 656, 2024, 2023, 521, 522, 2229, 517, 2207, 2126, 2148, 2241, 2204

Too many boats during the low flow period could disrupt daily feeding activities of brown trout.

Response:

This problem was considered during formulation of the Preferred Alternative. As with the fisherman/boater problem, impacts to fisheries is most likely to occur during low flows (1½ - 2 months in late summer). Boats should not affect trout during the primary boating season when flows are over 1,000 cfs. Chapter III, of this document explains how the potential impact to fisheries was determined. Current boating numbers and seasons for seven segments would result in potential impacts to the fisheries resource during low flows. Lesser impacts are expected in the three segments where the boating seasons are shorter.

9. Access and Transportation

Comment No.: 590, 2246

The projected use would result in a heavy increase in traffic along Highway 50. Highway improvements should relieve some of this traffic congestion. Further study needs to be done to insure the traveling public has a safe highway to drive on.

Response:

The Colorado Department of Highway was consulted about potential traffic volumes, accident rates, and highway improvements under the Preferred Alternative. Site specific needs, and costs of such improvements have not yet been identified. DPOR and BLM will work with state and local governments on identification and resolution of any highway safety problems that occur.

10. Safety

Comment No.: 2224, 2230

The rapids of Royal Gorge are considered some of the most technical in the state; boating increases called for in the Draft Plan may cause severe safety problems.

Response:

The Preferred Alternative leaves carrying capacities for Segment 5 unchanged from the Proposed Action. The limiting factor of access is resolved in the plan by acquisition and development of an enlarged put-in site in the Parkdale area. The safety hazards of Royal Gorge's rapids would not limit the segment's ability to accomodate prescribed daily boating volumes. These capacities leave room for private boating increases in response to identified private boater needs (from existing peak of 120 BPD to a capacity of 150 BPD).

Comment No.: 527

There have been several floods at Hobson deep enough to drown people, therefore this proposed recreation site would not be safe for public use.

Response:

The Final Plan does not propose a recreation site at Hobson. A site near Beaver Creek located in a safe area is planned as a replacement.

Comment No.: 2229

Issues of safety are not being adequately addressed in the Draft Plan. The potential for accidents to the private boater is elevated in Brown's Canyon and the Parkdale run by allowing for increased commercial boating use and forcing both private and commercial boaters to use the river at the same time of day. This situation would force boaters with beginning or intermediate level of skills to use other more dangerous sections of river, thereby increasing the risk of injury.

Response:

In the Final Plan, Segment 1 emphasizes private boating over other uses. Also, private boaters are not restricted to any particular time of day for the entire river; there are restrictions on commercial boaters. These changes offer the opportunity for private boaters to use the river when there are no commercial boaters present. See Chapter II, Illustration II-1.

Comment No.: 517, 625, 2002, 2006, 2229, 2170

Allowing for increased numbers of boats on the river (Proposed Action) would cause serious safety problems, especially in Brown's Canyon at the rapids.

Response:

The Preferred Alternative's carrying capacities, which reflect the maximum number of boats per day, are lower than those in the Proposed Action. Also portage/scouting routes around the more dangerous rapids and warning signs have been provided for in the Preferred Alternative.

Comment No.: 2229, 2128, 2220

Alternative A in the Draft Plan would destroy the opportunity for beginning canoe and kayak instruction on Segment 3. This section offers the necessary hydraulics and safety for beginners not found elsewhere on the river. Early and late season cutbacks would severely limit existing evening raft trips as well as multi-day trip possibilities. Forcing these uses to other more dangerous segments of the river would certainly lead to an increase in safety-related incidents.

Response:

The management emphasis for Segment 3 is fishing, but the Final Plan does allow for private boating year round and seasonal commercial boating. which is a change from Alternative A in the Draft Plan and should accommodate these uses. See Chapter II, Table 1. Existing evening trips will be accommodated by special permit.

11. Miscellaneous

Comment No: 2050, 2075, 2157

Missing from the Proposed Action and all alternatives is factual information on actual use numbers, carrying capacity, wildlife and fisheries impacts, and social considerations. Additional studies need to be completed before a final decision is made.

Response:

Social information on recreation user preferences as well as regional socio-economic data were included in the Draft Plan. Visitor use data were also included and are updated in the Final Plan based on 1988 data. The same is true for various wildlife data. The comment may indicate a misunderstanding of the carrying capacity concept. There are no magic concrete numbers backed up by hard data. Carrying capacity is defined by public land management policy as the amount and type of recreational use an area can accommodate without altering either the environment or the user's experience beyond the degree of change deemed acceptable by the management objectives for the area. Available data are adequate to formulate management objectives, establish carrying capacities, and begin implementing the Final Plan design.

Comment No: 2050

Under Page III-4, Section E, Management Authorities, the Draft Plan states: "The Bureau of Reclamation exercises a major influence in the river's recreational character through periodic upstream water releases from the Fryingpan-Arkansas water storage project." There is no mention of the Southeastern Water Conservancy District in connection with the U.S. Bureau of Reclamation. To properly inform the public, the relationship should be disclosed.

Response:

The context of the paragraph cited is the variety and number of other entities which influence the recreational character of the Arkansas River, not the details of working relationships involved. It is acknowledged that the Southeastern Water Conservancy District is one of several entities not mentioned. Those mentioned in the text are merely examples illustrative of the administrative complexities of Arkansas River management.

Comment No.: 502, 2050

BLM needs detailed studies of the present affected environment so that monitoring will be effective. This plan does not show that sufficient background data has been collected, or is planned, to conduct a meaningful

monitoring program. Monitoring should be detailed in the plan, and self-serving agency information such as promoted by the DOW, should not be utilized. Third party data should be required, the same as these cooperating agencies require from the private sector. There needs to be some science behind the carrying capacity numbers.

Response:

The Preferred Alternative incorporates provisions for a number of studies and monitoring effort. These efforts would evaluate effectiveness of plan implementation and add to existing baseline information. Third party information from other agencies (including DOW) would be utilized. Inventories of threatened and endangered plants would be conducted by the Colorado Natural Areas Program with funding provided by DPOR. A cooperative bighorn sheep study is planned. DOW would monitor impacts to fishermen and fisheries through electrofishing and creel census. The Preferred Alternative also includes provisons for working with the university community to replicate and expand baseline user preference studies that were completed in previous years.

Comment No.: 616

Take the lead in what is to be appropriate for billboards along the river corridor. People need to be aware that what we value here is the resource, not the commercialism of boating.

Response:

Signing of public lands within the river corridor would emphasize information, education, and interpretation of natural resources such as geology, bighorn sheep and natural history. It would not advertise boating.

Comment No.: 584

I ask that power boats be outlawed except for the handicapped.

RESPONSE:

There is no power boat use on the river at the present time. Power boats would be allowed by special permit only.

Comment No.: 2050, 515, 2241, 2216

Implementing the Draft Plan and the resulting increase in use levels could result in adverse environmental impacts. The listing of mitigation measures is insufficient to qualify as the reasoned discussion required by NEPA. This effort has required substantial planning and expenditure of time and resources and as such should be considered a major Federal action and a full scale EIS prepared including a benefit-cost analysis.

Response:

Much of the mitigation listed in the Draft Plan is incorporated in the Preferred Alternative. The environmental analysis in Chapter III of the Final Plan reflects this. An EIS is required if there would be significant impacts to the human environment. The decision on whether to do an EIS is not based on planning time or expenditures.

Comment No.: 2241

The purpose of an E.A. is to determine is an EIS required. The flow chart on page iii shows a "Finding of No Significant Impact." We find this disturbing, because such a finding is supposed to be the reviewing officer's decision after reviewing the Plan in final form. Has such a decision been predetermined by the plan writers?

Response:

The flow chart was provided in the Draft Plan to show steps in the EA process. If there is a finding of significant impact, an EIS would be required prior to plan approval.

Comment No.: 2241

The Draft Plan is not even dealing with third parties. The DPOR is the primary contractor which would carry out the federally-mandated mitigations. Nowhere in the plan is there a discussion of how this would be achieved.

Response:

A cooperative management agreement between DPOR and BLM would be the contract through which the implementing actions would be carried out.

E. LIST OF PREPARERS

Team Members	Assignment
Lanny M. Berta	Project Manager
Paul Trentzsch	EA Team Leader/Safety/Public Comments Analysis
Lona Kossnar	Typist
Erik Brekke	T&E Species/Animal Life (all except livestock)
Bill Schneider	Wilderness/VRM/ACEC/Wild and Scenic Rivers
Jeanette Pranzo	Socio-economics
John Beardsley	Cultural Resources
Howard Wertsbaugh	Soils/Air/Water Quality/Climate/Floodplains and Wetlands/Hydrology
John Carochi	Hazardous Wastes
Dave Hallock	Lands/Realty/Land Use Plan Consistency/Access
Dan Grenard	Minerals/Geology/Topography/Alluvial Valley/ Paleontology
Don Bruns	Recreation/Noise
Tom Grette	Prime or Unique Farmlands/Vegetation (range)
Jim Cunio	Vegetation (forest)
Jim Sazama	Grazing Management/Transportation
Ken Smith	Planning/Environmental/Public Affairs/Public Comment Analysis
Jerry Halladay	Cartographer
Debbie Pietrzak	Editor

APPENDIX A
SOCIO-ECONOMIC VALUES

POPULATION TRENDS BY COUNTY

	1980	1990	2000	2010	PERCENT CHANGE
Chaffee	13289	12858	14535	16030	20.62
Fremont	28794	31315	35832	40435	40.42
Lake	8526	5974	4672	3072	-63.9
TOTAL ESA	50609	50147	55039	59537	17.64

SOURCE; COLORADO STATE DEPARTMENT OF LOCAL AFFAIRS, DEMOGRAPHY SECTION

ASSESSED VALUATION BY ENTITY

Entity	Thousands	Levy	Thousands	Levy	Thousands	Levy
Chaffee County	29418	16.85	49012	8.54	63362	5.11
Buena Vista	3199	17	6132	12.9	8842	6.625
Salida	7648	23.5	13319	11	17189	8.52
Fremont County	51702	18	81218	16.73	114429	13.25
Canon City	18967	19.5	29866	5	38798	4.49
Lake County	47708	15.53	115116	10.01	81810	12.72
Leadville	3821	32	6645	19.86	9073	16.7

SOURCE: COLORADO DEPARTMENT OF REVENUE

HOUSING UNITS BY COUNTY

	CHAFFEE COUNTY		FREMONT COUNTY		LAKE COUNTY	
	1980	1986	1980	1986	1980	1986
Total Housing Units	5800	6274	11530	12549	3761	3891
Vacant Housing Units	1042	1641	1472	1619	761	1533
Housing Vacancy Rate	17.97	26.16	12.77	12.9	20.2	39.4

SOURCE: DIVISION OF LOCAL GOVERNMENT DEMOGRAPHY SECTION, LOCAL GOVERNMENT SURVEY

IMPACT OF TRAVEL ON ESA COUNTIES, 1984
U.S. TRAVEL DATA CENTER COUNTY
TRAVEL ECONOMIC IMPACT MODEL (CTEIM)

ESA COUNTIES	TOTAL TRAVEL EXPENDITURES THOUSANDS	TRAVEL GENERATED PAYROLL THOUSANDS	TRAVEL GENERATED EMPLOYMENT JOBS	STATE TAX RECEIPTS THOUSANDS	LOCAL TAX RECEIPTS THOUSANDS
Chaffee	24890	5547	696	898	532
Fremont	21339	4797	598	772	389
Lake	4755	1028	127	157	95
TOTAL ESA	50984	11372	1421	1827	1016

