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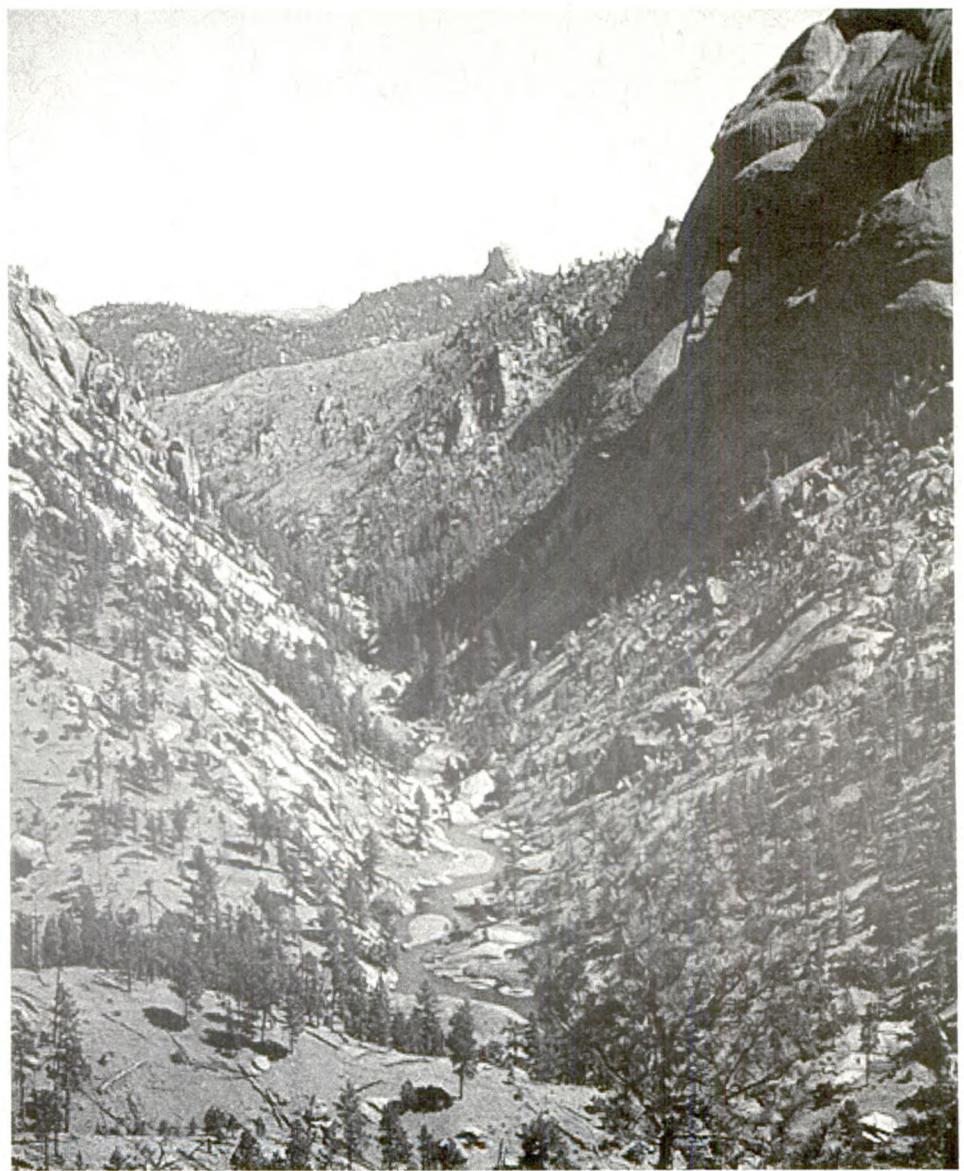


and Scenic River Study Report and Draft Legislative Environmental Impact Statement

North Fork of the South Platte and the South Platte Rivers

Administered by the

Pike and San Isabel National Forests
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Front Cover Photograph: South Platte River above Deckers

**WILD AND SCENIC RIVER STUDY REPORT
AND DRAFT LEGISLATIVE
ENVIRONMENTAL IMPACT STATEMENT
FOR THE NORTH FORK OF THE SOUTH PLATTE
AND THE SOUTH PLATTE RIVERS**

Douglas, Jefferson, Park, and Teller Counties, Colorado

LEAD AGENCY: USDA Forest Service
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**TYPE OF ENVIRONMENTAL
IMPACT STATEMENT:** Legislative

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ABSTRACT

Section 5(d)(1) of the Wild and Scenic Rivers Act, P.L. 90-542 et seq., requires that all Federal agencies consider potential national wild, scenic, and recreational river areas in all planning for the use and development of water and related land resources.

This Wild and Scenic River Study Report and Draft Legislative Environmental Impact Statement documents the results of the analysis of the North Fork of the South Platte River and portions of the South Platte River to determine their suitability for inclusion into the National Wild and Scenic Rivers System. The study area is located in Douglas, Jefferson, Park, and Teller Counties, Colorado. The nine alternatives considered are: A1) No action - no recommendations for designation; A2) No action - with the outstandingly remarkable values protected by means other than designation; B) Recommend designation of all eligible segments of both study rivers, totaling 72.3 miles, at their most protective inventoried classifications; C) Recommend designation of all eligible segments of both study rivers, totaling 72.3 miles, with a portion at a classification less protective than that inventoried; D) Recommend designation of all eligible segments of the South Platte River, totaling 49.4 miles, with a portion at a classification less protective than that inventoried; F) Recommend designation of one segment of the North Fork and four segments of the South Platte River that are entirely on National Forest System land and free of encumbrances at their most protective classifications totaling 26.1 miles; G)

Recommend designation of 26.8 miles of the South Platte River upstream from Cheesman Reservoir at its most protective inventoried classifications; I) Recommend designation of the South Platte upstream from Corral Creek with a "Scenic" classification upstream to Beaver Creek and a "Recreational" classification from Beaver Creek to Elevenmile Dam, totaling 22.4 miles; J) Recommend designating 48.1 miles in segments similar to Alternative D, but excluding the portion of the South Platte from the North Fork confluence to Strontia Springs Reservoir. Classifications are the same as Alternative D, except that in Wildcat Canyon, a 3-mile segment from 1/4 mile downstream of Corral Creek to 1/4 mile upstream from Hackett Gulch is recommended as "Scenic" and not "Wild", and the portion of the South Platte downstream from the North Fork confluence is found not suitable for designation.

The proposed action is either alternative J or Alternative A2. The two alternatives are posed in an either/or sense because, while Alternative J is seen by the Forest Service as providing the greatest assurance of protection of the outstandingly remarkable values and the best balance of competing uses, there may be a viable but unexplored alternative that could achieve an equivalent level of protection of river values through locally-generated agreements and other measures. The either/or framework is employed to make clear that if a viable substitute for designation (Alternative A2) is generated in a reasonable period of time, then the Forest Service will proceed to recommend designation as described in Alternative J in the Final EIS and River Study.

Alternative J recommends designation of 48.1 miles of the South Platte River from its confluence with the North Fork to the special-use fence line below Elevenmile Dam for inclusion in the National Wild and Scenic Rivers System with USDA Forest Service administration. This alternative would designate the South Platte with a classification of "Recreational" from Elevenmile Dam to Beaver Creek (16.4 miles), "Wild" from Beaver Creek to 1/4 mile upstream from Hackett Gulch (2.9 miles), "Scenic" from there to 1/4 mile downstream from Corral Creek (3.0 miles), "Wild" from there to Cheesman Reservoir (4.5 miles), "Wild" from Cheesman Dam to the Wigwam Club property (3.1 miles), and "Recreational" from there to the confluence with the North Fork (18.2 miles). This would provide additional river protection and ensure the protection of the outstandingly remarkable values on the South Platte River while allowing for current water delivery and potential storage on the North Fork. The total area recommended for designation encompasses approximately 15,099 acres, of which, 1,934 acres are in private ownership, 1,631 acres are owned by Denver Water, and 11,534 acres are National Forest System lands administered by the Pike and San Isabel National Forests, Comanche and Cimarron National Grasslands.

Under Alternative A2, none of the study rivers would be recommended for designation, but measures would be developed to ensure the protection of river values. No such measures have been specifically identified or implemented at this time. This alternative will be further evaluated if additional information about the potential of locally-generated measures to protect river values emerges during a reasonable period of time, and if such measures appear to afford a level of protection generally equivalent to Alternative J.

Reviewers should provide the Forest Service with comments during the review period of the draft Wild and Scenic River Study Report and LEIS. This will enable the Forest Service to analyze and respond to the comments at one time and to use information acquired in the preparation of the final Wild and Scenic Rivers Study Report and EIS, thus avoiding undue delay in the decision-making process. Reviewers have an obligation to structure their participation in the National Environmental Policy Act process so that it is meaningful and alerts the agency to the reviewers' position and contentions, *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 553 (1978). Environmental objections that could have been raised at the draft stage may be waived if not raised until after completion of the final EIS, *Wisconsin Heritages, Inc., v. Harris*, 490 F. Supp. 1334, 1338 (E.D. Wis. 1980). Comments on the draft LEIS should be specific and should address the adequacy of the statement of the merits or the alternatives discussed (40 CFR 1503.3).

COMMENTS TO BE RECEIVED BY:

COMMENTS CAN BE SENT TO:

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Table of Contents



TABLE OF CONTENTS

	PAGE
<u>SUMMARY</u>	S-1
<u>Chapter 1. PURPOSE OF AND NEED FOR ACTION</u>	
1.1 <u>Introduction</u>	I-1
1.2 <u>Purpose Of and Need For Action</u>	I-5
1.3 <u>Proposed Action</u>	I-6
1.4 <u>Study Process</u>	I-7
1.5 <u>Public Involvement</u>	I-8
<u>Chapter 2. DESCRIPTION OF AREA (AFFECTED ENVIRONMENT)</u>	
2.1 <u>Description of Area (Affected Environment)</u>	II-1
2.2 <u>Regional Setting</u>	II-1
2.2 <u>River Descriptions</u>	II-1
2.4 <u>Climate</u>	II-1
2.5 <u>Geology and Physiographic Regions</u>	II-1
2.6 <u>Landownership</u>	II-9
2.7 <u>Land Use</u>	II-11
Forest Plan Management Areas	II-11
Other Management Areas and Uses	II-12
Study Segment Descriptions	II-14
2.8 <u>Vegetation/Timber Management</u>	II-18
2.9 <u>Grazing</u>	II-20
2.10 <u>Soils</u> II-23	
2.11 <u>Fisheries</u>	II-24
2.12 <u>Wildlife</u>	II-31
2.13 <u>Recreation</u>	II-37
2.14 <u>Scenery</u>	II-42
2.15 <u>Cultural Resources</u>	II-46
2.16 <u>Hydrology and Water Resources</u>	II-49
2.17 <u>Land Use Controls</u>	II-57
2.18 <u>Socio-Economics</u>	II-61
2.19 <u>Wild and Scenic Rivers in the Region</u>	II-73
<u>Chapter 3. FINDINGS OF ELIGIBILITY AND CLASSIFICATION</u>	
3.1 <u>Summary</u>	III-1
3.2 <u>Segments Studied</u>	III-1
3.3 <u>History</u>	III-1
3.4 <u>Eligibility Determination</u>	III-3
Eligibility	III-4
Free-Flowing Character	III-4
Outstandingly Remarkable Values Analysis	III-5
South Platte River (upstream from Cheesman Reservoir - Segments A, B and C)	III-5
South Platte River (downstream from Cheesman Reservoir-Segments D & E)	III-8
North Fork of the South Platte River - Segments F, G, and H	III-11
Eligibility Determination	III-14
3.5 <u>Classification</u>	III-17

Chapter 4. ALTERNATIVES INCLUDING THE PROPOSED ACTION

4.1	<u>Purpose of this Chapter</u>	IV-1
4.2	<u>Key Study Issues</u>	IV-2
4.3	<u>Description of Alternatives</u>	IV-7
4.4	<u>Alternatives Not Considered in Detail and Eliminated from Further Study</u>	IV-11
4.5	<u>Monitoring</u>	IV-13

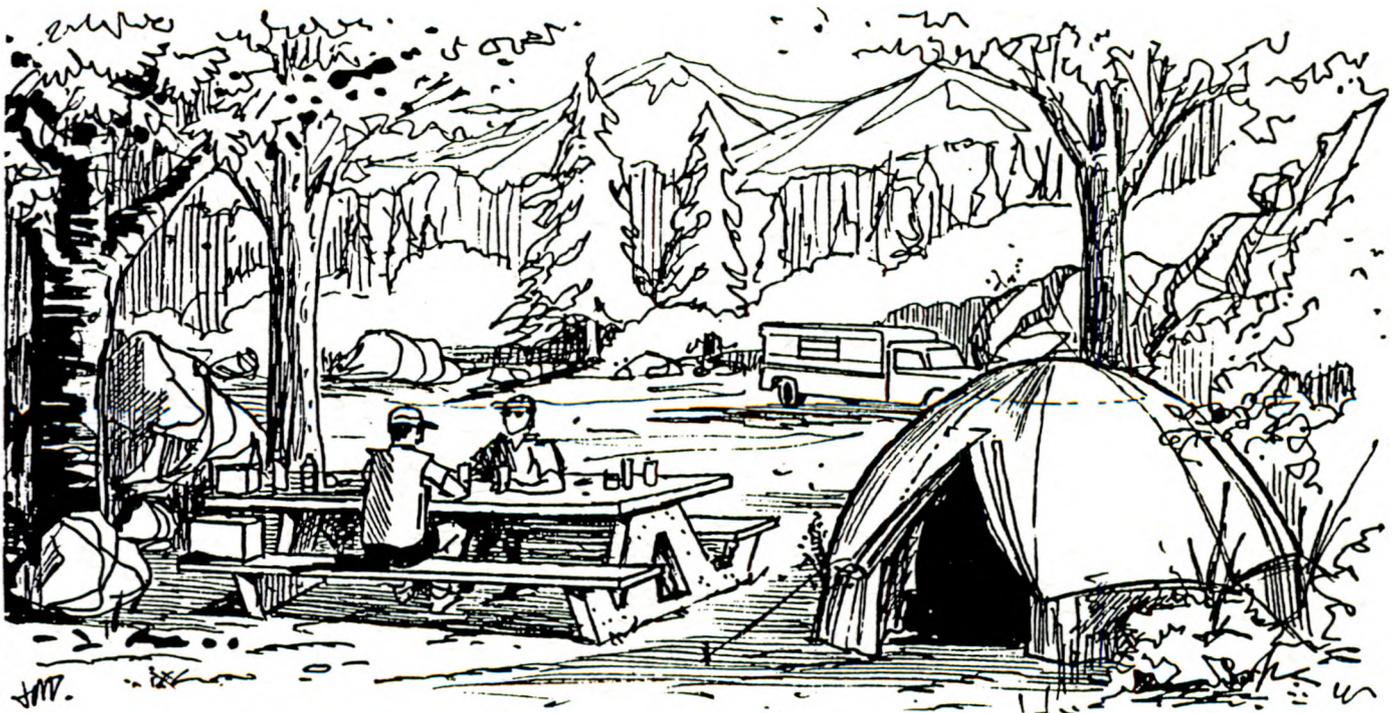
Chapter 5. ENVIRONMENTAL CONSEQUENCES

5.1	<u>Purpose of this Chapter</u>	V-1
5.2	<u>Environmental Components Not Affected Under All Alternatives</u>	V-1
5.3	<u>Fisheries</u>	V-2
5.4	<u>Wildlife</u>	V-7
5.5	<u>Social and Economic Considerations</u>	V-10
5.6	<u>Recreation</u>	V-11
5.7	<u>Scenery</u>	V-13
5.8	<u>Cultural Resources</u>	V-16
5.9	<u>Water Developments (Construction of Dams or Diversions for Water Storage)</u>	V-18
5.10	<u>Landowner Rights</u>	V-21
5.11	<u>Vegetation/Ecological</u>	V-23
5.12	<u>Timber</u>	V-24
5.13	<u>Transportation</u>	V-27
5.14	<u>Minerals</u>	V-29
5.15	<u>Adverse Environmental Affects that Cannot be Avoided</u>	V-29
5.16	<u>Local Short-term Uses of the Environment and the Maintenance and Enhancement of Long-term Productivity</u>	V-29
5.17	<u>Irreversible and Irretrievable Commitments of Resources</u>	V-30
5.18	<u>Cumulative Effects</u>	V-30
5.19	<u>Other Impacts</u>	V-30
5.20	<u>Additional Federal Implementation Costs for Each Alternative</u>	V-30
5.21	<u>Basis for the Proposed Actions</u>	V-30
5.22	<u>Public Review of this Document</u>	V-32

Chapter 6. DISTRIBUTION OF THE REPORT VI-1**Chapter 7. LIST OF PREPARERS** VII-1**APPENDICES**

- A. Eligibility and Classification Determinations
- B. Wild and Scenic Rivers Act
- C. Glossary
- D. References
- E. Section 7 - Water Resource Development Analysis
- F. Water Quality Status and Classification Explanation

Summary



Purpose of This Document

The purpose of this document is to provide a basis for Congress to determine whether to add the North Fork of the South Platte River and the South Platte River between Elevenmile Dam and Strontia Springs Reservoir into the National Wild and Scenic Rivers System. The two rivers, located in Colorado, were identified for study for possible inclusion into the National Wild and Scenic Rivers System through the forest planning process under Section 5(d)(1) of the Wild and Scenic Rivers Act.

This document includes the eligibility and suitability studies for 99.5 miles of river, including the North Fork of the South Platte River and segments of the South Platte River, and makes a recommendation to Congress for the designation or nondesignation into the National Wild and Scenic Rivers System for each.

All of the South Platte River study corridor and most of the North Fork of the South Platte River study corridor lie within the boundaries of the Pike National Forest. Both areas, however, include many private and local government inholdings. The study corridors also contain a 6.6-mile stretch of the North South Platte River which lies just outside the National Forest boundary. This section is mostly in private ownership, but includes some public lands managed by Denver Water, Jefferson County Parks, or the Bureau of Land Management.

This LEIS is the result of a joint effort between the USDA Forest Service and USDI Bureau of Land Management and is required under the National Environmental Policy Act (NEPA) (40 CFR Parts 1500-1508). The regulations developed by the Council on Environmental Quality for implementing the National Environmental Policy Act specify that this study be documented in a Legislative Environmental Impact Statement (LEIS) if a recommendation for designation of at least one segment is made to Congress. A LEIS is a detailed statement similar to an EIS and it accompanies and supports the recommendation to Congress.

Overview of the Wild and Scenic Rivers Act

The National Wild and Scenic Rivers Act was passed in 1968 to balance river development with river protection. Congress declared that:

"certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and...shall be protected for the benefit and enjoyment of present and future generations".

Current Management of the Study Corridor

National Forest System lands in the study corridors are managed in accordance with the Land and Resource Management Plan for the Pike and San Isabel National Forests, Comanche and Cimarron National Grasslands approved in November, 1984. Pending the outcome of the suitability analysis, the segments in the study corridor are included in a special management area under the Forest Plan. The special management area, called the Scenic River Corridor, provides additional protection to preserve the characteristics which made the segments eligible for potential Wild and Scenic designation. This includes protection of free-flow, water quality, and outstandingly remarkable values. The special protection continues until the study river is either added into the system and the interim direction replaced by a River Management Plan, or the river is found not suitable for designation by the Forest Service, USDA, or Congress and the management of the area is released from special protection, reverting back to the Forest Plan management area in which the corridors lie.

These Forest Management Plan areas vary by river section and may have a wide range of management practices which include an emphasis on developed and semiprimitive recreation opportunities, wildlife habitat needs, forage and cover on big game winter ranges, and productive tree stand management.

The 29 acres of land managed by the Bureau of Land Management in the North Fork study corridor are governed by the Northeast Resource Area Management Plan. The Plan identifies the corridor as part of the Evergreen Management Unit. The area is managed primarily to protect a peregrine falcon nesting site and secondarily, for dispersed recreation.

Private lands consist mostly of rural residences. There are several small towns and communities scattered within the study segments. The North

Fork corridor includes 545 developed acres in Pine Valley Ranch, an open space park, owned by Jefferson County. A few ranches with grazing and irrigated hay fields exist in the upper portions of the North Fork study corridor and just north of Lake George.

Next to the Forest Service, Denver Water is the largest landowner. Denver Water's lands are managed for water delivery, dispersed recreation, summer-home rentals, and resource protection to ensure high water quality. Prior to the Two Forks Dam proposal, Denver Water acquired many of the private lands on the South Platte from Deckers to the North Fork confluence and on the North Fork from the confluence to Ferndale because they would potentially be inundated by a reservoir.

Public Involvement

After the stream segments were determined to be potentially eligible for possible inclusion into the Wild and Scenic Rivers System, an extensive public involvement program was developed to make sure that the alternatives would consider the concerns of landowners, local residents, permittees, water developers, water users in the Denver metropolitan area, Douglas, Jefferson, Park, and Teller Counties, the States of Colorado, Kansas, and Nebraska, and others having a stake in how the river is managed. The public involvement program consisted of public open houses, meetings, newsletters, mailings to interested parties, and ongoing informal meetings with any party requesting them.

A Notice of Intent was published in the Federal Register to announce that an EIS and Wild and Scenic River Study Report would be prepared and that written comments and suggestions were invited. In addition, interested parties were mailed a newsletter and invitations to public meetings.

The Forest Service conducted eight public scoping meetings between December 10, 1995, and March 14, 1996. The meetings took place in Bailey, Colorado Springs, Deckers, Denver, and Lake George, Colorado, and were attended by about 400 people. All of these meetings were advertised in local and regional media and by direct mailings. In some re-

mote areas that are perceived to be underserved by media, the meetings were additionally advertised by posters located where community members were likely to see them, such as Post Offices and general stores. Many of these meetings were attended by and reported about in local and regional media (newspapers and radio).

In addition, upon request, the Forest Service conducted about 25 briefings for county governments, water providers, citizen groups, landowners associations, and environmental groups.

Four informational mailings were prepared: the first during the issue identification process to inform people about the study and request comments on the Eligibility and Classification Determinations; the second to let people know about the suitability study, open houses, and to request their issues and concerns; the third to let people know about the second round of open houses, solicit comments on preliminary alternatives, and gather further issues and concerns; and the fourth to announce the availability of the Draft LEIS. These mailings were designed to make sure as many people as possible were informed about the study and how to make their views known.

The mailings reached over 2,600 people, including those owning land in or adjacent to the study river corridors, river users, grazing permittees, businesses related to the river corridor, recreationists, water providers, water users, local, state, and Federal agencies, interested parties, and others who requested to be kept informed of the study's progress.

Periodic briefings were also conducted with Arapahoe, Douglas, Jefferson, Park, and Teller County officials, Denver Water, and US Congressional delegations beginning in November 1995. In response to requests, presentations were also made to each county commission, the Metropolitan Water Providers, Suburban Water Suppliers Wild and Scenic Task Force, several county planning departments, and a variety of organizations in eastern Colorado. Additional issues, concerns, and opinions were made at these meetings and incorporated into the scoping process.



Long Scraggy Peak forms a backdrop for the lower South Platte Study corridor.

The Study Process

Components of a Wild and Scenic River Study

This document contains the three major components of a Wild and Scenic River study: the eligibility study, classification analysis, and the suitability study.

The Eligibility Study. The purpose of the eligibility study is to determine if the rivers meet the minimum requirements for addition to the National System. To be eligible for inclusion in the National Wild and Scenic Rivers System a river must be both free-flowing and possess one or more outstandingly remarkable values. All of the South Platte Study Segments (A, B, C, D, and E) and Segment H of the North Fork (from the upstream boundary of the Berger property near Insmont, to the confluence with the South Platte) meet the minimum eligibility requirements as specified by the Wild and Scenic Rivers Act. They are found to be free-flowing and have at least one outstandingly remarkable value.

Eligible segments possess outstandingly remarkable values as listed below:

Segment A: Scenery, Recreational, Geology, Fisheries. The 8.7-mile section of the South Platte River from Elevenmile Dam (downstream from fence on Denver Water's special-use area) downstream to the southern end of the private lands south of Lake George.

Segment B: Fisheries. The 7.7-mile segment of the South Platte River from the southern end of the private lands south of Lake George to the north end of the private lands near Beaver Creek.

Segment C: Scenery, Geology, Fisheries, Wildlife. The 10.4-mile segment of the South Platte River from the north end of the private lands near Beaver Creek to the high water line of Cheesman Reservoir (upstream of the stream gauge)

Segment D: Recreational, Fisheries, Wildlife. The 3.1-mile section of the South Platte River from below Cheesman Dam downstream to the upstream boundary of the Wigwam Club property

(the NW 1/4 of the NW 1/4, Section 29, Township 9 South, Range 70 West).

Segment E: Recreational, Fisheries, Wildlife. The South Platte River from the upstream boundary of the Wigwam Club property downstream to the high water line of Strontia Springs Reservoir (19.5 miles).

Segment H: Recreation, Wildlife, Cultural. The North Fork of the South Platte River from the upstream boundary of the Berger property near Insmont, downstream to within 1/4 mile of its confluence with the South Platte River (22.9 miles).

The North Fork of the South Platte River, from its headwaters to the upstream boundary of the Berger property near Insmont (Segments F and G), is found either not free-flowing or having no outstandingly remarkable values and is thus, ineligible for inclusion into the National Wild and Scenic Rivers System.

The Classification Analysis. The classification analysis studies patterns of development and naturalness in the corridor of eligible rivers to determine whether the river would be classified as "Wild," "Scenic," or "Recreational," if the rivers are added to the National System. The rivers' inventoried classification are listed in Chapter III, Chart III-4.



Rock outcrops dominate the lower North Fork study corridor.

The Suitability Study. The suitability study is designed to determine whether eligible rivers are appropriate additions to the National System. This is done by comparing alternative ways of managing the river corridors, including at least one alternative involving Federal designation of all eligible river segments and one alternative involving non-

designation. Suitability considerations include the environmental consequences of designation and the manageability of the river if it is designated, including costs and the willingness of local and state governments to participate in river corridor management.

Key Study Issues

Several key issues guided the development and evaluation of the North Fork of the South Platte and the South Platte River Study alternatives. All of these issues were identified through the public involvement process as well as by an interdisciplinary team of Bureau of Land Management and Forest Service resource specialists.

The key study issues are wildlife, fisheries, recreation, social and economic considerations, scenery and geology, cultural resources (including archaeological resources), water developments (construction of dams or diversions for water storage), and landowner rights. See Chapter IV for a discussion of the issues.

Alternatives Considered

Alternative A1

This is the "no action" or "no change" alternative. It describes the existing situation and serves as a baseline to evaluate the other alternatives. Under this alternative, current management of the river corridors would continue under the Forest Plan and none of the study rivers would be recommended for addition to the National Wild and Scenic Rivers System or for any other special Federal designation.

Adoption of this alternative would mean that no new programs, protection measures, or designations would be implemented. There would be no further efforts to coordinate management activities in the corridors beyond what currently exists. The corridor boundaries for Alternative A are shown in Map IV-1.

Alternative A2 (Proposed Action)

This is the "no action with OR values protected" alternative. It is an outgrowth of a concept originally posed as Alternative H during scoping, and it responds to an expression of interest raised by the local community to find a local solution to the challenge of protecting the rivers' OR values. Under this alternative, both rivers' OR values are protected by measures other than adding the rivers to the National Wild and Scenic Rivers System. In other words, this alternative would be a substitute for designation. It would involve establishment of locally-generated agreements, ordinances, legisla-

tion, and other measures as needed to accomplish this end. To be viable, it would need to be the product of a broad-based effort incorporating the many interests that the Forest Service has taken into consideration in developing the other alternatives. The kinds of measures that might be employed to achieve protection of OR values could include:

- Formation of a River Management Board to provide recommendations on river management.
- Flow agreements between responsible parties to ensure protection of outstandingly remarkable values.
- Development of new partnerships and formalization of existing cooperative agreements to improve resource protection.
- County zoning to protect current recreation use and provide resource protection.
- Amendment of the Forest Plan (USFS), Northeast Planning Area Plan (BLM), and Royal Gorge Plan (BLM), where necessary, to strive to provide better protection for the outstandingly remarkable values and related resources in the study corridor. For National Forest System lands, this could include adding special management area status in the study corridor similar to what exists in Elevenmile Canyon.
- Purchase of scenic easements, exchange agreements, or water rights, and rights-of-way from willing sellers, where needed, to better protect the area.
- Purchase or exchange for properties in the study corridor, from willing sellers, to ensure better resource protection.
- County or other local government acquisition of additional properties for park or open space from willing sellers in the study corridor.

This alternative should attempt to emulate Alternative B to the extent feasible. Implementation of this alternative would have to occur in stages: 1) a locally generated package of measures protecting the rivers' values would have to be put in place--i.e., agreements signed, laws and ordinances passed, etc., 2) the Forest Service would accordingly decide that, because protection of OR values is satisfactori-

ly achieved by this package of measures, it would not be necessary to find the study rivers suitable for designation, and 3) the rivers would consequently not be recommended for addition to the National Wild and Scenic Rivers System and they would be released from further protection under the Wild and Scenic Rivers Act.

Alternative A2 has not been developed in detail and its potential viability is speculative at this time. It must be described more fully and additional analysis conducted to permit evaluation for viability. Important questions need to be answered regarding how river values could be protected and whether those measures would prove reliable over the long run. Meaningful public involvement by interested parties will be necessary to achieve a proper local solution. Then the measures that have been identified will need to be implemented. An additional phase of work would therefore be needed to further develop this alternative and determine how well it might serve as a substitute for designation under the Wild and Scenic Rivers Act.

Alternative B

Alternative B finds all eligible river segments suitable and recommends them for designation at their most protective classifications. The goal of this alternative is to add all eligible river segments to the Wild and Scenic Rivers System, maximizing protection and enhancement of OR values, free-flow, and water quality, and maintaining system integrity. This alternative was developed as a result of concerns about how to ensure the best protection of the river's natural environment and OR values. In this alternative, all of the eligible segments of the two study rivers, totaling 72.3 miles, would be recommended for addition to the National Wild and Scenic Rivers System. Classification would be in accordance with potential classifications as listed in Chart IV-2 and would total 13.5 miles "Wild", 4.9 miles "Scenic", and 53.9 miles "Recreational".

Alternative C

Alternative C, like Alternative B, finds all eligible river segments suitable and recommends them for designation. All segments are recommended at their most protective classification, except that the classification of the 10.4-mile segment of the South Platte

River from Cheesman Reservoir to Beaver Creek is changed from "Wild" to "Scenic". The goal of this alternative is to add all eligible river segments to the Wild and Scenic Rivers System, provide protection and enhancement of the OR values, maintain system integrity, and follow current Forest Plan direction. This alternative was developed as a result of concerns to ensure the best protection of the river's natural environment and OR values while allowing a wider range of natural resource management including continued OHV use between Beaver Creek and Cheesman Reservoir. In this alternative, all of the eligible segments of the two study rivers, totaling 72.3 miles, would be recommended for addition to the National Wild and Scenic Rivers System. Classification would be in accordance with potential classifications as listed in Chart IV-3 and would total 3.1 miles "Wild", 15.3 miles "Scenic", and 53.9 miles "Recreational".

Alternative D

Alternative D finds all eligible South Platte River segments suitable and recommends them for designation at their most protective classification, but finds the North Fork unsuitable for designation. The goal of this alternative is to add all eligible South Platte River segments to the Wild and Scenic Rivers System, maximizing protection and enhancement of the OR values, and maintaining system integrity. This alternative was developed as a result of concerns to ensure the best protection of the South Platte River's natural environment and OR values. The chief assumptions of this alternative are that: 1) although there are also outstandingly remarkable values on the North Fork, they are not as significant as those on the South Platte; 2) there are current water operations associated with the Roberts Tunnel fluctuations that might be affected by designation; 3) there is already one designated Wild and Scenic River in this physiographic province (Cache la Poudre); and 4) only the highest quality rivers should be recommended for designation.

In this alternative, all eligible segments on the South Platte River, totaling 49.4 miles, would be recommended for addition to the National Wild and Scenic Rivers System. Classification would be in accordance with potential classifications as listed in Chart IV-4 and would total 13.5 miles "Wild" and 35.9 miles "Recreational".

Alternative F

Alternative F recommends the designation of one small segment of the North Fork and four small segments of the South Platte that are entirely on National Forest System land and have no encumbrances. The goal of this alternative is to protect the OR values while minimizing the potential and/or perceived impacts associated with private land and Denver Water's 1931 USDI ROW for a reservoir from the confluence of the North Fork and South Platte to Deckers.

In this alternative, five segments of the two rivers, totaling 26.2 miles, would be recommended for addition to the National Wild and Scenic Rivers System. One segment, entirely on National Forest System lands between Estabrook and Crossons on the North Fork, would be recommended with a "Scenic" classification. Segments on the South Platte River entirely on National Forest System lands, between Elevenmile Dam and Lake George, and between Tappan Gulch and Vermillion Creek would be recommended with a "Recreational" classification, and, between Beaver Creek and Cheesman Reservoir and between Cheesman Dam and the Wigwam property would be recommended with a "Wild" classification. Classification would be in accordance with potential classifications as listed in Chart IV-5 and would total 13.5 miles "Wild", 2.6 miles "Scenic", and 10.1 miles "Recreational".

Alternative G

Alternative G finds all eligible segments of the South Platte upstream from the gauging station above Cheesman Reservoir (26.8 miles) suitable and recommends them for designation at their most protective classification. This alternative finds the North Fork unsuitable for designation. The goal of this alternative is to provide protection for some of the OR values while lessening the potential and/or perceived impacts associated with private land and Denver Water's 1931 USDI ROW for a reservoir from the confluence of the North Fork and South Platte to Deckers. It also addresses the concerns of continued OHV use between Beaver Creek and Cheesman Reservoir.

The chief assumptions of this alternative are that: 1) although there are also outstandingly remarkable values on the North Fork, these are not as significant as those on the South Platte; 2) there are cur-

rent water operations associated with the Roberts Tunnel fluctuations that might be affected by designation; 3) there is already one designated Wild and Scenic River in this physiographic province (Cache la Poudre); and 4) there are potential storage sites downstream from Cheesman Reservoir that would be foreclosed by designation.

Classification would be in accordance with potential classifications as listed in Chart IV-6 and would total 10.4 miles "Wild" and 16.4 miles "Recreational".

Alternative I

Alternative I recommends the designation of the 6.0-mile stretch of the South Platte from Corral Creek to Beaver Creek with a "Scenic" classification and the 16.4-mile stretch of the South Platte from Beaver Creek to Elevenmile Dam with a "Recreational" classification. This alternative finds the North Fork unsuitable for designation. The goal of this alternative is similar to Alternative G, to protect and enhance OR values upstream from Corral Creek while lessening the potential and/or perceived impacts associated with private land and Denver Water's 1931 USDI ROW for a reservoir from the confluence of the North Fork and South Platte to Deckers. This alternative also addresses the protection and enhancement of OR values upstream from Corral Creek while addressing concerns of additional potential water storage (especially from a potential Cheesman expansion), continued water delivery, current water operations, and channel maintenance. It also addresses the concerns of continued OHV use between Beaver Creek and Cheesman Reservoir.

The goal of this alternative is to add only those South Platte River segments to the Wild and Scenic Rivers System that have the least potential impacts on water delivery and potential storage. The chief assumptions of this alternative are that: 1) although there are also outstandingly remarkable values on the North Fork, these are not as significant as those on the South Platte; 2) there are current water operations associated with the Roberts Tunnel fluctuations that might be affected by designation; 3) there is already one designated Wild and Scenic River in this physiographic province (Cache la Poudre); and 4) there are potential storage sites downstream from Corral Creek that would be foreclosed by designation.

Classification would be in accordance with potential classifications as listed in Chart IV-7 and would total 6.0 miles "Scenic", and 16.4 miles "Recreational".

Alternative J (Proposed Action)

Alternative J finds portions of the South Platte River from the confluence of the North Fork to Elevenmile Dam suitable and recommends them for designation into the National Wild and Scenic Rivers System. Recommended classifications are: "Recreational" from the North Fork confluence to the Wigwam Club property, "Wild" from the Wigwam Club property to Cheesman Dam, "Wild" from Cheesman Reservoir to 1/4 mile downstream from Corral Creek, "Scenic" from 1/4 mile downstream from Corral Creek to 1/4 mile upstream from Hackett Gulch, "Wild" from 1/4 mile upstream from Hackett Gulch to the Beaver Creek confluence, and "Recreational" from the Beaver Creek confluence to Elevenmile Dam. The North Fork is found unsuitable for designation.

The goal of this alternative is to recommend the best South Platte River study segments for addition to the Wild and Scenic Rivers System, provide protection and enhancement of OR values, and maintain system integrity. This alternative was developed to balance the concerns of water delivery and storage with the protection of the area's natural environment and OR values while still meeting present uses. The chief assumptions of this alternative are that: 1) although there are also outstandingly remarkable values on the North Fork, these are not as significant as those on the South Platte; 2) there are current water operations associated with the Roberts Tunnel fluctuations that might be affected by designation; 3) there is already one designated Wild and Scenic River in this physiographic province (Cache la Poudre); 4) only the highest quality rivers should be recommended for designation; 5) the South Platte River between its confluence with the North Fork and Strontia Springs Reservoir does not have the outstandingly remarkable values that are as remarkable as the rest of the South Platte to warrant potential designation; and 6) there are important motorized recreation opportunities in portions of Wildcat Canyon that can be maintained without impact to the area's OR values.

In this alternative, all eligible segments on the South Platte River, totaling 48.1 miles, would be recommended for addition to the National Wild and Scenic

Rivers System. Classification would be in accordance with potential classifications as listed in Chart IV-8 and would total 10.5 miles "Wild", 3.0 miles "Scenic", and 34.6 miles "Recreational".

Basis for the Proposed Actions

This Draft Legislative Environmental Impact Statement (LEIS) identifies two proposed actions based upon information contained in the study, and consideration of issues identified by the public and the ID Team. These proposed actions will be re-evaluated depending on comments received. If more viable Alternative A2 emerges which appears worthy of detailed evaluation, a Supplemental DEIS may be prepared and an additional comment period offered prior to preparation of the Final EIS. The Secretary of Agriculture makes the decision to release the Final EIS and identify the preferred alternative after reviewing the Forest Service's recommendation.

The Forest Service has identified the two proposed actions as an either/or pair. The proposed action is to implement either Alternative J or Alternative A2. These alternatives are described briefly below:

Alternative J - In this alternative, 48.1 miles of the South Platte River from its confluence with the North Fork to the special-use fence line below Elevenmile Dam meet both the eligibility and suitability requirements for inclusion in the National Wild and Scenic Rivers System. It recommends that these river segments be added to the National System with USDA Forest Service administration and with the classifications as describes in Chart I-3 and Map I-9.

Alternative A2 - In this alternative, measures developed and implemented by non-Federal parties protect river values and there is no recommendation for Wild and Scenic River designation. At this time, however, such measures have not been specifically identified or implemented. Further development of this alternative is required prior to additional consideration by the Forest Service. Alternative A2 would require that mechanisms be put in place by non-Federal entities that would afford a level of protection to river values in the eligible segments generally equivalent to Alternative J before the Forest Service could conclude that its obligation to protect the rivers' OR

values under the Wild and Scenic Rivers Act could be set aside (see Map I-8).

The above alternatives are posed in an either/or sense because, while Alternative J is seen by the Forest Service as providing the best balance of competing uses, there may be a viable but unexplored alternative that could achieve protection through locally-generated measures. The either/or framework is employed to make clear that if a viable Alternative A2 cannot be devised and implemented in a reasonable period of time, then the Forest Service will proceed to recommend designation as described in Alternative J.

Alternatives A2 and J may be of different scope. In identifying Alternative J as the proposed designation alternative, the Forest Service weighed the impacts of the various alternatives and concluded that Alternative J struck the best balance between competing uses in protecting river values. If Alternative A2 is further developed, it may not necessarily be restricted to the river segments recommended for designation in Alternative J. Rather, it should consider the full range of values in all eligible segments (see Alternative B) and look at balancing competing uses through means other than Congressional designation. An outcome different from Alternative J may emerge. The Forest Service will then have to evaluate that alternative in terms of its success in protecting river values and garnering support from various participating interests and the public, and then decide if that alternative is preferred over Alternative J.

Alternative J was identified over all other designation alternatives and over no-action (Alternative A1) as the proposed alternative because:

- The South Platte above the North Fork confluence has several characteristics that make the river a worthy addition to the National System: 1) the area is in close proximity to the Denver/Colorado Springs metropolitan areas and contains a variety of river-related recreation opportunities including camping, picnicking, and sightseeing that draw people from all over the region; 2) the South Platte contains some of the best wild trout populations and habitat in the State, and is known nationally if not internationally for its fishery; 3) the South Platte study corridor and surrounding sideslopes contain some of the habitat of the Pawnee montane skipper butterfly which, along with populations on the North Fork, is

found nowhere else in the world; and 4) the Wildlife, Fisheries, and Geologic outstandingly remarkable values are not represented by other established Wild and Scenic Rivers in the state.