SOURCE: COLORADO TOURISM BOARD

EMPLOYMENT AND LABOR INCOME BY COUNTY

	CHAFFEE			PERCENT OF TOTAL			FREMONT			PERCENT OF TOTAL			LAKE			PERCENT OF TOTAL			ESA			PERCENT OF TOTAL		
	1975	1980	1986	1975	1980	1986	1975	1980	1986	1975	1980	1986	1975	1980	1986	1975	1980	1986	1975	1980	1986	1980	1986	1975
Agriculture	18	19	27	0.3573	0.31	0.38	29	23	37	0.2945	0.19	0.26	15	15	20	0.2730	0.26	0.81	62	57	84	0.3042	0.24	0.35
Mining Employment	51	79	45	1.0125	1.31	0.64	173	340	235	1.7570	2.87	1.68	3001	3672	621	54.6210	64.3	25.3	3225	4091	901	15.826	17.3	3.86
Construction Employment	283	562	588	5.6184	9.33	8.44	430	533	835	4.3672	4.50	5.99	65	109	83	1.1831	1.90	3.39	778	1204	1506	3.8180	5.10	6.45
Manufacturing Employment	103	157	180	2.0448	2.60	2.58	1089	1157	1153	11.060	9.76	8.27	20	31	D	0.3640	0.54	D	1212	1345	1333	5.9478	5.70	5.71
Trans & Pub Util Empl	242	194	205	4.8044	3.22	2.94	384	421	374	1.9000	3.55	2.68	D	D	D	D	D	D	626	615	579	3.0720	2.60	2.48
Wholesale Trade Employment	73	107	144	1.4492	1.77	2.06	99	130	162	1.0054	1.09	1.16	29	30	D	0.5278	0.52	D	201	267	306	0.9864	1.13	1.31
Retail Trade Employment	1109	1238	1343	22.017	20.5	19.2	1486	1693	1863	15.092	14.2	13.3	502	561	411	9.1372	9.82	16.8	3097	3492	3617	15.198	14.8	15.5
Fin. Ins. & Real Est Empl	210	298	413	4.1691	4.94	5.93	508	645	745	5.1594	5.44	5.34	101	161	150	1.8383	2.82	6.13	819	1104	1308	4.0192	4.68	5.60
Services Employment	986	1117	1757	19.217	18.5	25.2	1948	2512	3411	19.784	21.2	24.5	541	D	D	9.8471	0	0	3457	3629	5170	16.965	15.3	22.1
Government	1980	2250	2260	39.309	37.3	32.4	3700	4390	5110	37.578	37.0	36.6	1220	1130	1160	22.2060	19.7	47.4	6900	7770	8530	33.861	32.9	36.5
TOTAL	5037	6021	6962	100	100	100	9846	11844	13927	100	100	100	5494	5709	2445	100	100	100	20377	23574	23334	100	100	100
TOTAL LABOR INCOME (thousands)	24185	45454	62554				52911	101763	153695				60553	123234	50693				137649	270451	266642			
PERCENTAGE UNEMPLOYMENT	6.36	8.1	10.43				7.95	8.8	10.63				7.7	9.06	18.24									

0= NOT DISCLOSED

SOURCE: BUREAU OF ECONOMIC ANALYSIS AND COLORADO STATE DEPARTMENT OF LOCAL AFFAIRS

APPENDIX B
REALTY AUTHORIZATIONS

Segment Number 1 - Leadville to Buena Vista

	Realty Authorizations	Purpose/Effect/Restrictions	Holder
1.	Withdrawal Power Site Reserve 92 EO 7/2/1910	Limits disposal of public land [may take action subject to Section 24 of the Federal Power Act with concurrence of BLM and Federal Energy Regulatory Commission (FERC)]	BLM & FERC Washington, D.C.
2.	Railroad Right-of-Way 100' C-094000	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Denver & Rio Grande Railroad
3.	Railroad Right-of-Way 100' C-093801	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Denver & Rio Grande Western/ Union Pacific Railroad Co.
4.	Powerline Right-of-Way 10' C-36849	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Sangre De Cristo Elec Assn. Box 2103 Buena Vista, CO 81211
5.	Powerline Right-of-Way 10' C-35443	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Sangre De Cristo Elec Assn.
6.	Buried Pipeline Right-of-Way 50' C-0122222	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Cities of Aurora and Colorado Springs
7.	Ditch for Clear Creek Reservoir L-0480	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Otero Irrigation District
8.	Withdrawal Gunnison Arkansas Reclamation Project SO 6/3/1946	Closes public land to mining and disposal except by R&PP with concurrence of BOR.	Bureau of Rec (BOR) Albuquerque, N.M.
9.	Reservoir Site 50 SO 8/18/1894	Closes public land to mining, limits disposal of public land. [may take action subject to Section 24 of the Federal Power Act with concurrence of BLM & FERC].	BLM & FERC Washington, D.C.

10.	State Highway Right-of-Way (Federal Aid Highway Approp Act 8/27/19) variable C-28178	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Colorado Department of Highways
11.	Powerline Right-of-Way 50' C-0122222	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Cities of Aurora and Colorado Springs
12.	BLM Order Protective Withdrawal Application C-24224, FLPMA Sect. 204	Withdrawal in effect until decision is issued. Closes public land to disposal and protect primitive recreational values.	BLM
13.	Fence Right-of-Way C-0122544	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	U.S. Forest Service Pike & San Isabel NF Pueblo, CO
14.	Classification Power Site 32 SO 4/29/1922	Limits disposal of public land [may take action subject to Section 24 of the Federal Power with concurrence of BLM and FERC].	BLM & FERC Washington, D.C.
15.	Access Road Right-of-Way 10' & 7.5' C-35471	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Martin Schwalbaum Box 148 Rutherford, NJ 07070
16.	Powerline Right-of-Way 10' C-36849	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Sangre De Cristo Elec Assn.
17.	Powerline Right-of-Way 5' C-38702	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Mountain States T&T 1005 17th St. Denver, CO 80202
18.	RS2477 State Highway Right-of-Way Variable	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	CO Dept of Highways
19.	RS2477 Lake County Road Right-of-Way 30'	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Lake County 505 Harrison Leadville, CO 80461
20.	Chaffee County Road Right-of-Way 30' C-42318	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Chaffee County County Court Salida, CO 81201

21.	Withdrawal Reservoir Site 51 SO 8/18/1894	Limits disposal of public land [may take action subject to Section 24 of the Federal Power with concurrence of BLM and FERC].	BLM & FERC Washington, D.C.
22.	State Highway Right-of-Way variable C-23564	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	CO Dept of Highways

Segment Number 2 - Buena Vista to Salida

	Realty Authorizations	Purpose/Effect/Restrictions	Holder
1.	Withdrawal Power Site Reserve 92 EO 7/2/1910	Limits disposal of public land [may take action subject to Section 24 of the Federal Power with concurrence of BLM and Federal Energy Regulatory Commission (FERC)]	BLM & FERC Washington, D.C.
2.	Railroad Right-of-Way 100' C-0122118	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Denver, South Park, & Pacific Railroad Co.
3.	Railroad Right-of-Way 100' C-094000	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Denver & Rio Grande Railroad Co.
4.	Railroad Right-of-Way 100' C-093801	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Denver & Rio Grande Western/ Union Pacific Railroad Co.
5.	Road Right-of-Way 15' C-25762	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	H.H. Newsom Box 244 Buena Vista, CO 81211
6.	Buried Powerline Right-of- Way 15' C-25762	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Sangre de Cristo Electric Assn.
7.	State Highway Right-of-Way 100' C-4506	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Colorado Dept. of Highways
8.	RS2477 Chaffee County Road Rights-of-Way 30' C-42318	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Chaffee County Box 689 Salida, CO 81201

9.	BLM Order Protective Withdrawal Application C-24224, FLPMA Sect. 204	Withdrawal in effect until decision is issued. Closes public land to disposal and protect primitive recreational values.	BLM
10.	Withdrawal Power Site Classification 32 SO 4/29/1922	Limits disposal of public land [may take action subject to Section 24 of the Federal Power with concurrence of BLM and FERC].	BLM & FERC Washington, D.C.
11.	State Highway Right-of-Way D-051639	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Colorado Dept. of Highways
12.	State Highway Right-of-Way 70' C-1653	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Colorado Dept. of Highways

Segment Number 3 - Salida to Vallie Bridge

	Realty Authorizations	Purpose/Effect/Restrictions	Holder
1.	Withdrawal Power Site Reserve 92 EO 7/2/1910	Limits disposal of public land [may take action subject to Section 24 of the Federal Power with concurrence of BLM and Federal Energy Regulatory Commission (FERC)]	BLM & FERC
2.	Railroad Right-of-Way 100' C-093736	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Denver & Rio Grande Railroad Company
3.	Powerline Right-of-Way 10' C-022171	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Sangre de Cristo Electric Assn. Buena Vista, CO 81211
4.	Powerline Right-of-Way 5' C-25602	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Public Service Co. of Colorado Box 840 Denver, CO 80202
5.	Buried Telephone Right-of-Way 5' C-24845	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Mountain Bell 1005 17th St. 1130-2 Denver, CO 80202
6.	State Highway Right-of-Way D-054071	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Colorado Dept. of Highways

7.	Telephone Right-of-Way D-043931	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Mountain States T&T
8.	Powerline Right-of-Way 25' C-18025	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Sangre de Cristo Elec. Assn.
9.	Telephone Right-of-Way D-043931	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Mountain Bell
10.	Powerline Right-of-Way 62.5' C-0128242	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Department of Energy WAPA, Box 11606 Salt Lake City, UT 84147
11.	State Highway Right-of-Way D-046246	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Colorado Dept of Highways
12.	Telephone Right-of-Way C-35424	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Eagle Telecomm, Inc Box 470 Eagle, CO 81631
13.	Public Water Reserve 107 C-17097 (Interpreted) Lot 3 Sec 8 36.97 acres Lot 16 Sec 27 37.17 acres	Limits disposal. No interference allowed and action taken only with BLM concurrence.	BLM
14.	Power Site Classification 32 SO 4/29/1922	Limits disposal of public land [may take action subject to Section 24 of the Federal Power with concurrence of BLM and FERC].	BLM & FERC Washington, D.C.
15.	RS4277 Fremont County Roads Rights-of-Way 30' C-44142	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Fremont County Box 1007 Canon City, CO 81212
16.	Powerline Right-of-Way 5' C-40751	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Eagle Telecomm Inc.
17.	BLM Order Classified Multiple Use Management C-2295	Closes public land to agricultural entry & public sales.	BLM

a) East Salida Campground 80 acres C-083981	Closed to mining, disposal (except under the Recreation and Public Purposes Act), and agricultural entry.	BLM
b) Coaldale 40 acres C-0111199	Closed to mining, disposal (except under the Recreation and Public Purposes Act), and agricultural entry.	BLM
c) Cotopaxi 80 acres C-083480	Closed to mining, disposal (except under the Recreation and Public Purposes Act), agricultural entry and exchange.	BLM
d) Swissvale 40 acres C-083414	Closed to mining, disposal (except under the Recreation and Public Purposes Act), agricultural entry and exchange.	BLM
e) Rincon 660 acres C-083428	Closed to mining, disposal (except under the Recreation and Public Purposes Act), agricultural entry and exchange.	

Segment Number 4 - Vallie Bridge to Parkdale

	Realty Authorizations	Purpose/Effect/Restrictions	Holder
1.	Withdrawal Power Site Reserve 92 EO 7/2/1910	Limits disposal of public land [may take action subject to Section 24 of the Federal Power with concurrence of BLM and Federal Energy Regulatory Commission (FERC)]	BLM & FERC Washington, D.C.
2.	Telephone Right-of-Way 5' C-40751	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Eagle Telecmm, Inc.
3.	State Highway Right-of-Way 50' P-056862	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Colorado Dept. of Transportation
4.	Powerline Right-of-Way 10' C-022171	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Sangre de Cristo Elec. Assn.
5.	Railroad Right-of-Way 100' D-093736	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Denver & Rio Grande Railroad Co.

6.	Telephone Right-of-Way 200' D-043931	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Mountain States T&T
7.	Power Site Classification 32 SO 4/29/1922	Limits disposal of public land [may take action subject to Section 24 of the Federal Power with concurrence of BLM and (FERC)].	BLM & FERC Washington, D.C.
8.	Non-Mineral/FLPMA Sec. 302 Lease C-31165	Residential & Business interest in 1.4 acres from the highway right-of-way to approximately 5 feet of the river high water line. Lessee owns improvements. Lease term expires May 1, 1995.	David Thompson Box 397 Cotopaxi, CO 81223
9.	BLM Order Classified Multiple Use Management C-2295	Closes public land to agricultural entry and public sale.	BLM
	a) Pinnacle Rock 40 acres C-083393	Closed to mining, disposal (except under the Recreation and Public Purposes Act), agricultural entry and exchange.	BLM
	b) Bakers Gulch 160 acres C-083440	Closed to mining, disposal (except under the Recreation and Public Purposed Act), agricultural entry and exchange.	BLM
	c) Lone Pine 33 acres C-0127886	Closed to mining, disposal (except under the Recreation and Public Purposes Act), agricultural entry and exchange.	BLM
10.	GLO Power Site Reserve 186 Interpreted 320	Limits disposal of public land [may take action subject to Section 24 of the Federal Power with concurrence of BLM and FERC].	BLM & FERC Washington, D.C.
11.	GLO Power Site Reserve 92 Interpreted 323	Limits disposal of public land [may take action subject to Section 24 of the Federal Power with concurrence of BLM and FERC].	BLM & FERC Washington, D.C.
12.	Withdrawal Arkansas Valley Reclamation Project SO 4/25/1941	Grants possessory right. Concurrence required prior to granting any other possessory rights. Closes public land to mining.	Bureau of Rec.

13.	Road Right-of-Way 10' C-29360	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Larry Fontaine 765 Bayfield Dr. Colo. Spgs. CO 80906
14.	44LD513 Easement Reservation 50' C-15910	A prior federal right is established. Any action must be subject to this road easement.	BLM Road Reservation
15.	Powerline Right-of-Way 10' C-36850	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Sangre de Cristo Elec. Assn.
16.	Withdrawal Power Site Reserve 186 EO 5/16/1911	Limits disposal of public land [may take action subject to Section 24 of the Federal Power with concurrence of BLM and FERC].	BLM & FERC Washington, D.C.
17.	State Highway Right-of-Way P-058297	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Colorado Department of Highways
18.	Withdrawal Protection of Recreational & Archaeologic Values Public Land Order 3843	Designation of public land for specific use.	BLM

Segment Number 5 - Parkdale to Canon City

	Realty Authorizations	Purpose/Effect/Restrictions	Holder
1.	Withdrawal Power Site Reserve 92 EO 7/2/1910	Limits disposal of public land [may take action subject to Section 24 of the Federal Power with concurrence of BLM and Federal Energy Regulatory Commission (FERC)]	BLM & FERC Washington, D.C.
2.	Railroad Right-of-Way 100' C-093736	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Denver & Rio Grande Railroad
3.	Fremont County Road Right-of-Way 30' C-44142	Authorizes use of public land for specific purpose, no interference allowed, other authorizations made subject to this prior right.	Fremont County

Segment Number 6 - Canon City to Pueblo

Realty Authorizations	Purpose/Effect/Restrictions	Holder

No public land administered by BLM.

APPENDIX C
ENCUMBRANCES ON R&PP POTENTIAL LEASE SITES

Site	Realty Authorizations
Railroad Bridge (65 ac. in Segment 1) T13S, R79W, portion of the E½ Sec 13	Withdrawal Power Site Reserve 92 EO 7/2/1910 Classification Power Site 32 SO 4/29/1922 Chaffee County Road Right-of-Way C-42318
Fishermans Bridge (40 ac. in Segment 2) T15S, R78W, SE¼SE¼ Sec 3	Withdrawal Power Site Reserve 92 EO 7/2/1910 Road Right-of-Way C-25762 Buried Powerline Right-of-Way C-25519 Chaffee County Road Right-of-Way C-42318
Ruby Mountain (40 ac. in Segment 2) T15S, R78W, SW¼SW¼ Sec 3	Withdrawal Power Site Reserve 92 EO 7/2/1910 BLM Order Protective Withdrawal Application - C-24224 Chaffee County Road Right-of-Way C-42318
Centerville (2 ac. in Segment 2) T15S, R77W, portion of Lot 3 Sec 31	Withdrawal Power Site Reserve 92 EO 7/2/1910 BLM Order Protective Withdrawal Application - C-24224
Hecla Junction (90 ac. in Segment 2) T51N, R8E, Portions of the E½SW¼, W½SE¼ Sec 23 and the W½NE¼, E½NW¼, NE¼SW¼, NW¼SE¼ Sec 26	Withdrawal Power Site Reserve 92 EO 7/2/1910 BLM Order Protective Withdrawal Application - C-24224 Chaffee County Road Right-of-Way C-42318
Rincon (8 ac. in Segment 3) T49N, R10E, Portions of Lots 8 & 9 Sec 28	Withdrawal Power Site Reserve 92 EO 7/2/1910 Powerline Right-of-Way C-022171 Buried Telephone Right-of-Way C-24845 Telephone Right-of-Way C-35424 State Highway Right-of-Way D-046246 BLM Order Classified Multiple-Use Management, C-2295 BLM Order C&MU and Mineral Segregation, C-083428

Site	Realty Authorizations
Lone Pine (30 ac. in Segment 4) T48N, R12E, Portions of the S½NE¼, Lot 1 Sec 29	Interpretation 320 Power Site Reserve 186 GLO Order Withdrawal Arkansas Valley Reclamation Project SO 4/25/1941 State Highway Right-of-Way P-057099 BLM Order Classified Multiple Use Management, C-2295 BLM Order C&MU and Mineral Segretation, C-083480
Pinnacle Rock (11 ac. in Segment 4) T18S, R73W, Portion of the W½NE¼ Sec 35	Withdrawal Power Site Reserve 92 EO 7/2/1910 BLM Order Classification Multiple Use Management - C-2295 State Highway Right-of-Way D-043931 BLM Order C&MU and Mineral Segregation, C-083393 (Survey Problem)
Salt Lick (2 ac. in Segment 4) T18S, R73W, Portion of the N½SE¼ Sec. 25	Withdrawal Power Site Reserve 92 EO 7/2/1910 State Highway Right-of-Way D-043931 BLM Order Classification Multiple Use Management, C-2295
Five Points (40 ac. in Segment 4) T18S, R72W, Portions of lots 6 & 7 Sec 30	Withdrawal Power Site Reserve 92 EO 7/2/1910 Telephone Right-of-Way D-043931 Withdrawal Protection of Recreation and Archaeological Values PLO 3843 State Highway Right-of-Way P-058297 BLM Order Classification Multiple Use Management, C-2295
Spikebuck (7 ac. in Segment 4) T18S, R72W, Portions of the NE¼NE¼ Sec 30 and the NW¼NW¼ Sec 29	State Highway Right-of-Way P-058297 BLM Order Classification Multiple Use Management, C-2295

Site	Realty Authorizations
Bootlegger (2 ac. in Segment 4) T18S, R72W, Portions of the SW¼NW¼, NW¼SE¼ Sec 21	Withdrawal Power Site Reserve 92 EO 7/2/1910 State Highway Right-of-Way P-058297 BLM Order Classification Multiple Use Management, C-2295
Parkdale (2 ac. in Segment 4) T18S, R72W, Portion of lot 2 Sec 14	Withdrawal Power Site Reserve 92 EO 7/2/1910 State Highway Right-of-Way P-058297 BLM Order Classification Muiltiple Use Management, C-2295
Parkdale South (140 ac. in Segment 5) T18S, R71W, SE¼NW¼, E½SW¼, and portions of the SW¼NE¼, W½SE¼ Sec 18	Withdrawal Power Site Reserve 92 EO 7/2/1910 Fremont County Road Right-of-Way C-44142

APPENDIX D

RECREATION USERS/PREFERENCES

1. Visitor Characteristics

Where Do Visitors Come From?

	Segment 2A		Segment 4B	
	1981	1987	1981	1987
Colorado	61.9%	61.4%	59.7%	57.8%
- Denver metro area		(22.0)		(25.0)
- Colorado Spgs./Pueblo		(8.3)		(11.3)
- Boulder		(7.8)		(2.5)
- Howard/Cotopaxi		--		(6.3)
- Buena Vista/Salida		(5.3)		(1.3)
- Glenwd. Spgs./Vail area		(4.5)		--
- Dillon/Idaho Spgs. area		(4.5)		--
- Fort Clns./Longmnt. area		(4.5)		--
- Canon City		(2.3)		(3.8)
- Castle Rock/Monument area		(1.5)		(3.8)
- (others)		(.8)		(3.8)
Other States	38.1%	38.6%	40.3%	42.2%
- Texas		(3.0)		(5.7)
- Kansas		(5.3)		--
- California		(3.8)		--
- Wisconsin		(3.8)		--
- Nebraska		--		(3.8)
- Missouri		(2.3)		(3.8)
- Connecticut		(2.3)		(2.5)
- Indiana		(2.3)		--
- Minnesota		(2.3)		(2.5)
- Iowa		(2.3)		(2.5)
- Illinois		(1.5)		(2.5)
- (Others)		(17.6)		(20.0)

How Much Previous River Trip Experience Do People Have On The Arkansas River?

	Segment 2A		Segment 4B	
	1981	1987	1981	1987
Once-this trip	71.8%	53.3%	68.7%	50.0%
2-5 times	15.0	21.6	17.9	25.2
6-10 times	2.9	12.6	3.2	10.0
>10 times	10.2	11.9	10.1	15.0

How Much Previous River Trip Experience Do Users Have On Any River?

	Segment 2A	Segment 4B
1st trip this yr.	30.4%	12.5%
last year	7.6	10.1
2-5 yrs. ago	25.1	33.8
6-10 yrs. ago	20.7	23.8
>10 yrs. ago	16.2	20.0

How Many Float Trips Have Users Made on Rivers Other Than The Arkansas?

	Segment 2A		Segment 4B	
	1981	1987	1981	1987
0	38.9%	36.6%	39.8%	30.0%
1-5	47.5	41.0	49.2	37.4
6-10	11.1	3.0	8.1	7.5
>10	2.5	20.0	2.8	25.0

2. Trip Characteristics

Where Did Boaters Spend Their Nights In The Arkansas River Valley?

		Percent Stayed this Number of Nights								Percent Stayed No Nights
		1	2	3	4	5	6-10	>10	Total	
Total Boaters/	Seg.#2	20.7	18.5	5.2	1.5	0	2.2	7.4	55.5%	44.4%
	Seg.#4	21.1	21.1	6.6	0	0	2.6	11.8	63.2	36.8
Camped Public/	Seg.#2	12.6	12.6	1.5	0	0	0	4.4	31.1%	
	Seg.#4	12.6	10.5	3.9	0	0	0	3.9	21.1%	
Camped Private/	Seg.#2	1.5	3.7	2.2	0	0	0	2.2	9.6%	
	Seg.#4	11.8	5.3	1.3	0	0	2.6	6.6	27.6%	
Lodged Comm./	Seg.#2	5.9	3.0	2.2	1.5	0	1.5	0.7	14.8%	
	Seg.#4	6.6	5.3	1.3	0	0	0	1.3	14.5%	

Where Shoreline Users Spend Their Nights In The Arkansas River Valley?