- It ensures the protection and the enhancement of the South Platte's outstandingly remarkable values, other river-related resources, and the river's free-flowing condition.
- It provides a reasonable balance between strong proponents for the designation of all segments and strong opponents of any designation at all.
- It recommends for designation that section of the study area with the highest quality, variety, and quantity of outstandingly remarkable values.
- It best complements the Forest Service's current river-related recreation emphasis in the area.
- It has very few possible conflicts with existing uses.
- It would ensure the protection of the South Platte's current fisheries population and habitat, the South Platte's current mix of dispersed and developed recreation use, and the semi-primitive motorized recreation experience above Cheesman Reservoir as long as the outstandingly remarkable values were protected and enhanced.

Alternative A2, although not developed in detail in the DEIS, may have the potential to accomplish protection similar to Alternative J without Wild and Scenic River designation and the additional costs and bureaucracy associated with administration of the designated corridor by a Federal agency.

Alternative A1 was not chosen as a proposed action because the outstandingly remarkable values and other issues that are dependent upon a free-flowing river on the South Platte were thought so important that some measure of protection is warranted. These values include fish, wildlife, recreation, scenery, geology, and cultural resources. It was also not chosen since the South Platte was felt to be a worthy addition to the National Wild and Scenic Rivers System.

Alternatives B and C were not chosen because: 1) the North Fork was not felt a worthy addition to the

National Wild and Scenic Rivers System; and, 2) designation of portions of the North Fork corridor or of the South Platte corridor below the confluence with the North Fork could lead to some impacts on Denver Water's current delivery system on the North Fork. Denver Water's water rights and the Robert's Tunnel capacity exceed the river's capability to carry the potential flows. Intensive channel improvements, relocation, channelization, riprap, check dam, and other maintenance work is required to protect the private property in the area. Although the trend is toward Denver Water acquiring resource easements to minimize potential property damage, the area still requires constant maintenance which could be further impacted by Wild and Scenic River designation. Designation of the North Fork under these alternatives would also have included areas outside the National Forest boundaries, the largest proportions of private lands in the corridor, and the areas where Wild and Scenic River designation had the most local opposition. In addition, Alternative B would have prohibited the existing motorized use on the Longwater Gulch and Corral Creek four-wheel drive roads where extensive cooperative efforts have been under way with motorized recreation groups to mitigate resource impacts.

Although Alternative F addressed all the private concerns (no private land is included) it was not chosen as one of the proposed actions since it: 1) represented a fragmented approach to protecting the outstandingly remarkable values and other issues that were dependent upon a free-flowing river on the South Platte; 2) results in the same effects on the North Fork delivery system as Alternatives B and C; 3) the 2.6-mile North Fork section was not felt a worthy addition to the National System; and, 4) the alternative received little or no support.

Alternatives G and I were not chosen because they: 1) failed to protect the area of the South Platte that contained the best outstandingly remarkable values in the study area (fisheries and recreation); and, 2) received little or no support.

Alternatives J and D are similar and provide many of the same effects. Alternative J was chosen over Alternative D as a proposed action because designation of the South Platte below the North Fork confluence under Alternative D would include the lower 1/4 mile of the North Fork which may result in many of the same restrictions on the North Fork Water delivery system as Alternatives A, C, and F. In addition, Alternative D would have prohibited the existing motorized use on the Longwater Gulch and Corral Creek four-wheel drive roads where extensive cooperative efforts have been under way with motorized recreation groups to mitigate resource impacts.

Public Review of This Document

After the public comment period, this Draft LEIS will be revised. If the revisions, including the further development of Alternative A2, provide significant new information, a Supplemental DEIS may be prepared and an additional comment period offered. If the Forest Supervisor chooses to recommend any portions of the river for designation, the Final LEIS will be forwarded through the Secretary of Agriculture to the President. The President then submits the document to Congress for approval. If Congress designates any portions of the river as components of the National Wild and Scenic Rivers System, a management plan would be prepared by the Forest Service. The plan would include detailed procedures for implementing the preferred alternative, including developing final boundaries for the river corridor(s).

Chapter I

Purpose and Need for Action



1.1 Introduction

Selection

The eligibility and suitability of 99.5 miles of the North Fork of the South Platte River and segments of the South Platte River in Colorado, are being studied to determine if they should be recommended for addition to the National Wild and Scenic Rivers System. All of the South Platte River study corridor and most of the North Fork of the South Platte River study corridor lie within the boundaries of the Pike National Forest. Both areas, however, include many private and local government inholdings. The study corridors also contain a 6.6-mile stretch of the North Fork of the South Platte River which lies just outside the National Forest boundary. This section is mostly in private ownership, but includes some public lands managed by Denver Water, Jefferson County Parks, and the Bureau of Land Management.

Because the rivers were identified by the Forest Service for study, the eligible segments are recognized as study rivers under the provisions found in Section 5(d)(1) of the Wild and Scenic Rivers Act of 1968 (P.L. 90-542 *et seq*). This section of the Act requires that all Federal agencies consider potential national wild, scenic, and recreational river areas in all planning for the use and development of water and related land resources. Forest Service Manual (FSM) 1924 states "consideration of the potential wild and scenic rivers is an inherent part of the ongoing land and resource management planning process."

If any portions of the study rivers are found *eligible* and *suitable*, this document would be forwarded to Congress who would determine if the recommended river(s) or river segment(s) should be added to the National System.

Timing

In 1984 the Land and Resource Management Plan for the Pike and San Isabel National Forests, Comanche and Cimarron National Grasslands (Forest Plan) found that a 26.8-mile segment of the South Platte River from Elevenmile Dam to the high water line of Cheesman Reservoir was eligible for potential addition to the Wild and Scenic Rivers System. At that time, the South Platte from Cheesman Reservoir downstream to its confluence with the North Fork and the lower North Fork, below Bailey, were being evaluated for potential reservoir development by the U.S. Army Corps of Engineers in the Two Forks Environmental Impact Statement (EIS).

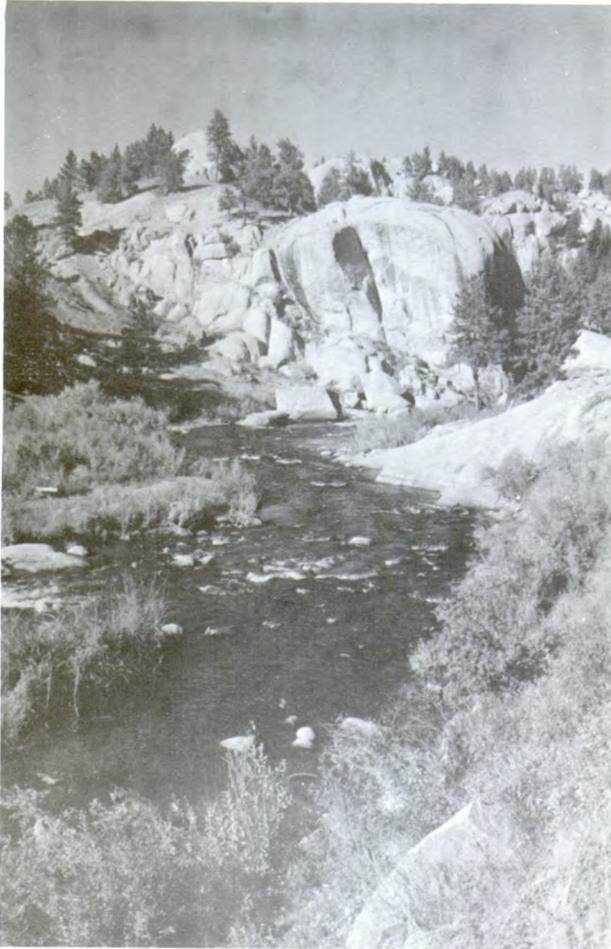
The EIS dealt with the Two Forks Dam and reservoir proposal, a water supply project proposed by the Denver Board of Water Commissioners and the Metropolitan Water Providers to help meet the water supply needs of the Denver metropolitan area. The EIS was finished in March 1988 and recommended construction of a dam on the South Platte River, approximately one mile downstream from its confluence with the North Fork. The proposed reservoir would have a surface area of about 7,300 acres and would provide a storage capacity of 1,100,000 acre feet. After several years of meetings and review, the Environmental Protection Agency issued a Recommendation Determination to prohibit construction of the Two Forks Dam and reservoir pursuant to Section 404 (c) of the Clean Water Act. EPA's decision was appealed by eight suburban water districts. On June 5, 1996, U.S. District Judge Richard Matsch dismissed the appeal. The judge ruled that EPA had not "acted capriciously and arbitrarily" in blocking construction of the dam because of its impact on the environment. The judge also ruled that the eight suburban water districts did not have legal standing to proceed with the case without support of the Denver Water Board.

The Forest Service has no position on the Two Forks Dam and reservoir proposal or subsequent legal decisions. However, its interpretation of Section 5(d)(1) of the Wild and Scenic Rivers Act is that a wild and scenic rivers assessment would have to occur prior to any decision that would allow construction of a containment structure. In other words, the Metropolitan Denver Water Supply EIS was not sufficient to meet the intent of the Wild and Scenic Rivers Act defined above.

In 1991, Congress appropriated \$75,000 for the Forest Service to study the recreation potential of the South Platte River from Elevenmile Dam to the high water line of Strontia Springs Reservoir. The Forest Service felt that this could be best accomplished as a Wild and Scenic River study and included the entire North Fork. This document is the result.

The Study Area

The river segments identified for study total 99.5 miles and are located in Douglas, Jefferson, Park, and Teller counties, in Colorado. The study river corridors are mostly National Forest System lands administered by the Pike and San Isabel National Forests, Comanche and Cimarron National Grasslands, but also include private inholdings and lands managed by the Bureau of Land Management, Denver Water, and Jefferson County.



Granite outcrops along the South Platte River

The Forest Service completed an eligibility study of the 26.8-mile segment of the South Platte River from Elevenmile Dam to the backwaters of Cheesman Reservoir in 1984 as part of the Forest Plan. The Plan found the entire 26.8-mile segment eligible for potential addition to the National Wild and Scenic Rivers System. In 1992, the Forest Service commenced an eligibility study for the entire North Fork of the South Platte River (50.1 miles) and the South Platte River from Cheesman Dam to the backwaters of Strontia Springs Reservoir (22.6 miles). The preliminary eligibility study released in August 1995 and completed in June 1996, found that all 22.6 miles of the South Platte Study River and the North Fork of the South Platte downstream from the Berger property near Insmont (22.9 miles) were eligible

for potential addition to the Wild and Scenic Rivers System. It also found that the North Fork, upstream of Insmont, was not eligible for further consideration. This is explained in detail in Appendix A and summarized in Chapter III. A list of the segments examined in the 1984 and 1996 eligibility studies are listed in Chart I-1. When combining the two eligibility studies, a total of 72.3 miles, 22.9 miles of the North Fork and 49.4 miles of the South Platte River, were found eligible for potential addition to the Wild and Scenic Rivers System. Other than the eligibility discussion in Chapter III, the remainder of this document deals with the suitability of these 72.3 miles of eligible streams for potential addition to the National Wild and Scenic Rivers System. These segments are listed in Chart I-2. For the purposes of this analysis, the Forest Service has established a study area 1/4 mile from the ordinary high water mark on either side of the study rivers.

Overview of the Wild and Scenic Rivers Act

The National Wild and Scenic Rivers Act was passed in 1968 to balance river development with river protection. Rivers are designated as Wild and Scenic Rivers to keep selected rivers, or river segments, in a free-flowing condition and to fulfill vital national conservation purposes. Congress declared that:

"certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and ... shall be protected for the benefit and enjoyment of present and future generations."

There are about 10,734 miles of river on 150 river segments in the National Wild and Scenic Rivers System. In contrast to Wilderness, which is managed to maintain a pristine environment, rivers in the System are managed to maintain the character of the river in its current state and protect and enhance specific resource values. The Act encourages a cooperative relationship between the agencies and landowners along designated rivers. Existing uses may continue, including grazing, timber harvest, and recreation. New uses must be consistent with the Act. Water projects, including dams and water diversions, are specifically prohibited.

**CHART I-1
LIST OF STUDY SEGMENTS
CONSIDERED IN THE 1984 AND 1996 ELIGIBILITY STUDIES**

Segment	Length (miles)	Description
A&B - South Platte River	16.4	From Elevenmile Dam (downstream from fence on Denver Water's special-use area) downstream to Beaver Creek (northernmost boundary of private land).
C - South Platte River	10.4	From Beaver Creek (northernmost boundary of private land) downstream to the high water line of Cheesman Reservoir (upstream of the stream gauge).
D - South Platte River	3.1	From Cheesman Dam (downstream of the stream gauge weir) downstream to the the Wigwam Club property (southern end).
E - South Platte River	19.5	From the Wigwam Club property (southern end) downstream to the high water line of Strontia Springs Reservoir (6029 foot contour).
F - North Fork of the South Platte River	9.7	From its headwaters downstream to Kenosha Gulch, near Webster (also known as the Hall Valley).
G - North Fork of the South Platte River	17.5	From Kenosha Gulch, near Webster, downstream to Insmont (upstream boundary of Berger property).
H1 - North Fork of the South Platte River	1.5	From Insmont (upstream boundary of Berger property) downstream to Estabrook (downstream side of old stone house).
H2 - North Fork of the South Platte River	4.9	From Estabrook (downstream side of old stone house) downstream to Cliffdale (the Section line between Sections 29 and 30 east of Cliffdale).
H3 - North Fork of the South Platte River	16.5	From Cliffdale (the section line between Sections 29 and 30 east of Cliffdale) downstream to within 1/4 mile of the confluence with the South Platte River.
TOTAL	99.5	

**CHART I-2
LIST OF STUDY SEGMENTS
FOUND ELIGIBLE AND
INCLUDED IN SUITABILITY STUDY**

Segment	Length (miles)	Description
A&B - South Platte River	16.4	From Elevenmile Dam (downstream from fence on Denver Water's special-use area) downstream to Beaver Creek (northernmost boundary of private land).
C - South Platte River	10.4	From Beaver Creek (northernmost boundary of private land) downstream to the high water line of Cheesman Reservoir (upstream of the stream gauge).
D - South Platte River	3.1	From Cheesman Dam (downstream of the stream gauge weir) downstream to the the Wigwam Club property (southern end).
E - South Platte River	19.5	From the Wigwam Club property (southern end) downstream to the high water line of Strontia Springs Reservoir (6029 foot contour).
H1 - North Fork of the South Platte River	1.5	From Insmont (western boundary of the Berger property), downstream to Estabrook (downstream side of the old stone house).
H2 - North Fork of the South Platte River	4.9	From Estabrook (downstream side of the old stone house) downstream to Cliffdale (the section line between Sections 29 and 30 east of Cliffdale).
H3 - North Fork of the South Platte River	16.5	From Cliffdale (the section line between Sections 29 and 30 east of Cliffdale) downstream to within 1/4 mile of the confluence with the South Platte River.
TOTAL	72.3	

1.2 Purpose Of and Need For Action

The purpose of this document is to provide a basis for Congress to determine whether to add any portions of these two rivers into the National Wild and Scenic Rivers System. It does this with a three step process which includes: 1) determining what river segments are eligible for potential addition to the Wild and Scenic Rivers System; 2) classifying these segments as to their most protective potential classifications as "Wild", "Scenic", or "Recreational" rivers; and 3) evaluating the eligible segments for their suitability for potential addition to the Wild and Scenic Rivers System. Accordingly, a detailed analysis of potential future water resource developments and their effects is beyond the scope of this study.

These rivers were identified for study for possible inclusion into the National Wild and Scenic Rivers System through the forest planning process under Section 5(d)(1) of the Wild and Scenic Rivers Act.

Maps I-1 through I-4 show the study area vicinity, river segments studied for eligibility, and the potential classifications and land status of the eligible portions of the two study rivers analyzed in the suitability portion of this document.

This Legislative Environmental Impact Statement (LEIS) is the result of a joint effort between the USDA Forest Service and USDI Bureau of Land Management and is required under the National Environmental Policy Act (NEPA) (40 CFR Parts 1500-1508). The regulations developed by the Council on Environmental Quality for implementing the National Environmental Policy Act specify that this study be documented in a Legislative Environmental Impact Statement (LEIS) if a recommendation for designation of at least one segment is made to Congress. A LEIS is a detailed statement similar to an EIS and it accompanies and supports the recommendation to Congress.



The study corridors receive heavy, year-round, recreation use from the Denver area for sightseeing, fishing, and camping.

1.3 Proposed Action

The Forest Service has identified two proposed actions as an either/or pair. The proposed action is either Alternative J or Alternative A2. These alternatives are described briefly below:

Alternative J - Under this alternative, 48.1 miles of the South Platte River from its confluence with the North Fork to the special-use fence line below Elevenmile Dam meet both the eligibility and suitability requirements for inclusion in the National Wild and Scenic Rivers System. It recommends that these river segments be added to the National System with USDA Forest Service administration and with the classifications as describes in Chart I-3 and Maps I-9 and I-10. The proposed action along with the no action alternative serve as the base from which the other alternatives can be compared.

Alternative A2 - Under this alternative, measures are developed by non-federal parties to protect river values without recommending Wild and Scenic River designation. At this time, however, no such measures have been specifically identified or implemented. Further analysis of this alternative by the Forest Service may occur if mechanisms exist that would afford a level of protection to river values generally equivalent to Alternative J. Such substitute protection mechanisms would have to be fully developed before the Forest Service could conclude that its obligation to protect the rivers' OR values under the Wild and Scenic Rivers Act could be set aside. (See Map I-8).

The proposed actions are posed in an either/or sense because, while Alternative J is seen by the

Forest Service as providing the greatest assurance of protection of the outstandingly remarkable values and the best balance of competing uses, there may be a viable but unexplored alternative that could achieve an equivalent level of protection of river values through locally-generated agreements and other measures. The either/or framework is employed to make clear that if information and comments that would allow the full development and evaluation of Alternative A2 are not generated in a reasonable period of time, then the Forest Service will proceed to recommend designation as described in Alternative J.

A fully developed Alternative A2 may be of different scope than Alternative J. In identifying Alternative J as the proposed designation alternative, the Forest Service weighed the impacts of the various alternatives and concluded that Alternative J struck the best balance between competing uses in protecting river values. In developing Alternative A2 from potential new additional information and comments from the public and interested parties, Alternative A2 should consider the full range of values in all eligible segments (see Alternative B) and the need to balance competing uses. An outcome different from Alternative J may emerge. If significant new information emerges, a Supplemental DEIS may be released to allow public comment on a more detailed Alternative A2. The Forest Service will then evaluate this additional detailed alternative in terms of its potential to protect the outstandingly remarkable values of the river and its ability to achieve the support of interested parties to determine if that alternative is a reasonable substitute for Alternative J. If Alternative A2 is determined to be a viable means of providing protection to river values, then the Forest Service could choose to recommend no designation.

**CHART I-3
SEGMENTS RECOMMENDED
FOR DESIGNATION
UNDER ALTERNATIVE J**

Segment	Length (miles)	Classification	Description
A&B - South Platte	16.4	Recreational	From Elevenmile Dam (downstream from fence on Denver Water's special-use area) downstream to Beaver Creek (northernmost boundary of private land).
C - South Platte	2.9	Wild	From Beaver Creek (northernmost boundary of private land) downstream to 1/4 mile upstream from Hackett Gulch.
C - South Platte	3.0	Scenic	From 1/4 mile upstream from Hackett Gulch downstream to 1/4 mile downstream of Corral Creek.
C - South Platte	4.5	Wild	From 1/4 mile downstream of Corral Creek to water line of Cheesman Reservoir (upstream of the stream gauge).
D - South Platte	3.1	Wild	From Cheesman Dam (downstream of the stream gauge weir) downstream to the the Wigwam Club property (southern end).
E - South Platte	18.2	Recreational	From the Wigwam Club property downstream to confluence with the North Fork (Section line between Sections 25 and 36, T. 7 S., R. 70 W.)
TOTAL	48.1		

1.4 Study Process

The Wild and Scenic Rivers Act and Federal guidelines (Federal Register 47 FR 39454, September 7, 1982) specify the process used to study rivers for possible inclusion in the National Wild and Scenic Rivers System. This process has three major components: the eligibility study, classification analysis, and the suitability study.

The purpose of the eligibility study is to determine if a river meets the minimum requirements for addition to the National System. In order to be eligible for addition to the System, a river segment must be free-flowing and possess one or more "outstandingly remarkable" values, such as scenic, recreational,

geologic, fish, wildlife, historic, ecologic, or cultural resources. The eligibility study is documented in Appendix A and summarized in Chapter III.

The classification analysis studies patterns of development and naturalness in the corridors of an eligible river to determine whether the river would be classified as "Wild," "Scenic," or "Recreational," if the river eventually is added to the National System. The classification analysis is documented in Chapter III.

The suitability study is designed to determine whether an eligible river is an appropriate addition to the National System. This is done by comparing alternative ways of managing the river corridor, including at least one alternative involving Federal

designation of all eligible river segments and one alternative involving non-designation. Suitability considerations include the environmental consequences of designation and the manageability of the river if it is designated, including costs and the willingness of local and state governments to participate in river corridor management.

This Draft LEIS recommends a preferred alternative based upon information contained in the study, consideration of issues identified by the public and the the ID Team.

After the public comment period, the Draft LEIS will be revised in due course and published as a Final EIS. (If major changes are made, a Supplemental DEIS may be prepared, however.) If the Forest Supervisor chooses to recommend any of the streams or portions thereof for designation, the Final EIS becomes a Legislative Environmental Impact Statement (LEIS) that will be forwarded through the Secretary of Agriculture to the President. The President then submits the Final LEIS to Congress. If Congress designates any of the rivers into the National Wild and Scenic Rivers System, a management plan would then be prepared. The management plan would include detailed procedures for implementing the preferred alternative, including developing final boundaries for the river corridor(s).

1.5 Public Involvement

After the stream segments were determined to be eligible for possible inclusion into the Wild and Scenic River System, an extensive public involvement program was developed to make sure that the alternatives would consider the concerns of landowners, local residents, permittees, water developers, water users in the Denver metropolitan area, Douglas, Jefferson, Park, and Teller counties, the States of Colorado, Kansas, and Nebraska, and others having a stake in how the river is managed. The public involvement program consisted of public open houses, meetings, newsletters, mailings to interested parties, and ongoing informal meetings with any party requesting them.

Public Meetings

The National Environmental Policy Act (PL 91-190) and accompanying Federal guidelines and regulations (40 CFR Parts 1500-1508 as of July 1, 1986)

specify the required procedures for preparing environmental impact statements. This includes holding one or more scoping meetings early in the study so citizens have the opportunity to express issues and concerns important to them.

The Forest Service conducted eight public scoping meetings between December 10, 1995, and March 14, 1996. The meetings took place in Bailey, Colorado Springs, Deckers, Denver, and Lake George, Colorado, and were attended by about 400 people. All of these meetings were advertised in local and regional media and by direct mailings. In some remote areas that are perceived to be underserved by media, the meetings were additionally advertised by posters located where community members were likely to see them, such as Post Offices and general stores. Many of these meetings were attended by and reported about in local and regional media (newspapers and radio).

In addition, upon request, the Forest Service conducted about 25 briefings for county governments, water providers, citizen groups, landowners associations, and environmental groups.

Interested Parties

A list of over 2,600 people, agencies, and groups was compiled to make sure that other interests were kept informed of the study. On November 16, 1995, a Notice of Intent was published in the Federal Register (Volume 60, Number 221, page 57571) to announce that an EIS and Wild and Scenic River Study Report would be prepared and that written comments and suggestions were invited. In addition, interested parties were mailed a newsletter and invitations to public meetings.

Four informational mailings were prepared: the first during the issue identification process to inform people about the study and request comments on the Eligibility and Classification Determinations; the second to let people know about the suitability study, open houses, and to request their issues and concerns; the third to let people know about the second round of open houses, solicit comments on preliminary alternatives, and gather further issues and concerns; and the fourth to announce the availability of the Draft LEIS. These mailings were designed to make sure as many people as possible were informed about the study and how to make their views known.

The mailings reached over 2,600 people, including those owning land in or adjacent to the study river corridors, river users, grazing permittees, businesses related to the river corridor, recreationists, water providers, water users, local, state, and Federal agencies, interested parties, and others who requested they be kept informed of the study's progress.

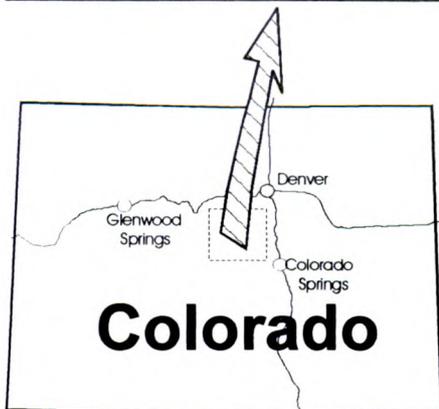
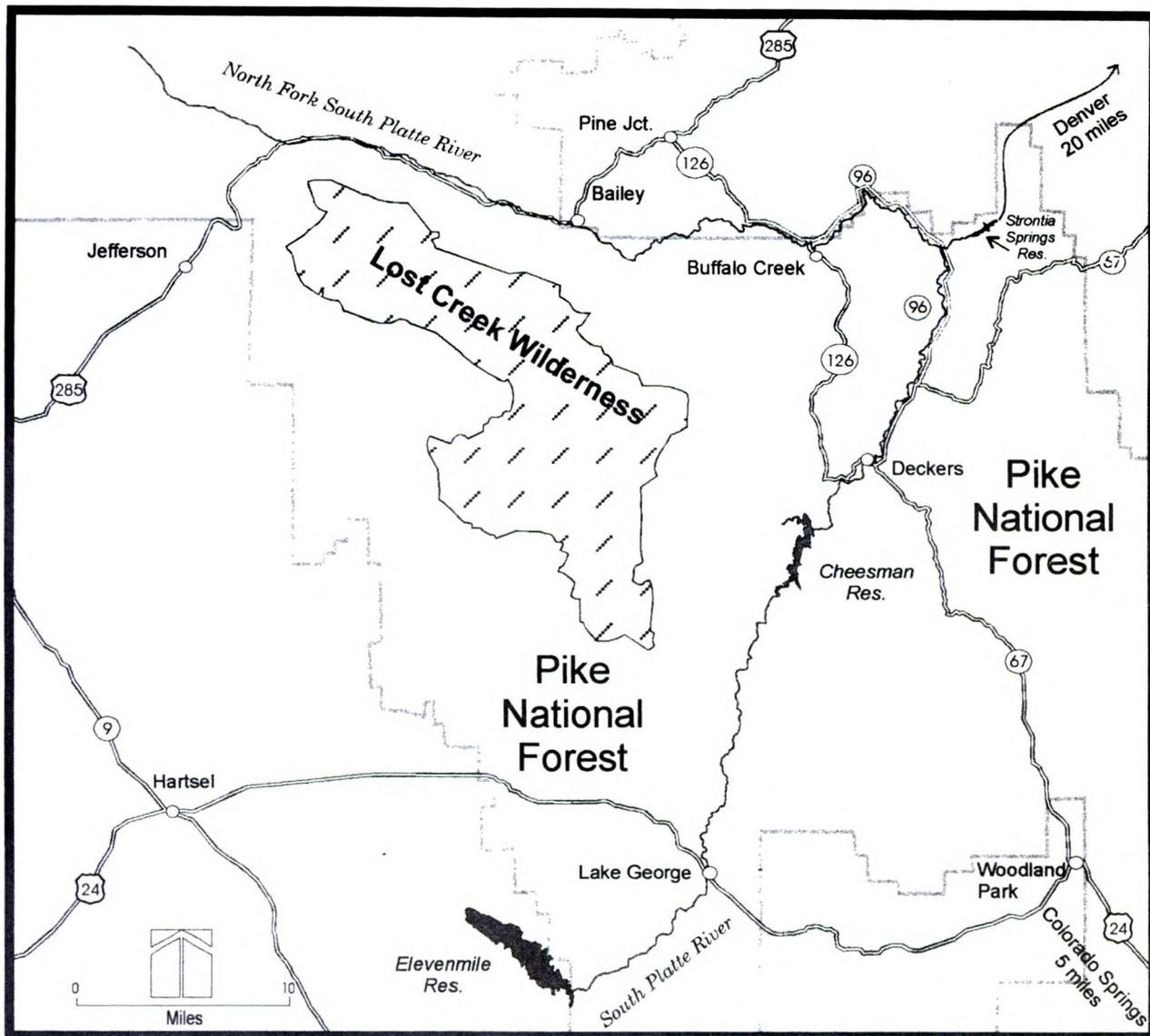
Periodic briefings were also conducted with Arapahoe, Douglas, Jefferson, Park, and Teller County

officials, Denver Water, and U.S. Congressional delegations beginning in November 1995. In response to requests, presentations were also made to each county commission, the Metropolitan Water Providers, Suburban Water Suppliers Wild and Scenic Task Force, several county planning departments, and a variety of organizations in eastern Colorado. Additional issues, concerns, and opinions were obtained at these meetings and incorporated into the scoping process.



Wildcat Canyon on the South Platte River

Vicinity Map

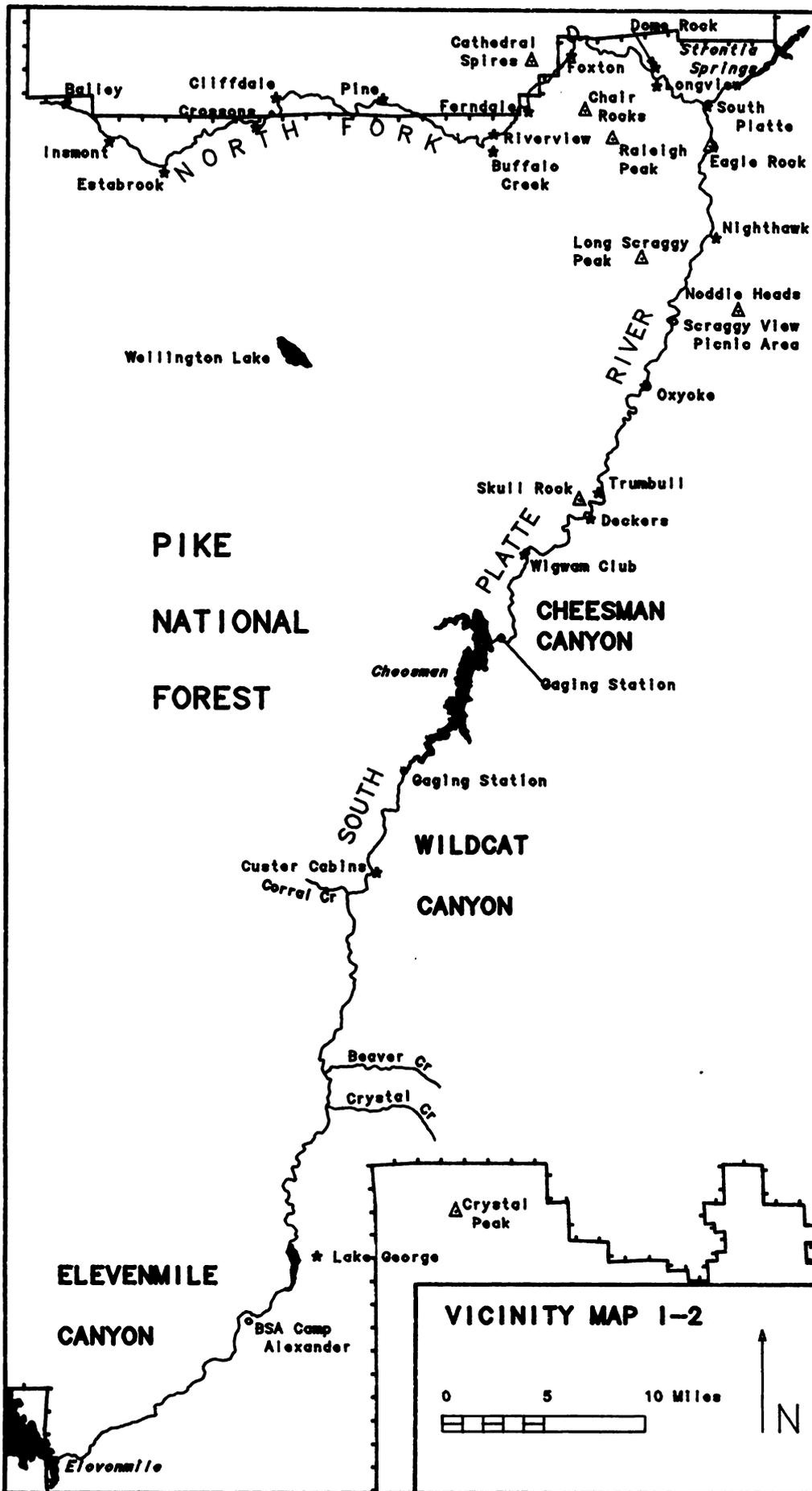


Land Ownership

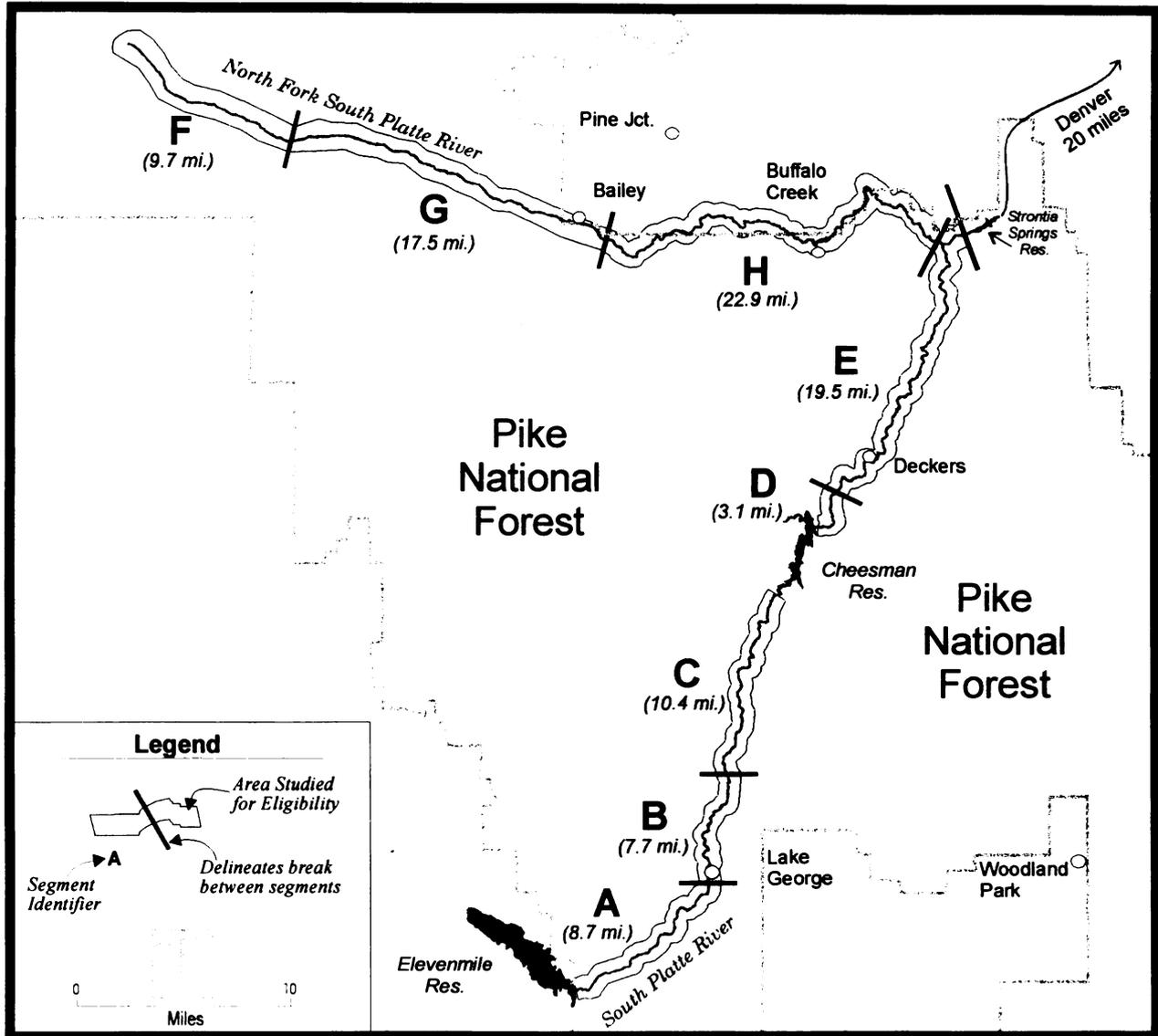
-  Within National Forest Boundary
-  Outside National Forest Boundary

Roads and Highways

-  State Highways
-  U. S. Highways



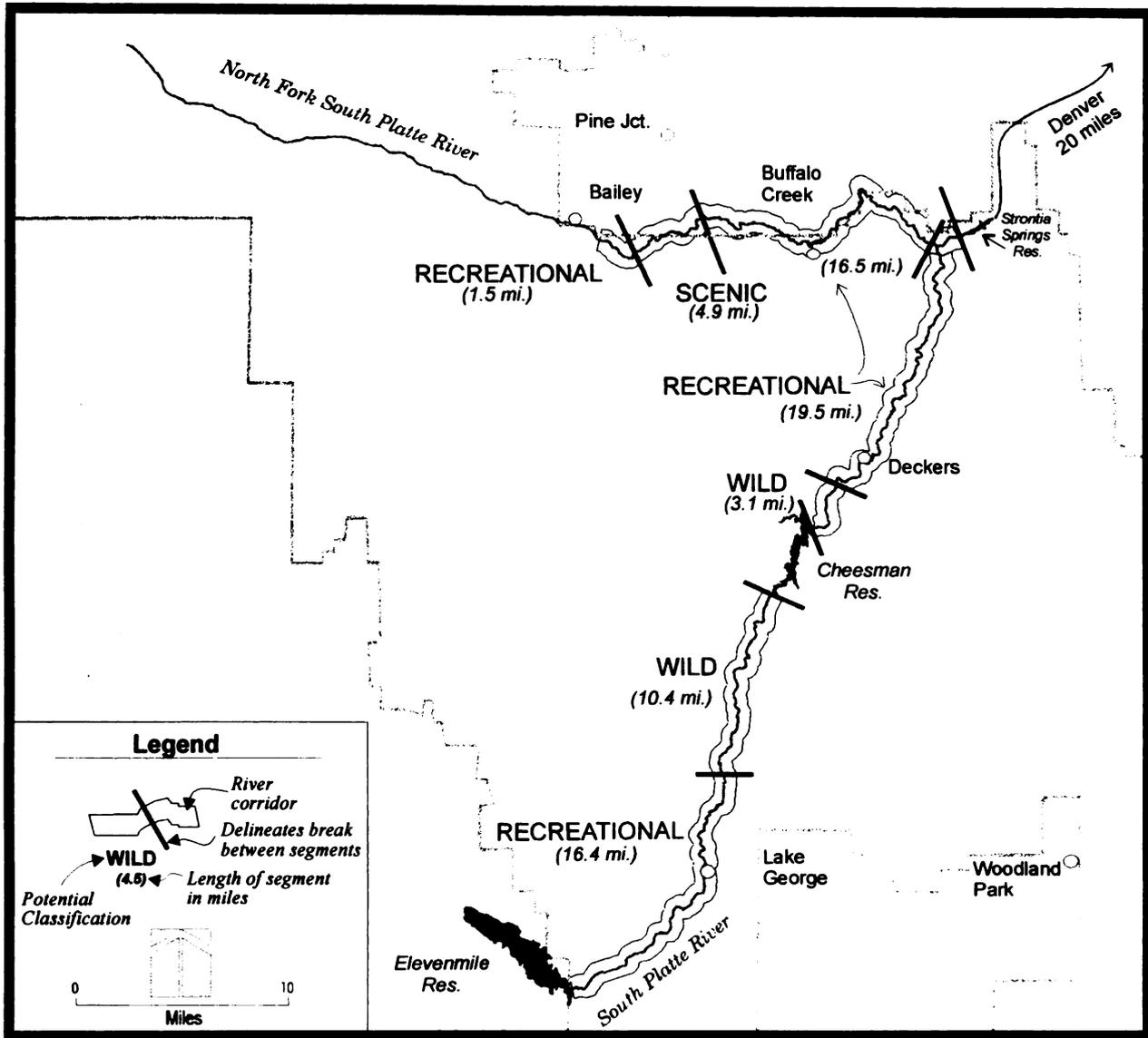
River Segments Studied for Eligibility



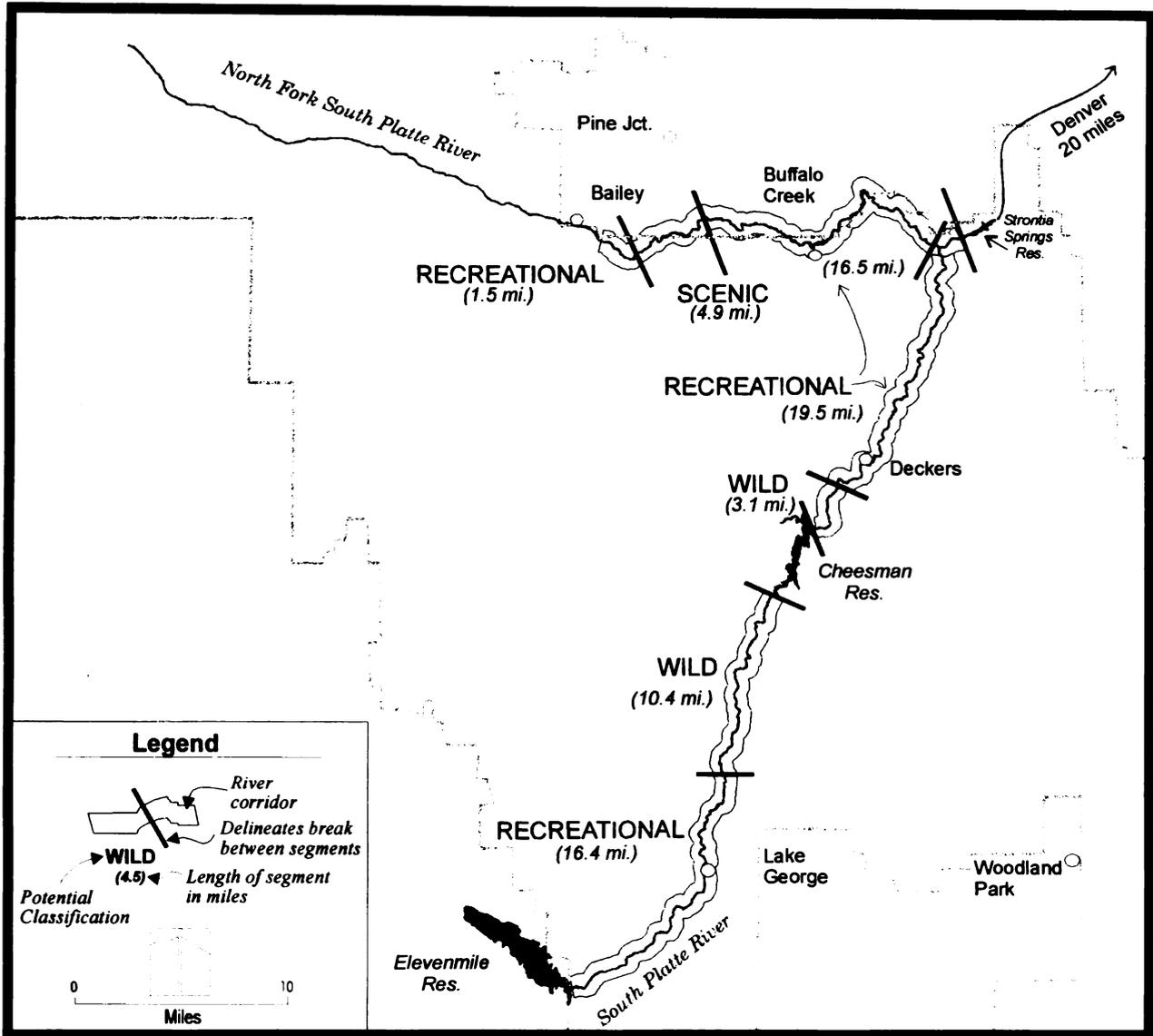
South Platte River and North Fork of the South Platte River
Wild and Scenic River Study

Map I-4

Eligible Segments with Potential Classification



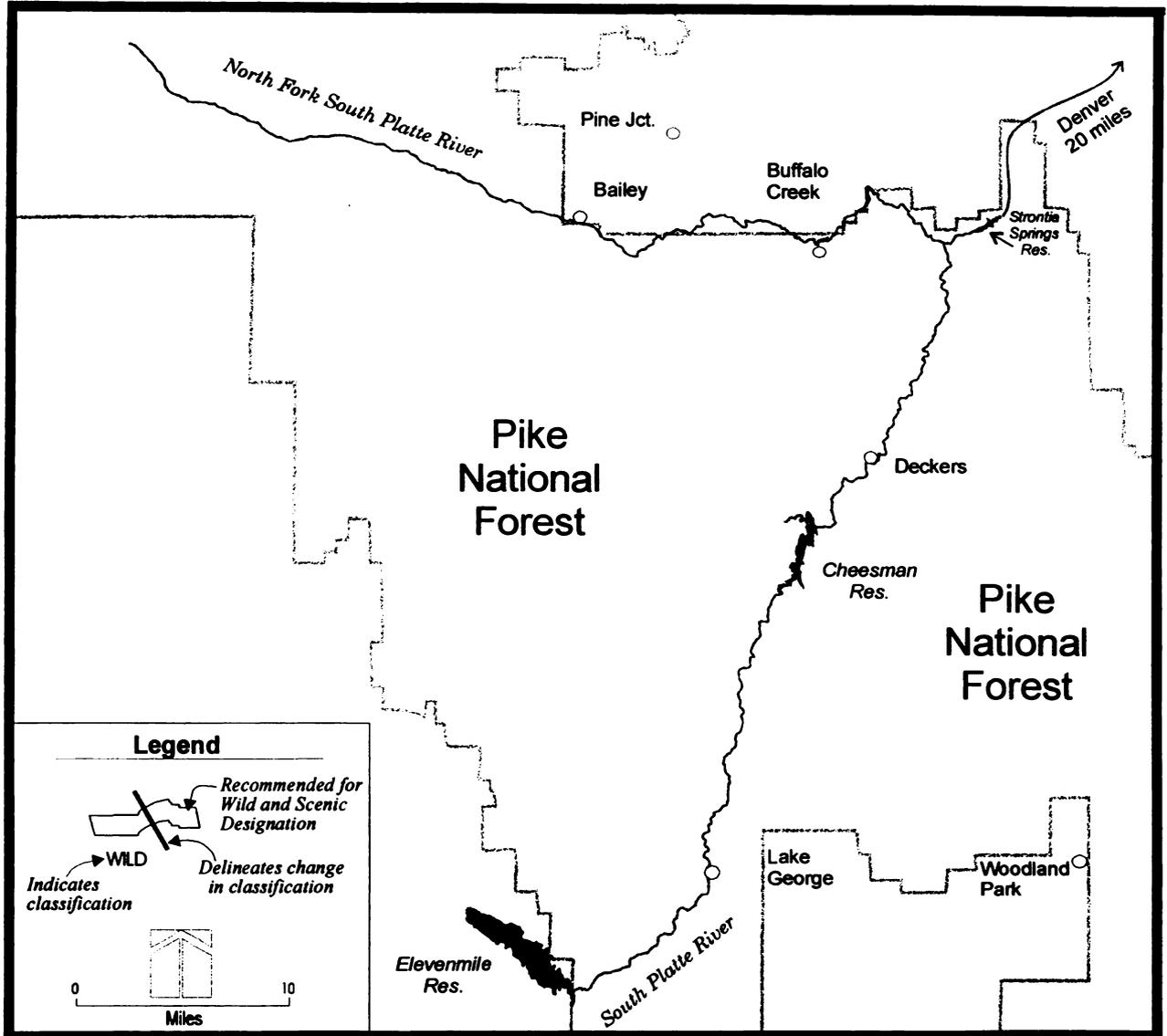
Eligible Segments with Potential Classification



South Platte River and North Fork of the South Platte River
Wild and Scenic River Study

Map I-8

Proposed Action - Alternative A2



No segments recommended for designation.

Chapter II

Description of Area (Affected Environment)



2.1 Description of Area **(Affected Environment)**

The purpose of this chapter is to describe the area summarizing the character and resources of the North Fork of the South Platte and the South Platte River wild and scenic river study corridors. The current conditions, as well as existing trends, are described to acquaint people with the study corridors and provide a basis from which to assess the consequences of the various designation and management alternatives to be presented in Chapter IV. Additional summary descriptions of some of the affected environment and current conditions for each study river is also found in the Eligibility and Classification Determinations in Appendix A.

As used in this document the term "river" is defined in Section 16 (a) of the Wild and Scenic Rivers Act which states that: "River" means a flowing body of water or estuary, or a section, portion, or tributary thereof, including rivers, streams, creeks, runs, kills, rills, and small lakes. The words "river" or "stream" are used interchangeably, in reference to them throughout this report.

2.2 Regional Setting

The North Fork of the South Platte and the South Platte River are located in east central Colorado and part of the Platte River drainage. Their headwaters lie high in the Rocky Mountains on the Continental Divide and they drain east through the Front Range, merging at the unincorporated community of South Platte. Both study rivers are located primarily within the Pike National Forest. The eligible river segments studied comprise 72.3 miles of streams.

2.3 River Descriptions

The North Fork of the South Platte (North Fork) originates on the east crest of the Continental Divide at the base of Teller Mountain, 10 miles northeast of Breckenridge, in Park County, Colorado. The stream flows east for 50.3 miles into Jefferson County, Colorado, to its confluence with the South Platte River, 22 miles southwest of Denver. Although the entire river was considered in the eligibility study, only that 22.9-mile portion of the stream from the upstream boundary of the Berger property near Ins- mont, Colorado, downstream to its confluence with the South Platte River was found eligible and included in the study corridor.

The South Platte River is formed by the Middle Fork and South Fork two miles west of Hartsel, Colorado.

The Middle Fork originates on the east crest of the Continental Divide near Wheeler Mountain, in Park County, Colorado, 13 miles northwest of Fairplay and flows southeast through Antero Reservoir to its confluence with the South Fork. The South Fork originates at Westin Pass in Park County, Colorado, and flows southeast to its confluence with the Middle Fork. From Hartsel, in the middle of a grass covered basin called South Park, the South Platte flows southeast for 20 miles through the Spinney Mountain and Elevenmile Reservoirs, then turns northeast through the Front Range, flowing through Cheesman, Strontia Springs, and Chatfield Reservoirs in Park, Teller, Douglas, and Jefferson Counties to Denver. From Denver, it continues northeast, across the plains, to its confluence with the North Platte, forming the Platte River, just east of North Platte, Nebraska. The 49.4-mile portion of the South Platte River from Elevenmile Dam to Strontia Springs Reservoir (excluding Cheesman Reservoir) was considered in the eligibility study, found eligible, and is included in the study corridor.

Each study river corridor is approximately 1/2-mile wide (1/4-mile on each side of the river's ordinary high water mark). This comprises the study area covered in this report. None of the study segments lie within any State Scenic Waterway or State Protected River corridors.

2.4 Climate

The mountains and valleys of the South Platte and the North Fork basins exhibits marked differences in climate. The higher elevations along the western boundary of both basins receive most of the precipitation as snowfall in the winter. Average annual precipitation in the high mountains is about 40 inches. The portion of the watershed from South Park to the east usually receives relatively small accumulations of snowfall. Precipitation in this area usually comes in the form of convective rain storms. Average annual precipitation in this area ranges from 11-15 inches, measured at Hartsel and Cheesman, respectively. In the high mountains along the western boundary, average annual temperature is less than 32 degrees F. Temperature in the valleys averages about 45 degrees F.

2.5 Physiographic Regions **and Geology**

Physiographic Regions

The two rivers are located within the Front Range, a complex portion of the Southern Rocky Mountains.

This northerly trending range is bounded on the east by the Denver Basin and on the west by South Park. Igneous and metamorphic rock comprise this mountain range which stretches from Cripple Creek north to Wyoming with a width over 40 miles at a point west of Boulder. Within the Front Range, there are several granitic batholiths including the Pikes Peak, Sherman, and Boulder Creek. The Pikes Peak Batholith is the main feature of the study area. Today's topography is the result of glacial activity at higher elevations. Erosion was followed by deposition of alluvial materials along major drainages. The Kenosha Hills and Tarryall Mountains are northwest trending features which form the western edge of the South Platte drainage basin. The Rampart Range forms the eastern edge of the South Platte drainage basin.

There are two areas of locatable minerals within or adjacent to the study corridors. The South Platte Pegmatite District is centered around Raleigh Peak near South Platte and the Tarryall Mining District which lies just northwest of Lake George. Mining claims are located within T.11 and 12S., R.71W. The Bureau of Land Management Geographic Mining Claims Index for February 9, 1996, shows one current claim and thirty-one that are behind in their assessment filings. All the lands within the river corridors are open to mineral entry except for specific areas such as campgrounds. There are no known leasable mineral resources or active quarry sites within either corridor.

Historical Geology

The majority of the rock types found in this study were created from 1.7 to 1.0 billion years ago during the Proterozoic Eon of Precambrian time (Chronic and Chronic, 1972). The oldest rock unit is a biotite gneiss created during the middle Proterozoic. Later, various younger granites were formed from 1.7 to 1.4 billion years ago mainly in the Elevenmile area. Erosion followed, creating low rolling hills almost to sea level. Mountain building events, coupled with metamorphism of pre-existing rocks followed by erosion, were repeated several times. A long period of erosion completed Precambrian time.

Some Paleozoic Era rocks are found to the east. The rock types include sandstones, limestones, dolomites, conglomerates, and shales. Mountain building during the Pennsylvanian Period of the Paleozoic created the ancestral Rocky Mountains. These rocks are situated in the Manitou Half-Graben, a structural feature which lies to the east of the river corridor adjacent to the Rampart Range.

Mesozoic Era rocks are missing in the study area. The climate in Colorado ranged from arid to shallow marine environments which created generally fine-grained sandstones and shales.

Early in the Tertiary Period of the Cenozoic Era, mountain building time known as the Laramide Orogeny, created several north-south ranges including the Front Range. This uplift formed a linear block faulted on both sides with hogbacks to the east. Mineralized solutions migrated upward through joints and faults in the crust. Oligocene lava flows east of the study area created a lake in which fine volcanic ash trapped insects and fish, preserving them along with stumps and trees at Florissant. During the Quaternary Period, glaciation of the higher peaks took place, erosion created alluvial fills in valleys and terrace levels, and landslides areas were formed.

Regional Geology

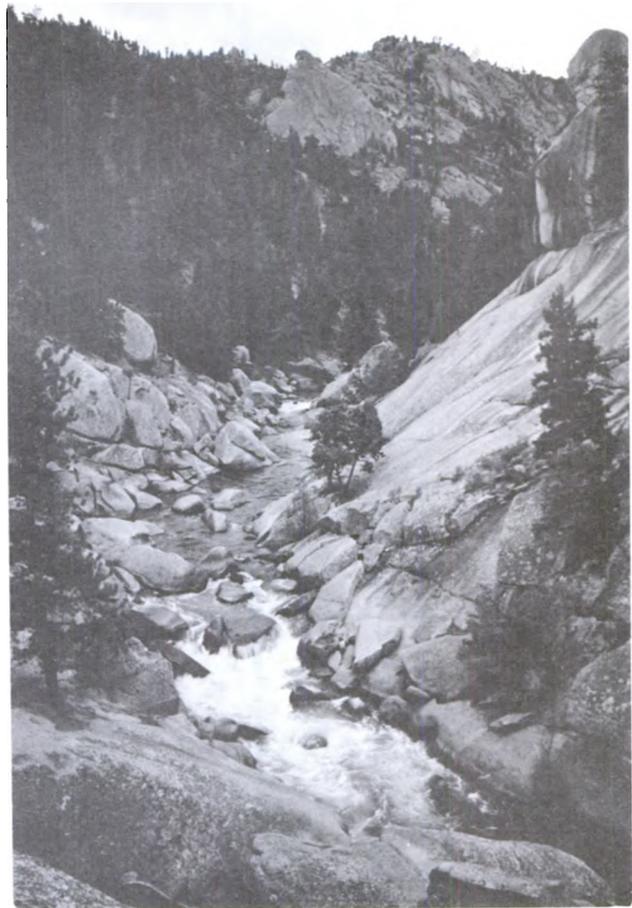
The Front Range is a northerly trending band of Precambrian age rocks which extends north from the Wet Mountains into Wyoming, terminating with the Laramie Range (Bryant and others, 1981; Scott and other, 1978). This range has been called the Southern Rocky Mountains, a band of complex mountains with intermontane basins, defined by faulting on the eastern and western edges (Fenneman, 1931). The Front Range is bounded on the east by the asymmetrical Denver Basin which extends northeast into Nebraska. The Denver Basin consists of sedimentary sections which have been raised to create hogbacks on the west. South Park, a complex basin of sedimentary units which have been faulted and thrust, lies to the west of the Front Range (DeVoto, 1971). The Manitou Half-Graben, composed of Upper Paleozoic rocks is located to the east of Cheesman Reservoir. The Ute Pass Fault forms the western boundary of the half-graben. The main component of the Front Range in the river corridor is the Pikes Peak Batholith, an irregular mass of granitic-type rocks about 1.1 billion years in age (Tweto, 1987). The Pikes Peak Granite includes the West Creek and Tarryall Creek Plutons and the Redskin and Lake George Stocks, all varied compositional forms of granitic rocks.

Local Geology

The river corridors cut through the Pikes Peak Granite, biotite gneiss, various Precambrian age granites, and Oligocene lake sediments as shown on the Geologic Map. The Pikes Peak Batholith is roughly an oval shaped batholith which covers about 1,200 square miles of the southern Front Range (Bryant,

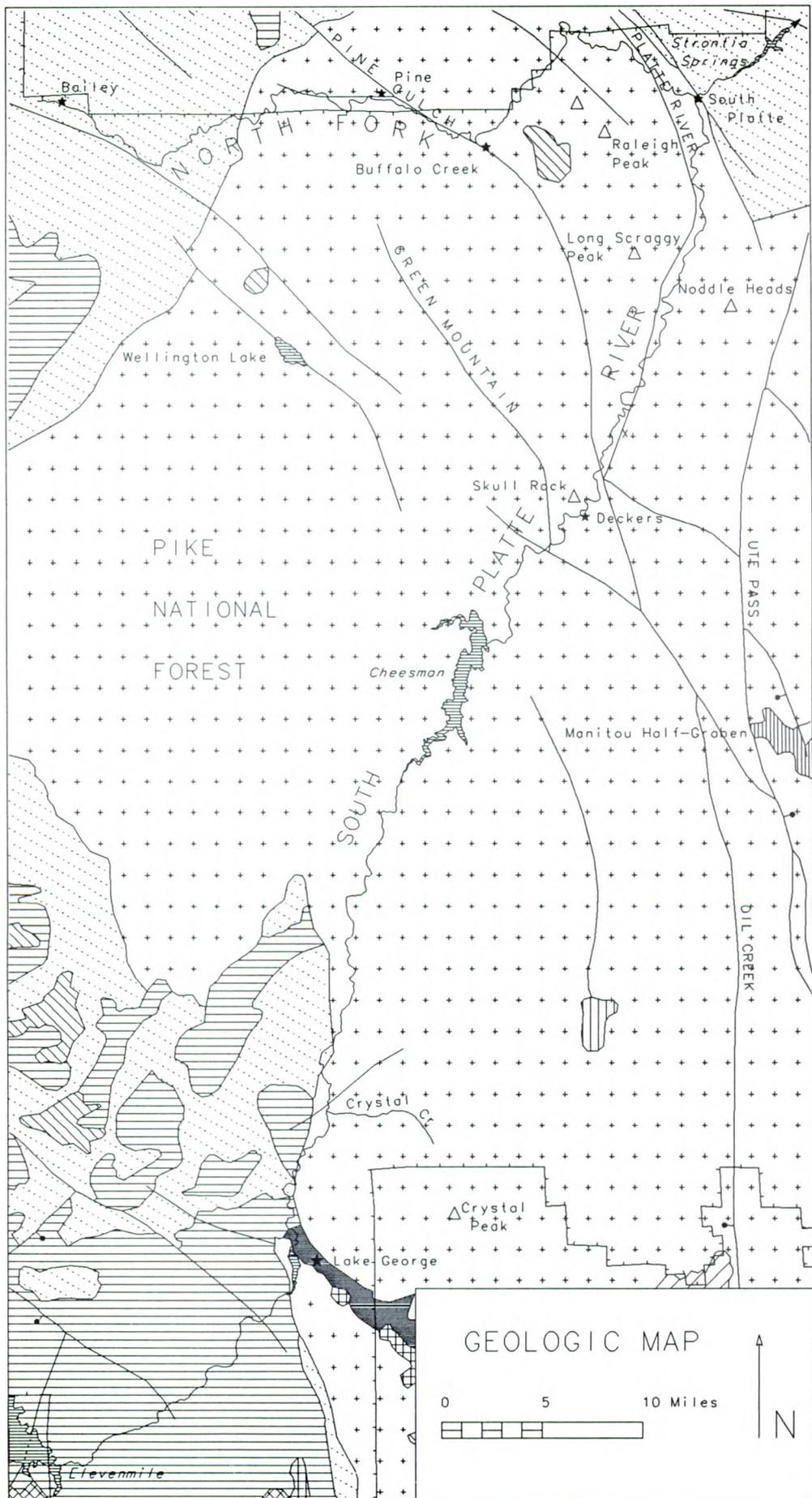
1976, 1974; Peterson, 1964; Scott, 1963). The batholith is a white to moderate orange-pink, medium to coarse-grained, biotite and hornblende-biotite granite very susceptible to weathering. Gradational varieties of the batholith include quartz monzonite, granodiorite, and syenite. The granite is composed of microcline-perthite, quartz, hornblende, and biotite. The grains range in diameter from 1 inch for perthite to 1/4 inch for quartz with 1 inch thick books of biotite. Outcrops are generally large, rounded cubical forms which are perched atop each other, or large slabby, tabular forms. Segregations of biotite and hornblende weather out as knobby forms of the granite surface. The quartz monzonite is a porphyritic, coarse-grained, light grey to light pinkish-grey rock with dark speckles. Granodiorite and syenite are limited in the study area. They are composed of oligoclase, microcline, quartz, biotite and microcline. Numerous xenoliths of gneiss and migmatite are found in the batholith. Northwest trending sandstone dikes can be traced in faults at South Platte and Buffalo Creek (Scott, 1963). The sandstone is red or green fine-grained quartz of Cambrian age. Aplite dikes which strike N60°W and dip 10°NE occupy fracture in the granite. They average two feet in width over strikes of several hundred feet. The jointing is northwest oriented with a shallow southeast dip creating beds of 12 inches and greater in thickness. The granite can easily weather to 15 feet along joints or fractures. The weathering of the biotite and feldspar leaves a surface of friable aggregate. Pegmatite seams are found throughout the granite, particularly around the edge of the batholith. They may be either circular or elliptical in shape. The quartz-microcline-muscovite variety of pegmatite is the most abundant. Tourmaline, beryl, and fluorite are found within these pegmatite seams. Cavities in the seams contain crystals of pale brown microcline, clear quartz, and muscovite perched on the microcline and quartz.

The Precambrian biotite gneiss has been mapped as banded or layered sequences of sillimanitic biotite-muscovite and fine-grained biotite varieties located around the Pikes Peak Batholith border. The gneiss is fine to medium-grained, well foliated as shown by a planar arrangement of the biotite crystals, and composed of quartz, biotite, oligoclase, with hornblende and microcline. The gneissic contact with the Pikes Peak Granite is sharp and well defined. Granite gneiss and amphibolite are mapped locally. The gneiss weathers easily, particularly where there is a concentration of biotite to form smooth outcrop surfaces.



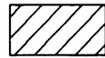
Granite rock formations along the South Platte River in Wildcat Canyon.

The Precambrian granites range from 1.4 to 1.7 billion years in age (Tweto, 1979; Wobus, 1976). They are medium to coarse-grained, porphyritic quartz monzonites, quartz diorites, and granodiorites. The mineral composition includes microcline, quartz, oligoclase, biotite, and muscovite with minor hornblende. These rocks are generally a pale pink compared to the brighter color of the Pikes Peak Granite. The feldspar crystals, microcline and oligoclase, weather to form tabular features on the surface. In Elevenmile Canyon, there is a porphyritic quartz monzonite that borders the batholith west of Lake George. The rock is a medium to coarse-grained, pink, porphyritic quartz monzonite with 1-1.5 centimeter microcline phenocrysts in a biotite-rich groundmass. The mineral composition includes quartz, plagioclase, microcline, biotite and minor muscovite.

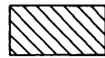


LEGEND — GEOLOGIC MAP

Correlation of Map Units



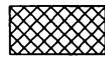
Pliocene Ogallala formation



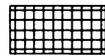
Pliocene bouldery gravel



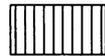
Oligocene Florissant Lake Beds



Oligocene andesitic lavas, breccias, and tuffs



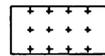
Oligocene Wall Mountain tuff



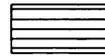
Middle Tertiary intrusive rocks



Paleozoic rocks undivided



Precambrian Pikes Peak granite (1.1 by)



Precambrian granites (1.4-1.7 by)



Precambrian biotite gneiss (1.7-1.8 by)

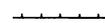
from Tweto, 1979; Wobus and Epis, 1979



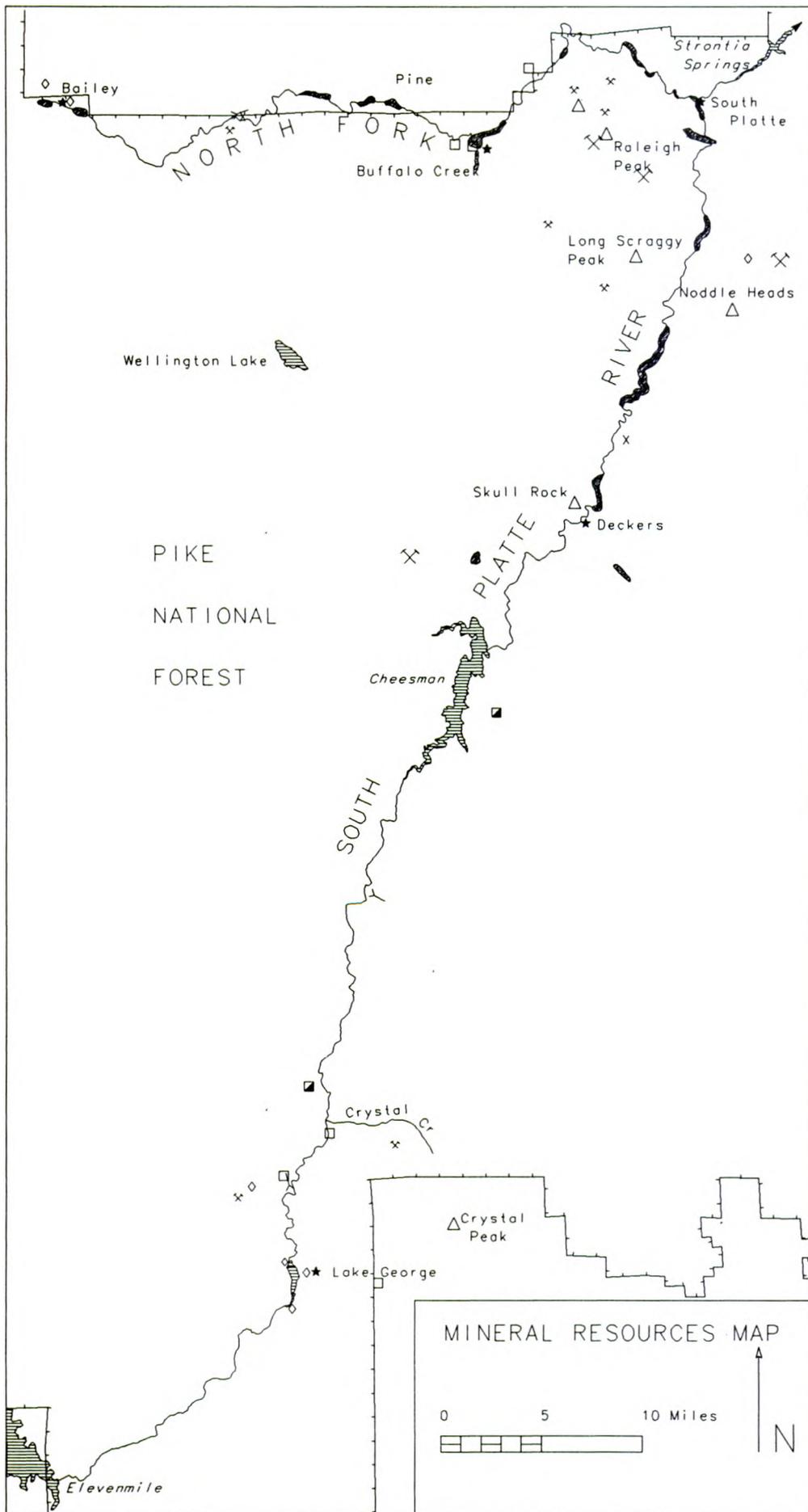
Geologic contact



Fault, dashed where inferred, bar on downthrown block and name



Forest Boundary



LEGEND – MINERAL RESOURCES MAP

Mining Activity

- ⋈ Adit
- ▣ Shaft
- X Prospect(s)

Commodities

- ◊ Aggregates (sand, stone, grus, granite)
areas and specific sites
- Gemstone
- Fluorspar
- ⊗ Pegmatite, 5+ sites
- x Pegmatite, 1-4 sites
- Forest Boundary

The Oligocene Florissant Fossil Beds extend from the national monument at Florissant northwest to Lake George (Wobus and Epis, 1978). These beds are composed of arkosic and volcanic conglomerates, tuff and volcanic mudflow breccias, tuffaceous shale and mudstones, and pumiceous tuffs. The beds are less than 150 feet thick and generally lie horizontal. Plant and insect fossils and fossilized stumps and logs are found in these beds. Examples are well exposed in the monument.

Alluvial materials of varied composition are found along both river corridors, particularly at wide points and at the confluence of both forks. Landslide, talus, and morainal deposits are not found in either river corridor.

Structure

Numerous faults occur in the area and several major ones are labeled on the Geologic Map. The Elkhorn Fault forms the western edge of the batholith border. The granitic rocks were thrust at a low angle over the sedimentary units in South Park. The eastern edge of the batholith is formed by the Jarre Canyon and Rampart Range Faults. These high-angle faults have dropped the sedimentary units of the Denver-Julesburg Basin down in relation to the Pikes Peak Granite. The Manitou Half-Graben is a repeat of a portion of the Paleozoic section with the Ute Pass Fault Zone forming the western edge. The Platte River, Pine Gulch, and Green Mountain Faults named by Harza Engineering (1985) are located within the river corridors. Area seismicity has been well-documented by the U.S. Army Corps of Engineers (1986).

Minerals

Although the corridors and surrounding areas have had some past mining history, current activity has been minimal since the turn of the century. Of the study corridors' 32 mining claims, none are currently producing, and only one is current. The potential for future commercial operations for locatable and leasable minerals within the study corridors is very low. Although the study corridors have some potential for aggregate sources they contain no active quarry sites. The potential for development of new sites is low due to the recreation use, fisheries, and other resource values in the study corridors. The mineral resources described below are shown on the Mineral Resources Map.

Industrial Minerals - A group of over 50 rare-earth and fluorine-rich pegmatites constitute the South Platte Pegmatite District (Simmons and Heinrich,

1980). The Pine Creek pegmatite located north of the Noddle Heads and others in the district contain by-product fluorspar (Van Alstine, 1964). The pegmatite composition in the South Platte Pegmatite District, which is centered around Raleigh Peak, is similar to the adjacent country rock, Pikes Peak Granite. Specific minerals found include quartz, feldspar (oligoclase, orthoclase, and microcline), biotite, magnetite and locally, hornblende, garnet, beryl, tourmaline, and sillimanite (Hawley and Wobus, 1977; Peterson, 1964). Mining activity in the Raleigh Peak area pursued feldspar, along with mica, beryl, topaz, fluorite, and some rare-earth minerals. The pegmatite dikes are large, complex, nearly vertical, circular to elliptical, and have definite zonation with bull-quartz centers that usually outcrop above the ground surface.

Groups of pegmatites are also found north of Noddle Heads on Pine Creek, three miles northwest of Cheesman Dam on Wigwam Creek, and around Crystal Peak (Voynick, 1994). These pegmatites have produced clear and smokey quartz, greenish-white and pale blue amazonite, muscovite, orthoclase, and purple fluorite. Museum-grade topaz crystals have been excavated from pockets in the granite around Crystal Peak. Other minerals found in these pockets include phenakite and goethite. Crushed quartz has been removed from various pegmatites in the South Platte area (Adams, 1964).

Metals - A caved trench oriented N 22°W, lies in Sec. 18, T.12S., R.71W., near Happy Meadows. The trench was driven in a light salmon colored granite probably for uranium or rare-earth elements. It is in close proximity to the Lake George beryllium area. A uranium occurrence has been reported in literature, one mile to the north, but may actually be the same occurrence (Nelson-Moore and others, 1978). The Gilley Ranch Skarn Deposit lies west of the river in Sec. 32, T.11S., R.71W. (Heinrich, 1981). A five-foot wide scheelite-bearing zone was mapped in the workings.

Aggregates - The alluvial fill found along the rivers is derived from the area bedrock, mainly the Pikes Peak Batholith. The fill is generally granitic in composition which includes feldspar, quartz, and mica flakes. The quality and quantity of each deposit varies according to the location. There is sufficient material available at South Fork and Pine to be a possible resource (Schwochow, 1975). Areas defined by the U.S. Army Corps of Engineers (1986) are shown on the Mineral Resources Map.

Localized slide areas, colluvial deposits, and small terraces can be found within the river corridors. The

sand, gravel, cobbles, and boulder shapes vary from subrounded to angular in these deposits. The Pikes Peak Granite is a good source material for road surfacing and subsurface material. Quarry locations and crushing specifications can be formulated for the required use.

Quartz has been mined from the South Platte pegmatites for terrazzo purposes.

Leasable Minerals - There are no known petroleum, natural gas, or coal resources located within the river corridors (Smith and others, 1991; Jones and others, 1979, Tremain, 1984). Geothermal resources are found in the area, but not within the river corridors (Pearl, 1980).

2.6 Landownership

The study corridors encompass a total of approximately 22,630 acres -- 15,428 on the South Platte

and 7,202 on the North Fork. Federal lands include 13,954 acres of the Pike National Forest, administered by the Pike and San Isabel National Forests, Comanche and Cimarron National Grasslands, and 29 acres of BLM land, administered by the Canon City District of the Bureau of Land Management. County lands include 545 acres in Pine Valley Ranch, an open space park, owned by Jefferson County, and 3,352 acres owned by Denver Water. Private lands account for 4,750 acres.

The proportion of public to private lands has remained stable for several decades. Prior to that, Denver Water was actively acquiring private lands for the potential Two Forks Reservoir between Strontia Springs Reservoir and Cheesman Dam on the South Platte and between the confluence and Bailey on the North Fork.

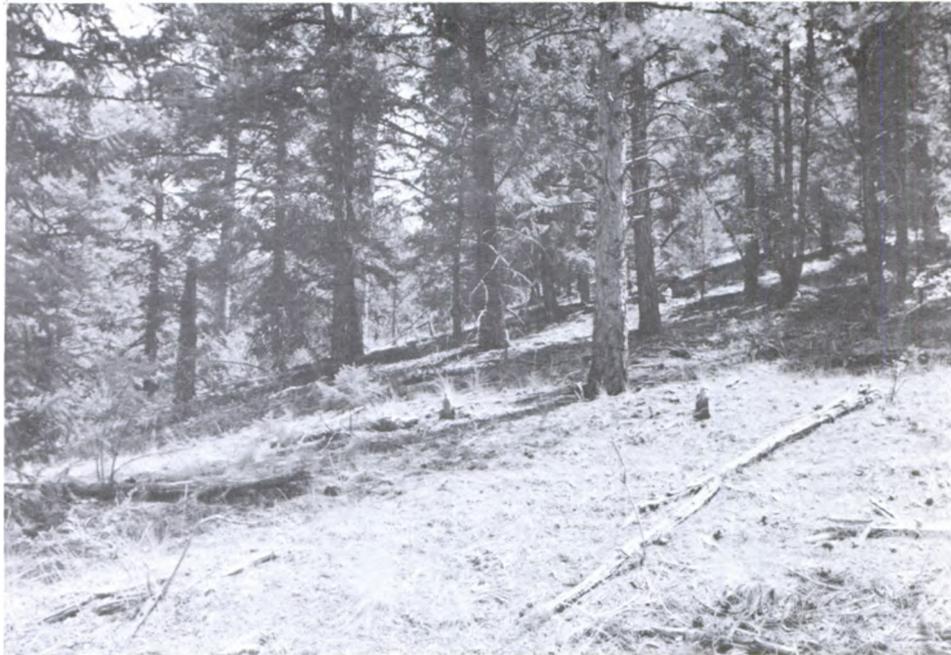
CHART II-1
LANDOWNERSHIP OF ELIGIBLE STUDY RIVERS

RIVER	USDA FOREST SERVICE (ACRES)	%	BLM (ACRES)	%	DENVER WATER (ACRES)	%	COUNTY (ACRES)	%	PRIVATE OWNERSHIP (ACRES)	%
South Platte	11,784	76.4	0	0.0	1,710	11.1	0	0.0	1,934	12.5
North Fork	2,170	30.1	29	0.4	1,642	22.8	545	7.6	1,816	39.1
Totals	13,954	61.7	29	0.1	3352	14.8	545	2.4	4750	21.0

**CHART II-2
LANDOWNERSHIP
OF ELIGIBLE STUDY SEGMENTS**

RIVER SEGMENT	USDA FOREST SERVICE (Acres)	%	BLM (Acres)	%	PRIVATE (Acres)	%	DENVER WATER (Acres)	%	JEFFER- SON COUNTY (Acres)	%
A&B - South Platte Elevenmile to Beaver Creek.	3912	75	0	0	1302	25	0	0	0	0
C - South Platte Cheesman to Beaver Creek.	3267	98	0	0	0	0	2	0	0	0
D - South Platte Cheesman to Wigwam Club.	680	71	0	0	0	0	281	29	0	0
E - South Platte Wigwam Club to Strontia Springs Reservoir	3925	66	0	0	632	11	1377	23	0	0
H1 & H2 - North Fork Insmont to Estabrook and Cliffdale to Confluence	1165	20	29	1	2312	41	1642	29	545	9
H - North Fork Estabrook to Cliffdale.	1005	67	0	0	504	33	0	0	0	0
TOTAL	13954	62	29	0	4750	21	3352	15	545	2

Total length of eligible segments is 72.3 miles.
Total acreage in eligible study corridors is 22,630 acres.



Scattered stands of old-growth ponderosa pine occur throughout the lower portions of the study corridors.

The two rivers in this study are not recognized as navigable by the State of Colorado. In accordance with law as interpreted today, the bed and the banks belong to the adjacent property owner.

2.7 Land Use

Forest Plan Management Areas

National Forest System lands are managed in accordance with the Land and Resource Management Plan for the Pike and San Isabel National Forests, Comanche and Cimarron National Grasslands approved in November 1984. The Forest Plan determined that the 26.8-mile segment of the South Platte River from Elevenmile Dam to Cheesman Reservoir was eligible for inclusion into the Wild and Scenic River System and recommended a suitability analysis (the Plan listed the length as 23 miles but it has been revised to 26.8 miles through GIS). Pending the outcome of the suitability analysis, the segment and adjoining study corridor are included in a special management area under the Forest Plan. The special management area, called the Sce-

nic River Corridor, provides additional protection to preserve the characteristics which made the segment eligible for potential Wild and Scenic designation. This includes protection of free-flow, water quality, and Outstandingly Remarkable Values. The special protection continues until replaced by a River Management Plan after designation, or until the segment is found not suitable for designation. In the latter case, the management of the area is released from special protection and reverts to the Forest Plan management area in which the corridor lies.

The Forest Plan specifies a variety of management areas for the Forest. The study corridors lie within a variety of these areas. The following is a summary of the areas' management activities. A complete description of the management areas and their general direction, management activities, and standards and guidelines is listed in Chapter III of the Forest Plan.

Scenic River Corridor - Protect river segments that have been determined eligible for potential addition to the National Wild and Scenic Rivers System from

activities which could diminish or change the free-flowing character, water quality, or the scenic, recreational, fish and wildlife, and other values which make the river eligible for designation. This is an interim management direction that applies to all study river segments upstream from Cheesman Reservoir.

Management Area 2A - Management emphasis is for semiprimitive motorized recreation opportunities such as snowmobiling, four-wheel driving, and motorcycling, both on and off roads and trails. Motorized travel may be restricted or seasonally prohibited to designated routes to protect physical and biological resources. Range resource management provides sustained forage yields.