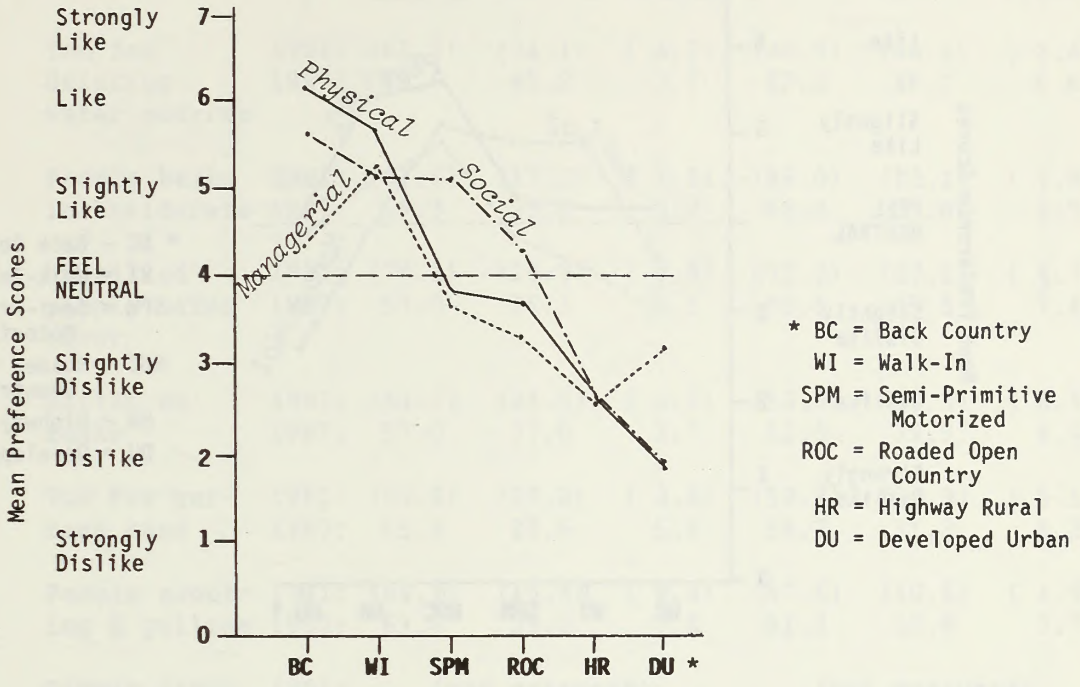
		Percent Stayed this Number of Nights								Percent Stayed No Nights
		1	2	3	4	5	6-7	>7	Total	
Total Shoreline Users	Seg.#4	17.1	12.2	7.3	1.2	1.2	3.7	6.1	48.8%	51.2%
Camped Public		9.8	9.8	3.7	0	0	2.4	2.4	28.0%	
Camped Private		2.4	2.4	1.2	0	0	1.2	0	7.3%	
Lodged Comm.		4.9	1.2	2.4	2.4	1.2	1.2	0	13.4%	

What Numbers of People Were Seen Outside Boaters' Own Group?

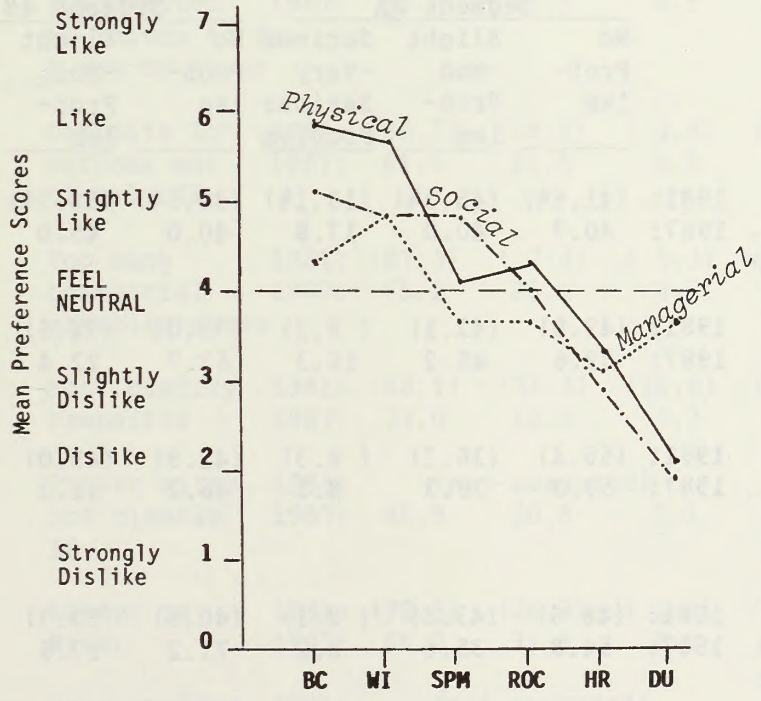
		Segment 2A			Segment 4B		
		Put-Ins	On River	Take-Outs	Put-Ins	On River	Take-Outs
None/	1981:	16.2%	1.7%	8.4%	31.6%	4.2%	16.9%
	1987:	6.3	0.8	0.8	6.8	5.2	7.8
1-10/	1981:	19.6	11.3	12.6	30.1	23.0	28.2
	1987:	12.6	9.5	4.0	23.1	16.9	22.2
11-25/	1981:	28.8	32.6	21.8	20.7	28.6	20.2
	1987:	19.6	17.4	18.4	23.4	20.8	28.7
25-75/	1981:	33.3	38.5	44.7	17.0	37.1	30.0
	1987:	33.8	35.4	43.2	29.9	33.8	31.7
>75/	1981:	2.1	15.9	12.5	0.5	7.0	4.6
	1987:	28.2	37.0	33.7	17.8	23.2	10.4

3. Recreation Opportunity Preferences: Reasons for Visiting the River

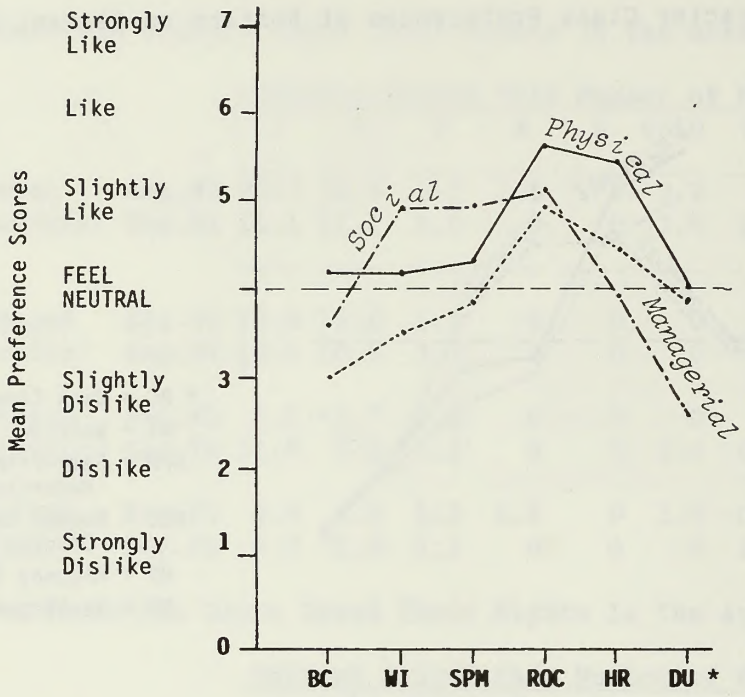
What Were the Character Class Preferences of Boaters on Segment 2A?



What Were the Character Class Preferences of Boaters on Segment 4B?



What Were the Character Class Preferences of Shoreline Users on Segment 4B?



4. Problems Encountered

What Issues Were Perceived as Problems by Boaters?

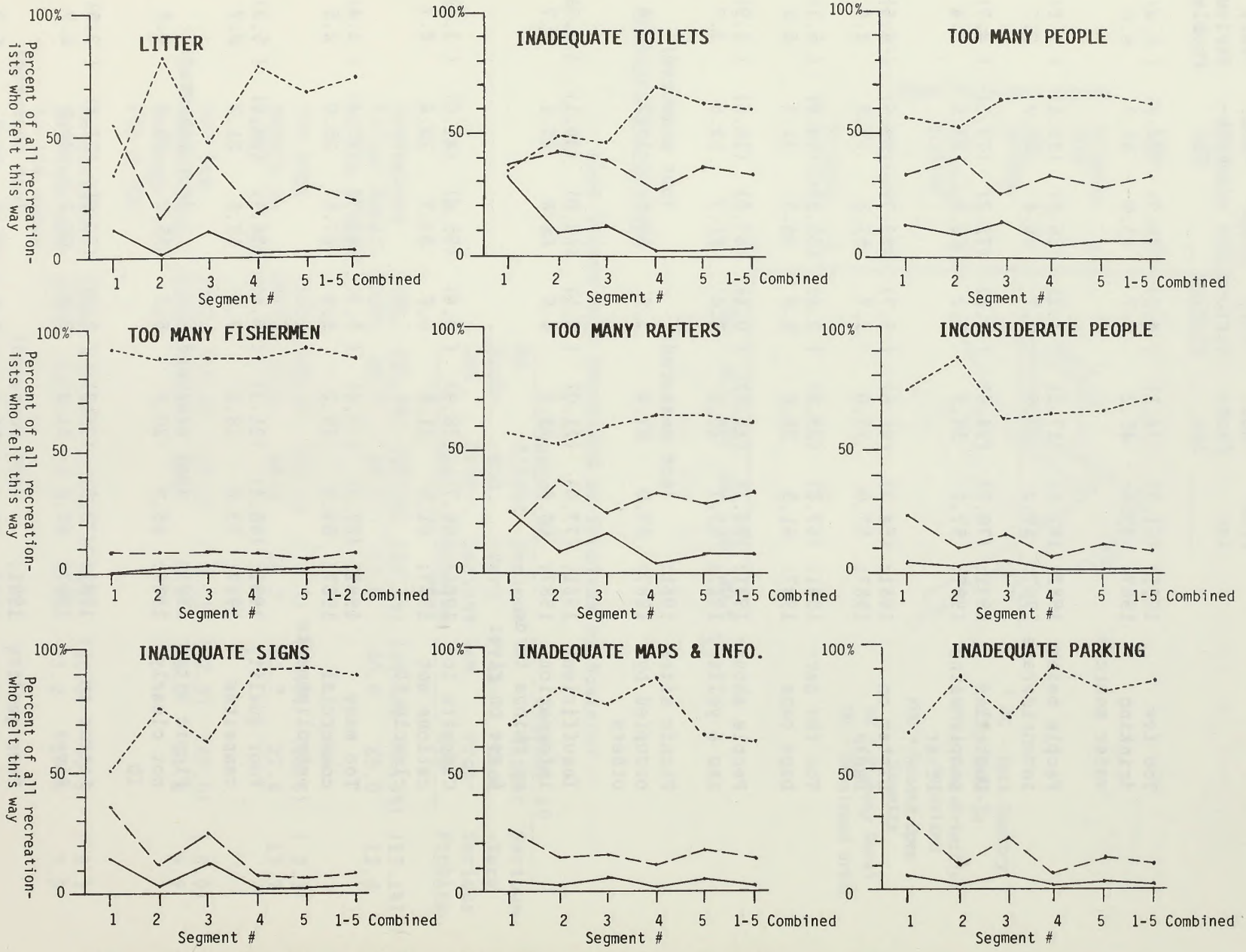
		Segment 2A			Segment 4B		
		No Problem	Slight-Mod. Problem	Serious-Very Serious Problem	No Problem	Slight-Mod. Problem	Serious-Very Serious Problem
Inadequate toilet facil. at PIs & TOs*	1981:	(41.6%)	(45.3%)	(13.1%)	(30.5%)	(56.3%)	(13.1%)
	1987:	40.7	40.0	17.8	40.0	45.0	12.4
Too many people on river	1981:	(49.8)	(42.1)	(8.2)	(73.0)	(24.6)	(2.3)
	1987:	32.6	48.2	16.3	63.7	22.4	13.7
Too few toilet facil. between PIs & TOs	1981:	(55.4)	(36.3)	(8.3)	(42.9)	(49.0)	(8.0)
	1987:	53.3	36.3	8.1	46.2	41.2	9.9
Navigation problems due to low water	1981:	(48.6)	(43.3)	(8.1)	(40.6)	(50.3)	(9.3)
	1987:	54.8	35.6	8.2	71.2	17.5	7.5

* Note: PIs=Put-Ins/TOs=Take-Outs

(table continued on next page)