Management Area 2B - Provides opportunity for outdoor recreation in rural and roaded natural settings, including developed recreation facilities and year-round motorized and nonmotorized recreation. Motorized travel may be restricted or seasonally prohibited to designated routes to protect physical and biological resources.

Management Area 3A - Management emphasis is for semiprimitive nonmotorized recreation in a non-wilderness semiprimitive setting. Roads are closed to public use.

Management Area 4B - Management emphasis is on the wildlife habitat needs of one or more management indicator species. Species with compatible habitat needs are selected for an area. The goal is to optimize habitat capability, and thus numbers of species. Recreation and other human activities are regulated to favor the needs of the indicator species. Roaded-natural recreation opportunities are provided along Forest arterial and collector roads. Local roads and trails are either open or closed to public motorized travel. Semiprimitive motorized recreation opportunities are provided by those local roads and trails that remain open; semiprimitive nonmotorized opportunities are provided on those that are closed.

Management Area 5B - Emphasizes the management of forage and cover on big game winter ranges. Winter habitat for deer, elk, bighorn sheep, and mountain goats is emphasized. Treatments to increase forage production or to create and maintain thermal and hiding cover for big game are applied. New roads, other than short-term temporary roads,

are located outside the management area. Short-term roads are obliterated within one season after intended use. Existing roads are closed and new motorized recreation use is managed to prevent unacceptable stress on big game animals during the primary big game use season.

Management Area 7A - Emphasizes productive tree stand management on lands available, capable, and suitable for production of a variety of commercial and noncommercial wood products. Roaded-natural recreation opportunities are provided along Forest arterial and collector roads. Semiprimitive motorized recreation opportunities are provided on those local roads and trails that remain open; semiprimitive nonmotorized recreation opportunities are provided on those that are closed.

Other Management Areas and Uses

The following is a list of management areas and other uses in the study corridors.

North Fork of the South Platte River - About half of the North Fork study corridor lies outside the National Forest, and almost 70 percent of the corridor is owned by Denver Water, Jefferson County, or private individuals.

The upper 4 miles of the study corridor, from Ins-mont downstream to the Park/Jefferson County line, lie within the Pike National Forest in Management Area 5B. The area from the Jefferson/Park County line downstream to the Forest boundary lies in Management Area 7A. Because of very difficult access and surrounding private property, the area has been managed similar to Management Area 5B.

From the National Forest boundary the study corridor passes for several miles through either private property or the Pine Valley Ranch (a Jefferson County Open Space Park). The study corridor re-enters the Forest below Pine and, although it stays mostly on private land, includes a 2-mile section of Management Area 7A between Pine and Riverview.

The lower portion of this study segment, from Riverview to the confluence with the South Platte River, lies in Management Area 2B. The corridor is mostly on lands owned by Denver Water and private individuals, and at times is outside of the Forest boundary. Included in this lower portion are 29 acres man-

aged by the Bureau of Land Management in accordance with their Northeast Planning Area Resource Area Management Plan. The lands are currently under consideration for trade with Denver Water for other lands in the area.

South Platte River - The South Platte River study corridor is entirely within the Pike National Forest and contains about 75 percent National Forest System lands. The 26.8-mile section of the study corridor from Elevenmile Dam to Cheesman Reservoir has special management area status, as previously

discussed, but also lies within several regular management areas.

From Elevenmile Dam to a mile downstream from Beaver Creek the study corridor lies in Management Area 2B. The area upstream from Lake George (Elevenmile Canyon) contains several developed campgrounds and picnic areas and is quite heavily used by the public. Site-specific management in Elevenmile Canyon is governed by the Elevenmile Canyon Ecosystem Project which was approved in May, 1995. The purpose of the plan is to enhance the quality of the recreation experience and activities, while reducing resource damage.



National Forest campgrounds and picnic areas draw hundreds of visitors annually to Elevenmile Canyon.

From one mile downstream from Beaver Creek to Cheesman Reservoir the study corridor is in Management Area 2A, except for a small portion west of the South Platte River downstream from Wildcat Creek which is in Management Area 3A.

From Cheesman Dam downstream to the confluence with the North Fork the study corridor falls mostly in Management Area 2B. Downstream from the Wigwam Club the area is readily accessible by

roads and contains several developed and dispersed recreation sites (trailheads, parking areas, campgrounds, camping areas, and picnic areas). Downstream from Deckers, Denver Water is the largest landholder, but their holdings are interspersed with private and National Forest System lands.

The 3.1-mile portion east of the South Platte from Cheesman Dam to the Wigwam Club property lies

in Management Area 5B, and the portion east of the South Platte from Deckers to Oxyoke lies in Management Area 7A (only 1 mile of this section is located on National Forest). Very little timber remains within the study corridor in this area.

The extreme lower section of the South Platte study corridor from the confluence with the North Fork to Strontia Springs Reservoir lies in Management Area 4B.

Special Areas - There are no wilderness areas, research natural areas, or inventoried roadless areas in the study corridors. The Lost Creek Wilderness lies immediately west of the study area and is within one mile of the South Platte study corridor near Corral Creek.

Access, Structures, and Private Land Uses - The study corridors are within 1-1/2 hour drive of 2/3 of the State's population and most of the area is easily accessible by roads which parallel the river. Exceptions are Segments C, D, and the "Scenic" portion of H where there is little or no road access. There are numerous structures and several small communities within portions of the study corridors. On National Forest System lands there are fewer structures, and these are limited to bridges, developed and dispersed campgrounds, stream monitoring stations, several abandoned mining cabins, and summer homes under special-use permits. Denver Water is the largest non-Federal landowner. Its lands are managed for water delivery, dispersed recreation, summer-home rentals, and resource protection to ensure high water quality. Private lands within the study corridors are primarily occupied by year-round rural residences with some small communities scattered along the river. These include: the unincorporated town of Pine and the communities of Estabrook, Crossons, Cliffdale, Riverview, Ferndale, Argyle, Foxton, Dome Rock, Longview, and South Platte on the North Fork; and the incorporated town of Lake George and the communities of Nighthawk, Oxyoke, Trumbull, and Deckers on the South Platte. The towns include about 200 houses, community buildings, churches, and several retail businesses. Deckers contains several retail stores and a restaurant leased from Denver Water. A volunteer fire department is located in Trumbull. Prior to the Two Forks Dam proposal, Denver Water acquired many of the private lands on the South Platte from Deckers to the North Fork confluence and on the North Fork from the confluence to Fern-

dale because they would be inundated by a reservoir. Even though the permit for the dam and reservoir was denied by EPA, Denver Water is generally pursuing acquisition from willing sellers in the study area. A few ranches with grazing and irrigated hay fields occur in the upper portions of the North Fork study corridor and just north of Lake George. There is little timber production in the study corridors.

Utilities - Two high power transmission lines cross the South Platte study corridor, one at Corral Creek and one under construction north of Happy Meadows Campground on the Wildcat Canyon section of the river (Segment C). A water pipeline also parallels US Highway 24 crossing the South Platte study corridor at Lake George. Under the Federal Land Management Policy Act, the Forest Service recognizes that these corridors would be given first consideration for the location of future electric, gas, oil, and communication facilities.

Study Segment Descriptions

The following are descriptions of the study corridors showing private land uses and the locations of roads, bridges, and structures.

North Fork - Segment H - There is much evidence of past human activity throughout the 22.9-mile North Fork study corridor. Power and telephone lines access nearly all the houses in this study segment. An old abandoned railroad grade runs the length of the North Fork study segment with numerous rock walls, bridge abutments, riprap, blast areas, through cuts, and some channelization. Because of fluctuations in flows due to the Robert's Tunnel, Denver Water has a very active cooperative program with landowners to stabilize banks, construct check dams, riprap, and protect resources along the North Fork study corridor. There has been some extensive channelization upstream from the study corridor and some channelization in the study corridor upstream from Pine. The trend however, in the study corridor, is away from channel work and more toward easement acquisition to protect riparian areas.

The upper portion of the North Fork study corridor from the upstream end of the Berger property, near Insmont, to Buffalo Creek is characterized as an open 500 to 1,500 foot wide river valley with meadows and grasslands along a meandering stream. Side slopes are moderate and valley rims average

600 feet. The river loses some of this character between Estabrook and the Pine Valley Ranch, where the flat valley and meanders disappear, side slopes become steeper and rockier, and the river becomes v-shaped below 800 foot valley rims. Downstream from the outskirts of Buffalo Creek, the river speeds up and narrows. The valley deepens as the river cuts through a mountainous area and the channel is filled with large boulders.

The North Fork study corridor starts within the Pike National Forest on private land owned by the Berger Land Company. The area is used for grazing and is undeveloped except for a power line, several old structures, and a small private bridge. Near Estabrook the stream is paralleled for a mile by graveled County Road 68 which provides access to at least 10 houses with a variety of storage buildings. Along the two-mile river stretch at Estabrook, there are three private river bridges across the North Fork, a private bridge across Craig Creek, short roads to the houses, and a small pond along Craig Creek.

About 1/4 mile downstream from Estabrook the river enters National Forest System lands for 4.5 miles. This area is rugged, undeveloped, and inaccessible by roads except in several places across private land. There are few developments except for several houses on private lands about 1/4 mile from the river, and a diversion dam, footbridge, abandoned mine, and five houses and a private river bridge in a small private inholding at Crossons. Just below Crossons, the river leaves the National Forest. The area remains undeveloped and inaccessible until Cliffdale, except for some channel relocation downstream from Crossons. At Cliffdale there are several houses on the river, with several more under construction, and three houses about 1/4 mile from the river. A private dirt road parallels the north side of the river for two miles downstream to Pine, and there are several other private roads connecting with it up several drainages in the area. Just upstream from Pine, Jefferson County recently constructed the Pine Valley Ranch open space park. There are 545 acres of the park in the study corridor. The park includes paved access, parking areas, a lodge, amphitheatre, caretakers house, tennis courts, covered picnic areas, fire station, buildings, foot trails, a road bridge and several foot bridges across the river. The area also contains several diversion dams, a large pond, and two abandoned gravel quarries. From the Pine Valley Ranch to Pine, the river flows through private lands used for grazing

and horse pastures. The area includes a diversion dam and Crystal Lake, several dirt roads and a river bridge, a bed and breakfast inn, corrals, and several ranch houses, barns, and other buildings.

Near Pine the river is paralleled by paved State Highway 126 and the paved access route to the Pine Valley Ranch park. The unincorporated town of Pine lies along the river for over a mile and contains over 200 buildings which include houses, school, fire department, community buildings, churches, and several retail businesses. River developments include a diversion dam, several river bridges, and ponds from channel relocation.

After leaving Pine the river crosses and recrosses the National Forest boundary until it reaches County Road 97 upstream from Foxtan, then it stays within the National Forest. Although within the National Forest, most of the study corridor is owned by Denver Water or private individuals. From Pine, the river flows through several ranches for over two miles and is paralleled by State Highway 126. The area contains irrigated and non-irrigated pastures and is used for hay, horse pastures, and cattle grazing. Developments in this section include several ranch houses with numerous barns and outbuildings, corrals, fences, two river bridges, several diversion dams, a small pond, and some channel relocation.

On the outskirts of the community of Buffalo Creek, the North Fork enters a steep canyon in which it remains until its confluence with the South Platte River. Throughout this section, the river is paralleled by graveled County Road 96 which is only a foot or two above the river. Graveled County Road 97 and graveled Last Chance Creek Road intersect County Road 96 near Foxtan and climb out of the corridor up Last Chance Creek and Kennedy Gulch respectively. Most of the upper portion of this segment is privately owned and used for rural residences while the lower section is owned mostly by Denver Water and managed for water delivery, resource protection, and dispersed recreation. Included in the lower portion are 29 acres of undeveloped land managed by the Bureau of Land Management for dispersed recreation use.

The portion of the Buffalo Creek community in the study corridor includes a church, several houses, a combination store/gas station/post office, and several short roads connecting County Road 96 with State Highway 126. Near the store is the State High-

way 126 bridge and a private road bridge across the North Fork. Between Buffalo Creek and the confluence there are several small settlements scattered on the hillsides on both sides of the river. These include Riverview, Ferndale, Argyle, Foxton, Dome Rock, and Longview. The first and largest, is Riverview with about 30 structures, mostly residences. Foxton, Argyle, Dome Rock, and Longview are mostly on lands owned by Denver Water and leased back to the residents. A few residents, however, still maintain title.

Other developments include six private road bridges crossing the river, a statue to a heroic railroad brakeman, and a stream monitoring gauge near the confluence. The Buffalo Creek flood of June, 1996, destroyed all the bridges below Buffalo Creek and caused other property damage. Most of the property damage has been repaired and some bridges are being rebuilt.

South Platte - Segment A - This 8.7-mile segment from just below the fence line beneath Elevenmile Dam to the private land boundary south of Lake George lies within the Pike National Forest and, except for a small area owned by the Boy Scouts of America, is entirely National Forest System lands. The area is characterized as a rocky 400-foot deep v-shaped granite canyon containing a fast-flowing mountain stream with a very narrow and sometimes non-existent valley floor. The entire segment is paralleled by Forest Service Development Road (FDR) 96 which follows an old railroad grade through several tunnels. Elevenmile Canyon is included in a special recreation management area administered by the Forest Service and used primarily for developed and dispersed recreation, including camping, picnicking, hiking, fishing, tubing, swimming, and driving for pleasure. This area includes: the Reservoir, Cove, and Riverside Campgrounds; the Idlewild, Messenger Gulch, Elevenmile, and O'Brien Picnic Areas; numerous designated parking areas; and some of the Sleeping Tom Summer Homes under special-use permit. The Wagon Tongue and Springer Gulch Campgrounds are located just outside the study corridor. The corridor also contains FDR 96-1E and FDR 96-1F which are short 1/2-mile dead-end roads that access the summer homes and Springer Gulch Campground. FDR 244 provides access to Wagon Tongue Campground but continues outside the corridor. Other developments in the area include a 10-foot diversion dam and abandoned aqueduct near Lake George and a pri-

vate road with several old buildings up Rankin Gulch on Boy Scout Camp Alexander (the camp and most of the other improvements are located just outside the corridor boundary).

South Platte - Segment B - From Lake George to Tappan Gulch the river and valley floor widens and the canyon disappears. From Tappan Gulch to Beaver Creek the valley bottom narrows and enters a 200 to 400-foot deep canyon. This 7.7-mile segment is mostly privately owned and includes: the town of Lake George with several hundred houses, community buildings, fire department, cemetery, schools, churches, and several retail businesses; the lake itself with several dams and a mile-long diversion channel; subdivisions with 25 to 50 houses each around the Lake itself, Vermillion Creek, and Crystal Creek. The area is used primarily for year-round residences, but there is some private recreational use on Lake George, and hay fields and grazing use along the mile portion from US Highway 24 to Tappan Gulch. A two-mile segment between Tappan Gulch and Vermillion Creek is mostly National Forest System lands and other National Forest lands lie above the subdivisions on Crystal and Vermillion Creeks.

The area includes US Highway 24 and County Road 96 which cross the area and bridge the South Platte. Other roads include FDR 79 which parallels the lake for a mile, FDR 298 which intersects 79 and leaves the corridor to the southwest, County Road 77 which parallels the South Platte for a mile north of Lake George, FDR 207 which intersects County Road 77 and parallels the west side of the South Platte for three miles from Tappan Gulch to Beaver Creek, FDR 897 which parallels the east side of the South Platte from Vermillion Creek to Beaver Creek, and numerous city and private subdivision roads. Other improvements include: several old ranch buildings near Tappan Gulch; several dams and small ponds along Tappan Gulch, Vermillion Creek, and Crystal Creek; a small pond along the South Platte near Crystal Creek; a private river bridge near Crystal Creek; an aqueduct that parallels US Highway 24, the small Happy Meadows Campground administered by the Forest Service; a Forest Service trailhead; and a Forest Service trail which parallels the river for several miles downstream from Vermillion Creek.

South Platte - Segment C - This 10.4-mile segment, from the north end of the private lands near Beaver

Creek to the backwaters of Cheesman Reservoir, is known as Wildcat Canyon. This segment lies within the Pike National Forest and is entirely National Forest System lands except for the lower 750 feet of the corridor which is owned by Denver Water. The area is used for dispersed recreation including hiking, fishing, and semiprimitive motorized recreation (four wheel drives, all terrain vehicles, and motorcycles). The area is characterized by a rugged v-shaped 400 to 600-foot deep granite canyon with steep canyon walls and numerous large rock formations. The area is undeveloped and inaccessible except for a mile of Forest Service trail (FDT 654) along the upper mile of the west side of the corridor, a Forest Service trail (FDT 619) (used as a four-wheel drive road) from FDR 210 to the South Platte River near Platte Springs and north to the Longwater Gulch/Corral Creek ford, and a four-wheel drive road that comes down to the river near Corral Creek (FDR 540), turns south and parallels the west bank for a mile, then fords the South Platte and climbs out of the canyon to the east near Longwater Gulch (FDR 221). In addition, four-wheel drive roads proceed down Metberry Creek, Northrup Gulch, and Hackett Gulch to the study corridor (FDRs 205, 206, and 220). Although some of these at one time forded the South Platte, the Northrup Gulch Road was closed several years ago about 1/4 mile from the river to mitigate erosion and protect resource values. The Metberry Creek Road, which currently goes to the river, is planned to be closed below the Custer Cabin to reduce erosion on a 1/4-mile steep section. The Hackett Gulch Road still goes down to the river but the ford has been closed.

Developments in this segment include remnants of old mining cabins on Tarryall Creek and near Longwater Gulch, and the Custer Cabin, an intact mining cabin on Metberry Gulch.

South Platte - Segment D - This 3.1-mile segment between the downstream end of the stream gauge below Cheesman Dam to the upstream end of the Wigwam Club property known as Cheesman Canyon lies within the Pike National Forest. The upper one mile is owned by Denver Water and the lower mile by the Forest Service. The area is inaccessible except by the Gill Trail (FDT 610) which parallels the entire west bank of the river. The area is characterized by a 600-foot deep v-shaped canyon with steep canyon sides and numerous large rock formations. Although the area lies immediately below Cheesman Dam and the dam is visible from the upper one

mile of the area, the canyon is primitive and there are no other developments in the corridor.

South Platte - Segment E - This 19.5-mile segment from the north end of the Wigwam Club property to the backwaters of Strontia Springs Reservoir lies within the Pike National Forest. The area is predominately National Forest System lands, with about 20 percent owned by Denver Water and 10 percent privately owned. This segment, like the upper end of the North Fork segment, is characterized as an open 500 to 1,500 wide river valley with meadows, grasslands, and willow shrubs along a meandering stream. Side slopes are moderate and valley rims average 600 feet. An old abandoned railroad spur accessed Nighthawk from the mainline up the North Fork. The old grade is mostly covered by the county road but is evident in places. This entire segment is paralleled by paved County Road 126 from the Wigwam Club to Deckers, paved County Road 67 and 97 from Deckers to Nighthawk, and graveled County Road 97 from Nighthawk to the confluence. Graveled County Road 75 parallels the east side of the South Platte for one mile south of Deckers. Graveled county roads, coming in from the east, intersect with the roads along the South Platte at Nighthawk (County Road 40) and Oxyoke (County Road 67). There are numerous roads throughout the small communities. The Colorado Trail (FDT 1776) crosses the corridor near the confluence of the South Platte and the North Fork. Power and telephone lines access nearly all the houses in this study segment.

The upper end of this 19.5-mile segment is owned by the Wigwam Club, a private fishing club. This mile-long area contains a lodge and 10-15 cabins and other structures, several fish ponds, two foot-bridges, one road bridge, more than 40 checkdams, a road, and other improvements.

From the Wigwam Club to Deckers, the river crosses National Forest System lands and passes the Lone Rock Campground. In Deckers, there are two highway bridges across the South Platte and about 20 structures leased from Denver Water including cabins, a store, fishing shop, and restaurant (which is currently closed). Downstream from Deckers are the small communities of Trumbull, Oxyoke, Nighthawk, Twin Cedars, and South Platte. About 2/3 of the properties in these areas is owned by Denver Water which leases out the buildings for year-round residences, summer homes, and other recreational

use. The remaining 1/3 of the properties are privately owned residences. All these areas, including Deckers, are within the ROW granted by the USDI in 1931 to Denver Water for a dam and reservoir. Trumbull, which straddles the South Platte for 1/2 mile contains over 300 lots with over 50 structures, mostly houses. Other developments include a volunteer fire department and a highway bridge over the South Platte. Ownership is split between Denver Water and private individuals, but Jefferson County also owns a few lots in the community. For 1-1/2 miles downstream from Trumbull, most of the river corridor is owned by Denver Water or private individuals. In this section there are over 20 structures, mostly houses, a highway bridge over the South Platte, and the Swayback Ranch, a private fishing club. For a mile downstream from the Swayback Ranch the river crosses National Forest System lands which contain the Bridge Crossing Picnic Ground and Platte River Campground. The river runs a mile through the community of Oxyoke, which has over 20 houses, a highway bridge over the South Platte, and a small pond on Gunbarrel Creek, then back on the National Forest for 1/4 mile then for 1/2 mile across several small tracts of private land with a few houses. For the next several miles the river passes through the National Forest which includes the following developed recreation sites: Ouzel Camping Area, Scraggy View Picnic Ground, Willow Bend Picnic Ground, and Osprey Camping Area. From Nighthawk to the confluence with the North Fork, the river passes through several miles of lands owned by Denver Water and private individuals which contain the Nighthawk and Twin Cedars communities with over 40 structures, mostly houses or summer homes. The river then flows for several miles through the National Forest (crossing a small undeveloped private tract) then reaches the community of South Platte at the North Fork confluence. South Platte includes about 10 houses and the historic South Platte Hotel (listed on the National Register of Historic Places). There is also a highway bridge across the South Platte and a stream-gaging station. A bridge owned by Denver Water which crossed the North Fork behind the hotel was washed out in the Buffalo Creek Flood in 1996. Below the confluence, the river enters the National Forest for a mile to the backwaters of Strontia Springs Reservoir. Denver Water maintains a gated road along this segment, which receives more use as a trail for anglers, and a footbridge across the South Platte near the backwaters of Strontia Springs Reservoir.

2.8 Vegetation/Timber Management

Vegetation

Late in the 1800s, railroads provided access to the timber within the North Fork, lower South Platte (upstream to Nighthawk), and Elevenmile Canyon areas of the South Platte. Primitive roads provided access into most of the other areas. Large park-like ponderosa pine stands mixed with Douglas-fir and some minor amounts of Colorado blue spruce covered most of the study area and were harvested to provide timber for the railroad and lumber for the construction of Denver and other local communities. Early timber operations were followed by large uncontrolled fires. Many of these areas regenerated naturally, but nonstocked and understocked areas were replanted by the Civilian Conservation Corps during the 1930s.

Elevations range from 6,029 to 9,240 feet within the South Platte study corridor and 6,100 to 8,400 feet within the North Fork study corridor. Ponderosa pine stands still cover much of the study area but are more closed and in places mixed with Douglas-fir. South-facing slopes in the lower elevational ranges are brushy with Gambel's oak, mountain mahogany, and scattered Rocky Mountain juniper and ponderosa pine. North-facing slopes contain nearly pure stands of Douglas-fir with an understory of Gambel's oak. Douglas-fir is the climax species for almost the entire study area, except for a few sites in the upper reaches of the South Platte study corridor. All vegetation age classes are present, with the majority of stands 80 to 130 years old. Ground cover is relatively sparse. Riparian areas are characterized by riparian grasses, sedges, woods rose, willows, dogwood, alder, interspersed with a few scattered narrowleaf and plains cottonwoods. Mountain grasslands typically occupy untimbered areas adjacent to mountain shrub, ponderosa pine, and Douglas-fir types. They are scattered throughout the study area on relatively flat terrain between about 6,500 and 9,000 feet in elevation. Stands of quaking aspen are present in Elevenmile Canyon as a common stand component.

A small portion of the study corridors is used for agriculture (about 2,000 acres). Agricultural lands consist primarily of riparian and mountain grasslands situated on private lands along the river. These areas are used primarily for livestock grazing

and a minor amount of hay production. Most of the agricultural lands lie in the upper portions of the North Fork study corridor above Buffalo Creek and in the area between Lake George and the northern boundary of private lands near Tappan Gulch. There are also grasslands along the South Platte study corridor between Deckers and the confluence of the North Fork and the South Platte Rivers. They are not under agricultural or grazing use since most of the area is owned by Denver Water or individual private homeowners.

Of special importance in the study corridors is the prairie gayfeather (*Liatris punctata*) plant which is the primary food source of the endangered Pawnee Montane Skipper butterfly. This butterfly is endemic to the study corridors and to adjacent areas on the North Fork and South Platte downstream from Tarryall Creek. There are no records of federally-listed threatened or endangered plants in the study area. There are also no records of plants within the study area that are on the Forest Service's list of sensitive species. The corridor does contain potential habitat for one federally listed threatened species - Ute ladies tresses orchid (*Spiranthes diluvialis*).

Timber

Logging was important in the entire study area from 1860 to 1900. Cutting rates probably peaked shortly after 1880 to support mills supplying lumber for Denver and other mining towns. The Denver, South Park and Pacific Railroad was constructed along the North Fork from Denver to Leadville by 1880 and provided rail access to wagon road systems which covered the area. In about 1896, the Colorado Midland Railroad was completed from Denver to Buena Vista and Leadville through Elevenmile Canyon. It is likely nearly all the sawtimber readily accessible to both these railroads was removed by the turn of the century. Much of the area is shown as "cut over and burned" on early Forest Service timber inventories.

Nearly all the National Forest System lands in the study area are forested and part of the suitable timber base for the Pike and San Isabel National Forests. In the past 50 years there have been no commercial timber sales on National Forest System lands in the corridors. Timber harvest has been limited to the cutting of dead and down timber for firewood. Although nearly all the study area is part of the Forest's suitable timber base, no commercial sales are scheduled. There is some possibility for

commercial sales in response to Forest health issues.

Based on 1984 Forest Plan estimates, which have been subject to much debate, the study area contains 11,200 acres of suitable timber on National Forest System lands. "Suitable" is defined as harvestable on forest lands in Forest Plan management areas which include scheduled timber harvest on a regular sustainable basis. These suitable acres currently produce an average of 11.6 cubic feet of wood per acre annually or 129,920 cubic feet of wood annually for the study corridors. Given current markets and newer inventories, the corridors are unlikely to produce significant commercial timber.

There has been some minimal harvest on private lands, consisting of thinnings and partial cuts. This has decreased over the past 30 years due to increased recreational use and residential development. There is no harvest activity on lands owned by Denver Water or Jefferson County. Throughout the study area the corridor retains a forested appearance and shows little, if any, signs of timber harvest activities.

Timber harvest and other management of BLM system lands on 29 acres of the North Fork study corridor is governed by the Northeast Resource Area Management Plan. The Plan identifies the corridor as part of the Evergreen Management Unit. Within this unit, the area is composed of forest and rock outcrops. The entire area is unavailable for commercial timber harvest and management is restricted to maintain recreation, scenic, wildlife, and watershed values. There are no records of BLM harvest on this 29-acre area.

Ecology

Wildfire was the predominant shaper of vegetation types prior to European settlement in the middle of the 19th century. Fire size and intensity probably increased by the turn of the century with extensive logging and the construction of steam railroads in the area. Fire exclusion since the 1940s has led to the replacement of open ponderosa pine stands with closed-canopy ponderosa pine and Douglas-fir stands. This resulted in little understory development in the grass and shrub components, poor vigor due to overstocking, and a shift in fire intervals from frequent cool fires to infrequent, high intensity, stand replacement fires. A result has been a decline

in forest health, including increased insect infestations, disease, and parasitism by dwarf mistletoe. Douglas-fir mortality has become very noticeable in the past decade with losses from spruce budworm, tussock moth, and bark beetles. Ponderosa pine bark beetle mortality was heavy in parts of the study area in the 1960s and 1970s, but has been low since then. These conditions have increased the potential for large, intense fires.

An example of the problem created by fire exclusion is the Buffalo Creek Fire in May, 1996. Driven by strong winds, the fire burned 11,875 acres in the Buffalo Creek area, halting at the confluence of the North Fork and South Platte. Fire intensity levels were extreme and destroyed over 7,000 acres of timber and several homes. About 800 acres of the study corridor were affected by this fire, but tree mortality was light.

2.9 Grazing

Most of the study area supports herbaceous or shrubby vegetation that provides forage and habitat for wildlife, protection for soils, water production, scenery, and a visually pleasing diversity. Vegetative types in the study river corridors vary from riparian meadow bottoms to upland grass and shrub types with conifer overstories.

Domestic livestock grazing is a common use on the private lands in the upper portions of the North Fork study corridor and on the private lands downstream from Lake George. There are also some small private horse pastures along the lower North Fork and lower South Platte, and two free ranging donkeys on private land near the confluence of the study corridors. Some grazing use also occurs on portions of the National Forest System lands within the corridors and is controlled by a permit system administered by the Forest Service. The study corridors serve as the boundary between several allotments and grazing is extremely light and generally limited to areas away from the river. This grazing is allowed under controlled management conditions that will maintain or improve the range resource and riparian health. Current management includes the use of allotments with individual pastures where animals are rotated through areas according to the season, available forage, utilization levels, and resource objectives. Allotments along the South Platte River corridor include the Thirtynine Mile Mountain North,

Wagon Tongue, Blue Mountain, Rocky, Badger, Crystal, Lower West Creek, Wigwam, and Platte River. Allotments along the North Fork of the South Platte include Spring Creek, Buffalo, and Craig Meadows. All of these are or were stocked with cattle. The grazing use that does occur within these allotments is described below.

Allotments along the South Platte River Corridor

Thirtynine Mile Mountain North - The northern edge of the Reservoir unit of this allotment borders the South Platte River just below the spillway at Elevenmile Reservoir. The terrain is too steep to allow access to the river by the cattle on this allotment. The river corridor is unaffected by grazing from domestic livestock along this one-mile stretch of river.

Wagon Tongue - The northern boundaries of the Rimrock and Sledgehammer units border the South Platte River from about a mile below the spillway to Rankin Gulch. Steep topography prevents access to the river for most of the four miles on this stretch. Drift fences have been installed to prevent access to the river along this corridor. It should be noted that the Elevenmile Canyon Recreation Area occupies the entire stretch of river described as the boundaries for the units in the Thirtynine Mile and Wagon Tongue allotments. The river is not a source for water or forage on these allotments, as this area is in a developed recreation management prescription. Any cattle use in this area is merely incidental.

The Blue Mountain unit in this allotment was added to the Wagon Tongue allotment in the 1960s. Blue Mountain borders the South Platte River from Rankin Gulch to Lake George. This unit has been vacant since the late 1960s and there are no plans to restock it.

Rocky - This allotment has five units that border the South Platte River on its southern boundary from the spillway at Elevenmile to Lake George. The allotment has been vacant since 1947. There are no plans to restock it.

Badger - To the north of the Rocky allotment is the Badger allotment. The Tappan Gulch, Platte Springs, and Matukat units of this allotment all border the South Platte River on the west from Happy Meadows Campground to about a mile past the confluence of Tarryall Creek and the South Platte.

All of these units are active. The Tappan Gulch and Platte Springs units are under permit for 25 head of cattle from June 11 to October 31. Most of the South Platte River is inaccessible to the cattle due to steep topography. If any grazing does occur it is incidental and very light. Part of the South Platte within the Tappan unit flows through a piece of private property known as the Sportsman's Paradise. Property owners are allowed to have horses on their lots but there is no community horse pasture and no grazing occurs along the river itself.

The Matukat unit was historically used as a separate unit and was permitted for 35 head season-long. In 1989 the permittee elected to discontinue use of this unit due to conflict with public use. The unit remained vacant until 1996 when it was temporarily used with the Wigwam allotment to the north. The steepness of the terrain in this unit discourages cattle from accessing the river. Light use along the river occurs from cattle moving upstream from the Wigwam allotment. This unit will probably remain active in the future.

Crystal - On the east side of the South Platte directly across from the Badger allotment is the Crystal allotment. This allotment has been vacant since 1947 with the exception of 1989 when the allotment was stocked with a temporary permit for 50 head of cattle. This proved to be unsuccessful due to the poor condition of existing fences and the inability of the permittee to keep the cattle within the bounds of the allotment. This allotment borders approximately nine miles of the South Platte River, much of which is too rugged and unsuitable for grazing. This allotment will remain vacant and may be closed.

Lower West Creek - North of the Crystal allotment is the Lower West Creek allotment. The west side of this allotment borders the South Platte from Metberry Gulch to about 1/4 mile south of Cheesman Reservoir. Historical abuse of this area from overgrazing, logging, clearing, and fire forced exclusion from grazing in 1950. In order to protect the watershed and allow re-establishment of vegetation this allotment has remained vacant. There are no plans to restock it.

Wigwam - On the west side of the South Platte and north of the Badger allotment is the Wigwam allotment. This allotment is divided into three units. The southernmost, the Wildcat unit, borders the South Platte for a little over a mile. There are 85 head of

cattle permitted on this allotment from June 1 to September 30. The cattle are rotated between the three units during the grazing season. They are in the Wildcat unit a little over a month. The cattle have good forage along the river as well as in old burns and clearcuts on a bench above the river. Grazing use is light in all of these areas. Recreational use, particularly by off-road vehicles is high along this stretch of the river. This prevents the cattle from concentrating in one place for any length of time. Unfortunately the cattle are sometimes pushed completely off of the allotment. The cattle can also graze in Wildcat Creek and Corral Creek which are tributaries to the South Platte. At Wildcat Creek the allotment boundary swings to the east and away from the river. The river is not accessible to cattle from the two units to the north.

Platte River - To the east of the Wigwam allotment on both sides of the South Platte and inclusive of Cheesman Reservoir is the Platte River allotment. The allotment is divided into two units, at the center of which is the South Platte River. The area spans from about a mile south of Cheesman Lake all the way to the confluence of the North Fork of the South Platte and the South Platte River. The ownership along this part of the South Platte includes large tracts of private property interspersed with Forest Service land. The impacts from grazing on the river from these properties is unknown at this time.

Prior to World War II, the allotment had a history of unregulated grazing, logging, clearing, and fires. These activities quickly destroyed the ground cover. A plan of action was developed in 1945 and the allotment was excluded from grazing in 1950 for watershed protection. The allotment has remained vacant. The advent of better fire protection, control of logging activities, and exclusion of grazing has greatly improved vegetative cover and condition on this allotment. This allotment will probably be closed permanently.

Allotments along the North Fork of the South Platte River Corridor

Spring Creek - The Spring Creek allotment was located at the confluence of the North Fork of the South Platte and the South Platte River. Its boundary roughly followed the North Fork to Riverview. Most of the ownership along the North Fork is private. There is very little information on the history of this allotment. Apparently there was severe erosion

associated with grazing and the allotment was excluded from grazing sometime prior to 1942 for watershed protection. The allotment has continued to be vacant since that time and will probably be closed.

Buffalo Creek - Upriver from the Spring Creek allotment is the Buffalo Creek allotment. One and one half miles of the North Fork is contained within the allotment boundary. It is all private property. The allotment was active until 1994 when the permit was waived back to the Forest Service. The permit was for 90 head of cattle. There are no plans to restock this allotment.

Craig Meadows - The vacant Craig Meadows allotment was combined with the Buffalo Creek allotment under one management plan. The North Fork is contained within the allotment to a point about a mile downriver from Bailey. None of the river is accessible by livestock as the terrain is much too steep. The remainder of the corridor is located on private property. There are no plans to restock this allotment.

Summary

Currently there are four active allotments along the South Platte River corridor and no active allotments along the North Fork corridor. No significant impacts from grazing have occurred on the river from these allotments. The Wigwam allotment is the only allotment where cattle actively use the South Platte River. There are no plans to increase the number of cattle on this or any allotment along the river corridor.

The effects of management practices in the past and the increasing pressure over the last 50 years from urban growth and recreational use have made most of the vacant allotments impractical and uneconomical to use. Many of the historic ranches have been subdivided into smaller tracts and the water rights sold to meet the needs for growth along the Front Range. The allotments were usually adjacent to these ranches. It is doubtful that any of the vacant allotments will ever be restocked.



Several private ranches are located in the upper portions of the North Fork study corridor.

2.10 Soils

General Soil Types

The soils of the study area have developed primarily from materials derived from the Pikes Peak Batholith. The granites from the batholith include medium and coarse grained hornblende-biotite deposits throughout most of the study area and fine grained quartz monzonite and granodiorite in the northern portion of the study area. Within the river corridors, the soils have developed in colluvial deposits on mountain sides and fluvial deposits in intermittent and perennial drainage bottoms. Slopes range from 15 to 80 percent along the mountain slopes and 0-10 percent in the valley bottoms. In general the soils are moderately acid, have low cation exchange capacity, low organic matter content and are shallow to bedrock. These soils are commonly referred to as "decomposed granite".

Two dominant soils occur along the river corridors. These are the Sphinx and Legault. The Sphinx soils are shallow and somewhat excessively drained. They formed in material weathered from Pikes Peak granite on mountain sides. The surface layer is gravely coarse sandy loam. Permeability is rapid and the available water capacity is low. Runoff is moderate to rapid and the hazard of water erosion is moderate to severe depending on slope. The Sphinx soil supports ponderosa pine and Douglas-fir communities. The Legault soil is a dark grayish brown, very gravely coarse sandy loam that has also formed from weathered Pikes Peak granites. It is found on north-facing aspects and higher elevations of the mountain sides. Permeability is moderately rapid, and the available water capacity is very low. Runoff is rapid and the hazard of water erosion is moderate to severe depending on slope. The dominant vegetation is Douglas-fir communities.

The valley bottoms contain fluvial deposits. These deposits represent past flooding events and are often stratified by sizes that represent different flow rates or flood intensities. Due to the proximity to the drainages, these soils support a much higher production and diversity of vegetation. The soils and the associated vegetation of the valley bottoms are critical for maintaining the equilibrium within the watershed as they provide protection, water and nutrient storage, and act as a buffer to erosional events.

Use and Management

The soils that have derived from the Pikes Pike Batholith are very erosive. The erosional processes include unravelling and rolling of particles downslope. Sheet, rill, and gully erosion are common with any surface disturbance in this area. Due to the structure of the bedrock, the soils are not susceptible to mass wasting or land slides. South and west-facing aspects are more susceptible to erosion due to the low amounts of organic matter in the soil surface and higher amounts of rock outcrop and bare soil. Slopes greater than 35 percent occur along the river corridors. These slopes are rated as severe for erosion potential.

Recreational uses in the study area are increasing and are expected to increase in the future. Road and trail systems in the area are currently the greatest threat to erosional soil losses and downstream sediment impacts. Proper location of road and trail systems is required to minimize soil losses and maintain watershed health. Access points and travel corridors should be located along contours and outside of drainage channels. The road and trail systems above the river corridor impact the health and water quality of the South Platte River and must be taken into consideration. Downstream impacts of sedimentation can be seen in several areas. The origin of the sediment is generally higher in the watershed and related to soil disturbance through access or recreational uses. The potential for soil losses and degradation of the river corridor is very high given the inherent erosiveness and low productivity of the soils.

In May, 1996, a wildfire burned about 11,875 acres in the Buffalo Creek area, including about 800 acres within the study corridors near the confluence of the North Fork and South Platte Rivers. The burn was quite light within the study corridors with little tree mortality. The case was quite different however, outside the study corridors with 100 percent mortality on over 7,000 acres. On July 12, 1996, a major storm caused serious flooding in Buffalo Creek which continued downstream along the North Fork to Strontia Springs Reservoir and from Spring Creek down the South Platte to Strontia Springs Reservoir. A 10 to 20-foot wall of water and mud washed down these streams causing two fatalities and destroying several trailer houses, the fire station, town water system, community building, numerous automobiles, seven private bridges crossing the North Fork, and por-

tions of County Road 96 along the North Fork. In addition, the flooding caused serious sheet erosion on the burned areas and deposited tons of sediment and debris into Strontia Springs Reservoir and along the study corridor below Buffalo Creek. Forest Service and local citizen and government rehabilitation efforts include seeding, sediment check dams to limit erosion, and efforts to repair roads or replace bridges. It is unclear however, if all the private bridges will be rebuilt.

The area of the South Platte below the Buffalo Creek Fire will continue to receive large amounts of sediment through Spring Creek and the North Fork from Buffalo Creek for many years. The soil losses from the fire could impact the river corridors for several decades and the potential for a similar fire and subsequent erosion to occur higher in the South Platte watershed is high.

2.11 Fisheries

History

The Arkansas River and the South Platte River are the two main drainages east of the Continental Divide in Colorado. Because of its size, accessibility and high quality fishery resource, the South Platte River has an extensive history, in terms of its fishing heritage. Being relatively large and close to the major population centers of Colorado, it offers the most prolific and probably highest quality trout fishing resource in eastern Colorado. Close to the city of Denver, the fishery in the South Platte River has been utilized since Euro-Americans first settled the area. The fishery in the system was most likely utilized by Native Americans as well.