		Segment 2A			Segment 4B		
		No Problem	Slight-Mod. Problem	Serious-Very Serious Problem	No Problem	Slight-Mod. Problem	Serious-Very Serious Problem
Too few drinking water sources	1981:	(61.7)	(34.1)	(4.2)	(46.9)	(44.6)	(8.4)
	1987:	49.6	45.2	3.7	43.8	46.3	6.6
People being inconsiderate	1981:	(81.6)	(17.2)	(1.2)	(86.0)	(12.1)	(1.8)
	1987:	59.3	29.6	9.7	68.8	25.0	3.7
Unskilled people using river	1981:	(70.2)	(24.9)	(4.8)	(72.2)	(23.1)	(4.7)
	1987:	57.0	36.3	5.2	62.5	27.5	7.4
Litter on banks	1981:	(54.7)	(41.6)	(3.7)	(53.7)	(39.9)	(6.5)
	1987:	57.0	37.0	3.7	52.5	39.9	4.9
Too few garbage cans	1981:	(67.8)	(29.8)	(2.4)	(59.9)	(34.9)	(5.1)
	1987:	61.5	29.6	5.9	58.7	31.3	6.2
People shouting & yelling	1981:	(84.1)	(15.5)	(0.4)	(87.5)	(10.6)	(1.9)
	1987:	63.7	25.2	7.4	81.3	12.6	3.7
Picnic sites occupied by others	1981:	(not measured)			(not measured)		
	1987:	57.0	27.4	5.9	67.5	16.2	7.4
Insufficient information on things to do & see on river	1981:	(77.0)	(21.0)	(2.1)	(69.0)	(30.1)	(0.9)
	1987:	60.0	33.3	4.5	68.8	25.1	3.7
Campsite locations not clearly ID	1981:	(66.7)	(28.9)	(4.4)	(55.4)	(41.0)	(3.6)
	1987:	61.5	21.5	6.6	53.7	22.4	8.7
Too many commercial establishments	1981:	(87.3)	(7.4)	(5.3)	(83.3)	(15.4)	(1.4)
	1987:	65.2	25.2	5.9	67.5	25.0	2.5
Poor quality campsites	1981:	(68.1)	(21.3)	(10.6)	(56.1)	(38.6)	(5.3)
	1987:	73.0	18.0	7.3	57.5	21.2	8.7
Picnic sites not clearly ID	1981:	(not measured)			(not measured)		
	1987:	65.9	20.8	5.1	55.0	26.2	4.9
Litter in River	1981:	(72.5)	(26.3)	(1.2)	(74.0)	(23.3)	(2.8)
	1987:	65.2	31.3	2.2	66.2	25.0	4.9
Poor quality Picnic sites	1981:	(not measured)			(not measured)		
	1987:	65.2	28.2	2.9	55.0	36.2	6.2

PROBLEMS EXPERIENCED—All River Users (Undifferentiated by Activity)



5. Possible Management Actions

What Kinds of Management Do Boaters Support or Oppose?

	Segment 2A			Segment 4B		
	Oppose	Neutral	Support	Oppose	Neutral	Support
Actions Supported:						
Require to carry out own trash	8.9%	6.7%	81.5%	13.4%	10.0%	75.0%
Prohibit motorized watercraft	8.9	10.4	77.8	13.4	10.0	76.2
Allow wood fires only at designated sites	13.3	17.0	65.2	6.2	12.5	78.7
Prohibit ORVs except on roads & highways	9.7	15.6	73.2	10.0	26.2	62.4
Develop short hiking trails along river	10.3	20.0	66.7	6.2	17.5	75.0
Allow camping only at desig. locations	(see Neutral)			16.2	21.2	61.3
Post signs warning/advising of hazards	(see Neutral)			15.0	23.7	58.7
Neutral Actions:						
Improve put-in/take-out loading areas	11.1%	47.4%	38.5%	4.9%	47.5%	46.2%
Allow camping only at desig. locations	22.3	20.0	53.4	(see Supported)		
Provide campsites at put-ins & take-outs	16.3	28.9	51.8	17.5	36.2	45.0
More aggressively enforce safety rules & regs.	15.6	46.7	34.8	17.5	38.7	42.5
Restrict the number of people using the river at any one time	26.0%	22.2%	48.9%	30.0%	26.2%	42.5%
Limit the no. people per group allowed on the river	26.0	22.2	48.9	38.7	22.5	37.5
Post signs warnin & advising of hazards	25.2	25.9	45.2	(see Supported)		

(table continued on next page)

	Segment 2A			Segment 4B		
	Oppose	Neutral	Support	Oppose	Neutral	Support
Improve existing access roads to PIs & TOs*	15.6	48.9	32.6	10.0	50.0	37.7
Achieve better spacing by assigning beginning trip times	23.7	25.9	46.7	27.4	27.5	43.8
Require permits to protect the land	27.5	23.0	44.5	21.2	31.3	46.2
Provide more along-river campsites between PIs & TOs	25.9	34.8	35.5	24.9	37.5	36.3
Provide more patrols to assist river users and enforce regs.	28.5	40.9	28.2	27.4	37.5	33.8
Allow picnicking only at desig. areas	37.8	23.0	36.1	29.9	26.2	42.5
Provide firewood at campsites & picnic areas	32.6	25.9	37.8	31.2	26.2	41.2
Provide more info. along river to ID facil.& points of interest	29.6	34.1	33.3	17.5	36.2	43.0
Require permits to avoid conflicts	37.8	25.9	31.9	33.8	32.5	32.5
Provide more distance markers along river	37.0	34.1	25.9	22.4	47.5	28.7
Provide more points of public access	46.7	24.4	24.4	36.2	31.3	14.9
Require all individuals to pay fees	42.9	25.9	26.7	35.0	32.5	31.3
Actions Opposed:						
Prohibit all wood fires	28.2%	40.7%	28.2%	53.7%	23.7%	21.2%
Prohibit camping along river	69.6	17.8	8.9	49.7	18.8	10.0

What Differences Are There In Support For Selected Management Actions Between Commercial and Private Boaters?

	Segment 2A		Segment 4B	
	Comm.	Priv.	Comm.	Priv.
Require people to carry out their own trash	85.1%	80.0%	78.3%	88.2%
Prohibit motorized watercraft	83.3	71.5	79.0	70.6
Allow woodfires only at designated spots	75.6	48.6	82.0	76.5
Develop short hiking trails along the river	67.3	71.5	79.0	64.7
Prohibit ORVs except on roads and highways	71.9	80.0	67.7	47.0
Allow camping only at designated areas	58.9	47.0	62.9	58.8
Post signs warning and advising of hazards	46.3	48.6	62.3	53.0
Restrict the number of people using the river at any one time	55.3	37.1	45.1	35.2
Require permits to protect the land	52.6	30.3	53.2	23.6
Require permits to avoid user conflicts	38.5	18.2	37.1	17.7
Achieve better group spacing by assigning launch times	53.1	25.3	46.8	35.3
Limit the # of people per group allowed on river	50.0	42.8	41.9	23.5
Require all users to pay fees	32.3	15.1	32.2	29.4

1988

An Act

HOUSE BILL NO. 1253.

BY REPRESENTATIVES Chlouber, Anderson, Grant, Masson, Ratterree, Shoemaker, Trujillo, and Tucker;
also SENATOR McCormick.

CONCERNING THE GRANT OF REGULATORY AUTHORITY TO THE BOARD OF PARKS AND OUTDOOR RECREATION OVER THE RECREATIONAL USE OF THE ARKANSAS RIVER.

Be it enacted by the General Assembly of the State of Colorado:

SECTION 1. Title 33, Colorado Revised Statutes, 1984 Repl. Vol., as amended, is amended BY THE ADDITION OF A NEW ARTICLE to read:

ARTICLE 12.5
Arkansas River Recreational Act

33-12.5-101. Short title. This article shall be known and may be cited as the "Arkansas River Recreational Act".

33-12.5-102. Legislative declaration. The general assembly recognizes that the Arkansas river is a major recreation attraction and a vital resource for residents and nonresidents alike and hereby declares that it is the policy of this state to safeguard the recreational quality of the Arkansas river, and the adjacent lands, by granting the board the authority to regulate recreational use on the Arkansas river. It is not the intent of the general assembly to in any way interfere with private landowner rights along the river or with the determination, administration, or change of water rights in the drainage of the Arkansas river and its tributaries and the legal utilization thereof.

33-12.5-103. Powers of the board. (1) The board shall have the authority consistent with the legislative declaration of this article to regulate the manner, type, time, location,

Capital letters indicate new material added to existing statutes; dashes through words indicate deletions from existing statutes and such material not part of act.

and amount of recreational and commercial use on that portion of the Arkansas river that runs from the confluence of the Lake Fork and the East Fork of the Arkansas river to the Pueblo reservoir.

(2) Subject to section 33-12.5-102, the board shall also have the authority to enter into agreements with municipalities, water conservancy districts, and private individuals to effect reservoir operation in order to provide water flows beneficial to recreation and consistent with section 33-12.5-104.

(3) The board shall, to the maximum extent possible but consistent with the legislative declaration of this article, keep the regulation of the recreational uses of the Arkansas river to a minimum.

33-12.5-104. Effect of article - rights of property owners - water rights. (1) Nothing in this article shall be construed as:

(a) Diminishing the rights of owners of property as provided in the constitution and statutes of this state or in the constitution of the United States;

(b) Modifying or amending existing laws, court decrees, or court decisions or affecting future court proceedings or decrees in any manner with respect to the determination, administration, or change of water rights;

(c) Granting the board any vested water rights or right to apply for or obtain any decree for a water right for recreational purposes;

(d) Prohibiting or in any way regulating the construction, modification, rehabilitation, or operation of reservoirs, diversion structures, or other facilities necessary for the storage, diversion, or conveyance of water in the drainage of the Arkansas river and its tributaries as otherwise permitted by law;

(e) Superseding, abrogating, or impairing rights to divert water and apply water to beneficial uses in accordance with sections 5 and 6 of article XVI of the Colorado constitution, the provisions of articles 80 to 93 of title 37, C.R.S., or Colorado court decisions with respect to the determination and administration of water rights. Nothing in this article shall be construed, enforced, or applied so as to cause or result in material injury to water rights. The question of whether such material injury to water rights exists and the remedy thereof shall be determined by the water court.

(f) Allowing the board or the division to require minimum stream flows or minimum water levels in any lakes or impoundments.

33-12.5-105. Repeal of article. This article is repealed, effective January 1, 1992.

SECTION 2. No appropriation. It is the intent of the general assembly that no general fund moneys nor transfers from another park system may be used for the implementation of this act for fiscal year 1988-1989.

SECTION 3. Effective date. This act shall take effect January 1, 1989.

SECTION 4. Safety clause. The general assembly hereby finds, determines, and declares that this act is necessary for the immediate preservation of the public peace, health, and safety.

C B Bledsoe
Carl B. Bledsoe
SPEAKER OF THE HOUSE
OF REPRESENTATIVES

Ted L. Strickland
Ted L. Strickland
PRESIDENT OF
THE SENATE

Lee C. Bahrych
Leg C. Bahrych
CHIEF CLERK OF THE HOUSE
OF REPRESENTATIVES

Joan M. Albi
Joan M. Albi
SECRETARY OF
THE SENATE

APPROVED April 21, 1988 at 8:32 am

Roy Romer
Roy Romer
GOVERNOR OF THE STATE OF COLORADO

APPENDIX F
DPOR CAMPGROUND CLASSIFICATIONS

1. "Class A - Deluxe Campground" means those with highly sophisticated facilities, with: water pressure systems with sewer connections at each site; and individual electrical connections; laundry facilities, grocery store, food service facilities, game rooms, swimming pools, and other sophisitcated amenities not privided by the Division of Parks and Outdoor Recreation.

2. "Class B - Improved Campground" means those where demand justifies fairly sophisticated facilities. The Division may develop water pressure systems with hydrants, conveniently located flush toilets, lavatory and shower facilities, laundry facilities if not available nearby, and sanitary dump stations. Individual campsites will be defined and may include trash receptacles, tables, grills, firewood storage, high-use pads, and paths; but individual utility hookups will normally not be provided.

3. "Class C - Basic Campground" means those where vehicular camping units with self-contained facilities are to be served. Minimum facilities will be provided, such as: central water supply, central sanitary facilities, including a sanitary dump station and receptacles. Vehicle control will be established. Individual campsites generally are defined and may include: tables, grills or fire rings, firewood storage, and high-use pads or paths.

4. "Class D - Semi-Primitive Campground" means those accessible by walk-in, pack-in, equestrian campers or motorized trail vehicle (not camper vehicle). Generally, individual sites will not be defined. However, limited facilities may be provided for site protection and not necessarily for camper convenience or comfort.

5. "Class E - Primitive Campground" means those accessible by walk-in, pack-in, or equestrian campers. Generally, individual sites and improvements will not be provided. However, when necessary they will be designed for site protection and not necessarily for camper comfort.

APPENDIX G
FRAMEWORK FOR CAMPSITE CONDITION CLASSES
and
Possible Management Actions

Condition Class	Visible Indicators	Management
1	Ground vegetation flattened but not permanently injured. Minimal physical change except for possibly a simple rock fireplace	These sites are barely recognizable as camping areas. If not in situations known to be sensitivbe to use (e.g., wet or slump areas), no management action is necessary. Maintain current use level or allow increase if nearby sites must be closed.
2	Ground vegetation worn away around fireplace or center of activity.	Site change now apparent but still within acceptable limits. These areas are readily identified as campsites and will continue to attract use. Future use should be carefully monitored to detect adverse change.
3	Ground vegetation lost on most of the site, but humus and litter still present in all but a few areas	This is a transitional condition. Considerable change in plant cover is evident but little sign of soil problems. The condition may be accepted as normal in areas of high attraction. However, modification of current use patterns and intensities may be needed to prevent further change.
4	Bare mineral soil widespread. Tree roots exposed on the surface.	Deterioration is accelerating. If current level and type of use continues, soil erosion, loss of tree cover, and esthetic degradation are likely. Withdraw use from these sites and allow recovery. If site is improperly located, permanent closure should be considered. If site is reopened, insure that use patterns are adjusted to prevent reinjury.
5	Soil erosion obvious. Trees reduced in vigor or dead.	Natural recovery will be extremely slow. The sites should be closed permanently and alternate ones located. If the site is critical to the recreation pattern, extensive rehabilitation will be required to return it to acceptable condition.

APPENDIX H

DPOR STATUTES AND REGULATIONS REGARDING FEES

Statutes Regarding Fees

ARTICLE 12
Passes and Registrations

33-12-101. Passes and registrations. (1) (a) Every pass or registration shall expire on the date printed or written on the face of said document. As used in this article, "document" means pass or registration.

(b) When, in articles 10 to 15 of this title or a rule or regulation adopted pursuant thereto, the doing of an act between certain dates or from one date to another is allowed or prohibited, the period of time indicated includes both dates specified.

(2) Money received in payment for passes and registrations issued under articles 10 to 15 of this title shall not be refunded, except as follows:

(a) For proven errors committed by the division in issuing passes or registrations;

(b) For bona fide emergencies as may be determined by the division.

(3) In the event of loss or destruction of a pass or registration, the person to whom the document was issued, upon payment of a fee of fifty percent of the cost of the original document, but not to exceed five dollars, may obtain a replacement pass or registration by signing an affidavit stating where and by whom said document was issued and the circumstances under which the document was lost or destroyed. If the division determines that a pass or registration has been lost or destroyed in the mail, the person to whom the document was issued may obtain a replacement pass or registration without charge by signing an affidavit stating that such document was never received. The division shall supply agents selling such documents with affidavit forms for obtaining a replacement pass or registration.

33-12-102. Types of passes and registrations - fees. (1) The fees for the types of passes and registrations to be issued by the division, unless the board establishes a lesser fee pursuant to section 33-10-107 (1) (h), are as follows:

Editor's note: Section 3 of chapter 269, Session Laws of Colorado 1985, provides that the act amending the introductory portion to subsection (1) is effective January 1, 1986.

(a) Annual parks pass $25.00
(b) One-day parks pass ..... $ 3.00

Editor's note: Section 3 of chapter 269, Session Laws of Colorado 1985, provides that the act amending paragraphs (a) and (b) is effective January 1, 1986.

(c) Each additional annual parks pass for a

noncommercial motor vehicle	$ 3.00
(d) Senior citizen's aspen leaf annual pass ...	No charge
(e) Vessel registration (including annual resident registration, ten-day nonresident registration, and each rental vessel registration)	$10.00
(f) Dealer registration for all vessels owned by a dealer which are operated for research, testing, experimentation, or demonstration purposes only:	
(I) When the dealer sells twenty-five or less vessels within the preceding year	$13.00
(II) When the dealer sells more than twenty-five vessels within the preceding year	$25.00
(g) Manufacturer registration for all vessels owned by a manufacturer which are operated for demonstration or testing purposes only	$13.00
(h) Nonresident annual vessel registration for a person from a state or country where registration is not required	$15.00
(i) Snowmobile registration (including annual resident registration, ten-day nonresident registration, and each rental snowmobile)	$10.00
(j) Dealer registration for all snowmobiles owned by a snowmobile dealer which are operated for demonstration or testing purposes only:	
(I) When the dealer sells twenty-five or less snowmobiles within the preceding year	$25.00
(II) When the dealer sells more than twenty-five snowmobiles within the preceding year	$50.00
(k) Manufacturer registration for all snowmobiles owned by a manufacturer which are operated for research, testing, experimentation, or demonstration purposes only	$25.00
(l) Nonresident annual snowmobile registration for a person from a state or country where registration is not required	$30.00

(2) The fee for any pass or permit not provided for in articles 10 to 15 of this title shall not exceed seven dollars.

Editor's note: Section 3 of chapter 269, Session Laws of Colorado 1985, provides that the act amending this subsection (2) is effective January 1, 1986.

33-12-103. Aspen leaf annual pass. (1) A resident of this state as defined in section 33-10-102 (21) who is sixty-two years of age or older may obtain from the division an aspen leaf annual pass, which shall be valid for the calendar year in which issued. For the purpose of this section, the aspen leaf annual pass holder must own in whole or in part any vehicle used to enter a park area. Such pass

shall entitle the holder to enter state park and recreation areas for all days of the year. Such pass shall also entitle the holder to the use of division campgrounds for all days of the year except weekends and holidays. For the purpose of this section, "weekend" means the time period beginning at 12 noon on Friday through 12 noon on Sunday, and "holiday" shall mean the time period beginning at 12 noon on the day prior to the legal holiday through 12 midnight of the legal holiday. Any resident possessing such pass during the time period when such pass is valid shall pay no other fee.

(2) Each aspen leaf annual pass so issued shall be affixed to the vehicle for which it was issued in the manner prescribed by rule or regulation promulgated by the board.

(3) The continued use of the aspen leaf annual pass shall be subject to the holder's observance of rules and regulations concerning the state park or the state recreation area. For a violation of any of such rules and regulations, the division has the power to suspend such pass for six months; for a second violation, for one year; and, for a third violation, indefinitely. Any person aggrieved by an action of the division taken pursuant to this subsection (3) may appeal such action in accordance with the procedures provided in article 4 of title 24, C.R.S.

33-12-104. Pass and registration agents - reports - board of claims - unlawful acts. (1) The director may designate sole proprietors, partnerships, or corporations having permanent business locations in this state as pass and registration agents to sell, at their permanent business locations, passes and registrations. Pass and registration agents shall be paid a commission of five percent of all moneys collected for passes and registrations sold by such agents. All agents authorized to sell passes and registrations shall keep accurate records of all sales of passes and registrations and shall make such reports to the division regarding pass and registration sales as may be required. Such agents shall be required to give bond in such amount as may be fixed by the division to insure the remittance of all moneys collected from such pass and registration sales, less amounts allowed as commissions, and the making of reports required by the division. The board may promulgate rules and regulations for the establishment and cancellation of pass and registration agencies. All pass and registration moneys received shall be kept separate and apart from any other moneys of the agent authorized to sell passes and registrations and shall at all times belong to the state. All moneys due from the sale of passes and registrations shall belong to the state and shall draw interest at the rate of one and one-half percent per month from the time that the agency is cancelled by the division until paid.

(2) The executive director, state auditor, and attorney

ARTICLE 13
Vessels

33-13-101. Legislative declaration. It is the policy of this state to administer the registration and numbering of vessels in accordance with federal laws pertaining thereto and to promote the safety of persons and property in connection with the use, operation, and equipment of vessels.

33-13-102. Definitions. As used in this article, unless the context otherwise requires:

(1) "Motorboat" means any vessel propelled by machinery, whether or not such machinery is the principal source of propulsion.

(2) "Operate" means to navigate or otherwise use a vessel.

(3) "Owner" means a person who claims lawful possession of a vessel by virtue of legal title or an equitable interest which entitles him to such possession.

(4) "Sailboat" means any vessel propelled by the effect of wind on a sail. For the purposes of this article, any vessel propelled by both sail and machinery of any sort shall be deemed a motorboat, when being so propelled.

(5) "Vessel" means every description of watercraft used or capable of being used as a means of transportation of persons and property on the water, other than single-chambered air-inflated devices or seaplanes.

(6) "Whitewater" means natural running water with intermittent rapids.

33-13-103. Numbering of vessels required. (1) It is unlawful for any person to operate or use a vessel on the

waters of this state unless such vessel has been numbered and a certificate of the number, referred to in this article as a "registration", has been issued to such vessel by the division. The operator of such vessel shall produce the registration for inspection upon demand of any officer authorized to enforce the provisions of articles 10 to 15 of this title. The following are exempt from the requirements of this subsection (1) and from the vessel registration fee set forth in section 33-12-102:

(a) Canoes, kayaks, innertubes, single-chambered air-inflated devices, and nonmotorized or hand-propelled crafts; except that canoes, kayaks, and nonmotorized rafts shall be marked as required by subsection (5) of this section;

(b) Vessels holding a valid marine document issued by the United States bureau of customs;

(c) Vessels which are numbered in accordance with applicable federal law or in accordance with a federally approved numbering system of another state when the registration is valid and the identifying number set forth in the registration is displayed on each side of the bow of such vessel, which vessel is not used within this state during a period of not more than sixty consecutive days;

(d) A vessel from a country other than the United States temporarily using the waters of this state;

(e) A vessel belonging to a class of vessels which has been exempted after the division has found that the numbering of vessels of such class will not materially aid their identification, and, if an agency of the federal government has a numbering system applicable to the class of vessels to which the vessel in question belongs, after the division has further found that the vessel would also be exempt from numbering if it were subject to federal law.

(2) Every registration issued pursuant to this article shall continue in full force and effect for a period ending December 31 of the year of issuance of the registration unless sooner terminated or discontinued in accordance with the provisions of this article. A registration may be renewed by the owner in the same manner as that provided for obtaining the initial registration. The same number shall be reissued if the application for renewal is received by the division within thirty days before the date of expiration.

(3) The board shall prescribe by rule or regulation a system of numbering which is in compliance with the federal system for numbering vessels.

(4) Any person who violates subsection (1) of this section is guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of twenty-five dollars.

(5) It is unlawful for any person to operate or use a canoe, kayak, or nonmotorized raft on the waters of this state unless it has been marked with the owner's name and current address in a legible, clearly visible, and durable fashion. Any person who violates this subsection (5) is guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of fifteen dollars.

33-13-104. Application for vessel number. (1) The owner of each vessel requiring numbering by this state shall file an application for a number with the division or any representative approved by the division on forms approved and furnished by the division. The application shall be signed by the owner of the vessel and shall be accompanied by a fee as required under section 33-12-102; except that those vessels owned and operated by the state or any political subdivision thereof shall be registered without payment of a registration fee. Upon receipt of the application in approved form, the division or its representative shall issue to the applicant a registration stating the number issued to the vessel. The number issued shall be painted on or attached to each side of the bow on the forward half of the vessel or, if there are no such sides, at a corresponding location on both sides of the foredeck of the vessel for which it is issued. The number issued shall read from left to right in block characters of good proportion having a minimum of three inches in height, excluding border or trim, and of a color which contrasts with the color of the background, and so maintained as to be clearly visible and legible. No other number shall be carried on the bow of the vessel. Any person who fails to display a vessel number as required in this subsection (1) is guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of ten dollars.

(2) The registration shall be of pocket size and shall be on board and available at all times for inspection whenever the vessel for which it is issued is in operation in this state. Any person who violates this subsection (2) is guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of twenty-five dollars. If a registration is lost or destroyed, the owner shall, within fifteen days, notify the division. The notification shall be in writing, shall describe the circumstances of the loss or destruction, and shall be accompanied by a fee for a replacement registration as required under section 33-12-101.