The high quality of the fishery has historically provided anglers throughout the country with a quality recreational fishing experience. The Platte Canyon was a popular resort area from 1880 through the early part of this century. In addition to other services, the famous "fish train" was operated in summer months (Chappell, 1979). The fish train brought anglers from the Front Range communities into the Platte Canyon, dropping them off along the South Platte River for a day or weekend of fishing. The trains were a popular way to reach the numerous resorts along the river. A Monday morning run was made early enough to ensure that weekend guests could be back to work on time.

The native trout in the South Platte River was the greenback cutthroat trout (*Oncorhynchus clarki stomias*). Although this species was apparently highly utilized, the large number of anglers and abundant catches appeared to take its toll on the native trout fishery. As early as the 1880s, fish culturists began rearing non-native trout in the Denver area. An early explanation for introducing brook trout included the observation that the greenback cutthroat "is so easily caught, it is so unwary and confiding, that the fish in a moderate-sized stream can be taken out in one season with a hook line and grasshopper" (Wiltzius, 1985). Private hatcheries began operation along the South Platte River as early as 1872, which began the introduction of non-native trout in Colorado. The result of these and subsequent stocking of brook, rainbow and brown trout in the South Platte drainage was largely responsible for the loss of the greenback, through competition and hybridization.

The South Platte River, in particular the Cheesman Canyon area, has been the subject of magazine articles, television shows, and even books. The high quality fishery and aesthetic value has drawn considerable attention to this area for a number of years.

Segment Delineation

River segments referred to throughout Chapter II are described in Chart I-2.

South Platte - Segments A and B -

Habitat Characteristics - These segments of the South Platte River probably contain the most diverse habitat conditions of any of the study areas. The river exits the Elevenmile Dam, which influences physical characteristics of the river channel, as well as several water quality parameters.

The physical characteristics of the South Platte River in Elevenmile Canyon is in large part a result of the canyon morphology. The river exhibits cascades and high gradient boulder rapids in areas where the canyon is relatively narrow, and valley gradient is high. These areas also exhibit deep pools where the river has scoured the stream bed adjacent to bedrock cliffs. Areas where the valley is wider and gradient is less exhibit different characteristics. These areas are dominated by wide, shallow riffles and glides. These areas are also depositional areas for sediment that has been produced

from erosional processes upstream. Erosion is also more prevalent in the low gradient areas, primarily due to the unconsolidated banks, and depositional nature of the channel.

As the stream exits the canyon, it travels through private land that is channelized around Lake George. This area provides little fish habitat, as adequate depths and other forms of cover are extremely limited. Just downstream of this channelized section, the river passes through a wide valley that results in the river exhibiting considerable meandering. Unfortunately, there is little woody riparian vegetation along this stretch and, as a result, there is considerable bank erosion and poor pool development.

As the river enters a steeper canyon downstream of the private land to Beaver Creek, meandering decreases and habitat also improves. A variety of habitat conditions exist in this portion of the segment, with pools, rapids, and glides becoming more abundant. Substrate also becomes more variable, with large boulders becoming more prevalent, providing additional habitat.

The river exits Elevenmile Reservoir through a surface release outlet. Although the amount of released water can be regulated to some extent, the storage capacity of the reservoir dictates the amount of water released during the snowmelt runoff period. The flow releases from the dam result in the modification of the hydrologic conditions downstream. A hydrograph of the river in this section generally follows a pattern normally seen in stream systems in the Rocky Mountain Region, with peak flows occurring in the summer months, and low flows occurring in the fall, winter, and part of the spring. The main difference is that there are relatively sudden increases and decreases in flows, which typically are not as often and dramatic as in unregulated streams.

Historically, extremely low flows during winter months contributed to poor habitat conditions during the winter months (CDOW unpublished sampling report). Indeed, flows of less than 3 cfs were recorded as late as 1978. The completion of Spinney Mountain Reservoir and additional flows as a result has improved winter flow conditions. Flow records indicate that winter flows have not been less than 15 cfs since 1987.

Surface-release reservoirs have several effects on the stream system downstream. Because the water is coming from the upper portion or epilimnion of the reservoir, stream temperatures tend to be warmer during summer months. During the winter months when the reservoir is ice covered, the coldest water is typically found at the top of the reservoir. As a result, the river downstream exhibits colder water than would typically be found if the reservoir were not present. The water temperature conditions in the South Platte River downstream of Elevenmile Dam exhibit higher seasonal fluctuations than if a bottom-release reservoir or no reservoir were present. Although there is evidence to indicate that this temperature condition may improve conditions for the native sucker species in Elevenmile Canyon, it does not appear to benefit the trout fishery.

The surface-release outlet works on the dam may provide a food source for aquatic macroinvertebrates directly downstream of the reservoir. Nutrients, algae, and zooplankton in the surface layer are typically washed over the dam, where they are utilized by downstream stream insects. These insects in turn are a primary food source for fish in close proximity to the dam. Many of these insects are highly specialized to capture the floating material and organisms coming over the dam by their specialized filtering appendages and "net-like" devices they construct. Because there is little information on the aquatic macroinvertebrate populations downstream of Elevenmile Dam, it is impossible to say whether the current situation benefits the fishery or not.

Instream flow modeling, using the Instream Flow Incremental Methodology (IFIM) was conducted in this reach during the 1980s (Chadwick and Associates, 1986). Their results indicated that for brown trout, juvenile habitat is the most abundant type of habitat in this section. All habitats decrease during the high flows associated with the snowmelt runoff period. Although this seasonal trend is also apparent for rainbow trout, adult habitat far exceeds that of other lifestages. In addition, adult rainbow trout habitat is almost twice as abundant as adult brown trout habitat. When compared to other sections of the South Platte River, this section of river including these two segments and Segment C, contain the second highest amount of habitat in the river. Only Cheesman Canyon (Segment D) contains more adult habitat of both species. This may be due in part to the variety of habitats in this reach, especially

the deeper pools and runs associated with large substrates and bedrock.

Fishery Management - Segment A is managed as a quality regulation area, from Elevenmile Dam to the Wagon Tongue Gulch bridge, approximately 2.5 miles downstream. Regulations include a limit of two fish over 16 inches. This regulation provides a higher quality fishery in terms of the ability of anglers to catch larger, trophy-size trout. The remainder of Segments A and B are managed as a standard regulation area, with an eight fish limit.

There are several game fish found in this reach, some actively managed by the CDOW, and others a result of migration from Elevenmile Reservoir (Chadwick and Associates, 1986). Catchable as well as subcatchable rainbow, brown and cutthroat trout have been planted in this section of the river to provide a put and take fishery, as well as establish self-sustaining populations of trout. Although there is limited rainbow trout reproduction in this segment, the brown trout population is by and large self-sustaining.

Native fish in these segments include white suckers (*Catostomus commersoni*), longnose suckers (*Catostomus catostomus*), and creek chubs (*Semotilus atromaculatus*). Although the two sucker species are common, they are generally not considered a desirable game fish.

Angler Use - Angler use in the public sections of these segments is relatively high (CDOW, 1993, 1994). In 1994, the Colorado Division of Wildlife (CDOW) conducted creel census estimates of three segments of this section, all in Elevenmile Canyon. This census was conducted between May and September, when the highest number of anglers were present. Results indicated that the lower and middle portions of the canyon received similar fishing pressure (651 and 737 hours/acre respectively). The upper portion closer to the dam received considerably more use (4,018 hours/acre). Discrepancies between the two areas could be attributable to available camping in the upper portion of the canyon, preference for special regulations in that area, or a combination of factors. The relatively high fishing pressure in these segments can be attributable to several factors, including accessibility from adjacent roads, close proximity to major population areas along the front range, the high quality fishery, intensive management by the CDOW, and the

aesthetic value of the area. Most likely it is a combination of these factors that provides the high quality fishery observed in this segment.

South Platte - Segment C -

Habitat Characteristics - This segment of the South Platte River is in most part confined in a narrow, high gradient canyon. Sinuosity is relatively low, while stream gradient is higher than many portions of Segments A and B. Although there are areas of reduced gradient, much of this segment is typified by pool-riffle complexes associated with boulders and bedrock. Riparian vegetation is restricted to areas directly adjacent to the river, and several tributaries, including Tarryall Creek enter the river in this segment.

The thermal, nutrient enrichment and chemical modifications associated with Elevenmile Reservoir most likely do not significantly influence this section of the river. However, the flow releases from the dam result in the modification of the hydrologic conditions. The hydrograph of the river in this section generally follows a pattern normally seen in stream systems in the Rocky Mountain Region, with peak flows occurring in the summer months, and low flows occurring in the fall, winter and part of the spring. The main difference is that there are relatively sudden increases and decreases in flows, which are not observed to this extent in unregulated streams. Although the input from tributaries such as Tarryall Creek ameliorate these fluctuations more than in Segments A and B, there are some human induced fluctuations present.

Historically, extremely low flows during the winter months contributed to poor habitat conditions during the winter months (CDOW unpublished sampling report). However, the influence from other tributaries in this segment have resulted in historic low flows being not as limiting as in Segments A and B. In addition, recent flow conditions in the river have provided considerably more water during the winter months as a result of additional upstream reservoirs and transmission of additional water to Denver.

Instream flow modeling, using the Instream Flow Incremental Methodology (IFIM) was conducted in this reach during the 1980s (Chadwick and Associates, 1986). Their results indicated that for brown trout, juvenile habitat is the most abundant in this section, and all habitat decreases during the high

flows associated during the snowmelt runoff period. Although this seasonal trend is also apparent for rainbow trout, adult habitat far exceeds that of other lifestages. In addition, adult rainbow trout habitat is almost twice as abundant as adult brown trout habitat. When compared to other sections of the South Platte River, this section of river contains the second highest amount of adult habitat in the river. Only Cheesman Canyon (Segment D) contains more adult habitat of both species. This may be due to the variety of habitats in this reach, especially the deeper pools and runs associated with large substrates and bedrock.

Fishery Management - This segment of the South Platte River is designated as "Wild Trout Waters" by the CDOW. This designation is given to relatively high quality waters that are capable of producing a quality trout fishery. These waters receive little if any hatchery supplementation, and rely primarily on natural reproduction for recruitment to the fishery. This designation was placed on this portion of the river for two primary purposes: 1) the lack of fishing pressure due to the inaccessible nature of the area, and 2) the relatively high potential for natural reproduction. However, the CDOW, has planted fingerling brown trout and steelhead rainbow fry in this segment since 1990 (CDOW unpublished stocking information). This stocking was conducted to supplement natural reproduction of brown trout, and to introduce a large rainbow trout strain that would migrate to Cheesman Reservoir as juveniles, and return to the river as large adults.

Fish population information is limited, primarily due to the inaccessibility of the area. As part of the Two Forks study, two fish sampling stations were located in this segment, upstream and downstream of the confluence of Tarryall Creek. Sampling at these stations revealed that both brown and rainbow trout are self-sustaining in this area, and constitute a healthy fishery. In addition native longnose and white sucker populations are also present.

Angler Use - Angler use in this area has not been formally monitored. In part, this lack of information has been the result of the difficulty in accessing this portion of the river. Access is limited to a relatively few trails and primitive roads. The U.S. Forest Service (USFS) and CDOW has made an attempt at limiting access on severely degraded roads, in order to control erosion. The result of this restricted access is a fishery experience in a relatively undis-

turbed setting. Other than the Corral Creek area, there is an opportunity to fish the river with little contact with civilization. Roads and trails are rare, which limits the public's access. As a result, fishing pressure in this segment is probably lower than in any of the South Platte River study segments.

South Platte - Segment D -

Habitat Characteristics - This segment of the South Platte River is located primarily in a confined canyon, known as Cheesman Canyon. Although it is a relatively short segment, it contains probably the best habitat in the study area (Chadwick and Associates, 1986). The confined nature of the canyon and abundance of exposed bedrock and boulders provides excellent pool development and other habitats for both rainbow and brown trout.

Adult rainbow trout habitat exhibited the highest weighted useable area (WUA) of any lifestage of trout habitat in this segment. All lifestages of brown and rainbow trout exhibited the highest values during the fall and winter months. Flows during this period are moderate, and relatively stable. (Chadwick and Associates 1986). Habitat appears to be at a minimum during the snowmelt runoff period, when velocities are at their greatest. This trend was similar to the previous two segments studied. Nehring (1986) found a strong negative correlation between monthly discharge and rainbow and brown trout year class strength. Nehring concluded that flows during May and June were critical for brown trout survival, while June and July were the most critical for rainbow trout. Recruitment during years with moderate and relatively stable flows during the spawning and rearing period produced higher number of young, and ultimately higher adult biomass. As a result, increased flows during critical times of the year can have a negative effect on the trout population in this section.

The releases from Cheesman Reservoir have affected the flow levels as well as the physio-chemical properties of the downstream environment. Unlike Elevenmile Reservoir, the flow releases from Cheesman Reservoir are from the bottom of the dam, constituting a hypolimnetic release. This type of release results in different water quality properties than the Elevenmile Reservoir surface release. By removing water at the bottom of the reservoir, the receiving stream temperatures are more constant than would be expected in an unregulated stream. Aquatic

macroinvertebrate food sources are modified greatly, typically becoming dominated by high densities of smaller organisms. Invertebrates that require seasonal temperature changes to initiate growth and metamorphosis typically become absent soon after bottom releases are initiated.

Fishery Management - The Cheesman Canyon segment of the South Platte River is one of only a few stream segments in the state designated "Gold Medal". This is the highest classification given to a river segment or lake. These waters are managed to maximize the outstanding qualities of the river or lake. Specifically, a standing crop of trout must exceed 40 lb./acre, with at least 12 fish per acre being of quality size (14 inches or greater). The river must have above average scenic quality, and be wider than 20 feet.

The Cheesman Canyon segment has been extensively studied, in terms of its fish populations (Chadwick and Associates, 1986, CDOW unpublished sampling results). Typically, rainbow trout biomass exceeds 300 lb./acre in this segment, with values documented at over 700 lb./acre during the mid 1980s. The sustained high quality of the fishery in this segment has resulted in many articles in local newspapers as well as books and nationally distributed magazines. Nationwide, there are extremely few trout fisheries that approach the population dynamics of this segment.

Angler Use - This segment of the river is only accessible by foot, making it highly desirable to anglers pursuing a more primitive fishing experience. The Gill trail provides fast access from the lower portion of the canyon, to near the base of Cheesman Dam. Fishing accessibility is good throughout the length of the canyon. Creel census information collected from the CDOW during the mid 1980s indicates that this segment of the South Platte River receives heavy fishing use. Total fishing use approached 13,000 hours of angling use in June, with over 53,000 Angler hours spent during the April through September sampling period. During this time period, over 59,000 trout were caught, for a catch rate of over 1.1 trout per hour. These statistics are higher than any of the other areas sampled during the same time period in the segments being studied, and the sustained catch rate is especially high considering the intensive use in this segment.

The fishing is quite challenging in this segment, and limited to artificial lures only. As a result, there are several successful guiding services permitted each year for angling excursions to this segment.

South Platte - Segment E -

This segment of the South Platte River constitutes a diverse section of the river, from a habitat, management and angler experience stand point. Beginning at the Forest Service boundary, the river passes through the privately owned Wigwam Club, and enters a relatively wide valley, which ultimately affects the characteristics of the river. Highway access is good throughout this segment, and private land is scattered throughout its length.

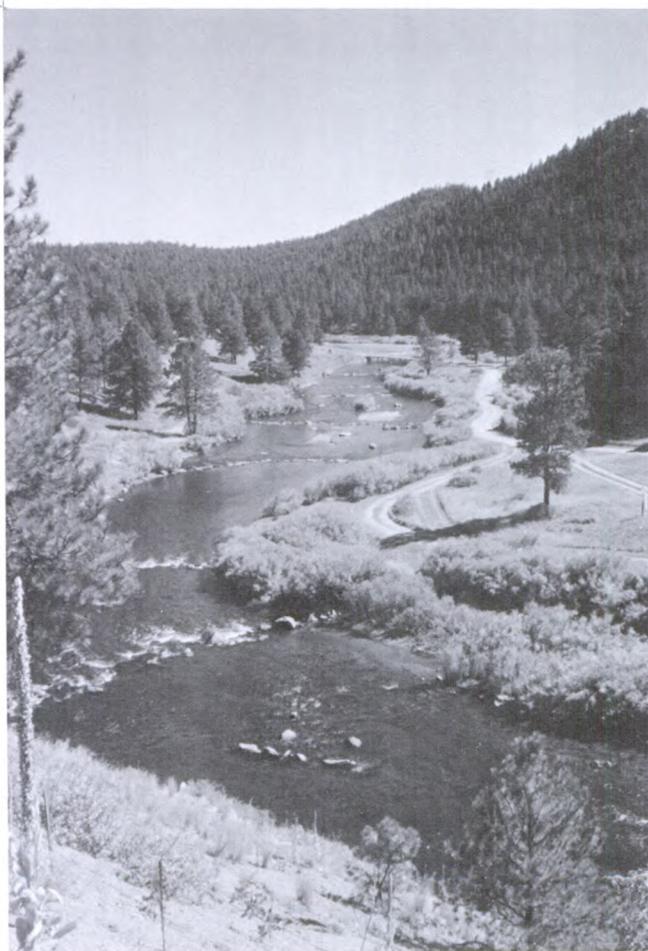
Habitat Characteristics - As the river exits Cheesman Canyon, the river valley begins to widen. The stream gradient is relatively less, and although pools created from bedrock and boulder outcrops are apparent, they are not as prevalent as in the steep canyon upstream. The riparian area is more extensive in this segment, and the river is wider.

Habitat, in terms of WUA is less in this section for all life stages of brown and rainbow trout than in the Cheesman Canyon segment (Chadwick and Associates, 1986). However, brown trout spawning habitat appears to be higher in this segment. Adult rainbow trout habitat appears to be higher in this segment than in Segments A, B, or C, while all life-stages appear to exhibit at least as high values for brown trout in this segment as in the other three South Platte segments.

Sedimentation, a result of erosion from adjacent roads and tributaries appear to be limiting this segment. Historic road maintenance of the adjacent County Road 533 has contributed excessive amounts of sediment in this segment. However, recent paving efforts by Jefferson and Douglas Counties, as well as travel management by several cooperators has resulted in a considerable decrease in sediment.

Fishery Management - This segment of the South Platte River is also managed with special regulations, although it is not considered a Gold Medal section by the CDOW. However, the special regulations in place are restrictive, and are designed to maintain a high quality fishery. Prior to this regulation, the vast majority of trout in this segment were

less than 3 years of age (Nehring and Anderson, 1983). Indeed, trout biomass in this segment was typically less than 10 percent of the Cheesman Canyon segment. Although habitat in this segment appears to be less than in Segments A, B, and C, Nehring and Anderson attributed part of the reduced trout population to angling pressure. Following special regulation implementation in 1983, extensive monitoring was conducted to determine its effectiveness. Nehring (1986) found that the implementation of special regulations in the Deckers area resulted in a dramatic increase of the rainbow trout population in this area. Near the downstream portion of this segment, where more liberal fishing regulations are in effect, brown trout still comprised over 80 percent of the trout captured by Nehring and Anderson.



Check dams constructed to improve fisheries habitat on the Wigwam Club property.

The Wigwam Club is not open to the public, and is managed as a trophy fishery for its members. Stock-

ing does occur in this segment, and biomass estimates approach levels seen in Cheesman Canyon.

Angler Use - This segment of the South Platte River is easily accessible to the large population centers along the front range of Colorado. County Roads 67 and 97 are adjacent to the river throughout its length, with camping, parking and picnic area available throughout its length. Although there is some private property along this segment, the majority of the river is open to public angling.

Creel census data collected by the CDOW in 1986 indicates that angling pressure was relatively high during the summer of 1986. More than 43,000 hours of angling were estimated in this relatively short section of stream from April through September of that year. Approximately 34,000 trout were caught, with a total catch rate of 0.78 trout per hour. Catch rates for brown and rainbow trout were identical, which is considerably different than Segment D which had a much higher catch rate for rainbow trout.

Creel information for the Scraggy View to Twin Cedars area during the same time period revealed that an estimated 38,000 angling hours were spent on this section during the same time period. Although this estimate is slightly lower than the previously discussed section, it should be noted that the area analyzed was considerably longer. As a result, it appears that during the sampling period there was considerably less pressure in this downstream section of Segment E. A total of 41,000 trout were caught during the sampling period in this section, for a catch rate of 1.09 trout per hour. This higher catch rate could be attributed to the fact that hatchery reared trout were planted in this section of the river during the creel census period. Indeed, the rainbow trout catch rate was almost four times the catch rate for brown trout in this section, showing the vulnerability of these fish to anglers.

North Fork - Segment H1 -

Habitat Characteristics - The North Fork of the South Platte River is considerably smaller than the segments addressed for the South Platte River. Originating on the south side of Mount Evans, the river passes the town of Bailey, and enters the study segment downstream. This segment exhibits a relatively low gradient, with typically a gravel and cobble substrate. Riparian vegetation is comprised primari-

ly of willows, with grasses and sedges interspersed. Pools are associated primarily with lateral migration of the stream channel and man made check dams. Although some boulders provide cover, this segment is dominated by riffle habitat which is typically considered marginal. Because this segment is located on private land, there is little current fishery habitat inventory data available for reference. The stream in this segment averages approximately 30 feet wide, and averages 1.0 feet deep during low flows (Chadwick and Associates, 1986).

Stream flow in this segment is modified by water delivered from the west slope, through the Roberts Tunnel. These imported flows have been known to increase the discharge in the river considerably. Adult rainbow trout habitat was measured to be the highest amount of habitat in this portion of the river, based on IFIM analysis (Chadwick and Associates, 1986). All habitat for rainbow as well as brown trout habitat declined dramatically after April, and started to increase again after June. This trend can be related to increased discharges during the summer months from the snowmelt runoff and water augmentation from the Roberts Tunnel.

Fishery Management - Sampling results indicate that there are cutthroat, brown, brook, rainbow trout and longnose suckers in this segment (CDOW unpublished results, Chadwick and Associates, 1986). Brown trout dominate the density and biomass of trout in this segment, and are apparently self-sustaining. Rainbow trout are present primarily as a result of stocking efforts. Although the CDOW plants rainbow trout both upstream and downstream of this segment, they do not plant trout within the private areas of the segment. The private land owners may plant fish or be conducting habitat improvement projects in this segment. However, this information was not available for this analysis.

Angler Use - Because this segment is located on private land, there is no information on angler use. Fishing access to the public is not available for this segment.

North Fork - Segment H2 -

Habitat Characteristics - This segment is located in a relatively steep canyon, with the gradient being higher than the previous segment discussed. As a result of the steep topography, access is limited and there is little information about the habitat condi-

tions. Information from other sections of the river, as well as the South Platte would indicate that there is considerably more boulders and associated habitat in this segment. Indeed, evaluation of aerial photographs indicates that the substrate in this segment contains considerable boulders and bedrock outcrops. The best fisheries in the South Platte (Cheesman Canyon, Elevenmile Canyon) are also found in these type of areas. The higher gradient generally results in more scouring of pools, and smaller amounts of fine sand and gravel being deposited. The presence of boulders and bedrock would increase the amount of pool habitats, which provide good trout cover. Based on information from other segments in the study area and aerial photographs, this segment probably represents the best trout habitat in the study area on the North Fork.

Stream flow in this segment is modified by water delivered from the west slope, through the Roberts Tunnel. These imported flows increase the discharge of the river considerably. Adult rainbow trout habitat was measured to be the highest amount of habitat in this portion of the river, based on IFIM analysis (Chadwick and Associates, 1986). All habitat for rainbow as well as brown trout habitat declined dramatically after April, and started to increase again after June. This trend can be related to increased discharges during the summer months from the snowmelt runoff and water augmentation from the Roberts Tunnel. The difference between habitat conditions related to flow in this segment and Segments A and B, is that the presence of pools and other deep water habitats associated with the boulder substrates is that there are considerably more areas for the trout to avoid high velocity areas. As a result, there is considerably more habitat in high flows, when habitat is generally at a minimum.

Fishery Management - There has been minimal stream enhancement work done on this segment. This is not surprising considering the rugged nature of the canyon, large boulders and poor access. In addition, it appears that trout habitat is relatively good compared to other reaches in the river. Based on a knowledge of preferred trout habitat in the South Platte River system, this boulder-dominated segment of the river probably provides some of the highest quality habitat in the North Fork.

Due to the inaccessible nature of this section of river, there is no fish stocking in this segment. As a

result, the fishery is most likely dominated by a self-sustaining brown trout population. Hatchery reared rainbow trout may migrate into the segment from upstream, and there may be some residual brook trout in the reach. However, it is doubtful that they comprise more than a fraction of the biomass or density of fish found in this segment. Basically, this segment is managed as a wild trout fishery by the CDOW, although no special regulations have been implemented.

Angler Use - Because this segment is relatively inaccessible, fishing is limited to a "walk-in" type experience. This type of fishing experience is limited in the drainage, and provides a more secluded, pristine experience than is found in most other portions of the river. Use is light.

North Fork - Segment H3 -

Habitat Characteristics - This segment of the North Fork of the South Platte River encompasses a variety of habitats, from steep, boulder dominated areas, to relatively low gradient gravel substrate stretches. Because roads parallel the river through most of this segment, the channel is constricted, and riprap is abundant between the road and the stream. The unpaved section of river downstream of the town of Bailey results in considerable sedimentation. In addition, riparian vegetation is poorly developed along most of this segment, primarily a result of the encroachment of the adjacent road.

Stream flow in this segment is modified by water delivered from the west slope, through the Roberts Tunnel. These imported flows increase the discharge of the river considerably. Adult rainbow trout habitat was measured to be the highest amount of habitat in this portion of the river, based on IFIM analysis (Chadwick and Associates, 1986). All habitat for rainbow as well as brown trout habitat declined dramatically after April, and started to increase again after June. This trend can be related to increased discharges during the summer months from the snowmelt runoff and water augmentation from the Roberts Tunnel.

Fishery Management - The fish population in this segment is dominated by a self-sustaining brown trout population (CDOW unpublished sampling records, Chadwick and Associates, 1986). Biomass values typically are greater than 30 lb./acre, while rainbow trout typically comprise less than 5 percent

of the total biomass. Brook trout do not appear to be present in this segment, or are very rare, and long-nose and/or white suckers are common.

The CDOW typically supplements the brown trout population with thousands of catchable rainbow trout every year. Different species and strains of trout are stocked, but typically the management is geared towards a "put and take" type of rainbow trout fishery.

Angler Use - No formal creel census information for this section is available. Access to public land is good in this segment. However, there is a considerable amount of private land that is not available to the public. Informal creel census information collected by the CDOW indicates that the majority of people fishing in the segment are residents of Colorado, and catch rates are typically less than 0.5 fish per hour. Hatchery reared rainbow trout comprise the majority of the fish caught, with brown trout contributing less than 25 percent of the catch.

2.12 Wildlife

Introduction

On the Pike and San Isabel National Forest there are approximately 375 species of mammals, birds, reptiles and amphibians. While not all of these species can be found in the study area, many of them are likely to occur on a seasonal or year-round basis.

On an ecosystem scale, the river provides a path for the flow of organisms through the various wildlife habitat types. It provides outputs such as food, cover and nest sites. It connects different patches of habitat and allows animals to travel from site to site.

The principal wildlife species that occur within the study area are mule deer, elk, Merriam's turkey, Abert's squirrel, and Wilson's warbler. These species are included because of their economic importance or because they have been identified as management indicator species (MIS) in the Pike and San Isabel Land and Resource Management Plan. This Plan directs the Forest Service to provide for the habitat needs of these indicator species, which should accommodate other species with similar biological needs. In this study, Abert's squirrel is one of the MIS for mature ponderosa pine forest and Wilson's warbler reflects the needs of riparian species.

Many other significant wildlife species such as black bear, Rocky Mountain bighorn sheep and mountain lion are found along the river corridor. Several species of raptors use the corridor for foraging or nesting including peregrine falcon, golden and bald eagle, prairie falcon, kestrel, great horned owl, and osprey. Chart II-3 lists the species that are likely to occur in the study area intermittently or on a year-round basis.

The study area contains a diverse mix of habitat types important to wildlife for foraging, resting and breeding. These include wetlands, riparian vegetation, grass-forb, shrub-seedling, and mature forest structural stages. The study area also contains important special habitat features for wildlife such as large rock outcrops and snags which are used by many avian species for breeding and roosting.

There is both consumptive and non-consumptive use of the wildlife in the study area. Several of the common mammal species found in the corridor are hunted, with the exception of bighorn sheep. (This herd is recovering from a population crash in the early 1980s and receives special management treatment while the herd recovers.) Less than 1 percent of the statewide mule deer and elk harvest occurs in the study area and likely less than 4 percent of the annual statewide small game harvest (Mason CDOW, pers comm.) The Colorado Division of Wildlife is responsible for managing wildlife on all lands within the state. Since the Forest Service is responsible for managing the habitat on National Forest system lands, it is important that the two agencies work closely together. Over the last 10 years, cooperative habitat improvement projects in the study area have protected wetlands, restored riparian habitat and controlled noxious weeds to maintain native plant populations for wildlife.

Non-consumptive use of wildlife is important for many Coloradoans. High proportions (63%) consider wildlife viewing a very important part of their recreation activities and 33 percent take trips specifically to photograph, feed or observe birds or other wildlife (CSU, CDOW 1993). The chance to see certain animals, such as eagles, rare or endangered species, and bighorn sheep are extremely important to people when deciding to take a trip to view wildlife (CDOW 1991). National Forests are one of the primary locales (25.6%) for participating in non-consumptive wildlife activities (Standage 1990).

Threatened, Endangered and Sensitive (TES) Species

The Endangered Species Act of 1973, as amended, provides federal protection for threatened and endangered species and their critical habitats. As a land managing agency, the Forest Service makes many decisions that affect wildlife resources. The ESA directs the Forest Service to insure that their actions are "not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat" (16 USC 1536(a)(2)).

In addition, the National Forest Management Act of 1976 directs the Forest Service to provide for the maintenance of viable populations of native and desired non-native vertebrate species. The Forest Service has developed a list of sensitive species comprised of plants and animals that are either declining in numbers or occurrences, species whose habitat is declining, or species whose population or habitat is limited (FSM 2600-94-2).

The following text describes the distribution of wildlife habitat types in each of the seven river segments. Important wildlife and TES species occurrences are also discussed.

CHART II-3
WILDLIFE SPECIES LIKELY TO OCCUR IN THE STUDY AREA
On an Intermittent or Year-long Basis

Mammals		
Mule deer	Elk	Black bear
Coyote	Mountain lion	Beaver
Bobcat	Red fox	Raccoon
Rocky Mtn bighorn sheep	Porcupine	Striped skunk
Cottontail rabbit	Abert's squirrel	Red squirrel
Townsend's big-eared bat(S)	Deer mouse	Voles, Shrews
Birds		
Peregrine falcon (E)	Great blue heron	Purple martin (S)
Bald eagle (T)	American dipper	Hermit thrush
Northern goshawk (S)	Belted kingfisher	Bluebird (2 sps)
Golden eagle	Red-winged blackbird	Stellar's jay
Prairie falcon	Canada goose	Raven
Osprey (S)	White pelican	American crow
Red-tailed hawk	Killdeer	Pine siskin
Kestrel	Waterfowl	Swallows (5 sps)
Cooper's hawk	American goldfinch	Western tanager
Turkey vulture	Black-capped chickadee	Rufous-sided towhee
Great horned owl	Three-toed woodpecker (S)	Dark-eyed junco
Flammulated owl (S)	Townsend's solitaire	Mourning dove
Cooper's hawk	Broad-tailed hummingbird	Northern flicker
Merriam's turkey	Golden-crowned kinglet (S)	Black-billed magpie
Blue grouse	Pygmy nuthatch (S)	House wren
Flycatchers	Warblers	Sparrows
Reptiles and Amphibians		
Bull snakes	Common garter snake	Eastern fence lizard
Tiger salamander (S)	Northern leopard frog (S)	
(E) = Endangered	(T) = Threatened	(S) = Sensitive

South Platte - Segments A and B -

Habitat Features - This segment of the South Platte river begins as a rocky canyon below Elevenmile dam. Riparian vegetation, primarily willow thickets, occurs in a narrow band adjacent to the river and along the tributary streams. Wetland vegetation, more common after the river exits Elevenmile Canyon, can typically be found on the floodplain above the river. Both north and south-facing slopes contain a mixed-conifer forest of ponderosa pine and

Douglas-fir. In Elevenmile Canyon, many of the Douglas-fir are dead from insect outbreaks. The upper and lower portions of this segment contain prominent rocky outcrops suitable for nesting avian species.

Wildlife Occurrences - All of the principal wildlife species can be found in this segment, as well as many of the species listed in Table II-3. The Colorado Division of Wildlife records the use of Elevenmile Canyon by golden eagles and prairie falcons

(Craig, pers comm). No nest sites have been located. During the late 1970s and early 1980s, the Division of Wildlife introduced river otters into several major rivers in the state, including the South Platte River. While the otters did not survive, a 1993 study of this segment of river identified approximately 1.5 miles of river otter habitat (Public Service Company of Colorado, 1993).

Threatened, Endangered, and Sensitive Species Occurrences

The bald eagle, a threatened species, occurs in this segment. A winter communal roost site is located along the South Platte River north of Lake George and a nest site is located along the west shore of Lake George (Public Service Company of Colorado, 1993).

Two sensitive species are known to occur in this segment. A flammulated owl nest was located in the downstream portion of this segment (Public Service Company of Colorado, 1993). The buffer zone established around the nest site overlaps with the study area. Osprey are reported to occur around the Lake George area and approximately 2.5 river miles of this segment are included within the osprey's distribution area (Public Service Company of Colorado, 1993).

Other Region 2 sensitive species which may occur in this segment include: northern leopard frog, tiger salamander, northern goshawk, three-toed woodpecker, purple martin, pygmy nuthatch, golden-crowned kinglet, and Townsend's big-eared bat. Although specific locations for these species are unknown at this time, suitable habitat does exist within this river segment.

South Platte - Segment C -

Habitat Features - This segment of the South Platte River is fairly confined within a canyon. Riparian vegetation, primarily willow thickets, occurs in a narrow band adjacent to the river and along the tributary streams of Corral Creek and Tarryall Creek. Benches of willow and wetland vegetation can typically be found on the floodplain above the river. Both north and south-facing slopes contain a mixed-conifer forest of ponderosa pine and Douglas-fir. Massive rock formations dominate the lower portion of this segment.

Wildlife Occurrences - All of the principal wildlife species can be found in this segment, as well as many of the species listed in Table II-3. Noteworthy wildlife records include a pair of nesting golden eagles in the lower portion of this segment in 1992. The south-facing slopes in the lower portion are also considered mule deer winter range. Winter range is defined as "that part of the overall range where 90 percent of the individuals are located during the average five winters out of ten from the first heavy snowfall to spring green-up, or during a site specific period of winter" (CDOW, 1990). During the late 1970s and early 1980s, the Division of Wildlife introduced river otters into several major rivers in the state, including this segment of the South Platte River. While the introduction was apparently unsuccessful, suitable habitat still exists (DOW 2/9/96-Personal communication).

Threatened, Endangered and Sensitive Species Occurrences - The federally listed pawnee montane skipper is known to occur in this segment in the vicinity of Corral Creek. This threatened species has a restricted range along the mainstem of the South Platte River and the North Fork of the South Platte. The northeast limit of the ponderosa pine/blue grama grass community overlaps with the southwestern limit of the prairie gayfeather (*Liatis punctata*) to create suitable habitat for the pawnee montane skipper. Optimum features of its habitat include open ponderosa pine stands with a canopy closure of 30 percent, shrub and grass cover generally less than 10 percent, and the presence of prairie gayfeather and blue grama in specific densities. Skipper habitat in this segment is limited compared to other river segments.

The Colorado Division of Wildlife reports a male peregrine falcon sighting in the lower portion of this segment (Craig, personal communication). While this endangered species has not been recorded nesting here in recent years, the massive rock faces provide suitable nesting habitat and the riparian habitat provides foraging habitat. The Colorado Division of Wildlife WRIS 1995 database also records this as a potential nest site.

The bald eagle, a threatened species, may also occur in this segment. Winter concentration areas for this species are found both upstream and downstream. It is likely that the eagle forages along this segment of the South Platte River, particularly in the lower portion that flows into Cheesman Reservoir.

The northern goshawk is a Region 2 sensitive species known to occur in the study area. The goshawk inhabits montane areas of coniferous, deciduous and mixed forests. A 1993 study documented an active nest site in the upper portion of this segment and created a 5400-acre zone around the site to provide quality prey habitat and foraging opportunities for the goshawk (Public Service Company of Colorado, 1993). This foraging zone overlaps with the study area. While it is not known if the nest was active this year, nest areas (20-25 acres) are often used more than one year, and some are used intermittently for decades. Also, all previously occupied nest areas may be critical for maintaining nesting populations because they contain the habitat elements that attracted the goshawks originally (GTR RM-217).

Other Region 2 sensitive species which may occur in this segment include: northern leopard frog, tiger salamander, osprey, flammulated owl, three-toed woodpecker, purple martin, pygmy nuthatch, golden-crowned kinglet, Prebles' meadow jumping mouse, and Townsend's big-eared bat. Although specific locations for these species are unknown at this time, suitable habitat does exist within this river segment.

South Platte - Segment D -

Habitat Features - This segment is also within a confined, steep-sided, rocky canyon. Patches of willow thickets, wet meadows and other wetland types do occur but they are more limited because of the abundance of bedrock and boulders along the stream banks. Both north and south-facing slopes contain a mixed-conifer forest of ponderosa pine and Douglas-fir. Large rock outcrops occur throughout the canyon.

Wildlife Occurrences - All of the principal wildlife species can be found in this segment, as well as many of the species listed in Table II-3. Mule deer winter range occurs throughout this segment.

Threatened, Endangered and Sensitive Species Occurrences - The federally listed pawnee montane skipper is known to occur in this segment in the vicinity of the Wigwam Club private property (ERT 1986). This threatened species has a restricted range along the mainstem of the South Platte River and the North Fork of the South Platte. Habitat in

this segment is limited compared to other river segments.

The bald eagle, a threatened species, also occurs in this segment. Cheesman reservoir is a winter concentration area and the eagles are often seen in Cheesman canyon. An abundant, readily available food supply in conjunction with one or more suitable night roost sites is the primary characteristic of winter habitat (COE 1988).

Region 2 sensitive species which may occur in this segment include: northern goshawk, osprey, flammulated owl, three-toed woodpecker, purple martin, pygmy nuthatch, golden-crowned kinglet, and Townsend's big-eared bat. Although specific locations for these species are unknown at this time, suitable habitat does exist within this river segment.

South Platte - Segment E -

Habitat Features - This segment of the river is predominantly a wide valley with diverse wildlife habitats. The Two Forks study identified an abundance of willow thickets, willow-sedge, cottonwood-willow and other wetlands types along the river corridor and tributary streams (COE 1988). The upland habitat is also diverse, providing grass-forb, shrub-seedling, and mature stages of ponderosa pine/Douglas-fir forest. Dominant rock features that provide nesting habitat also occur in this segment.

Wildlife Occurrences - All of the principal wildlife species can be found in this segment, as well as many of the species listed in Table II-3. Noteworthy wildlife records include active prairie falcon eyries on Long Scraggy Peak and Eagle Rock, mule deer winter range throughout this segment, elk winter range in the lower portion of the segment, turkey habitat on the eastern portion of the segment and Rocky Mountain bighorn sheep lambing and overall habitat in the lowermost portion of this segment (COE 1988). This indigenous herd of bighorn sheep is one of only six low-elevation herds remaining in the state.

Threatened, Endangered, and Sensitive Species Occurrences - The federally threatened pawnee montane skipper is known to occur in this segment. The skipper has a restricted range, occupying an area (although not necessarily all the available habitat within it) roughly 23 miles long and 5 miles wide. It occurs along the mainstem of the South Platte

River for approximately 20 miles and along the North Fork of the South Platte for approximately 15 miles from their confluence to Cheesman Reservoir and Crossons, respectively. The present range covers approximately 38 square miles (ERT 1986). The skipper's habitat forms a continuous band along the main stem of the South Platte River and North Fork and includes Buffalo Creek and Horse Creek tributaries. The northeast limit of the ponderosa pine/blue grama grass community overlaps with the southwestern limit of the prairie gayfeather (*Liatris punctata*) to create suitable habitat for the pawnee montane skipper. Optimum features of its habitat include open ponderosa pine stands with a canopy closure of 30 percent, shrub and grass cover generally less than 10 percent, and the presence of prairie gayfeather and blue grama in specific densities (ERT 1986). The pawnee montane skipper's existence in this extremely limited and specialized area accentuates the ecological precariousness of the skipper (EPA 1990). The percent of skipper habitat within the study area is not known. However, it is known that 18 percent of the total pawnee montane skipper habitat lies within the proposed Two Forks inundation zone and that 23 to 42 percent of the population is also within this zone (ERT 1986). The proposed inundation zone was up to 1/2 mile on either side of the river, or slightly wider than the Wild and Scenic River Study corridor.