(3) When a numbered vessel is lost, destroyed, or abandoned, the registration issued for the vessel shall be surrendered to the division within fifteen days after any such event. When the owner of a numbered vessel changes his address from that shown on the registration, he shall notify the division within fifteen days of such change and as a part of such notification shall furnish the division with his new address. The board may provide in its rules or regulations for the surrender of the registration bearing the former

ARTICLE 32
River Outfitters

33-32-101. Legislative declaration. The general assembly declares that it is the policy of this state to promote and encourage residents and nonresidents alike to participate in the enjoyment and use of the rivers of this state and, to that end, in the exercise of the police powers of this state for the purpose of safeguarding the health, safety, welfare, and freedom from injury or danger of such residents and nonresidents, to license and regulate those persons who, for compensation, provide equipment or personal services to such residents and nonresidents for the purpose of floating on rivers in this state. It is not the intent of the general assembly to interfere in any way with private land owner rights along rivers or to prevent the owners of whitewater equipment from using said equipment to accommodate friends when no consideration is involved; nor is it the intent of the general assembly to interfere in any way with the general public's ability to enjoy the recreational value of state rivers when the services of commercial river outfitters are not utilized or to interfere with the right of the United States to manage public lands and waters under its control. The general assembly recognizes that commercial river outfitters, as an established business on rivers flowing within and without this state, make a significant contribution to the economy of this state, and that the number of residents and nonresidents who are participating in river rafting is steadily increasing.

33-32-102. Definitions. As used in this article, unless the context otherwise requires:

(1) "Board" means the board of parks and outdoor recreation.

(2) "Division" means the division of parks and outdoor recreation.

(3) "Guide" means any person, including but not limited to subcontractors, employed for compensation by any river outfitter for the purpose of operating vessels.

(4) "River outfitter" means any person soliciting to provide or providing, for compensation, facilities, guide services, or transportation for the primary purpose of river rafting; except that "river outfitter" does not include any person whose only service is providing motor vehicles, rafts, and other equipment for rent.

(5) "Vessel" means every description of watercraft used or capable of being used as a means of transportation of persons and property on the water, other than single-chambered air-inflated devices or seaplanes.

33-32-103. Powers and duties of the board. The board shall promulgate rules and regulations to govern the licensing of river outfitters, to regulate river outfitters, to ensure the safety of associated river running activities, to establish guidelines to enable a river outfitter to make a determination that the condition of the river constitutes a hazard to the life and safety of certain persons, and to carry out the purposes of this article.

33-32-104. License required - fee. (1) No person shall act in the capacity of a paid river outfitter or advertise in any newspaper or magazine or any other trade publication or represent himself as a river outfitter in this state without first obtaining a river outfitter's license in accordance with rules and regulations prescribed by the board.

(2) An applicant for a river outfitter's license shall meet the minimum qualifications pursuant to section 33-32-105 and shall make application upon a form prescribed by the board. All applicants shall pay a nonrefundable license fee to be determined by the board, which fee shall be adequate to cover the expenses incurred for inspections, licensing, and enforcement required by the provisions of this article, and shall renew such license annually upon payment of said fee.

33-32-105. Minimum qualifications for river outfitters. (1) An applicant for a river outfitter's license shall meet the following minimum qualifications:

(a) He shall be eighteen years of age or older.

(b) He shall submit to the board evidence of liability insurance in the minimum amount of one hundred thousand dollars per person, three hundred thousand dollars per accident for bodily injury, and ten thousand dollars per accident for property damage.

(c) He shall have at least two years of experience in the field of river outfitting or guiding or have a good knowledge of the river guiding and outfitting business or be the designated faculty of an institution of higher education in charge of water sport activity courses.

(d) He shall possess a valid standard first-aid card issued by the American red cross or its equivalent.

(e) He shall meet the safety standards for river outfitters established by the board by rule and regulation.

Regulations Regarding Fees

Chapter 1, Land & Water:

#104 - a. DECLARATION OF PURPOSE. Recreation areas, or portions thereof, requiring a park pass shall be designated, and public announcement made of such areas. Signs, and a copy of these regulations, shall be posted and maintained at the entrance to all such designated areas or designated portions thereof, advising that a pass or such other permit or fee as may be adopted by the Board is required for lawful use of the facilities as provided therein.

b. RECREATION AREA PARK PASSES

1. No motor vehicle, except snowmobiles as defined in 33-14-101 C.R.S. and as otherwise provided by Colorado Revised Statutes, shall be brought into any of the Parks and Outdoor Recreation Lands unless there is permanently affixed to the extreme lower right-hand corner of the windshield of such vehicle, in a position that may be observed and identified, a valid pass issued by the Division of Parks and Outdoor Recreation, provided that on Colorado Day a pass shall not be required. By action of the Board, the requirement for a pass may be waived for spectators at special events.

2. Any such vehicle without a windshield shall be treated as a special case, but evidence of a pass will be required. Notwithstanding the foregoing, passes shall not be required for state and government owned vehicles on official business, emergency vehicles, law enforcement vehicles, commercial

vehicles making deliveries in the area, snowmobiles, as defined in 33-14-101 C.R.S.

3. An annual park pass should be issued, and by appropriate language, shall authorize entrance by motor vehicle to the recreation areas to the user and all passengers in the motor vehicle to which the pass is originally affixed during the calendar year in which issued. One (1) pass shall cover all the recreation areas. The fee for the annual park pass shall be as specified by the State Legislature in 33-12-102 C.R.S.

4. One additional vehicle pass may be issued to an owner, or to the owner's immediate family members. For the purpose of this regulation, "immediate family members" are defined as spouses and children with a valid driver's license living at the same address. "Owner" is defined as a person whose name appears on the registration of both the original vehicle for which an annual pass was purchased and the additional vehicle, or a person who can provide proof of ownership of the original and the additional vehicle at a designated Division office.

5. A one day park pass, valid for one day only shall be issued for a fee as specified by the State Legislature in 33-12-102 C.R.S., and authorizes entrance by motor vehicle to the recreation areas by the user and all passengers in the motor vehicle to which the pass is originally affixed during the day used and until 12 o'clock noon the following day.

6. If the motor vehicle for which an annual pass or additional pass has been issued is sold or traded, or the pass is otherwise lost or destroyed during the calendar year for which it is issued, the person to whom the pass was issued may obtain a duplicate thereof, upon signing an affidavit reciting where and by whom said pass was issued and the circumstances under which said pass was lost or traded, and upon payment of a fee of $3.00, a new pass effective for the remainder of such calendar year may be issued to the original owner of such permit by the Division only.

7. Passes shall be distributed or sold as provided in 33-12-103 and 33-12-104 C.R.S. Anything to the contrary in this paragraph notwithstanding, the Board

may from time to time provide for issuance of passes by persons other than designated license agents. All fees collected for such passes shall be used solely for the administration, improvements, maintenance, and operation of outdoor recreation areas.

8. A fee of $1.00 per person shall be charged for a daily pass for all visitors entering ElDorado Canyon State Park, except those entering said park in a motor vehicle with a valid parks pass.

9. The receipt from the annual vehicle pass shall be used as an annual walk-in pass for visitors entering ElDorado Canyon State Park.

c. BOARD MAY WAIVE PARK PASS REQUIREMENTS

1. Notwithstanding the provisions of Article III, Section #104, paragraph (b) of these regulations, the Board may waive the requirement for a park pass, or it may close entirely any park or recreation area or portions thereof, whenever it finds the action necessary to protect and promote the health, safety, and general welfare of the people of this state.

#105 - a. Use Permits and Fees.

In order to obtain a camping permit, a member of the camping party must be present with the camping unit, ready to make immediate occupancy of the campsite or a reservation must be made through the approved campsite reservation vendor. No person may reserve a campsite for another party by purchasing a camping permit for an additional site. No person shall camp overnight in designated campgrounds or use any campground facilities of any recreation area unless such overnight camping or facility use shall be by authority of a valid permit issued by the Division of Parks and Outdoor Recreation. A special permit may be issued without charge to any organized group of active or retired Armed Forces personnel stationed as resident patients of any Armed Forces hospital or Veterans Administration hospital, or any resident patients of any state or other mental health institution of Colorado while under the supervision of a staff member. These groups shall be placed in a group, or organization campground or special area set aside for such use. Possession of a valid campground use permit visibly displayed at a place provided at each campsite shall entitle a single family unit or a maximum of 6 persons per site to camp overnight and until 12 o'clock

noon the following day. Furthermore a single camping vehicle or a facility is allowed per site. In group camp areas the fee will be $6.00 per night for each 6 persons or less or $6.00 per campsite assigned to such group area, whichever is greater, except that the fee shall be $7.00 per night for each 6 persons or less or $7.00 per campsite assigned to such group area, whichever is greater, in group camp areas which meet the specifications of Class "B" improved campground. The fee for the daily campground use permit shall be $7.00 for Campground "B" and $6.00 for Campground "C", Campground "D", and Campground "E" permits, except those persons qualifying under 33-12-103 C.R.S. who shall receive such permits at no charge all days of the year except weekends and holidays, as defined in such statute. A park pass in addition to the required camping permit shall be required for each succeeding night of camping.

b. Definitions as used in this regulation, unless the context otherwise requires:

1. "Class A - Deluxe Campground" means those with highly sophisticated facilities, with: water pressure systems with sewer connections at each site; and individual electrical connections; laundry facilities, grocery store, food service facilities, game rooms, swimming pools, and other sophisticated amenities not provided by the Division of Parks and Outdoor Recreation.

2. "Class B - Improved Campground" means those where demand justifies fairly sophisticated facilities. The Division may develop water pressure systems with hydrants, conveniently located flush toilets, lavatory and shower facilities, laundry facilities if not available nearby, and sanitary dump stations. Individual campsites will be defined and may include trash receptacles, tables, grills, firewood storage, high-use pads, and paths; but individual utility hookups will normally not be provided.

3. "Class C - Basic Campground" means those where vehicular camping units with self-contained facilities are to be served. Minimum facilities will be provided, such as: central water supply, central sanitary facilities, including a sanitary dump station and receptacles. Vehicle control will be established. Individual campsites generally are defined and may include: tables, grills or fire rings, firewood storage, and high-use pads or paths.

4. "Class D - Semi-Primitive Campground" means those accessible by walk-in, pack-in, equestrian campers or motorized trail vehicle (not camper vehicle). Generally, individual sites will not be defined. However, limited facilities may be provided for site protection and not necessarily for camper convenience or comfort.

5. "Class E - Primitive Campground" means those accessible by walk-in, pack-in, or equestrian campers. Generally, individual sites and improvements will not be provided. However, when necessary they will be designed for site protection and not necessarily for camper convenience or comfort.

c. The following recreation areas, or portions thereof, shall require a $7.00 campground use permit as provided in these regulations for "Class B - Improved Campgrounds":

1. Arapahoe County

(a) All campgrounds within:

(1) Cherry Creek State Recreation Area

2. Archuleta County

(a) All campgrounds within:

(1) Navajo State Recreation Area

3. Douglas County

(a) All campgrounds within:

(1) Chatfield State Recreation Area

4. Gilpin County

(a) Reverend's Ridge Campground within:

(1) Golden Gate Canyon State Park

5. Huerfano County

(a) Pinon Campground within:

(1) Lathrop State Park

6. Larimer County

(a) Cottonwood Shores Campground within:

(1) Boyd Lake State Recreation Area

7. Las Animas County

(a) All campgrounds within:

(1) Trinidad State Recreation Area

8. Morgan County

(a) All campgrounds within:

(1) Jackson Lake State Recreation Area

9. Pueblo County

(a) All campgrounds within:

(a) Pueblo State Recreation Area

10. Yuma County

(a) Wagon Wheel Campground within:

(1) Bonny State Recreation Area

In addition to the $7.00 per night campground use permit, electrical hookups are available for a fee of $3.00. Possession of a valid electrical hookup permit visibly displayed at the campsite shall entitle users of that campsite electricity until 12 o'clock noon the day following the date of purchase at the following areas:

1. Chatfield State Recreation Area

2. Lathrop State Park

3. Navajo State Recreation Area

4. Pueblo State Recreation Area

5. Trinidad State Recreation Area

d. The following recreation areas, or portions thereof, shall require a $6.00 campground use permit as provided in these regulations for "Class C - Basic Campgrounds":

1. Delta County

   (a) All campgrounds within:

      (1) Crawford State Recreation Area

2. Eagle County

   (a) All campgrounds within:

      (1) Sylvan Lake State Recreation Area

3. Garfield County

   (a) All campgrounds within:

      (1) Rifle Gap State Recreation Area (including Rifle Falls)

4. Gilpin County

   (a) Aspen Meadow's Campground within:

      (1) Golden Gate Canyon State Park

5. Gunnison County

   (a) All campgrounds within:

      (1) Paonia State Recreation Area

6. Huerfano County

   (a) Yucca Campground within:

      (1) Lathrop State Park

7. Jackson County

   (a) All campgrounds within:

      (1) State Forest

8. Mesa County

(a) All campgrounds within:

(1) Highline Lake State Recreation Area

(2) Island Acres State Recreation Area

(3) Vega State Recreation Area

9. Montezuma County

(a) All campgrounds within:

(1) Mancos State Recreation Area

10. Park County

(a) Rocky Ridge, Puma Hills, North Shore, Rocky Flats, Stoll Mountain, Cross Creek, Lazy Boy, Rocking Chair, Howbert Point, Witcher's Cove, and Ponderosa Ridge Campgrounds within:

(1) Eleven Mile State Recreation Area

11. Routt County

(a) All campgrounds within:

(1) Steamboat Lake State Park including Pearl Lake

12. Weld County

(a) All campgrounds within:

(1) Barbour Ponds State Recreation Area

13. Yuma County

(a) North Cove Campground, Foster Grove Campground, and Bonny East Ski Beach within:

(1) Bonny State Recreation Area

e. The following recreation areas, or portions thereof, shall require a $6.00 campground use permit as provided in these regulations for "Class E - Primitive Campgrounds":

1. Gilpin County

   (a) Backcountry area within:

      (1) Golden Gate Canyon State Park

2. Jefferson County

   (a) Backcountry area within:

      (1) Golden Gate Canyon State Park

3. Larimer County

   (a) Backcountry area within:

      (1) Lory State Park

4. Park County

(a) Backcountry area within:

(1) Eleven Mile State Recreation Area

f. No person shall use any facility of any group picnic area unless such use shall be by authority of a permit issued by the Division of Parks and Outdoor Recreation. The group picnic area fee shall be a minimum of $25.00 for up to 50 people and an additional $.50 per person over 50 people. Additionally, a $50.00 damage deposit per area shall be applied toward damages, if any, caused by such group. If no damages are caused, the deposit will be refunded. All permits, reservations and damage deposits must be received in advance. The following recreation areas or portions thereof shall require fees as provided in these regulations:

1. Arapahoe County

(a) Group picnic area within:

(1) Cherry Creek State Recreation Area

(i) Four units, maximum capacity of 40 people each, total capacity 160 people

2. Douglas County

(a) Group picnic area within:

(1) Chatfield State Recreation Area

(i) Capacity of 100 people

3. Jefferson County

(a) Group picnic area within:

(1) Golden Gate Canyon State Park

(i) Capacity of 100 people

4. Larimer County

(a) Group picnic area within:

(1) Lory State Park

(i) Capacity of 100 people

(b) Group picnic area within:

(1) Boyd Lake State Recreation Area

(i) Capacity of 200 people

5. Las Animas County

(a) Group picnic area within:

(1) Trinidad State Recreation Area

(i) Two areas, maximum capacity of 50 people each

6. Mesa County

(a) Group picnic area within:

(1) Highline State Recreation Area

(i) Capacity of 200 people

7. Pueblo County

(a) Group picnic area within:

(1) Pueblo State Recreation Area

(i) Three areas, maximum capacity of 100 people each

8. Yuma County

(a) Group picnic area within:

(1) Bonny State Recreation Area

(i) Capacity of 100 people

g. The following recreation areas or portions thereof shall require a fee of $.50 per person per visit or a personal $7.00 annual pass as provided in these regulations:

1. Pueblo County

Chapter 3, Article II, River Outfitters:

10. The river outfitter licensing fee schedule shall be as follows:

    a. Original license fee $300.00

    b. Annual renewal license fee $300.00

    c. Late license application filing fee $100.00

    d. License application refiling fee .....$ 25.00

    e. Duplicate license fee .....$ 25.00

    f. Limited use fee .....$ 75.00

    g. Limited use annual renewal fee .....$ 75.00
    Note: Credit for overpayment of the limited use fee in 1986 will be given in subsequent years.

11. Outfitters with limited use river outfitter's licenses may use specific river segments in the State of Colorado to initiate their trips, provided these trips are conducted primarily on waters of an adjoining state. The limited use license shall entitle the holder to use only the following river segments in Colorado:

    a. North Platte River - Northgate Canyon

    b. Green River - Within Dinosaur National Monument

    c. Yampa River - Within Dinosaur National Monumnet

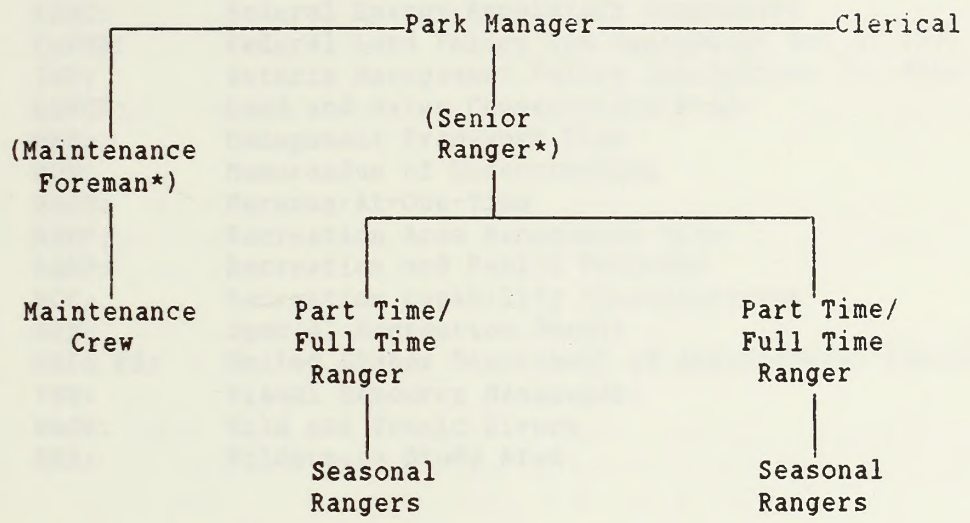
    d. Colorado River - Ruby Canyon

    e. Dolores River - Gateway Canyon

    Holders of limited use river outfitter licenses must comply with all laws and regulations pertaining to commercial river outfitting in the State of Colorado.

APPENDIX I

DPOR TARGET TABLE OF ORGANIZATION
FOR
ARKANSAS RIVER STATE RECREATION AREA



* Note: possible future positions.

APPENDIX J

LIST OF ACRONYMS

BOAT:	Boats-At-One-Time
BLM:	Bureau of Land Management
BPD:	Boats Per Day
BPH:	Boats Per Hour
CA:	Cooperative Agreement
CMA:	Cooperative Management Agreement
DOW:	Division of Wildlife
DPOR:	Division of Parks and Outdoor Recreation
FERC:	Federal Energy Regulatory Commission
FLPMA:	Federal Land Policy and Management Act of 1976
IMP:	Interim Management Policy (guidelines for WSAs)
L&WCF:	Land and Water Conservation Fund
MFP:	Management Framework Plan
MOU:	Memorandum of Understanding
PAOT:	Persons-At-One-Time
RAMP:	Recreation Area Management Plan
R&PP:	Recreation and Public Purposes
RCC:	Recreation Capability Classification
SRP:	Special Recreation Permit
USDA FS:	United States Department of Agriculture, Forest Service
VRM:	Visual Resource Management
W&SR:	Wild and Scenic Rivers
WSA:	Wilderness Study Area

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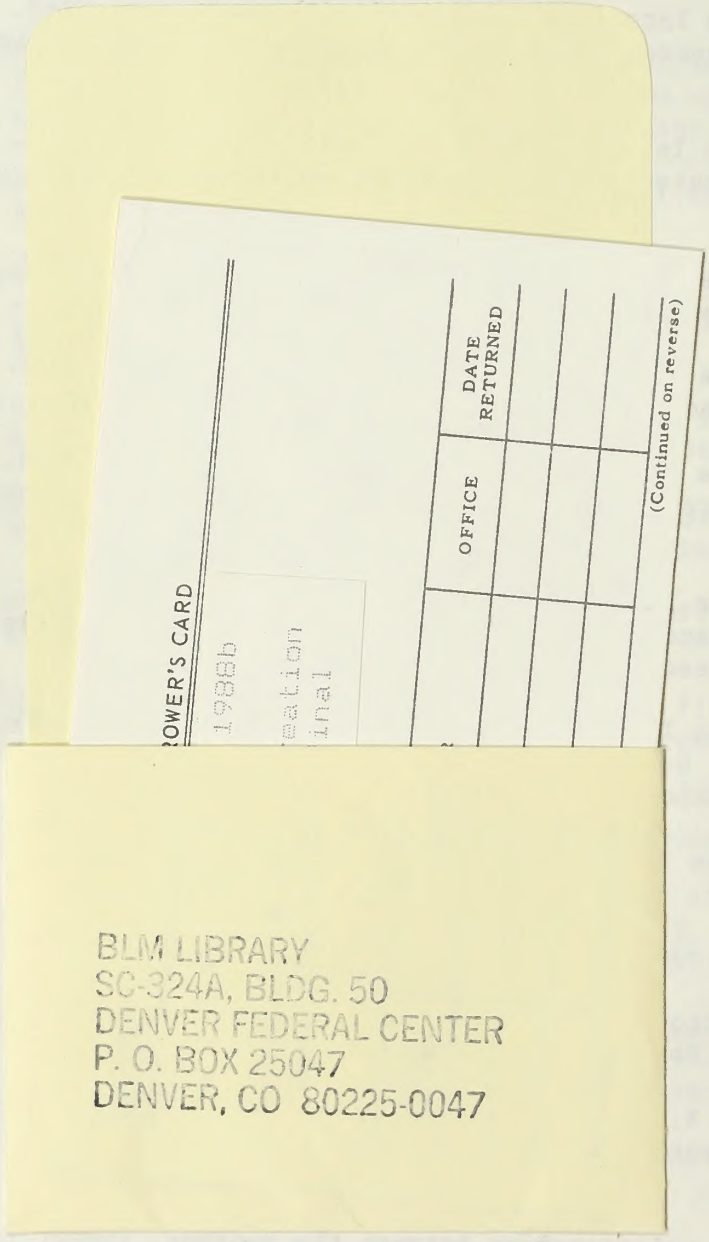
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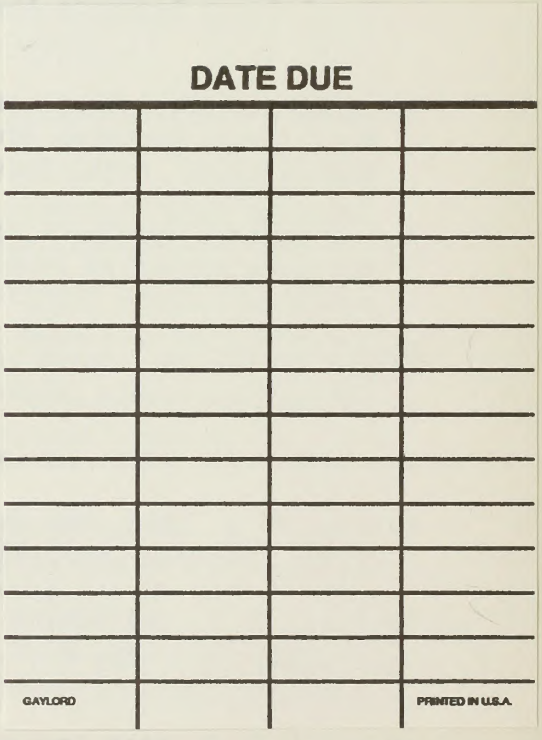
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