The bald eagle, a threatened species, is known to occur in this segment. Cheesman reservoir several miles upstream is a wintering area for this species, and eagles are regularly seen roosting along the river corridor.

The Colorado Division of Wildlife records a possible peregrine falcon nest site on the Noddle Heads rock outcrop in the middle of this segment. White-wash has been documented but surveys have not recorded any use. If the site is occupied in the future, the foraging area would overlap with this segment of the river.

The osprey, a Region 2 sensitive species, is found in this segment during spring and fall migrations. The osprey will often remain in the area for several days feeding along the river corridor.

Other Region 2 sensitive species which may occur in this segment include: northern leopard frog, tiger salamander, northern goshawk, flammulated owl, three-toed woodpecker, purple martin, pygmy

nuthatch, golden-crowned kinglet, Prebles' meadow jumping mouse, and Townsend's big-eared bat. Although specific locations for these species are unknown at this time, suitable habitat does exist within this river segment.

North Fork - Segment H1 -

Habitat Features - In this short segment, the North Fork of the South Platte runs through a wide river valley. Willow thickets and other wetland types are common in this segment and cottonwood-willow habitat occurs occasionally. The side slopes are forested with mixed ponderosa pine/Douglas-fir.

Wildlife Occurrences - All of the principal wildlife species can be found in this segment, as well as many of the species listed in Table II-3. The entire segment provides mule deer winter range and turkey range is located in the upstream portion.

Threatened, Endangered and Sensitive Species Occurrences - No threatened or endangered species are known to occur in this segment. Region 2 sensitive species which may occur include: northern leopard frog, tiger salamander, northern goshawk, flammulated owl, three-toed woodpecker, purple martin, pygmy nuthatch, golden-crowned kinglet, and Townsend's big-eared bat. Although specific locations for these species are unknown at this time, suitable habitat does exist within this river segment. However, the amount of forested habitat available for these species is reduced by the width of the valley bottom.

North Fork - Segment H2 -

Habitat Features - This segment of the North Fork of the South Platte contains the most narrow canyon of all segments. The riparian and wetland components are much reduced, limited to other wetland types with a few areas of willow thickets and cottonwood-willow habitat. A closed canopy Douglas-fir forest dominates the north-facing slope and the south-facing slope is again mixed ponderosa pine/Douglas-fir. Several large rock outcrops are in the canyon.

Wildlife Occurrences - Mule deer, elk and Abert's squirrel are the principal species likely to occur in this segment. The entire segment provides mule deer winter range, especially on the south-facing slopes.

Threatened, Endangered and Sensitive Species Occurrences - No threatened or endangered species are known to occur in this segment. Region 2 sensitive species which may occur include: northern goshawk, flammulated owl, three-toed woodpecker, purple martin, pygmy nuthatch, golden-crowned kinglet, and Townsend's big-eared bat. Although specific locations for these species are unknown at this time, suitable habitat does exist within this river segment.

North Fork - Segment H3 -

Habitat Features - This segment of the river includes both a wide valley section with diverse wildlife habitats and a more narrow canyon section with roaded access. The Two Forks study identified an abundance of willow thickets, willow-sedge, cottonwood-willow and other wetlands types along the river corridor and tributary streams in the upper portion of this segment (COE 1988). In the lower portion of this segment, the willow component is severely reduced and other wetland types dominate. The upland habitat provides grass-forb, shrub-seedling, and mature stages of ponderosa pine/Douglas-fir forest. Dominant rock features that provide nesting habitat also occur in this segment.

Wildlife Occurrences - All of the principal wildlife species can be found in this segment, as well as many of the species listed in Table II-3. The entire length of this segment is mule deer winter range and smaller portions provide elk winter range, turkey overall range and bighorn sheep historical range (COE 1988). This indigenous herd of bighorn sheep also uses Segment E, and is one of only six low-elevation herds remaining in the state. An active golden eagle nest site is located in the lower portion of this segment.

Threatened, Endangered and Sensitive Species Occurrences - The peregrine falcon, an endangered species, occurs in this segment. An active eyrie is located on Cathedral Spires and the 1-mile buffer around the nest site overlaps with the river corridor. The 5-mile feeding buffer around the nest site overlaps with all but two miles of this river segment. This segment provides important foraging habitat for the falcon. The eyrie was the last occupied site on the East Slope to be abandoned during the decline of the species in the 1970s and 80s. It was re-occupied in 1993 and successfully fledged 4 birds in 1994 and 2 birds in 1996 (DOW 1996).

Climbers present the most serious threat to this site. A seasonal closure is in effect during the nesting period.

Region 2 sensitive species which may occur in this segment include: northern leopard frog, tiger salamander, northern goshawk, osprey, flammulated owl, three-toed woodpecker, purple martin, pygmy nuthatch, golden-crowned kinglet, Prebles' meadow jumping mouse, and Townsend's big-eared bat. Although specific locations for these species are unknown at this time, suitable habitat does exist within this river segment.

2.13 Recreation

Summary

The South Platte River is one of the three largest rivers on Colorado's Eastern Slope. With flows exceeding 200,000 acre feet a year, the river represents a limited resource of large river canyons leading to the plains. The South Platte is characterized by good access, predominately public ownership, high quality fishing, and a diversity of other recreation opportunities in close proximity to a large metropolitan area.

Recreation activities are enhanced by the gentle stream gradients, level areas, vegetation patterns, and scenic quality along the river. These activities include camping, picnicking, fishing and flyfishing, swimming, tubing, sunbathing, motorcycle use, scenic viewing, rock climbing, and organized activities such as volleyball and horseshoes. The majority of these activities are day use activities and are related to the presence of the river either directly, such as for boating, tubing and fishing, or indirectly, such as for scenic viewing. Designated parking areas and developed camping opportunities are also important to activities such as hiking and motorcycling in adjacent areas, which are only marginally related to the river resource.

The study area includes over 27 miles of water suitable for white-water boating, tubing, and water play. This includes approximately 7 miles of the North Fork above Pine, 14 miles on the South Platte from Deckers to the North Fork confluence, and 6 miles on the South Platte from Reservoir to Riverside Campgrounds in Elevenmile Canyon. The South Platte River and the North Fork are used by over

12,000 kayakers and canoeists each year. This represents 70 percent of the river boating activity on the Pike National Forest. The study area offers a broad range of white-water boating opportunities, from Class I to Class V (International Scale of Difficulty). The white-water boating opportunity is especially significant because there are river sections that are suitable for teaching and practicing boating skills and which are close to the Denver metropolitan area. The North Fork is considered an important kayak area within the region due to its difficulty and the longer length of the season due to late-season releases from the Roberts Tunnel.

Much of the popularity of this area is due to its unique capability to accommodate a wide variety of recreation activities in one location. This diversity of recreation opportunities within the project study area contributes significantly to the popularity and uniqueness of the area.

Recreation Facilities

Developed recreation facilities in the study area are concentrated in Elevenmile Canyon and from Wigwam Creek downstream to the confluence. Public developed recreation facilities in the study corridor include ten National Forest campgrounds with a combined capacity of 975 persons at one time. Most of the facilities are managed by concessionaires under special use permit. Twelve other campgrounds within a half hour's drive of the river can accommodate another 2,400 people, although three of these campgrounds were closed due to fire and flood damage in 1996. In addition to the campsites on the South Platte, there are seven developed picnic areas, and numerous trailheads and parking sites. Private recreational facilities in the study corridor include private resorts, two private fishing clubs, a YMCA camp, and a private campground.

The area has long been popular as a site for summer homes. There are several hundred private residences in the study corridor. Many were at one time used primarily as summer homes, although many have become year-round residences.

There are 29 recreation residences in four summer home groups under special use permit on National Forest lands in the study corridor. Eight summer homes are located in Elevenmile Canyon, and 21 are located along the South Platte in three summer

home groups near Nighthawk, Lazy Gulch, and Shadybrook.

Other Recreation Opportunities

Rock climbing is a popular activity in the area. *South Platte Rock Climbing*, (Hubbel and Rolofson, 1988), is devoted specifically to the South Platte and North Fork. Although many of the climbs associated with the South Platte River are outside the 1/2-mile wide river corridor, the access for these climbs are within the corridor. Primary routes associated with this area of the South Platte River include Top Of The World, Malay Archipelago, Elevenmile Canyon, and Noddle Heads. There is a lack of comparative data with which to judge the geology and rock climbing values to other regional areas.

Special user groups play a large part in the use and management of the South Platte River. Youth groups such as scouting organizations do public service projects on the river each year. Other service groups, such as Trout Unlimited, also do yearly projects designed to protect and enhance the river while promoting their organization. Trout Unlimited also holds their annual Masterfly fishing event in Cheesman Canyon. The Paralyzed Veterans of America provides recreation opportunities for senior citizens and mentally challenged youths as well as for their own membership, on an annual basis.

Commercial recreation services in the study corridor include 8 companies permitted by the Forest Service to conduct guided flyfishing trips and instruction. Guided fishing activities occur primarily below Cheesman Dam and in the Elevenmile Canyon area. There are numerous applications for new permits for guided fishing on the South Platte. Several other permitted companies, or nearby church and organization camps, offer tubing, horseback riding, hiking and other activities, although there are no commercial rafting or kayaking operations.

The study area includes portions of two significant trail systems. Several motorized (motorcycle) trails reach into the corridor between Deckers and the confluence. These trails are part of the extensive Rampart Range Motorcycle Area. The Colorado Trail, which runs from Denver to Durango, crosses the river corridor near the confluence. In 1996 the Buffalo Creek flood destroyed a bridge on the North Fork belonging to the Denver Water Department that was used for access to the Colorado

Trail. The Forest Service has requested funds to replace the bridge.

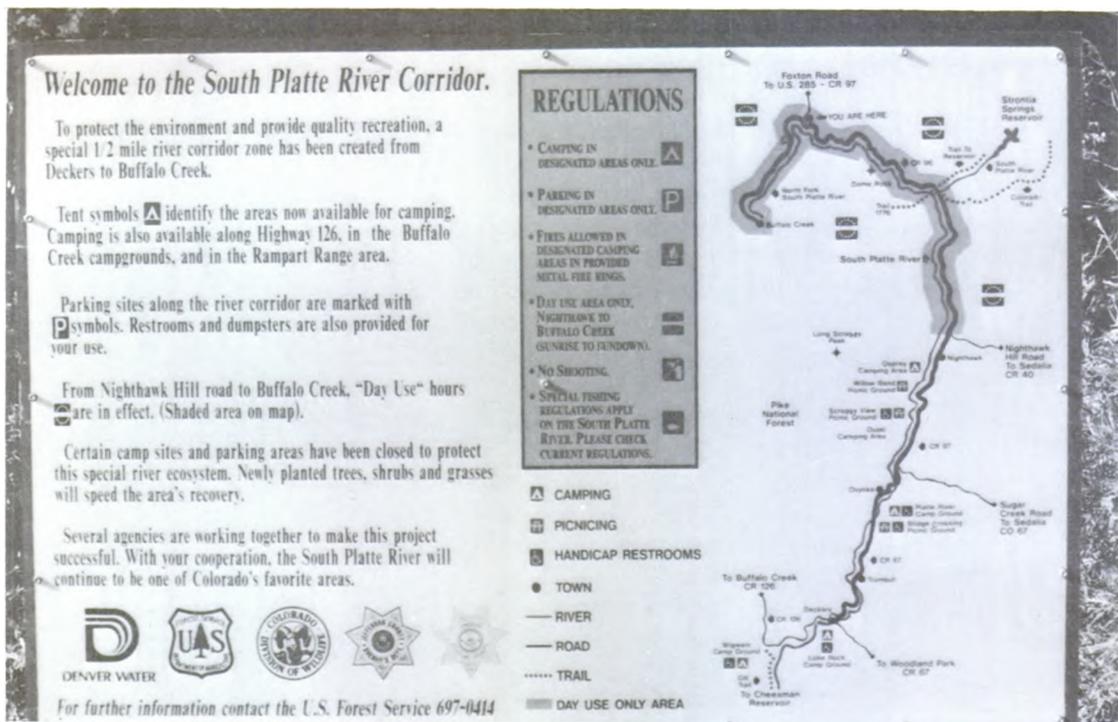
Recreation Use and Trends

The Pike and San Isabel National Forests rank 8th of 113 National Forests in terms of visitor use with 7.3 million recreation visitor days (RVD) in 1996. Typical of many "urban" National Forests, day use is intense, use "peaks" strongly on weekends and holidays, and many activities occur which are not "traditional" forest recreation. Much of the use is strongly motivated by desire to escape from the city, relax, enjoy nature, and socialize.

Changes in the management of parking, camping and more intensive law enforcement along the North Fork (Segment H) and South Platte River (Segment E) initiated in 1992 have led to a resurgence of interest in the area by families, flyfishing enthusiasts and others who had previously avoided the area's crowding and conflicts. These management actions are the result of a major cooperative effort between the Forest Service, Denver Water, the Colorado Division of Wildlife, and the Douglas and Jefferson County Sheriffs. Management actions include regulations that prohibit overnight use in the area from Nighthawk to the confluence on the mainstem and from Buffalo Creek to the confluence on the North Fork; allow parking and camping in designated areas only; allow fires in designated fire rings

only, and discourages firearms use. Additional improvements included the development of several developed camping areas by the Forest Service, placement and maintenance of portable rest rooms by Denver Water, and the signing of recreation opportunities and regulations by joint efforts of all cooperating agencies. The closure and revegetation of numerous eroding dispersed campsites and parking areas and agreements with county law enforcement agencies has resulted in improved scenery, more pleasant and secure recreation experiences, a major reduction in erosion, and protection of riparian areas and values from overuse.

Changes in management of the Elevenmile Canyon area (Segment A) have also accomplished similar results. In 1995, the Forest Service developed a management plan which set up the Elevenmile Canyon Ecosystem Management Project. The purpose of the project is to enhance the quality of the recreation experience and use activities, and reduce resource damage in the area. Resource improvements include revegetation; erosion control; fisheries habitat improvement; improvement of campgrounds, picnic areas, trails, fishing access sites, roads, parking, interpretation, and information facilities. Management actions include regulations which require payment of a parking fee before entering the area, allow camping in designated areas only, fires in existing metal fire rings only, and allow no firearms use.



Revegetation and regulations that allow camping and parking in designated areas only have improved the recreation experience and resource protection on the lower sections of the North Fork and South Platte study areas.

Use of the South Platte River area and adjacent uplands has increased 3-4 percent annually during the past decade, and was estimated at 1,650,000 RVD in 1995. In 1984 recreation use of the smaller study area associated with the proposed Two Forks reservoir, which excluded Elevenmile Canyon, was estimated 317,000 RVD.

The rate of increase has increased in concert with rapid population growth in the Denver metropolitan area and surrounding counties, particularly Douglas County. In-migrating new residents tend to be younger, active, and reasonably affluent, giving rise to a disproportionate increase in demand for "active" sports, dispersed activities (particularly involving sport utility vehicles and other motorized equipment), and activities which tend to require expensive or high tech equipment (from mountain bicycles to graphite fly rods).

Angling is a major use of the river in Elevenmile Canyon and from Cheesman Dam downstream, and is a clue to the area's overall popularity and

recreation use intensity. These areas typically receive 1,500 to 4,000 angling hours per mile of stream annually, and some locations, such as Cheesman Canyon, may see as many as 17,000 angling hours per mile. Catch rates, due mainly to catch and release regulations and other restrictions, are as high as 1.2 fish per hour in some parts of the river. (For comparison, at the time of designation as a Wild and Scenic River, the Cache La Poudre River was receiving 1,500 to 4,800 angling hours per mile depending on location). 11,400 anglers were estimated to have fished Cheesman Canyon in 1986; 20,000 anglers fished in Elevenmile Canyon in 1994.

Recreation Opportunity Classes

The South Platte from Deckers to Twin Cedars is classified as "rural" in the Recreation Opportunity Spectrum, a system used by the Forest Service to describe the recreation setting in terms of the physical, social and managerial characteristics of the area. "Rural" applies to areas with extensive modifica-

tions to the natural environment but which still have a pastoral character. High standard transportation and other facilities, and obvious residential and even commercial development are apparent. These areas provide recreation experiences in which socialization with others is important, contact with other visitors is common, and visitors generally do not seek a high degree of risk or wish to practice self reliance. Management controls such as regulations, signs, and enforcement patrols are obvious and extensive. Developed recreation facilities in this part of the study area include four National Forest campgrounds between the Wigwam Club and Strontia Springs Reservoir, with a combined capacity of over 520 people at one time. In addition, there are three developed picnic areas that can accommodate 56 persons at one time.

The South Platte below Twin Cedars to the confluence, Elevenmile Canyon downstream to Vermillion Creek (north of Lake George), and the North Fork, are classified as "roaded natural", which means the area retains a generally natural appearance but with a variety of scattered developments, roads for conventional vehicles, and other modifications. The social environment typically results in frequent encounters between groups. Facilities are designed for structured activities and to influence and control use, and management of the area is obvious (signs, enforcement patrols, etc). These areas provide an opportunity for experiences that require some privacy and limited opportunity for challenge and risk, but with frequent contact among users at campsites and other developments. The eight mile long segment of Elevenmile Canyon is primarily a narrow granite canyon. The road follows the route of the historic Denver South Park and Pacific Railroad, and includes two tunnels which add to the scenic driving experience. The canyon has six campgrounds with 455 PAOT and three picnic areas with 95 PAOT.

Along with camping and picnicking, fishing, swimming, tubing, and rock climbing are the most significant activities.

The South Platte from Vermillion Creek (just downstream from Lake George) to near Corral Creek is classified "semiprimitive motorized". This area has an extensive network of low standard and four-wheel drive roads into the river corridor and across the river at Longwater Crossing. This area has an essentially natural physical environment with few developments and only low standard roads or trails. It offers a type of experience in which there is opportunity for solitude and closeness to nature, and the opportunity to experience self-reliance and risk using motorized equipment. Managerial controls and presence is not highly obvious, and restrictions are few.

Wildcat Canyon from Corral Creek to the inlet of Cheesman Reservoir is classified as "semiprimitive non-motorized. This area is accessible only by trail and is a natural appearing environment in which visitors have a high probability of experiencing solitude, closeness to nature, self reliance and risk, with low interaction between visitors and only some evidence of past use by others. This three-mile segment is the only part of the study corridor where visitors do not encounter vehicular use in close proximity to the river.

Cheesman Canyon from the dam downstream to the Wigwam Club property meets the criteria for semiprimitive non-motorized, with only trail access. While the semiprimitive classification implies few encounters with other people or groups, the use of this area is so high at present that there is crowding in this area. Parking to serve Cheesman Canyon and the Gill Trail is limited and typically crowded.



Kayaking is a popular activity on the North Fork from Buffalo Creek to the confluence.

2.14 Scenery

Summary

The South Platte River study corridor is located within the Southern Rocky Mountain Physiographic Region, and the "Front Range" Landscape Character Subtype for the purpose of evaluating scenic quality.

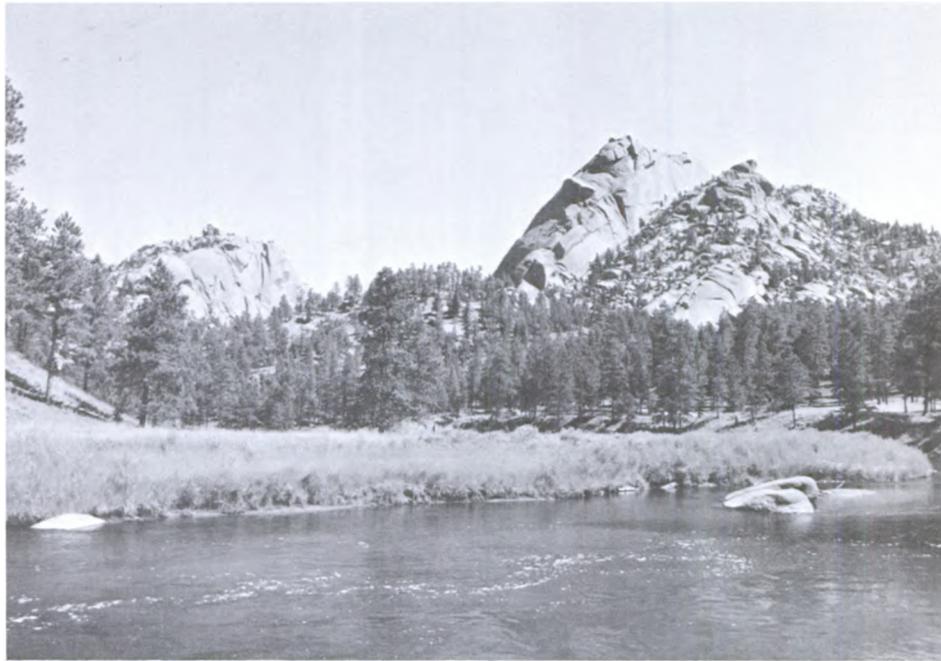
The river has a variety of visual settings, ranging from deep narrow canyons, flat bottom valleys, to broad meadows. This allows a range of visual experiences, from total enclosure and immediate foreground views only, to distant or background viewing distances. Water is present in many forms, including waterfalls, whitewater, still pools, long straight sections and very sinuous sections. Water clarity is generally high.

The vegetation surrounding the river include riparian vegetation such as alder, cottonwood, and wil-

low. Upslope from the river aspen, ponderosa pine and Douglas-fir are all present. In some areas the tree stands are very dense while in others, particularly on the south slopes, the stands are often park like. Tree stands are often interrupted by grassland openings.

Landforms are quite varied as well. Rock outcrops, vertical walls, boulder strewn streambeds. The color of the rock formations is primarily grey, with some isolated spots of red and light grey. Scraggy View, Slide Rock and the Chutes are a few of the named features.

The visual resource of the study area has been inventoried according to the National Forest Visual Management System. This provides an inventory of the existing visual quality objectives. Current land management direction from the Forest Plan requires that these objectives be met to the extent practical in all management activities.



Scenic vista in Wildcat Canyon along the South Platte River.

The inventory system divides the Forest into several categories based on variety class, sensitivity level, distance zone. Through combining these characteristics, visual quality objectives are identified.

Variety Classes - Variety classes are obtained by classifying the landscape into different degrees of variety. This determines those landscapes which are most important and those which are of lesser value from the standpoint of scenic quality. This visual variety is the basis for a further delineation of landscapes. There are three Variety classes, A, B, and C. "A" landscapes are those with the most variety and are therefore considered the most scenic. "C" landscapes represent those areas with the least variety in form line, color or texture.

These inventory classifications are based upon a variety of factors, such as landforms, vegetation patterns, water forms, rock formations, line, color and texture.

Class A is distinctive. It refers to those areas where features of land form, vegetation patterns, water forms, and rock formations are of unusual or outstanding visual quality. They are usually not common in the character type.

Class B is common. It refers to those areas where features contain variety in form, line, color, and texture, or combinations thereof, but which tend to be common throughout areas the subtype and are not outstanding in value quality.

Class C is minimal. It refers to those areas whose features have little change in form, line, color or texture. Includes all areas not found in Classes A and B.

The majority of the river corridor is in either "A" or "B" variety class settings.

Sensitivity Level - Sensitivity levels are a measure of the people's concern for the scenic quality of the

National Forests. Level 1 is the highest sensitivity, Level 2 is average sensitivity, and level 3 is lowest sensitivity.

Distance Zones - Distance zones are divisions of particular landscapes being viewed.

Foreground is limited to those distances at which details can normally be perceived. Normally, in foreground views, the individual boughs of trees form texture. Foreground is usually limited to areas within 1/4 to 1/2 mile of the observer.

Middleground extends from the foreground zone to three to five miles from the observer. Texture is normally characterized by masses of trees in stands of uniform tree cover.

Background extends from middleground to infinity. Texture in stands of uniform tree cover is generally weak or nonexistent.

Visual Quality Objective - The visual quality objectives (VQOs) are: Preservation, Retention, Partial Retention, Modification, and Maximum Modification.

Preservation is assigned to all existing and recommended wilderness and other primitive non-roaded areas.

Partial Retention provides for management activities that remain visually subordinate to the characteristic landscape.

Modification allows management objectives to be visually dominant, but natural in appearance, even when viewed as foreground or middleground within the surrounding area.

Maximum Modification allows management activities of vegetative and land form alternatives to dominate the characteristic landscape. However, when viewed as background, the visual characteristics must be those of natural consequences within the surrounding area.

Existing Visual Condition

Existing Visual Condition (EVC) is an inventory of the present state of visual condition, measured as the deviation from the characteristic or natural landscape. This inventory is not influenced by variety

class or sensitivity level, but is based solely on physical conditions and appearance. The six categories or condition levels are defined below. Category I are those areas least impacted, while Category VI represents areas with the heaviest impacts.

TYPE I Areas in which only ecological change has taken place except for trails needed for access. They appear to be untouched by human activities.

TYPE II Areas in which changes in the landscape are not visually evident to the average person unless pointed out. They appear unnoticed.

TYPE III Areas in which changes in the landscape are noticed by the average visitor, but do not attract attention. The natural appearance of the landscape dominates. Disturbances appear to be minor.

TYPE IV Areas in which changes in the landscape are easily noticed by the average visitor and may attract attention. They appear to be disturbances but resemble natural patterns.

TYPE V Areas in which changes in the landscape are strong and would be obvious to the average forest visitor. These changes stand out, dominating the landscape, yet are shaped so they might resemble natural patterns when viewed from a distance. They appear to be major disturbances.

TYPE VI Areas in which changes in the landscape are in glaring contrast to the natural appearance. Almost all forest visitors would be displeased with the effect. They appear to be drastic disturbances.

Review of the Existing Visual Condition inventory completed prior to 1989 shows the Wild and Scenic River study corridor to be in condition classes II, III, IV or V. The impacts are associated primarily with the roads paralleling the river, the numerous small towns, artificial stream banks, road and train bridges, modification of the streambed configuration, irrigation diversions, riprap that doesn't match the sur-

roundings, impacts from use, recreation facilities, and water clarity.

Description of Specific River Segments

As a result of the foreground viewing distance, sensitivity levels, and variety class considerations, most of the study segments have a Retention Visual Quality Objective.

South Platte - Segment A - This segment of the river from Elevenmile Dam to Lake George in Elevenmile Canyon passes by several campgrounds and picnic areas. The area is known for its rock formations, attractiveness of water features, and old railroad tunnels. Its scenic beauty draws people from all over the region. A road closely parallels the river, including two bridges over the river. A third bridge is for pedestrian access to the Elevenmile picnic area. The Elevenmile Reservoir Dam dominates the upstream end of the canyon; at the mouth of the canyon there is a 10 foot diversion dam. Lake George and Highway 24 are visible, as are powerlines and other utilities. This segment has a VQO of Foreground Retention, Variety Class A, Sensitivity Level 1, with an Existing Visual Condition of Category IV along the river and Category II along the canyon rims. One generally can not see outside the river corridor.

South Platte - Segment B - This segment from Lake George to Beaver Creek has a human influence particularly around the Lake George area. Utility lines, Highway 24, private residences, and businesses are all visible. North of Happy Meadows CG a more natural appearance is evident. The river exits a steep sided canyon from Segment A and meanders through broad meadows, until near Vermillion Creek where it enters another steep sided canyon. This segment has a VQO of Foreground Retention, Variety Class B, Sensitivity Level 1, with an Existing Visual Condition of Category V. Outside the study corridor the area has a VQO of Middleground Partial Retention, Variety Class B, Sensitivity Level 1, with an Existing Visual Condition of Category II.

South Platte - Segment C - Segment C from Beaver Creek to Cheesman Reservoir, known as Wildcat Canyon, is entirely on National Forest System lands and has little human impacts except for a high voltage powerline, several abandoned mining cabins and several four-wheel drive roads.

The area is known for its remoteness, undeveloped character, and rock formations. This segment has a VQO of Foreground Retention, Variety Class A, Sensitivity Level 1, with an Existing Visual Condition of Category II, except for a small section along Northrup Gulch where it is Category III. One generally can not see outside the river corridor.

South Platte - Segment D - Segment D, from Cheesman Dam to the Wigwam Club property, lies within 600 foot deep Cheesman Canyon marked by steep sideslopes. The area is only accessible by trail and there are no developments in this segment. Cheesman Dam dominates the view in the upper 1/3 of this river segment and the Wigwam Club improvements are visible from the lower 1/3. The area is known for its limited access, undeveloped character, and rock formations. This segment has a VQO of Foreground Retention, Variety Class A, Sensitivity Level 1, with an Existing Visual Condition of Category II west of the river and Category III east of the river. One can not see outside the river corridor.

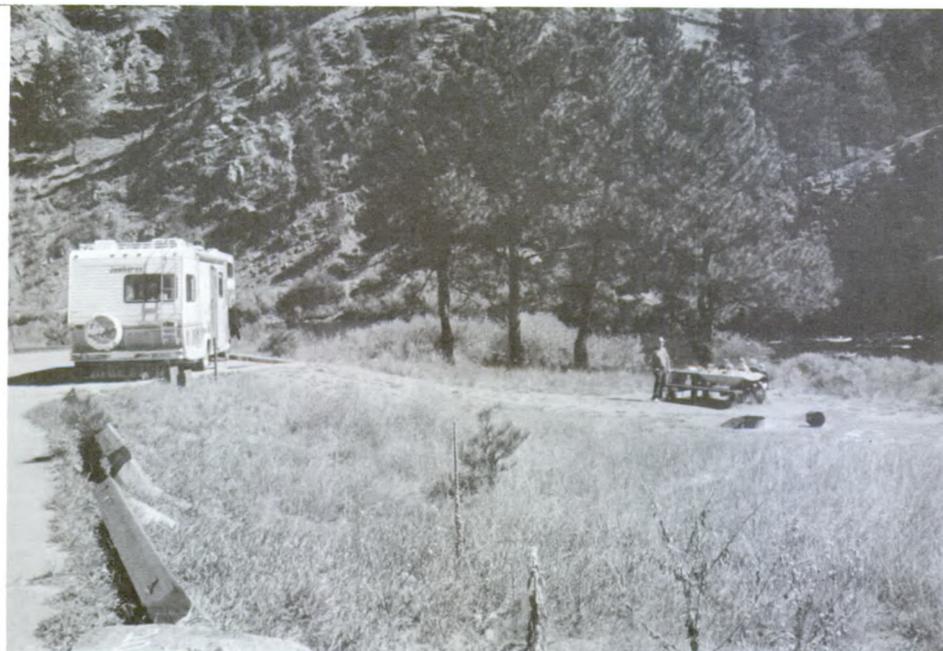
South Platte - Segment E - In segment E, from the Wigwam Club property to Strontia Springs Reservoir, the valley bottom widens and there are many flat areas covered with willows and grass. Numerous recreation facilities are located along the river banks. A road parallels the river from Deckers to the confluence. Numerous private residences, bridges, and roads, are visible. Dispersed recreation and the impacts associated with it are heavy along this section of the river. In the recreation sites and dispersed areas the vegetation is often parklike, with small openings. This segment has a VQO of Foreground Retention, Variety Class A, Sensitivity Level 1, with an Existing Visual Condition of Category IV along the river and Category II outside the river corridor.

North Fork - Segment H - This segment is predominately privately owned. It begins on the Berger property used mostly for grazing, passes the small community of Estabrook, enters the National Forest for several miles through an inaccessible undeveloped canyon between Estabrook and Cliffdale, and then remains mostly on private land passing through the town of Pine and several smaller communities, the Pine Valley Ranch Open Space Park, and several ranches. Most of the corridor's scenery includes either rural communities with roads, powerlines, and private residences or small ranches and grazing pastures. From Buffalo Creek to the confluence with the South Platte, there are large rock

formations such as Cathedral Spires and Dome Rock which loom over the study corridor, but scenic views in the corridor are detracted by a graveled county road paralleling the North Fork right along the river bank.

This segment contains several diversion dams for irrigation, constructed of rocks, concrete, or a combination of the two. There are numerous check dams, some channelization, and riprap is used to protect the highway side of the river and on the outside of some of the meanders. The color and style of the material generally matches the surroundings, and would appear natural to the casual observer. Several abandoned railroad bridge abutments are evident. Several other foot and vehicle bridges all in varying states of repair are also visible.

This segment has a VQO of Foreground Retention or Middleground Partial Retention, Variety Class B, Sensitivity Level 1. The Existing Visual Condition Category is IV along the river and III along the sideslopes from Insmont to Estabrook, Category IV along the river and II along the sideslopes from Estabrook to Crossons, Category I along the National Forest System lands from Crossons to downstream of Pine (no rating outside the National Forest), Category V along the river and II along the sideslopes from Pine to Ferndale, and Category IV along the river and II along the sideslopes from Ferndale to the South Platte confluence. Outside the study corridor the area, where visible, has a VQO of Middleground Partial Retention, Variety Class B, Sensitivity Level 1.



Scenic driving and picnicking are popular throughout the study area.

2.15 Cultural Resources

Introduction

Although survey investigations done by the Forest Service and other state and federal agencies within the study corridors are incomplete, considerable knowledge regarding cultural resources within the

analysis area has been accumulated. Most of the knowledge is based on the cultural resources investigations done by the Denver Water Board and the Metropolitan Water Providers for the Two Forks study. Other investigations have been done by the Forest Service as part of its continuing cultural resources management program, and by the Colorado Department of Transportation in the U.S. High-

way 285 corridor, which parallels the North Fork along its upper reaches. Currently, 91 recorded sites are known within the analysis area; forty-four of the sites reflect prehistoric occupations, and the other 46 can be characterized as historic uses or occupations. Many more resources are known, but lack complete recordation. Included in this category are 216 structures with possible architectural significance at seventeen historic sites that were visited and photographed during the analysis for the Two Forks Reservoir project.

Prehistoric Resources

The study area contains a relatively high density of prehistoric sites when compared to the more rugged higher elevation areas adjacent to the river corridor. The prehistoric sites range in their expressions from isolated single artifacts to large areas of chipped stone debris near the river, to sheltered caves on the slopes adjacent to the river flood plain. Culturally-scarred trees reflecting the American Indian practice of harvesting the inner bark of the ponderosa pine in the late 18th or early to middle 19th century are known, but not comprehensively recorded in the Elevenmile Canyon portion of the corridor. Intuitively, both the North Fork and South Platte valleys would have been very attractive to prehistoric groups both in terms of seasonal living location and areas where critical natural resources were relatively plentiful.

Prehistoric occupation of the river valleys was probably a traditional practice for hundreds of generations, although this has not been conclusively documented. Contemporary 19th century accounts by the first European settlers in the area describe encounters with groups and individuals of Ute Indians; Horse Creek, the Long Scraggy vicinity and Wigwam Creek on the South Fork, and Pine Creek and Buffalo Creek on the North Fork are mentioned in early accounts as traditional summer camping places for Ute groups. The recorded archeological sites in these areas are probably the camping spots used most recently by the Ute Indians. The valleys were probably used by earlier groups, who may well have used the same camping locations. Radiocarbon dates from Dancing Pants Shelter, located on the South Platte a few miles upstream from the confluence, suggest 4,000 years of use. Artifacts collected during the Two Forks archeological survey also suggest a lengthy prehistoric occupation. The archeological sites upstream from the confluence

along both forks (along the South Platte from the confluence to Cheesman Dam, and upstream along the North Fork to Pine) as a group, constitute a significant resource in terms of National Register of Historic Places eligibility. As a case set for archeological research, they contain the vital data necessary to build a local sequence of mountain prehistory and also could be used to reconstruct the lifeways of the prehistoric Ute Indians and other earlier groups. These resources also would be significant for descendant modern American Indian groups in the context of their heritage.

Historic Resources

Recorded historic resources differ widely in their expression and represent a variety of historic uses. Among the major themes in Colorado history reflected in the study area are early transportation (stagecoach roads and railroad routes), mining (mines, mills, and tramways), logging (charcoal production sites and timber mills), recreation and tourism (hotels, resorts, and summer residences), mountain and water development (Cheesman Dam and related construction camps), and ranching (homesteads and ranches along the river). Three resources, The North Fork Historic District, the Estabrook Historic District, and Glen Isle Resort, are listed on the National Register of Historic Places.

There are several recorded resources in the study area that contribute to the mining theme. At the head of the North Fork north of Kenosha Pass is Hall Valley which was the site of an extensive silver mining operation beginning in 1869. The several mines, tramway, smelter and mill sites, and company town were the holdings of the Hall Valley Silver-Lead Mining and Smelting Company, Ltd. One of the first ore smelters in Colorado was built in Hall Valley about four miles downstream from the principal mines. The original firm failed in 1876, but the holdings were taken over by a series of owners; the last full scale operations apparently occurred in the 1920s. The Hall Valley mining-related sites are eligible to the National Register of Historic Places.

Railroad History Resources

The remains of two pioneering railroads, the Denver, South Park, and Pacific Railroad (DSP&P), and the Midland Railroad are very significant heritage resources located in the study area. The initial settlement of Colorado by people of European descent

was tied closely to the discovery of gold and silver in the high country. Travel to the mineral areas from the new cities located on the eastern plains initially was difficult and could be measured in terms of a week or more. Enterprising railroad men were quick to remedy this situation and several railroads were soon under construction, using the most early constructed routes. The South Platte River corridor offered one of the easiest routes for the railroad entrepreneur. Beginning in 1872 the DSP&P thrust up the South Platte canyon from Waterton south of Denver to the confluence of the Forks and then up the North Fork to Kenosha Pass and on to the gold and silver fields near Fairplay and Leadville. For over 50 years the DSP&P and its successors hauled mining barons, their agents, and supplies to the mountains and hauled ore back down to the plains. A second major source of DSP&P trade was the burgeoning tourist and recreation industry which became a major factor in the Colorado economy after 1890. The North Fork was a popular summer destination noted for its spectacular scenery, quiet rural setting, and fishing opportunities. The Railroad and other private entrepreneurs built several tourist resorts along the North Fork to accommodate potential visitors. These included several large facilities at Bailey (the Kiowa Lodge), Glen Isle, and Shawnee. Glen Isle is currently listed on the National Register of Historic Places. Today, much of the abandoned grade has been destroyed or altered by highway construction and other developments. There are two stretches within the study corridor that exhibit better preservation. One is in the lower canyon commencing below the confluence and continuing up the North Fork to the vicinity of Pine. Much of this stretch is a contributing element of the North Fork Historic District, listed on the National Register of Historic Places. The surviving features of the railroad include the grade itself, rock work and quarries along the grade, the highway bridge (formerly a railroad bridge) across the river just downstream from the confluence, a boxcar modified to serve as a residence about a mile upstream from the confluence, a second boxcar turned on its back and used as a bridge across the river, the former station building at Dome Rock, and the Westfall Monument (commemorates a heroic engineer who died in a train accident).

A portion of the grade west of Pine to the vicinity of Bailey is not within the North Fork District; however, most of this section is well-preserved and displays the engineering acumen necessary to construct a railroad in a wild and rugged river canyon. Within

this section is the Estabrook Historic District, which includes the former Estabrook Depot, now used as a private residence. Further upstream near the town of Bailey is the Keystone Bridge spanning the river; this former railroad bridge has been relocated; it originally crossed the river downstream from the confluence near Strontia Springs. The bridge was salvaged during the construction of the Strontia Springs Dam.

The DSP&P was a narrow gauge operation and hence was limited in the tonnage and volume of freight it could haul. In 1886 the Midland Railroad, a standard gauge line, began constructing grade and track between Colorado Springs and Aspen. With its standard gauge permitting larger cars and bigger engines with more horsepower, the Midland figured to have an inherent competitive advantage over its narrow gauge rivals. The line was routed over Ute Pass to Florissant and then through Elevenmile Canyon on the South Platte across South Park to the Arkansas Valley and Leadville. Eventually the line was connected to Aspen and its mining district via the Hagerman Tunnel over the Continental Divide. The Midland also catered to tourists and local recreationists from Colorado Springs; a favorite destination was the Elevenmile Canyon area with its spectacular rock formations and sparkling mountain stream. The Midland had approximately 35 years of operation from 1887 through October 1921; it did not survive the economic upheavals resulting from WWI. The basic alignment of the grade is preserved in Elevenmile Canyon; other surviving features include three tunnels, several cuts and fills, quarries for fill material, the former railroad stops at Lidderdale and Idlewild, and several railroad construction crew camps located in side canyons. The grade and features of the Midland are eligible to the National Register of Historic Places and constitute an outstandingly remarkable value through their contribution to railroad and Colorado history.

Recreation - Tourism Resources

Recreation and tourism is a second major theme prominent in Colorado history and relevant to this study. The mountains west of Denver and other young Front Range cities were recreation havens for the stressed-out urbanites even before the establishment of permanent towns and roads. After their construction in the last decades of the 19th century, the railroads were used by prospective tourists as the most efficient means of reaching

mountain recreation sites. The North Fork was a particularly favored recreation and resort destination for high-rolling citizens of Denver. Bailey was initially developed to accommodate travelers journeying between Denver and the mining districts in South Park and further west, but soon it also catered to the recreation trade. During the 1890s, many resorts and private summer retreats were built along the North Fork, which was easily accessible via the railroad. Recreation development also occurred to a lesser degree along the South Fork above the confluence; resorts and private cabins and clubs along the stretch of the river from South Platte to present day Cheesman Dam catered especially to anglers. The popularity of the South Platte west of Denver as a recreation and tourism destination seems to have peaked in the period between the world wars. The industry was severely hampered by WWII and did not recover after the war.

Some significant historic recreation/tourism related properties are located along the North Fork. Previously noted are the historic railroad associated resorts including the Kiowa and Shawnee Lodges, and Glen Isle. The North Fork Historic District contains some recreation-related historic components including the South Platte Hotel near the confluence, a log summer home in colonial style east of Ferndale, several jointed-log cabins in Ferndale that were double family company resort houses, the community of Longview which contains some summer cabins vintage 1910-1920, similar resort houses at Dome Rock, historic cabins at Foxton, company cabins of the Hendrie and Bolthoff Manufacturing Company at Riverview, the La Hacienda summer home built by John Jerome, the J.W. Green Mercantile Store, the Little Chapel in the Hills, and the Bluejay Inn, all at Buffalo Creek, and summer homes at Pine.

On the South Platte above the confluence are the Deckers (formerly Daffodil) Resort, the Wigwam Club, and the Grandview Resort which also are significant resources in terms of the recreation/resort theme. Further downstream are Tanglewood and the Childs' Cabin. These are summer residences constructed in the 1930s that are related to the recreation theme and also appear to have architectural significance.

Other Noteworthy Historic Resources

Cheesman Dam and Reservoir and related sites, located on the South Platte, constitute a significant historic site because of their association with Colorado water development and a more general connection with the history of metropolitan Denver. Completed in 1902, the dam and its construction (featuring the use of large granite blocks) also are significant in the context of engineering history and development. Several properties along the South Fork are significant in terms of the early settlement of the Colorado mountains and ranching and homesteading themes. These include the Fletcher Ranch, a former stage stop on Horse Creek, the Swayback Ranch which was originally developed and operated by Dell Manning, who tried lumbering and cattle raising in the area, and the Oxyoke Ranch, which was operated by the historically prominent Ammons family (Elias and Teller Ammons were governors of the state of Colorado). Further downstream at Scraggy View is the Corbin Homestead or the "Little White House" which was the home and ranch headquarters for the Ammons ranching operations. On the North Fork is the community of Bailey, which was established by William Bailey, his wife, and her sister, Mrs. Entriiken. The Bailey Ranche for travelers was established by the Bailey family in 1864. The Bailey townsite and perhaps some of the surviving older structures in the community probably are historically significant.

2.16 Hydrology and Water Resources

Watershed Characteristics

The area of the South Platte River basin considered in this analysis consists of a one-quarter mile corridor located on each side of the ordinary high water mark of the South Platte River from the high water line of Strontia Springs Reservoir upstream to Elevenmile Reservoir and the North Fork of the South Platte River from its confluence with the South Platte to the upstream property boundary of Berger Land Company, near Insmont. This is the area that was qualified in the Forest Plan or the eligibility study for consideration for inclusion into the Wild and Scenic River System. However, in order to describe the hydrology of the reaches in question it is important to consider the entire basin within which the rivers reside. The interrelationship between the climate

and geomorphology of the basin governs how the hydrologic system is managed.

The watershed above the high water line of Strontia Springs, including the North Fork of the South Platte and the South Platte, is about 2,580 square miles. The landscape of the watershed above Strontia Springs Reservoir is varied. It is comprised of a mosaic of rugged rocky slopes, heavy forest, and open mountain meadows. The western boundary of the watershed is the Continental Divide and the south and southwest boundary is the divide between the South Platte and Arkansas River basins. The east boundary is the Rampart Range, a divide between Plum Creek and the South Platte River above the high water line of Strontia Springs Reservoir. The north boundary is a discontinuous chain of mountains that forms a divide with other tributaries joining the South Platte further downstream. The mountains forming the divides range from 6,000 to above 14,000 feet above mean sea level. South Park is a large, nearly treeless mountain meadow of about 1,000 square miles, located above Elevenmile Reservoir and entirely surrounded by mountains. Downstream from Elevenmile Reservoir, the river enters a narrow valley and the surrounding terrain becomes considerably steeper. The North Fork also flows in a narrow valley and merges with the South Platte upstream from Strontia Springs Reservoir.

Flow Characteristics

The North Fork and South Platte exhibit a runoff pattern typical of a snow melt dominated system. High flows are experienced in the late spring and low flows are experienced in the winter. This runoff pattern has been altered due to several reservoirs located throughout the basin which dampen highs and lows depending upon the storage and release patterns prescribed to meet water demands for agriculture and domestic uses along the Front Range. Release patterns are highly dependent upon downstream water rights which sometimes "call" water through these reservoirs. Spring peak flows tend to not be as sharp and winter flows are much higher than natural runoff. During the runoff season, the peak flows are taken off and stored in reservoirs where they can be released at a later time to meet demands in the Front Range area. These later releases increase the flows in the river when it naturally would have low flows.

The reservoirs are owned and operated by front range municipalities primarily for water supply purposes. See Chart II-7 for a list of reservoirs. Water storage is critical and serves two purposes. It provides a day-to-day regulatory opportunity for both use demand and surplus storage and it provides carry-over on an annual basis. Both are essential to water providers because of the variation of weather, which affects demand on a day-to-day as well as long-term basis.

Low flows recorded at the South Platte gauge below Cheesman show that the average mean monthly flow, since the period of record (1924) has been as low as 2.0 cfs. This was the mean monthly flow that occurred in April of 1957. A thirteen year period of record from 1956-1968 exhibited some of the lowest flows recorded for the South Platte over an extended period of time. The lowest year of record, however, was the 1978 runoff year where the average mean monthly flow for the year was 60 cfs. The mean monthly flow has not dropped below 22 cfs since 1969. Even though the lowest total flow for a water year occurred since 1969, the mean monthly flow has remained above 22 cfs due to releases from reservoirs during low natural flow periods to meet demands of the Front Range.

Few minimum flow release requirements are in force on the South Platte River. The city of Aurora is required to release approximately 6 cfs for stream flow maintenance from its South Park sources. The city of Denver is required to release 30-60 cfs, depending on the season of the year, below Strontia Springs Reservoir downstream to Kassler Lake for fish habitat. The Colorado Water Conservation Board holds a 7 cfs instream flow right (1977) from the headwaters of the South Platte to Rich Creek.

The lowest mean monthly flow recorded on the North Fork at its confluence with the South Platte since 1957 was 17 cfs. There are no minimum release requirements on the North Fork.

Mean monthly flow records, by month, for the South Platte for the period of record 1924-1995 at USGS gauge No. 06701500 located below Cheesman Reservoir is shown in the following table (unadjusted for reservoir releases and influx of transbasin water).

CHART II-4
MEAN MONTHLY FLOWS (cfs)
SOUTH PLATTE RIVER BELOW CHEESMAN RESERVOIR
(1924 - 1995)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Avg	123	65	46	50	49	51	147	282	326	345	342	197
Min	13	6.3	5.3	5.3	2.8	3.1	2	11	38	54	67	33
Max	380	266	118	130	143	208	932	1716	1067	984	984	431

Mean monthly flow (cfs) records, by month, for the North Fork at South Platte for the period of record 1909-1910, 1913-1982 at USGS gauge No.

06707000 located at the confluence with the South Platte are shown in the following table (unadjusted for transbasin water).

CHART II-5
MEAN MONTHLY FLOWS (cfs)
NORTH FORK OF THE SOUTH PLATTE RIVER AT SOUTH PLATTE
(1909 - 1910, 1913 - 1982)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Avg	124	79	59	53	52	60	122	359	472	301	242	145
Min	36	32	18	19	17	26	45	69	83	64	57	42
Max	110	204	151	180	150	155	452	1062	1193	608	579	685

Since the addition of flow from the Roberts Tunnel to the North Fork commenced in 1963, the mean annual flow in the North Fork measured near Grant has increased from 66 cfs to 135 cfs.

The North Fork basin produces nearly the same amount of water as the South Platte basin even though the South Platte is at least 1,000 square miles larger. This is accounted for by the large amount of dry park area which contributes little flow from the Upper South Platte Basin.

Channel Characteristics

Extensive and detailed channel stability studies were performed on the North Fork and main stem of the South Platte River as part of the Two Forks study. The data collection methods, data sites, and channel classification techniques were determined by the USFS. The following channel stability infor-

mation is found in the report entitled *"Summary of Existing Stream Channel Conditions in the S/SEIS Study Area,"* Simons & Associates, April 1986.

The North Fork of the South Platte River has bed material consisting mainly of cobbles and boulders with some sand and gravel. The bed is quite stable and no evidence of significant aggradation/degradation problems is apparent. For the most part, the channel banks are low and stable. Some minor bank erosion is evident. Several reaches from Roberts Tunnel to the town of Insmont have had their water conveying capabilities enhanced with drop structures and riprap. This work was performed by Denver Water as preventive stabilization in some cases and in response to bank instability problems in others. Private land owners have requested and received from Denver Water special types of stabilization work or in some cases have performed their own stabilization work. Some reach-

es exist where low flow channelization was constructed, and rippapped islands and random rocks have been placed to improve fish habitat. Significant development exists adjacent to the river including agriculture, roads, and small towns.

Channel types on the North Fork include rocky, steep canyon areas like those from Estabrook to Crystal Lake near the town of Pine, and flatter, meandering areas through wider valley sections, as is the case from Pine to Buffalo Creek. Throughout this range of channel types, the river is basically stable, partially due to channel stabilization work and partially due to the inherent existing stability due to coarse bed material and vegetated banks. Denver Water has an ongoing project to enhance the water conveying capabilities of the North Fork of the South Platte River. This has required site-specific channel stabilization procedures to eliminate any increased degradation or lateral migration associated with flow conditions since Roberts Tunnel started operations in 1963.

The South Platte channel types range from a relatively flat, meandering channel through wider valley areas to very steep rocky canyons. The meandering channel sections include the reaches from one mile below Oxyoke to Trumbull, the first mile upstream of the confluence with the North Fork of the South Platte River, and the reach from below Lake George to the mouth of Beaver Creek. Steeper, rocky canyons include the reaches from one mile below Oxyoke to one mile upstream from the confluence of the North Fork from Deckers to Cheesman Dam, from Cheesman Reservoir to the mouth of Beaver Creek, and through Elevenmile Canyon between Lake George and Elevenmile Reservoir. Bed material sizes range from sand, gravel and cobbles in flatter areas up to extremely large boulders in the steeper areas. Flow along this river is buffered and sediment load is reduced by several reservoirs. The banks are generally low and quite stable. Only minor bank instabilities can be seen in some areas. Minor amounts of land development have occurred along this river and no major river stabilization has occurred. Channel work that has been done in a few areas includes a number of jetties and weirs that have been built by fishing clubs on their own land. In summary, the South Platte in the study area is generally stable and has only minor amounts of bank instabilities. The S/SEIS further states that:

"There were no overall significant impacts to channel stability identified as a result of the diversion of water for any of the site-specific or No Federal Action alternatives for the main stem channels in the study area."

The primary factors affecting channels are the frequency, magnitude and duration of flow, bed and bank material size distribution, channel bank vegetation, sediment transport capacity, and sediment supply.

The effects of dams and reservoirs on channels are complex. Gravel and cobble bed channels may experience aggradation below dams because the flow releases are insufficient to transport gravel and cobbles deposited by tributary streams during spring high flows and other episodic events. On the other hand, water that has had the natural sediment load removed by impoundments can erode channels in order to reach a state of dynamic equilibrium.

The channel of the North Fork has been altered by the placement of bank stabilization structures to protect the banks from erosion brought about by the Roberts Tunnel transbasin diversion. Accelerated erosion has occurred because of the increase of time that flows have been held near bankfull in order to meet metropolitan area water demands. Denver operates the flow from the Roberts tunnel with the intent of never exceeding a combined flow of 680 cfs measured at the state gauge near Grant or 980cfs at the confluence with the South Platte. The 680 cfs is the sum of natural flow above the gauge at Geneva Creek and transbasin diversions from the tunnel. When the natural flow of the North Fork exceeds 680 cfs at the gauge, Denver does not add water to the system from the Roberts Tunnel. With a lag time of 12 hours between release of flows from the Roberts Tunnel, storm events may occur that add runoff to the augmented flows to actually cause the flow to exceed 680 or 980 cfs. The 980 is the combined total of all natural flows and the transbasin diversion.

Roberts Tunnel at full capacity can deliver 1020 cfs. In the future, the city of Denver does not plan to deliver flows from the tunnel that would increase the combined flow of the North Fork above Grant and the tunnel to greater than 680 cfs. However, the duration of flows up to 680 cfs may increase as greater demands are placed on the Denver Water Board to provide water in the future.

The channel of the South Platte above the confluence of the North Fork has experienced some erosion due to high flows and/or longer than normal near bankfull conditions brought about by the combination of reservoir releases to meet demands and storm events.

The channel gradient of the South Platte as it flows through South Park is about 0.7 percent. Below Elevenmile Reservoir to Lake George, the gradient increases to 1.0 percent. From Lake George to Cheesman the gradient increases to 1.3 percent. From Cheesman to Strontia the gradient reduces to 0.5 percent. The gradient of the North Fork from

Insmont to confluence with South Platte averages approximately 1-2 percent.

Water Quality

The upper basin provides excellent habitat for aquatic life and recreational opportunities. The North Fork and tributaries such as Geneva Creek have been degraded by past mining activities and natural causes due to contact with minerals such that aquatic life in these streams is severely restricted. Chart II-6 contains information from the "Status of Water Quality in Colorado, 1994" report (305b Report) about the water in the South Platte basin above Strontia Springs.

**CHART II-6
WATER QUALITY - SOUTH PLATTE BASIN ABOVE STRONTIA SPRINGS**

Segment Description	Status	Constituent(s)	Use Classification
Mainstream of South Platte above North Fork confluence	Partially Supporting Slight	Metals Sediment	Aquatic Life Cold 1 Recreation 2 Water Supply Agriculture
South Platte tribes to below Tarryall Creek	Slight	Sediment	Aquatic Life Cold 1 Recreation 2 Water Supply Agriculture
Mosquito Creek source/Middle Fork	Not Supporting	Cu, Zn, Fe	Aquatic Life Cold 1 Recreation 2 Water Supply Agriculture
S. Mosquito Creek source/Mosquito Creek	Not Supporting	Zn, Cd, Fe	Aquatic Life Cold 1 Recreation 2 Water Supply Agriculture
North Fork South Platte source/South Platte	Not Supporting	Cu, Mn	Aquatic Life Cold 1 Recreation 2 Water Supply Agriculture
Geneva Creek above Scott Gomer Creek	Partially Supporting	Metals	Aquatic Life Cold 1 Recreation 2

See Appendix F for an explanation of status and classification.

Water Uses

Natural and imported water is released from storage reservoirs and transported down the rivers to satisfy domestic and irrigation demands on the front range.

An understanding of how the supply system is managed can be gained by looking at how the City of Denver manages its water needs. The explanation of the Denver Water system will be limited to the amount of the system necessary for understanding those parts of it potentially affected by wild and scenic river designation. All Denver Water water is derived from Denver Water-owned or Denver Water-controlled water rights through the State of Colorado water rights priority system. Raw water supply system diversions are located on both the East and West Slopes on the Blue and South Platte River basins.

In many years the Denver Water raw water system can legally divert more water than can be consumed or stored; however, during dry years and during parts of the fall, winter, and spring months, the divertible yield to the Denver Water system is less than the demand, and water must be drawn from storage reservoirs to provide the difference. The divertible yield is the amount of water that Denver Water could legally remove from the various river basins, assuming adequate storage is available for all water not immediately used. The actual yield to Denver consumers in a given year is also influenced by operational factors and carryover storage.

The Denver Water raw water supply system is composed of water rights and physical facilities. The water rights comprise a large number of diversion, storage, and exchange rights. Physical facilities include diversion, storage, and conveyance elements, which are necessary to reliably satisfy the demand of Denver Water users and meet the commitments to other water suppliers in the Denver metropolitan area for raw and treated water. Denver's system is divided into 2 major units: the southern system and the northern system. Potential wild and scenic river designation would affect only the southern system which is comprised of water that is released from Antero, Elevenmile, Cheesman, and Dillon Reservoirs and conveyed through the South Platte, Roberts Tunnel, and the North Fork to Marston and Foothills water treatment plants.

Antero Reservoir - Antero Reservoir, located on the South Fork of the South Platte River, has a capacity of 20,015 acre-feet. The reservoir has a relatively junior water right (1907) and is operated to provide Denver Water with carryover storage that is needed during long drought periods. Once Antero Reservoir is filled, it is maintained as full as possible and is not used to provide for normal seasonal fluctuations in demand. When Antero Reservoir's storage is depleted, it may take many years to refill because of its junior water right and upstream location. Evaporation losses from Antero Reservoir, Elevenmile Reservoir, and Cheesman Reservoir (discussed below) are made up to the South Platte River system through exchange at the Metropolitan Denver Sewage Disposal District 1 Central Plant (MDSDD No. 1) by discharging sewage effluent derived from West Slope water.

Elevenmile Reservoir - Elevenmile Reservoir, located on the South Platte River, has very junior decreed rights (1926, 1957). The storage capacity is 97,778 acre-feet. The reservoir is operated in the Denver Water system to provide carryover storage that is needed during long drought periods. Once Elevenmile Reservoir is depleted, it may take many years to refill because of the junior water rights.

Cheesman Reservoir - Cheesman Reservoir, located on the South Platte River, has relatively senior decreed rights (1889, 1893) for an active storage capacity of 79,064 acre-feet. Cheesman Reservoir is operated to provide storage to accommodate seasonal fluctuations in supply and demand and provide carryover storage for long-term dry periods. Because of its senior rights and downstream location, Cheesman Reservoir is the first reservoir of all the large South Platte reservoirs that can be filled.

Dillon Reservoir - The upstream component of the Blue River basin subsystem is Dillon Reservoir, which was constructed in the 1960s as part of the development of the Blue River basin as a water supply source of Denver. Dillon Reservoir has a capacity of 254,346 acre-feet of storage above the outlet to the Roberts Tunnel. The terms of a Federal right-of-way provide for a minimum release to the Blue River of 50 cfs or the natural inflow to Dillon Reservoir, whichever is less. Historically, the minimum release and downstream tributary inflows have been sufficient to satisfy active senior agricultural water rights downstream on the Blue River.

The Roberts Tunnel conveys water from Dillon Reservoir to the North Fork at Grant. The direct flow decreed capacity of the tunnel is 788 cfs. The Roberts Tunnel intercepts a ground water source and produces approximately 5 cfs of yield in addition to the transmitted flow. Water delivered to the East Slope through the Roberts Tunnel flows down the North Fork from Grant to the confluence with the main stem of the South Platte River. Flow in the North Fork is constrained by channel capacity, which is 680 cfs at Grant and 980 cfs at the confluence with the main stem. The flow in the North Fork is further constrained in the winter because of icing conditions which reduce channel capacity. Roberts Tunnel releases are restricted to the differences between actual flow in the North Fork and the capacity constraints of the channel. Conveyance losses of 5 percent are charged by the State Engineer against water delivered from Dillon Reservoir to account for seepage losses in the North Fork.

The current demand on the Denver system averages 265,000 acre-feet/year. The current supply is approximately 345,000 acre-feet/year.

Denver looks to the South Platte basin to provide approximately 75 percent of its water supply needs (50% from the South Platte and 25% from the North Fork).

Other water providers manage their systems in much the same way as Denver Water to one degree or another. Only those listed below have rights that make a noticeable impact on the South Platte basin.

Aurora - Aurora looks to the South Platte basin to provide approximately 95 percent of its water supply needs. (This includes Homestake and various other small diversions.)

The current demand for Aurora is approximately 44,000 acre-feet/year. Current water rights available through the South Platte basin total 51,000 acre-feet/year.

Thornton - Thornton looks to the South Platte basin to provide approximately 15 percent of its water supply needs during average or wet years. During drought years looks to the South Platte to supply approximately 25 percent of water need.

Thornton's current demand is approximately 37,000 acre-feet/year.

All of the study corridors contain areas that have potential dam sites for water storage for the Denver metropolitan area. Some of these sites have been under consideration for dams for over a century. The most recent proposal, analyzed in the 1988 Metropolitan Denver Water Supply EIS, proposed the construction of a 600 foot high Two Forks dam just below the confluence of the South Platte and the North Fork with a 1,100,00 acre-foot reservoir. Other options proposed included a smaller 400,000 acre-foot Two Forks Reservoir, Estabrook dam and 200,000 acre-foot reservoir, and New Cheesman Reservoir just downstream from Cheesman (Cheesman Expansion). The Environmental Protection Agency issued a Recommendation Determination to prohibit construction of all proposed options under Section 404 (c) of the Clean Water Act.

The entire South Platte study corridor is within existing power site withdrawals. None of the study rivers currently receive any legal protection from hydro-power development, dam construction, diversions, or other water developments other than under Section 404 of the Clean Water Act (dredge and fill permit system administered by the U.S. Army Corps of Engineers and the Environmental Protection Agency).

In addition, Denver Water has an approved Right Of Way issued in 1931 by the U.S. Department of Interior pursuant to the provisions of the February 15, 1905 Act of Congress for a 346,000 acre-foot reservoir. A reservoir on this ROW inundate private and National Forest System lands from just below the confluence of the South Platte and the North Fork of the South Platte to just upstream of Foxton on the North Fork and to just upstream from Deckers on the South Platte.

Interest in dam construction in the study corridors is likely to remain high since the two study rivers serve as a major conduits for transporting water to the Denver metropolitan area from within the basin and from the Western Slope. Some water resource development interests claim the study area contains the most efficient and least costly storage sites for supplying the future water needs of the Denver metropolitan area.

There are no current projects or active applications for dam construction or energy development within the study segments. There is no doubt however,

that the Two Forks sites, Estabrook site, and Cheesman expansion sites will continue to be analyzed as possible future storage sites.

**CHART II-7
RESERVOIR CAPACITY/CONTROL OR OWNERSHIP/AMOUNT OF STORAGE BY MUNICIPALITY**

Reservoir Name	Capacity	Municipality (ac ft)	Storage by Municipality
SOUTH PLATTE BASIN			
Tarryall		CDOW	
Antero	20,015	Denver	20,015
Spinney Mountain	53,651	Aurora Thornton	53,151 500
Elevenmile	97,779	Denver	97,779
Cheesman	79,064	Denver	79,064
Strontia Springs	7,864	Denver Aurora	7,164 700
Jefferson Lake		Aurora	2,170
Wellington	4,400	Wellington Res. Co. Thornton	4,300 100
Duck Lake	600	Burlington Ditch Res. Co. Thornton	550 50
BLUE RIVER BASIN			
Dillon	254,036	Denver	254,036
ARKANSAS/ EAGLE RIVER BASIN			
Homestake	45,000	Aurora	21,441
Turquoise		Aurora	20,000
Twin Lakes		Aurora	2,717



Elevenmile Dam, one of the two existing dams within the study area, is used for water storage for the Denver Metropolitan area.

2.17 Land Use Controls

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

County Zoning

All the private land in the study corridors lie within Douglas, Jefferson, and Park counties in Colorado. All three counties have comprehensive land management plans covering all lands in the counties.

Park County Zoning - The private lands in the study river corridors of Park County are zoned Residential, Residential/Agriculture, Agricultural, Mountain Residential and Commercial.

Residential Zoning permits single-family dwellings, mobile homes, and essential services. Conditional uses include: churches, schools, daycares, duplex-

es, fire stations, guest house, home occupations, kennel, non-commercial parks, and water tanks. Minimum lot sizes are generally between 3 and 5 acres, depending on where they are located. Existing platted lots are exempt from lot size requirements and may be smaller.

Residential/Agriculture zoning permits single-family buildings and accessory buildings, mobile homes, and essential services. It also includes conditional uses as listed in Residential and Agriculture zones. The minimum lot area is 20 contiguous acres per tract.

Agricultural zoning permits single-family dwellings and accessory buildings and on site employee housing. Conditional uses include dude/guest ranch/church camp/retreats, public/private recreation and private air strips if FAA sanctioned. Minimum lot area is 160 contiguous acres.

Commercial zoning permits all types of commercial enterprises with minimum lot size conditional based on type of enterprise and business use. All zoning

requires a minimum setback of 50-100 feet from all waterways.

In addition to the specific zoning regulations, Park County has extensive regulations protect water and adjacent lands. Channelization of streams which destroys aquatic habitat is prohibited. Land uses must fit the channel. Revegetation will occur along riparian areas as quickly as possible. Land uses will not increase stream sedimentation and suspension loads.

Douglas County Zoning - The private lands within Douglas County are zoned Agricultural One which is similar to the above agricultural zoning, however the density should not exceed one principal residence per 35 acres.

Jefferson County Zoning - The private lands within Jefferson County are primarily Agricultural One or Two and Mountain Residential Two unless the lands are near the communities which are Mountain Residential Three, Commercial One, or Restricted Commercial.

The Agricultural One zoning is intended to provide limited farming, ranching, and agricultural related uses while protecting the surrounding land from harmful effects. General farming, single-family dwellings, greenhouses, forestry farming, and public parks are allowed. Conditional uses include water supply reservoirs and irrigation canals, sewage treatment plants, transmission towers, and church/school/foster home/day care center, oil and gas drilling, and camps, picnic grounds, lodges, and other similar facilities. Minimum lot size is 5 acres.

The Agricultural Two zoning is intended to provide limited farming, ranching, and agricultural related uses while protecting the surrounding land from harmful effects. General farming, single-family dwellings, greenhouses, forestry farming, and public parks are allowed. Conditional uses include water supply reservoirs and irrigation canals, sewage treatment plants, transmission towers, and church/school/foster home/day care center/ and camps, oil and gas drilling, and picnic grounds, lodges, and other similar facilities. Minimum lot size is 10 acres.

The Mountain Residential Two zoning is intended to provide for low density residential development and provides both single-family and two-family dwellings. Certain agricultural uses which are compatible

with this residential development are included. Single and two-family dwellings, public parks, and group homes for up to 8 people, and public parks are allowed. Conditional uses include water supply reservoirs and irrigation canals, church/library/foster home and day care center. Minimum lot sizes are 17,400 square feet for a single-family dwelling and 10,000 square feet per family unit.

The Mountain Residential Three zoning is intended to provide for medium density residential development and provides both single-family and two-family dwellings. Single and two-family dwellings, public parks, and group homes for up to 8 people, are allowed. Conditional uses include water supply reservoirs and irrigation canals, church/library/foster home and day care center. Minimum lot sizes are 6,250 square feet for a single-family dwelling and 4,000 square feet per family unit (or up to 9,000 square feet for two units).

Commercial zoning permits all types of commercial enterprises with minimum lot size conditional based on type of enterprise and business use (1 acre to 30 acres) unless the existing property ownership and adjacent property in the same ownership total less than 1 acre as of July, 27, 1978.

Advisory Committee on Historic Preservation

The Colorado Advisory Committee on Historic Preservation consists of members recognized professionally in the fields of history, architectural history, architecture, archaeology and/or other disciplines. The members are appointed by the Governor.

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

The Committee has identified several sites on the North Fork study corridor that are listed or nominated for the National Register of Historic Places.

Bureau of Land Management

Management of 29 acres of BLM lands in the North Fork study corridor are governed by the Northeast Resource Area Management Plan. The Plan identi-

fies the corridor as part of the Evergreen Management Unit. Within this unit, the area is composed of forest and rock outcrops. The entire area is unavailable for commercial timber harvest and management is restricted to maintain recreation, scenic, wildlife, and watershed values. There are no records of BLM harvest on this 29 acre area. The BLM manages this area primarily to protect a peregrine falcon nesting site and has worked with various organizations, Denver Water, Jefferson County and other local officials to close the area to recreation use during the nesting season. To consolidate and improve management of the area the BLM is working to transfer the tract which includes the 29 acres in the study corridor to the Jefferson County Recreation District as an open space park under the Public Purposes Act.

Copies of the approved Northeast Area Resource Plan are available from the BLM's Canyon City District Office.

Colorado Water Conservation Board

A division of the Department of Natural Resources, the Department administers State laws and policies relating to the diversion and appropriation of surface and ground water, protects state water compacts and entitlements and where necessary, determines and sets minimum instream flows.

Colorado Division of Fish and Wildlife

A division of the Department of Natural Resources responsible for preserving, protecting, and managing all wildlife and fish in the state of Colorado. It maintains optimum numbers of indigenous fish and wildlife and ensures that no species are threatened with extinction. It is also responsible for developing and administering state fish and wildlife regulations and monitoring both angling effort and harvest, as well as hunter effort and harvest.



"Mountain Residential" zoned area along the South Platte in Trumbull.

Colorado State Forest Service

The mission of the State Forest Service is to achieve stewardship of Colorado's environment through forestry outreach and service. The agency provides assistance to private landowners and administers the state laws pertaining to forestry and wildfire prevention and suppression.

Denver Board of Water Commissioners

The Denver Board of Water Commissioners (Denver Water) is chartered by the City and County of Denver to have complete charge and control of the water works system and plant for supplying the city and county with water. They have the power to purchase, condemn, acquire, construct, lease, maintain, conduct, and operate a plant and water works operation. Denver Water, which supplies water to about half of the Denver metropolitan area, owns 3,352 acres in the study corridors and has numerous water rights in the study corridors. They have been involved in strong individual efforts on their lands and in cooperative efforts on other lands to improve recreation opportunities and protect natural resources in the study corridors.

Elevenmile Canyon Ecosystem Management Project

An approved May 1995 Forest Service management plan that provides additional management direction to protect the unique recreational, fisheries, and other values in the Elevenmile Canyon area (Segment A). The plan for this area calls for converting most of the campgrounds to day use facilities and constructing a single large campground on the canyon rim to the south. It also recommends closing the upper three miles of the road below Elevenmile Dam to motor vehicles and paving the remaining roads to reduce sediment and protect fisheries. Under the plan, recreation facilities and parking sites in the canyon are managed by a concessionaire under a special-use permit. This ensures the protection of the quality recreation experience and resources by providing intensive management of visitor use and behavior in the area.

Elevenmile Canyon Recreation Area

In addition to the ecosystem management project discussed above, special regulations established in 1984 provide additional protections in the area.

These include a camping and campfire closure outside of developed campgrounds and prohibitions on the discharge of firearms.

Front Range Mountain Backdrop Project

A joint cooperative project involving Boulder, Douglas, Jefferson, El Paso, and Larimer counties, and landowners to help encourage the preservation of the mountain backdrop extending from Ft. Collins to Colorado Springs. The study will be used to update the open space components of the counties' master plans and will help determine what areas may or may not be appropriate for development, define view sheds and visual aspects of the mountains, and help the counties determine appropriate land uses and development. The counties are also exploring future cooperative efforts to assist in preserving key open space and historic lands. These include conservation easements, limited development rights, concentrating development in some areas while permanently restricting it in others, long-term leases to keep property in agricultural use, land trades and exchanges, reclamation or reclaiming disturbed lands, fee simple purchase from willing sellers. This project may help to preserve the North Fork and South Platte study corridors in Douglas and Jefferson Counties.

Interim Management Plan for the South Platte

In 1993, an Interim Management Plan was instituted to improve public safety, protect the recreation experience, and protect and repair impacted riparian and wetland areas along the South Platte from Deckers to the confluence and along the North Fork from Buffalo Creek to the confluence. The plan and subsequent orders for the area eliminated overnight camping except in designated camping areas, prohibited parking except in designated sites, prohibited overnight use except in developed facilities, allows fires only in designated camping area fire rings, and closed the "chutes" area to the public. Dispersed camping was banned within one-quarter mile of either side of the rivers. There are now 72 parking areas that will accommodate approximately 1600 people at one time, and camping is allowed only in designated sites.

Under the plan, some recreation sites were rehabilitated, damaged riparian areas were restored, trees, grass, and shrubs were re-established, and vehicle barriers installed.

The plan is implemented through a major cooperative effort among the Forest Service, BLM, Denver Water, The Colorado Division of Wildlife, and the Douglas and Jefferson County Sheriff's Departments and has greatly improved the recreation experience and natural resources in the area.

U.S. Army Corps of Engineers

Any encroachment or channeling activities in a natural stream or wetland as defined by the U.S. Army Corps of Engineers are subject to the requirements of Section 404 of the Federal Clean Water Act. A permit must be obtained before any activities can occur within the streams.

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service administers the Endangered Species Act of 1973 (as amended) for plants, animals, and non-anadromous fish within the United States. Government agencies and private landowners may find their range of management strategies limited by the Act when it is determined that a threatened or endangered species, or its critical habitat, may be affected by a proposed management action.

Segment H of the North Fork study corridor and the South Platte study corridor downstream from Cheesman Dam include populations of and suitable habitat for peregrine falcons which are listed as endangered under the Endangered Species Act.

The entire North Fork and the South Platte study corridors also include populations of bald eagles which are listed as threatened under the Endangered Species Act.

Segment H of the North Fork and the South Platte downstream from Corral Creek contain up to 20 percent of the population and critical habitat for the Pawnee Montane Skipper, listed as endangered under the Endangered Species Act. The butterfly's habitat which extends up the dry hillsides above the study corridor contains the world's sole population of this species.

All Federal projects which may affect threatened or endangered species or their habitat must be approved by the U.S. Fish and Wildlife Service in accordance with the Endangered Species Act. These approvals and/or modification recommendations

add additional direct protection to these species in the study corridors.

United States Environmental Protection Agency

EPA is responsible for administering the nation's laws on air quality, water quality, solid and hazardous wastes, pesticides, toxic substances, and cleanup of hazardous wastes under the Superfund. Functions include: setting and enforcing environmental standards; conducting research on the causes, effects, and control of environmental problems, and assisting the states and local governments. EPA reviewed the U.S. Army Corps of Engineer's Two Forks Reservoir EIS and denied the permit for the Two Forks Dam and Reservoir under Section 404 (c) of the Clean Water Act. EPA would continue to review any new dam proposals in the area under the Clean Water Act.

2.18 Socio-Economics

Introduction

This discussion begins with the demographic statistics of the people who live in the towns and counties of the area, and the explosive growth that has occurred over the last 15 years. Then the link between water supply and future growth is explored. Finally, the economic organization and characteristics of the local economy are presented later in this section.

Area of Influence

The "area of influence" is much broader than the river corridor study area. The counties chosen as the area of influence comprise people whose cultural and economic development is tied, to some degree, to the study area and its management. Dependency on and use of the water resources in the study area are very important to the public in the area of influence.

The people in the area of influence for this study reside in heavily populated Metro counties (Adams, Arapaho, Denver, El Paso, Douglas and Jefferson) as well as sparsely populated non-Metro counties (Park, and Teller). The Metro counties all look towards the South Platte River for some or all of their water consumption needs. El Paso County water needs are met mostly from the Arkansas River but

are included because the study area is heavily used for recreation by its citizens and because the county exchanges some of its water with other municipalities that use the South Platte system.

Some of the economic and social differences in the distinction between Metro and non-Metro communities are blurring if not disappearing. New communities in Park, Douglas, and El Paso counties, while not yet major population centers, are well within commuting distance to Denver and Colorado Springs. Douglas county is presently the fastest growing county in the United States. Of all 63 Colorado counties, it ranks as #4 in terms of total population growth from 1980 to 1995.

Population Growth in the Area of Influence

Population statistics and projections in this section are based on the Colorado Draft Population Projections published by the Colorado Division of Local Government, May 1996.

This area, both Metro and non-Metro counties, has been experiencing significant population growth. The total number of people living in area of influence counties grew from 1,751,627 to 2,039,636 between 1980 and 1990. (See Charts SE-1, 2, & 3 which follow). This represents a total percentage change of 16.4 percent for the 10 year period. Furthermore, the area swelled by an additional estimated 277,578 people between 1990 and 1995. This added another 13.6 percent increase in just 5 years bringing the total population of the area of influence to 2,317,214. This represents a total change of population of 565,587 (32.3%) or a compound growth rate of 1.88 percent per year over the 15 year period.

By 1995, the area population was approximately 62 percent of the population of the entire State of Colorado. The area of influence has been growing faster than the State of Colorado, a State whose population growth rate is among the highest of all States in the nation.

The total population of the Metro counties dwarfs the population of the non-Metro counties (2,289,179 to 28,035 in 1995). The total population growth of the Metro counties also is huge in comparison to the non-Metro counties (550,919 to 14,668). El Paso, Arapahoe, and Jefferson counties are ranked 1, 2, and 3 respectively with the largest net gain of all counties in Colorado over the last 15 years.

However, the growth rates of the non-Metro counties exceeds that of Metro counties except for Douglas County. Douglas County, while classified as a Metro County in most published census statistics, has really been transformed from a non-Metro county to a Denver bedroom county in the last 15 years. In fact, Douglas, Teller, and Park counties are ranked 1,2, and 5 as the fastest growing of the State's 63 counties. As Chart II-10 illustrates, the non-Metro counties grew by 109.7 percent to only 31.7 percent for the metro counties (5.06 verses 1.85 percent on a compound annual basis) over the 15 year period. This trend would even be more pronounced if El Paso County could be artificially split between metro and non-Metro, since the majority of the population increase is taking place west of I-25. The same generalization is true of Douglas County. A very large part of the population growth in these two counties is at the urban/forest interface.

**CHART II-8
THE POPULATION OF THE AREA**

County	1980	1990	1995
Adams	245,944	265,038	297,914
Arapaho	293,621	391,511	443,443
Denver	492,365	467,610	493,063
Jefferson	371,753	438,430	488,089
El Paso	309,424	397,014	462,711
Douglas	25,153	60,391	1,039,597
METRO	1,738,260	2,019,994	2,289,179
Park	5,333	7,174	10,646
Teller	8,034	12,486	17,389
NON-METRO	13,367	19,642	28,035
Area Total	1,751,627	2,039,636	2,317,214
Colorado	2,889,964	3,294,394	3,746,235

**CHART II-9
THE POPULATION CHANGE IN THE AREA**

County	1980-90	1990-95	1980-95
Adams	19,094	32,876	51,970
Arapaho	97,890	51,932	149,822
Denver	-24,755	25,453	698
Jefferson	66,677	49,659	116,336
El Paso	87,590	65,697	153,287
Douglas	35,238	43,568	78,806
METRO	281,179	269,185	550,919
Park	1,841	3,472	5,313
Teller	4,434	4,921	9,355
NON-METRO	6,275	8,393	14,668
Area Total	288,009	277,578	565,587
Colorado	404,509	451,762	856,271

**CHART II-10
THE PERCENTAGE POPULATION CHANGE IN THE AREA**

County	Total % Pop. Change 1980 to 1990	Total % Pop. Change 1990 to 1995	Total % Pop. Change 1980 to 1995	Compound Average Annual Change 80-95 (%)
Adams	7.8	12.4	21.1	1.29
Arapaho	33.3	13.3	51.0	2.79
Denver	-5.0	5.4	0.1	0.01
Jefferson	17.9	11.3	31.3	1.83
El Paso	28.3	16.5	49.5	2.72
Douglas	140.1	72.1	313.3	9.92
METRO	16.2	13.3	31.7	1.85
Park	34.5	48.4	99.6	4.72
Teller	55.2	39.5	116.4	5.28
NON-METRO	46.9	42.7	109.7	5.06
Area Total	16.4	13.6	32.3	1.88
Colorado	14.0	13.7	29.6	1.75

Most of the population growth is due to in-migration and births exceeding deaths. The people migrating to these towns include people leaving the more eastern part of the state, people from Southern California and other cities along the West Coast, and a smaller percentage of people from all other parts of the nation. These population changes are part of a national pattern of population movement. In general, people are leaving the central and northern Great Plains and the Lake States for the metropolitan areas of Denver and the Front Range of Colorado, and for areas next to the National Forests and National Parks of the Central and Northern Rocky Mountains. At the same time, large numbers of people living in Southern California and in the larger cities of the West Coast are moving to the metropolitan areas of Denver, Salt Lake City, Boise, and Seattle. These people also are settling either into the metropolitan areas, or in the smaller towns of the I-70 and I-25 corridors in Colorado, Colorado's West Slope, and the area around Yellowstone National Park.

Projecting Future Population Growth for the Area of Influence

Future population and economic growth is linked to water availability. Charts II-11 and II-12 show population projections for the area of influence. This set of projections predicts population growth of approximately 853,000 for the area of influence in the next 25 years with 827,000 of these people into the metro

counties. The counties predicted to see the largest total growth are El Paso, Adams, Douglas, Jefferson, and Arapahoe. Douglas county has the highest percentage growth just like the period from 1980 to 1995.

By 2025, the area population is projected to be approximately 61 percent of the population of the entire State of Colorado. Several of the counties will grow significantly faster than the State average, even though the entire area of influence will grow slightly slower than the State of Colorado.

With projected growth of 1.25 percent annually between 1995 and 2020, current water supplies for the Denver metro area are expected to be insufficient. In November 1995, the Denver Regional Council of Governments published *Metro Vision 2020*, a look into possible futures and their consequences for the Denver metro area. The manner in which the Denver area grows has important effects on land use, transportation, open space, and environmental issues - including water consumption and supply relationships. Four scenarios of growth were examined. When per capita water consumption projections were compared with current water supplies, it was found that supplies in 2020 would be short by anywhere from 95,000 to 118,000 acre-feet. These amounts represent from 19 percent to 24 percent more water than the annual safe yield in 1990. Conservation measures were accounted for in the esti-

mates. Should water providers in the metro area agree to share supplies, the additional need could be reduced significantly. However, legal and institutional barriers that would permit and encourage such sharing are not in place. While details may be argued, it is generally agreed among knowledgeable sources that 100,000 acre-feet is a reasonable estimate of additional water supplies that the Denver metro area will require in 20 years.

Not all water suppliers in the Denver metro area are equally prepared for the future. The Denver Water Department is the best prepared, while some suburban providers are the least prepared with adequate water supplies. Surface water rights from South Platte, Arkansas, or Colorado River basins have been the preferred source of water supplies. As these become more costly because of limited supplies, environmental regulations, and political resistance to new dams and reservoirs, other sources are being explored. Northern Denver suburbs have acquired irrigated farm land and concomitant water rights with plans to divert and use the water for

municipal purposes. Agriculture accounts for more than 90 percent of all Colorado water consumption, and municipal use of the same water would actually reduce consumption. But Denver area residents and local governments are concerned that pursuing agricultural water would threaten the traditional and desirable land use and small town economies just outside the metro area. Southern Denver suburbs have chosen groundwater as their primary source - at least temporarily. The south metro area is on top of four vast deep aquifers - Dawson, Denver, Arapahoe, and Laramie-Fox Hills. Each is being heavily tapped by subdivisions in Douglas county. Experts disagree on the merits of using this resource. While all recognize that the water source is limited, some believe it is acceptable to draw down the aquifers and rely on the supplies for a many years. Others see this as prudent only in the short term, allowing local water providers time to pursue more reasonable long-term supplies. The Colorado Division of Water Resources has seen evidence that aquifer water levels have declined in recent years.

**CHART II-11
POPULATION PROJECTIONS FOR THE AREA OF INFLUENCE**

County	1995	2000	2005	2010	2015	2020
Adams	297,914	329,857	361,686	394,479	429,886	464,690
Arapahoe	443,443	478,986	504,217	523,757	540,901	555,802
Denver	493,063	511,127	520,477	528,339	536,741	546,351
Jefferson	488,089	524,718	553,795	579,911	606,013	631,787
El Paso	462,711	515,142	557,007	596,099	633,822	668,492
Douglas	103,959	37,069	167,166	196,446	223,717	249,105
METRO	2,289,179	2,496,899	2,664,348	2,819,031	2,971,080	3,116,227
Park	10,646	12,814	14,672	16,405	18,061	19,701
Teller	17,389	21,359	25,359	28,443	31,249	33,928
NON-METRO	28,035	34,329	40,031	44,848	49,310	53,629
Area Total	2,317,214	2,531,228	2,704,379	2,863,879	3,020,390	3,169,856
Colorado	3,746,235	4,112,608	4,416,828	4,695,283	4,965,257	5,224,025

**CHART II-12
PROJECTED POPULATION CHANGE IN THE AREA OF INFLUENCE**

County	Total Pop. Change 1995 to 2020	Total % Pop. Change 1995 to 2020	Compound Average Annual Change (%) 1995 to 2020
Adams	166,776	56.0	1.79
Arapaho	112,359	25.3	0.91
Denver	53,288	10.8	0.41
Jefferson	143,698	29.4	1.04
El Paso	205,781	44.5	1.48
Douglas	145,146	139.6	3.56
METRO	827,048	36.1	1.24
Park	9,055	85.1	2.49
Teller	16,539	95.1	2.71
NON-METRO	25,642	91.3	2.63
Area Total	852,642	36.8	1.23
Colorado	1,477,790	39.4	1.34

The most promising avenue for increasing water supplies in the Denver metro area may lie with conjunctive use. The same geologic formations that contain the aquifers mentioned above could be used as underground reservoirs. Suburbs that acquire surface water rights could divert them to the area and pump them down into the formations during seasons and years of high flows. During dry seasons and drought years, this stored water would then be pumped back up. This strategy relies on the efficient use of all existing water delivery systems (dams, reservoirs, canals, natural channels, etc.) of most metro area water providers plus an investment in aquifer pumping and distribution facilities. Improved cooperation among water providers would also be necessary.

With projections of unmet water needs and increasingly complex arrangements to provide additional supplies, the situation begs the question "How would Denver and Colorado Springs growth be affected". Other areas in dry climates have asked similar questions, and the answers are not clear. Residential water demand is dependent on a variety of factors, but one of the best correlated is price. As price goes up, some water uses are curtailed significantly. Prices can be increased through such things as fines during water restrictions or increases in use rates. What is regarded as a water shortage under

one price structure, may be a water surplus under another. Aggressive conservation measures also affect the determination of adequate water supplies. New technologies in water treatment and reuse and in industrial processing must be considered in any discussion of the future. Some may claim that if little or no additional water is provided then metro area growth will cease and economic ruin will follow. Research in other parts of the arid west has been unable to substantiate these claims.

Economic Traits of the Rural Counties in the Area of Influence

The Economic Research Service (ERS), USDA, has developed a rural typology that provides a way to identify groups of non-metropolitan counties sharing important economic and policy traits. Park and Teller counties were both classified as non-metropolitan.

The six nonoverlapping economic types include: farming-dependent, mining-dependent, manufacturing-dependent, government-dependent, services-dependent, and nonspecialized. Park County was classified as government-dependent meaning "Government contributed a weighted annual average of 25 percent or more of total labor and proprietor income over the 3 years from 1987 to

1989". Teller County was classified as services-dependent meaning "Service activities (private & personal services, agr services, wholesale & retail trade, finance & insurance, transportation, and public utilities) contributed a weighted annual average of 50 percent or more of total labor and proprietor income over the 3 years from 1987 to 1989".

Non-metropolitan counties are also classified by ERS into five overlapping policy types: retirement-destination, federal lands, commuting, persistent poverty, and transfers-dependent. Not surprisingly, Park and Teller counties are classified as Federal lands meaning "Federally owned lands make up 30 percent or more of a county's land area in 1987". Both Park and Teller counties are also classified as commuting meaning "workers aged 16 years and older commuting to jobs outside their county of residence were 40 percent or more of all the county's workers in 1990".

Economic Diversity of the Counties in the Area of Influence

Economic diversity can be defined as "the presence in an area of a great number of different types of industries" or "the extent to which the economic activity of a region is distributed among a number of categories". Shannon's entropy function was devised to have a useful summary statistic to describe the diversity of an area and compare it to other areas. The entropy statistic measures diversity of a region against a uniform distribution of employment where the norm is equiproportional employment in all industries. This index ranges from 0 (no diversity, a single economic sector) to 1 (perfect diversity, all sectors with equiproportional representation). Shannon's diversity statistic has been computed for the years 1977, 1982, 1985, and 1990. These statistics for 4-digit industry aggregation (Standard Industry Classification of the US Bureau of Economic Analysis) for the counties in our study area are presented below in Chart II-13.

CHART II-13
ECONOMIC DIVERSITY INDICIES

County	1990 #	1985 #	1982 #	1977 #
METRO				
Denver	.680	.637	.641	.587
Adams	.664	.599	.601	.525
Jefferson	.664	.598	.557	.466
Arapaho	.653	.596	.614	.534
EL Paso	.653	.577	.538	N/A
Douglas	.626	.584	.560	.496
NON-METRO				
Teller	.592	.552	.471	.458
Park	.590	.528	.431	.415

Some interesting observations can be made from these statistics. All of the counties have become more diversified over time. This increasing diversification includes traditional and newer industries such as telecommunications, four-season resorts, light manufacturing, and secondary or tertiary health care. Recently many parts of the study area appear to be undergoing another transformation - the basic character of these economies (the base export industries) appears to be shifting toward high technology and production of Information Age

goods and services (for example, financial plans, building and landscape architectural drawings, computer software, and stock brokering services). As the telecommunication service industries in the region continue to lay optical cable lines, digital switches and wireless communication servers into these areas, we expect to see a continued immigration of people who are coming to make their livings in these industries. As expected, the Metro counties are more diversified than the non-Metro counties.

Relative Size and Structure of the County Economies in 1993

In the next series of charts (II-14 to II-22), the relative size and structure of the economies in the area of influence are portrayed. The information comes from the Forest Service's IMPLAN model data set of 1993.

Chart II-14 is not an impact analyses, but simply a "snapshot" of the economic structure of the county economies in 1993. Total Industrial Output (TIO) represents the gross sales of the industry (or when summed across all sectors, the entire economy) for the accounting period of the study. Employment represents average monthly jobs. Total income is comprised of employee compensation, proprietor's income and other property income.

**CHART II-14
COUNTIES RANKED BY OUTPUT AND EMPLOYMENT, 1993**

County	Total Industrial Output MMS	Employment Number of Jobs
Denver	38065	494187
Arapahoe	19842	267529
Jefferson	19418	237314
El Paso	16301	259637
Adams	10606	143569
Douglas	1971	28389
Teller	376	7067
Park	170	2537

The information in Charts II-15 to II-22 is highly aggregated by combining possibly hundreds of industrial sectors into the 9 one-digit Standard Industrial

Code classification groups. This is done here solely for descriptive purposes, and the ease of common comparison.

CHART II-15
1 DIGIT STANDARD INDUSTRIAL CODE DEPICTION
OF AN AREA ECONOMY
DENVER COUNTY 1993 DATA

Aggregated Sector / Industry	Base Year Output \$MM	Total Income \$MM	Employment Number of Jobs
Agriculture	37	24	1294
Mining	1177	706	5618
Construction	3036	1276	25486
Manufacturing	4580	1869	32775
Transportation, Communications, & Utilities	6331	3187	41591
Trade (Whole & Retail)	4421	3102	100205
Finance, Insurance, & Real Estate	6537	3172	47571
Services	8533	5391	161886
Government	3414	3076	77761
Total	38065	21810	494187

CHART II-16
1 DIGIT STANDARD INDUSTRIAL CODE DEPICTION
OF AN AREA ECONOMY
ARAPAHOE COUNTY 1993 DATA

Aggregated Sector / Industry	Base Year Output \$MM	Total Income \$MM	Employment Number of Jobs
Agriculture	76	52	2473
Mining	780	449	2806
Construction	2584	1080	21326
Manufacturing	2034	889	14877
Transportation, Communications, & Utilities	2064	1139	12556
Trade (Whole & Retail)	2546	1732	62172
Finance, Insurance, & Real Estate	4270	1991	32355
Services	4573	2938	91172
Government	914	880	27792
Total	19842	11149	267529

CHART II-17
1 DIGIT STANDARD INDUSTRIAL CODE DEPICTION
OF AN AREA ECONOMY
JEFFERSON COUNTY 1993 DATA

Aggregated Sector / Industry	Base Year Output \$MM	Total Income \$MM	Employment Number of Jobs
Agriculture	62	41	2391
Mining	421	362	1533
Construction	2241	878	19555
Manufacturing	6842	2916	29235
Transportation, Communications, & Utilities	686	371	5047
Trade (Whole & Retail)	1752	1098	53426
Finance, Insurance, & Real Estate	2731	1341	17575
Services	3374	2187	74031
Government	1309	1292	34521
Total	19418	10351	237314

CHART II-18
1 DIGIT STANDARD INDUSTRIAL CODE DEPICTION
OF AN AREA ECONOMY
EL PASO COUNTY 1993 DATA

Aggregated Sector / Industry	Base Year Output \$MM	Total Income \$MM	Employment Number of Jobs
Agriculture	60	42	2077
Mining	79	31	373
Construction	1697	627	15276
Manufacturing	3200	1334	23699
Transportation, Communications, & Utilities	1095	554	7823
Trade (Whole & Retail)	1596	996	49616
Finance, Insurance, & Real Estate	2501	1096	16512
Services	3263	2057	76346
Government	2810	2663	67915
Total	13453	9400	259637

CHART II-19
1 DIGIT STANDARD INDUSTRIAL CODE DEPICTION
OF AN AREA ECONOMY
ADAMS COUNTY 1993 DATA

Aggregated Sector / Industry	Base Year Output \$MM	Total Income \$MM	Employment Number of Jobs
Agriculture	104	43	2379
Mining	35	19	198
Construction	1865	762	15758
Manufacturing	2562	900	14358
Transportation, Communications, & Utilities	1317	750	14247
Trade (Whole & Retail)	1586	1089	38759
Finance, Insurance, & Real Estate	977	485	5670
Services	1401	819	31595
Government	759	720	20605
Total	10606	5607	143569

CHART II-20
1 DIGIT STANDARD INDUSTRIAL CODE DEPICTION
OF AN AREA ECONOMY
DOUGLAS COUNTY 1993 DATA

Aggregated Sector / Industry	Base Year Output \$MM	Total Income \$MM	Employment Number of Jobs
Agriculture	45	35	1642
Mining	16	9	67
Construction	517	210	4382
Manufacturing	162	70	1423
Transportation, Communications, & Utilities	74	39	493
Trade (Whole & Retail)	176	107	5572
Finance, Insurance, & Real Estate	428	222	1941
Services	440	291	9031
Government	114	108	3838
Total	1683	1090	28389

CHART II-21
1 DIGIT STANDARD INDUSTRIAL CODE DEPICTION
OF AN AREA ECONOMY
TELLER COUNTY 1993 DATA

Aggregated Sector / Industry	Base Year Output \$MM	Total Income \$MM	Employment Number of Jobs
Agriculture	5	4	127
Mining	38	12	154
Construction	60	19	626
Manufacturing	26	11	324
Transportation, Communications, & Utilities	9	5	128
Trade (Whole & Retail)	36	21	1318
Finance, Insurance, & Real Estate	75	34	514
Services	106	73	3021
Government	22	22	855
Total	376	200	7067

CHART II-22
1 DIGIT STANDARD INDUSTRIAL CODE DEPICTION
OF AN AREA ECONOMY
PARK COUNTY 1993 DATA

Aggregated Sector / Industry	Base Year Output \$MM	Total Income \$MM	Employment Number of Jobs
Agriculture	33	7	212
Mining	2	1	12
Construction	54	17	545
Manufacturing	6	2	85
Transportation, Communications, & Utilities	7	3	79
Trade (Whole & Retail)	10	6	363
Finance, Insurance, & Real Estate	25	13	88
Services	18	10	548
Government	15	14	605
Total	170	73	2537

2.19 Wild and Scenic Rivers in the Region

National Wild and Scenic Rivers System

The Cache la Poudre is the only designated Wild and Scenic River in the the Front Range physiographic province and the only designated river within the State of Colorado. Within the Forest Service's Rocky Mountain Region there is only one other designated river, 20.5 miles of the Clarks Fork of the

Yellowstone in northwestern Wyoming, about 450 miles from the study area. There are six designated rivers within 400 miles of the study area. These include the Niobrara in Nebraska; the Cache la Poudre in Colorado; and the Rio Grande, Rio Chama, East Fork of the Jemez, and the Pecos in New Mexico. The designated portions of these rivers total 299.85 miles.

A list of the Federally designated rivers within a 400-mile radius of the study rivers are displayed in Chart II-23 and Map II-4.



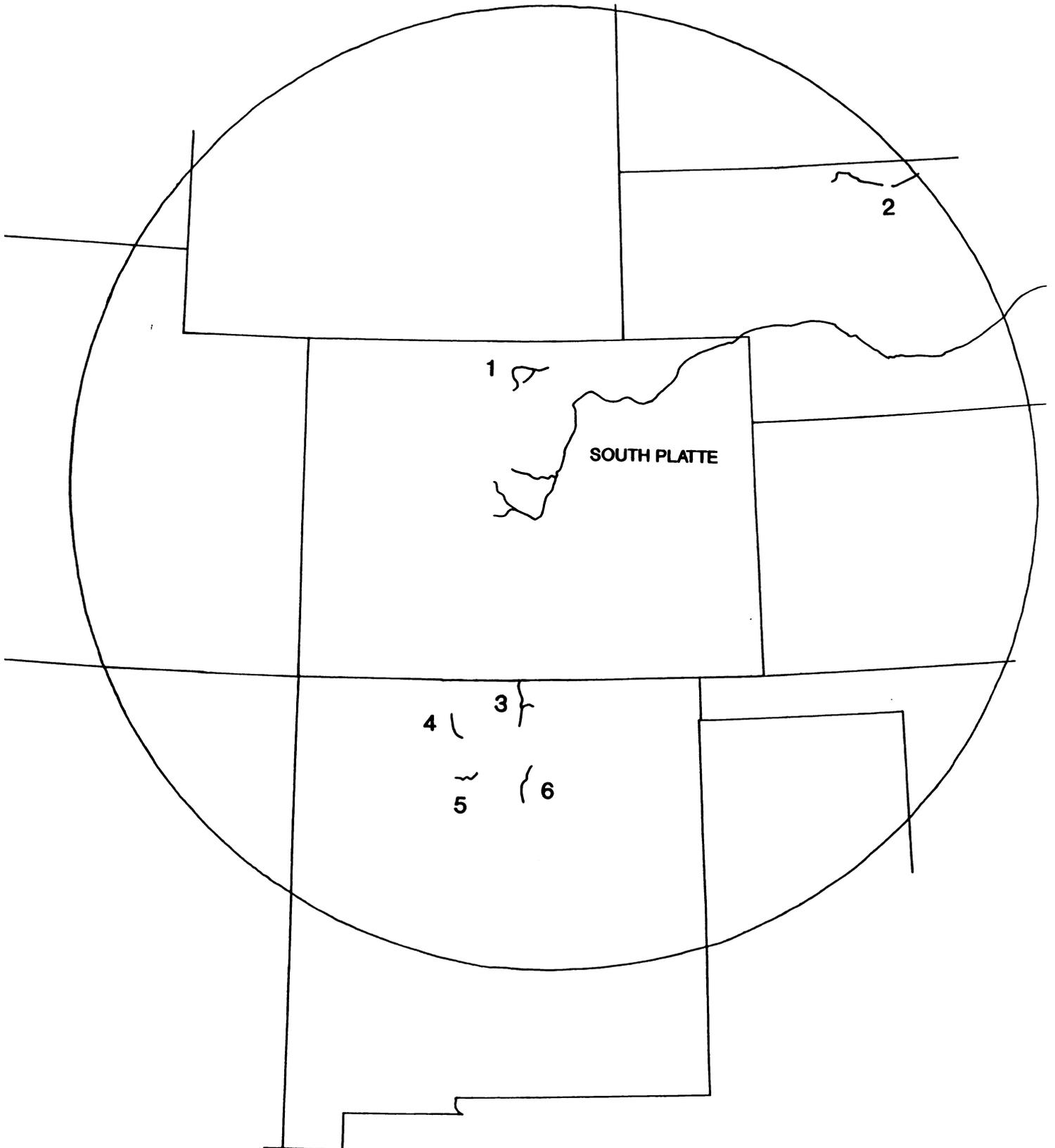
The old South Platte Hotel was an important stop on the Denver, South Park, and Pacific Railroad and is listed on the National Register of Historic Places.

**CHART II-23
RIVERS WITH FEDERAL OR STATE PROTECTION WITHIN 400 MILES
OF THE CENTER OF THE STUDY AREA**

RIVER NAME	ADMINISTERING AGENCY	MAP KEY	MILE-AGE	RIVER STATUS
Cache la Poudre	Forest Service/ National Park Service	1	76.0	National System
Niobrara	National Park Service/ Fish and Wildlife Service	2	103.0	National System
Rio Grande	Forest Service/BLM	3	64.75	National System
Rio Chama	Forest Service/BLM	4	24.6	National System
East Fork of the Jemez	Forest Service	5	11.0	National System
Pecos	Forest Service	6	20.5	National System

MAP 2-4

RIVERS WITH FEDERAL OR STATE PROTECTION
WITHIN 400 MILES OF THE CENTER OF THE STUDY AREA



Chapter III

Findings of Eligibility and Classification



3.1 Summary

The purpose of this chapter is to present the findings and summarize the methods and results of the Eligibility and Classification Determinations that are described in detail in Appendix A. The goal of these analyses was to determine whether the study rivers met the minimum requirements to be eligible for inclusion in the National Wild and Scenic Rivers System, and if so to determine their highest inventoried classification as either "Wild", "Scenic", or "Recreational".

3.2 Segments Studied

The area studied for potential eligibility includes 26.8 miles of the South Platte River from Elevenmile Dam to Cheesman Reservoir, 22.6 miles of the South Platte River from Cheesman Dam to Strontia Springs Reservoir, and the entire 50.1-mile North Fork of the South Platte River. The rivers have been further divided into segments for analysis purposes. The segments include:

Segment A - The South Platte River from Elevenmile Dam (downstream from fence on Denver Water's special-use permit area) downstream to the southernmost boundary of private lands in the vicinity of Lake George (8.7 miles rather than the 8.0 miles listed in the Forest Plan).

Segment B - The South Platte River from the southernmost boundary of private lands in the vicinity of Lake George downstream to the northernmost boundary of private lands near Beaver Creek (7.7 miles rather than the 6.0 miles listed in the Forest Plan).

Segment C - The South Platte River from the southernmost boundary of private lands near Beaver Creek downstream to the upstream end of the stream gauge above Cheesman Reservoir (10.4 miles rather than the 9.4 miles listed in the Forest Plan).

Segment D - The 3.1-mile section of the South Platte River downstream from the stream gauge below Cheesman Dam downstream to the upstream boundary of the Wigwam Club property (NW 1/4 of the NW 1/4 Section 29, Township 9 South, Range 70 West).

Segment E - The South Platte River from the upstream boundary of the Wigwam Club property downstream to the high water line of Strontia Springs Reservoir (6029 foot contour) (19.5 miles).

Segment F - The North Fork of the South Platte River from the headwaters downstream to its confluence with Kenosha Gulch (9.7 miles).

Segment G - The North Fork of the South Platte River from its confluence with Kenosha Gulch downstream to the upstream boundary of the Berger property (NW 1/4 of the SW 1/4, Section 34, Township 7 South, Range 72 West) near Insmont (17.5 miles).

Segment H - The North Fork of the South Platte River from the upstream boundary of the Berger property near Insmont downstream to within 1/4 mile of its confluence with the South Platte River (22.9 miles).

For classification purposes Segment H has been further divided into three subsections for classification. These include:

Segment H1 - From Insmont (upstream end of Berger property) downstream to Estabrook (downstream side of old stone house) (1.5 miles).

Segment H2 - From Estabrook (downstream side of old stone house) to Cliffdale (Section line between Sections 29 and 30 east of Cliffdale) (4.9 miles).

Segment H3 - From Cliffdale (Section line between Sections 29 and 30 east of Cliffdale) to within 1/4 mile of the confluence with the South Platte River (16.5 miles).

3.3 History

In 1931 the Secretary of the Interior issued a right-of-way to the Denver Board of Water Commissioners for a water storage reservoir (D-032121) along the South Platte and North Fork of the South Platte River pursuant to the provisions of the February 1, 1905 Act of Congress. The right-of-way runs from 1/2 mile below the confluence of the South Platte and North Fork of the South Platte Rivers to one mile below Deckers on the South Platte and from 1/2 mile below the confluence to just below Riverview on the North Fork. If constructed within the ROW, this 346,000

acre-foot reservoir would inundate approximately 17 miles of the South Platte River and 6 miles of the North Fork of the South Platte River.

In 1972 the "Western U.S. Water Plan, Streams and Stream Systems, Working Document", a multi-agency report, said that the South Platte River has "free-flowing values" and "should be appropriately considered and evaluated in Federal planning."

In 1974, "A Conceptual Proposal for a South Platte Canyons Free-Flowing Recreational River" published by the USDI, Bureau of Outdoor Recreation, found that the river was eligible for Wild and Scenic River protection. This was not however, an Eligibility Study.

In 1977, the Bureau of Outdoor Recreation's "Water and Land Resources Management Study for Metropolitan Denver and South Platte River and Tributaries, Colorado, Wyoming, and Nebraska" lists the South Platte as "free-flowing" and "potential regional park", "general park", or "recreation area".

The entire South Platte River was examined during the late 1970s by the Heritage Conservation and Recreation Service (HCRS), the agency of the U.S. Department of the Interior responsible for developing the National Recreation Inventory (NRI). The NRI is a national list of rivers which are recommended for study for possible Wild and Scenic River designation. The NRI, published by the National Park Service in 1982, included the South Platte River from below Elevenmile Dam to the high water line of Cheesman Reservoir. The Park Service concluded that these segments (A, B, and C) have outstandingly remarkable values which make them potentially eligible for consideration for addition into the National Wild and Scenic Rivers System. This was not however, an eligibility study, nor was it meant to contain all possible rivers.

On June 1, 1983, the Chief of the Forest Service approved the Regional Guide for the Rocky Mountain Region. The Guide confirmed the decision made previously by the HCRS and committed the Forest Service to study the eligibility of the South Platte River between Cheesman Reservoir and Elevenmile Dam.

On October 18, 1984, the Regional Forester approved the Land and Resource Management Plan for the Pike and San Isabel National Forests, Co-

manche and Cimarron National Grasslands (Forest Plan). The Plan was developed in compliance with the National Forest Management Act, 36 CFR 219, and the National Environmental Policy Act (NEPA). The Forest Plan included an eligibility study for the South Platte River between Cheesman Reservoir and Elevenmile Dam (See Appendix A). The eligibility study concluded that this section was eligible for inclusion in the Wild and Scenic Rivers System with a classification of "Wild" between Cheesman Reservoir and Beaver Creek (Segment C) and "Recreational" from Beaver Creek to Elevenmile Dam (Segments A and B). This reconfirmed the recommendations previously made by the HCRS and the Regional Guide and committed the Forest Service to do a suitability study for these three eligible segments for potential inclusion in the Wild and Scenic Rivers System. Because these river segments were identified through the forest planning process, they are recognized as study rivers under the provisions of Section 5(d)(1) of the Wild and Scenic Rivers Act (P.L. 90-542 et seq).

In March 1988, the Final EIS for the Metropolitan Denver Water Supply issued by the U.S. Army Corps of Engineers, disclosed that the segment of the South Platte from Cheesman Reservoir to Elevenmile Dam was eligible for study under the Wild and Scenic Rivers Act. No comments were received on the Draft EIS concerning the question of eligibility below Cheesman Dam. The Final EIS, supported by the Governor, Colorado Water Quality Control Commission, and 41 cities and utilities in Denver Metropolitan area, recommended construction of a dam for water storage just below the confluence of the North Fork of the South Platte and the South Platte Rivers. If constructed, this 1.1 million acre-foot Two Forks Reservoir, would provide a dependable future water supply for the Denver Metropolitan area but would flood approximately 21 miles of the South Platte River from one mile below the confluence with the North Fork to 1/2 mile below Cheesman Dam and 9 miles of the North Fork of the South Platte River from the confluence to just below Riverview.

In May 1988, the Rocky Mountain Regional Office of the National Park Service evaluated the South Platte River from below Cheesman Dam to its confluence with the North Fork of the Platte River (Segments D and E) for possible inclusion in the NRI. In their letter to the Director of the National Park Service they found that the river "possesses outstandingly remarkable recreational, fish, historic, and other (en-

dangered species) values." Furthermore, their field inspection "disclosed no characteristics which would cause the stream to be considered ineligible as a Recreational component of the Wild and Scenic Rivers System." It is important to note that this was an opinion and not an Eligibility Study.

On April 7, 1988, Regional Forester Gary Cargill in a letter to the Regional Director of the National Park Service stated that the Forest Service did not believe that the South Platte below Cheesman (Segments D and E) should be added to the NRI.

On June 9, 1988, the Director of the National Park Service, upon recommendation of the Forest Service, withdrew their recommendation for the listing of Segments D and E in the Nationwide Rivers Inventory.

In 1989, the Environmental Protection Agency (EPA) rejected the Two Forks Dam project as proposed in the March 1988, Final EIS for the Metropolitan Denver Water Supply. EPA concluded that the proposal was "the most environmentally damaging of the alternatives considered" and concluded that "construction and operation of the dam would have unacceptable adverse effects on fishery, wildlife, and recreation areas".

In 1989, Congress appropriated \$75,000 to study the recreation potential of the South Platte River. The Forest Service felt that a Wild and Scenic River Eligibility Study was best way to accomplish this and began the study which included the South Platte river below Cheesman Dam (segments D and E) and the entire North Fork of the South Platte River (segments F, G, and H). A draft of this document was made available for public review on August 7, 1995. Upon receipt of comments the document was revised. Since the study found that segments D, E, and F were eligible for potential wild and scenic river designation, the Forest Service decided to continue with a suitability study for these segments and segments A, B, and C of the South Platte River which were found eligible by the Forest Plan in 1984. On November 16, 1995, a Notice of Intent to prepare Wild and Scenic River Study Report and Legislative Environmental Impact Statement for the South Platte River and North Fork of the South Platte River was published in the Federal Register (Vol. 60, No., 221, page 57571). This commenced the public scoping period and started Forest Service preparation of the suitability study. The 1995 Draft Eligibility

study and the 1984 Forest Plan Eligibility Study were then incorporated in the Wild and Scenic River Study Report and Draft Environmental Impact Statement for the South Platte and North Fork of the South Platte Rivers.

On November 23, 1990, EPA Assistant Administrator for Water issued a Final Determination vetoing Two Forks. That decision prevented the US Army Corps of Engineers from issuing a proposed permit for the construction of the 1.1 million acre-foot project. The Final Determination also vetoed a 400,000 acre feet version of Two-Forks and the 450,000 acre-feet reservoir in the Corrective Action Proposal proposed by the applicants. EPA based its decision on findings that any of the Two forks projects would result in unacceptable adverse effects on fishery areas and recreational areas and that those losses would be avoidable because there were less environmentally damaging practical alternatives to Two Forks. Moreover, EPA found that the resources which would be lost were so valuable that the project's impacts, even factoring in the proposed mitigation, were unacceptable. EPA's Final Determination concludes that each of the Two Forks projects "would inundate the South Platte corridor, which supports a vital aquatic ecosystem offering unmatched fishery and recreation values within a single location easily accessible to major metropolitan areas."

In 1991, EPA's decision not to allow construction of the Two Forks project was appealed by eight suburban water districts.

On June 5, 1996, U.S. District Judge Richard Matsch dismissed the appeal by eight suburban water districts. The judge ruled that EPA had not "acted capriciously and arbitrarily" in blocking construction of the dam because of its impact on the environment. The judge also ruled that the eight suburban water districts did not have legal standing to proceed with the case without support of the Denver Water Board.

3.4 Eligibility Determination

This eligibility determination is a summary of the two Eligibility and Classification Determinations that are described in detail in Appendix A. These include: 1) the Eligibility and Classification Determination for the South Platte and North Fork of the South Platte

River (segments D-H) released as a draft in August 1995, and finalized, following scoping, as part of this Wild and Scenic Study Report in June 1996; and 2) the Elevenmile Dam to Cheesman Reservoir Eligibility Report (segments A, B, and C) as specified in Volume II, Appendix F, of the 1984 Forest Plan. Portions of the former have been summarized and the latter updated to show specific OR Values by segment. These changes are documented in the following sections.

Eligibility

To be eligible, a river must meet both of the following criteria:

1. It must be free-flowing, and
2. possess one or more Outstandingly Remarkable (OR) values.

Free-Flowing Character

The Wild and Scenic Rivers Act (Section 16b) defines free-flowing as:

...existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway. The existence, however, of low dams, diversion works, and other minor structures...shall not automatically bar its consideration for inclusion: Provided, that this shall not be construed to authorize, intend, or encourage future construction of such structures within components of the National Wild and Scenic Rivers System.

The free-flowing analysis of Segments D-F is well documented in the Eligibility and Classification Determination for the South Platte and North Fork of the South Platte River in Appendix A. Segments A-C were determined to be free-flowing in the Forest Plan; however, some additional comments are warranted for Segments A and B. Segment A has a small 5-foot dam, located on National Forest System

lands just upstream from Lake George. The original intent of the dam was to raise the water level slightly to provide water for irrigation via an aqueduct to the Lake George area. More recently, the flood gates have been removed and the dam has not been used in years. The permittee has asked to abandon the permit and a special-use permit has not been reissued for the dam. Segment B includes the ten-foot earthen 1,100 foot Lake George Dam, and 85 acre Lake George, which was built for ice production, in 1890. At that time, a small 3-5 foot earthen dike, was built up on the southern end of the lake and the main stem of the South Platte was channeled around the east side of the lake for about .8 mile. The lake washed out in the 1930s and was rebuilt again and was used for irrigation and recreation purposes. There is also a small one-acre lake with a 3-5 foot earthen dike immediately below Lake George. Segment B also includes both this channelized portion and the 3-5 foot earthen dike. Even though portions of this segment are channelized or behind a low dam, this .8-mile section is still considered free-flowing since the dam is small and the diverted portion has taken on a natural riverine appearance over the past 100 years.

Although all of the study segments are below major dams or diversions and releases are controlled, seven of the eight study segments were found to be free-flowing. Only Segment G, from the Roberts Tunnel to the upstream portion of the Berger property near Insmont was found not to be free-flowing. While some minor channel modifications and diversions are present, particularly on Segment H, and the lower portion of Segment D, they are not considered significant enough to affect the free-flowing nature of the river. Segment G, downstream from the Roberts Tunnel has undergone extensive alteration by human activities and includes over 20 diversion dams, numerous check dams, the outlet from the Roberts Tunnel, channel relocations, and countless other human-made intrusions and modifications to the river bed, channel, banks, and vegetation, leaving a majority of the segment no longer in a natural riverine appearance.



The Roberts Tunnel carries westslope water from Dillon Reservoir to the North Fork.

Outstandingly Remarkable Values Analysis

The goal of this analysis was to identify "outstandingly remarkable values" or more simply, outstanding values on the eight study rivers. This analysis was carried out in the 1984 Forest Plan for areas above Cheesman Reservoir and in the Eligibility and Classification Determination prepared in August 1995 and revised in June 1996 (Appendix A). These assessments document the determination of which river-related values or features are outstandingly remarkable.

Since seven of the eight study segments and a portion of Segment G (from the Roberts Tunnel upstream to Kenosha Gulch) were found to be free-flowing, their OR values were studied and identified as described Appendix A and in the 1984 Forest Plan. The outstandingly remarkable values studied include: scenic, recreational, geologic, vegetation/ecological, fisheries, wildlife, cultural (historic and prehistoric), traditional use/cultural values, and other resources. The determined OR values for each

river segment are listed in Chart III-1 and are also summarized briefly in the next section.

South Platte River (upstream from Cheesman Reservoir - Segments A, B, and C)

The 1984 Forest Plan documented that Segments A, B, C, contained five Outstandingly Remarkable Values: Scenery, Recreation, Geology, Fisheries, and Wildlife. The plan however, did not specify which values were found in each segment. This is clarified here for each of the three segments.

This section of the South Platte River flows through a canyon that is approximately 700 feet high and 1/2 mile wide known as Elevenmile Canyon in the upper portion and Wildcat Canyon in the lower portion. The terrain consists of a rocky canyon with steep side walls interspersed forest cover and scattered meadows. The central portion (Segment C) around Lake George consists of a wide flat canyon bottom. River elevations range from 8,450 feet below Cheesman dam to 6,860 feet near Cheesman Reservoir.

Segment A - The 8.7-mile section of the South Platte River from Elevenmile Dam (downstream from fence on Denver Water's special-use area) downstream to the southern end of the private lands south of Lake George. The area is almost entirely National Forest System land except for a few acres owned by the Boy Scouts of America in Camp Alexander. This portion contains several National Forest developed campgrounds and picnic areas and receives heavy developed and dispersed recreation use. This segment is paralleled by a gravel road that was the location of the old Colorado Midland Railroad from Colorado Springs to Leadville, of which only the grade and tunnels remain. It is the finding of the 1984 Forest Plan that Segment A possesses the following Outstandingly Remarkable Values:

Scenery - The study corridor located between 8,000 and 9,200 feet possesses a great deal of diversity in landform, water, color, and vegetation, notable in the geographic region. This includes the granitic rock formations, the steep forested canyon with several small waterfalls, and the old railroad tunnels one passes through along the gravel road that parallels the river. In addition, there is the diversity of vegetation, including meadows, aspen, willows, Douglas-fir, and ponderosa pine forests. The corridor draws people from all over the region for the area's variety, rock outcrops, and scenic beauty. A Forest-wide visual resource inventory classified the entire canyon as "Class A--Distinctive" due to the highly scenic features found in the area.



The South Platte in Elevenmile Canyon is noted for its scenic, recreational, geologic, and fisheries values.

Recreational - This segment in Elevenmile Canyon is one of the most popular destination site on the Forest and attracts people from all over the region. Because of the accessibility, scenic beauty, and facilities provided, this area receives heavy year-round use and a parking fee system to control use and limit environmental damage has been implemented. Rock climbing, camping, picnicking, fish-

ing, water play along with floating and tubing, hiking, and scenic viewing are the primary recreation activities. User density is high from early spring through late fall.

Geology - The area is known for its variety of rare and exemplary geologic features. The segment lies in an area of relatively young topography, with

north-south trending complex mountains cut by deep, rugged canyons. The entire area has been formed by Precambrian granite formations. These rocky outcrops predominate throughout the segment. Massive rock outcrops are exposed in the canyon walls, except where the bedrock is marked by a covering of talus and soil.

Fisheries - This segment contains nationally renowned brown and rainbow trout populations and habitat. Along with Segment B, the segment contains some of the most diverse habitat conditions of any of the study areas and is recognized by the Division of Wildlife as an important quality trout fishery in the state. Along with other study segments of the South Platte, this segment is a nationally important producer of brown and rainbow trout and draws people from all over the region. The upper 3 miles of the segment is a designated quality fisheries area with special fishing regulations in effect.

Segment B - This 7.7-mile segment of the South Platte River from the southern end of the private lands south of Lake George to the north end of the private lands near Beaver Creek flows through subdivided private lands that are used as year-round and seasonal recreational property. The area is paralleled, crossed, and otherwise heavily influenced by subdivision roads. U.S. Highway 24 crosses the river at Lake George. About 1-1/2 miles of undeveloped stream occurs on National Forest System land and there is a mile or so of private land that is used for grazing and hay pastures. It is the finding of the 1984 Forest Plan that Segment B possesses the following Outstandingly Remarkable Value:

Fisheries - This segment contains nationally renowned brown and rainbow trout populations and habitat. Along with Segment A, the segment contains some of the most diverse habitat conditions of any of the study areas and is recognized by the Division of Wildlife as an important quality trout fishery in the state. Along with other study segments of the South Platte, this segment is a nationally important producer of brown and rainbow trout and draws people from all over the region.

Segment C - This 10.4-mile segment of the South Platte River from the north end of the private lands near Beaver Creek to the high water line of Cheesman Reservoir (upstream of the stream gauge) flows through undeveloped National Forest System lands that are inaccessible except by trails or a few four-wheel vehicular roads. Smooth water alternates with boulder filled channels. The area is within 2-5 miles of the Lost Creek Wilderness, is essentially undeveloped, and presents a vestige of primitive America. Its primary use is for dispersed recreation which includes fishing, hiking, and off-highway vehicle use. A high voltage power line crosses the river just upstream from Corral Creek. Denver Water owns several acres in the extreme lower portion of the segment. It is the finding of this analysis that Segment C possesses the following Outstandingly Remarkable Values:

Scenery - The study corridor located between 8,500 and 6,860 feet possesses a great deal of diversity in landform, water, color, and vegetation, notable in the geographic region. This includes large granitic rock formations and a steep forested canyon with several small waterfalls. In addition, there is the diversity of vegetation, including meadows, aspen, willows, Douglas-fir, and ponderosa pine forests. The area lies within an undeveloped canyon that is a vestige of primitive America and draws people from all over the region for its ruggedness, remoteness, and scenic beauty. A Forest-wide visual resource inventory classified the entire canyon as "Class A--Distinctive" due to the highly scenic features found in the area.

Geology - The area is known for its variety of rare and exemplary geologic features. The segment lies in an area of relatively young topography, with north-south trending complex mountains cut by deep, rugged canyons. Like Segment A, the entire area has been formed by Precambrian granite formations. These rocky outcrops predominate throughout the segment. Massive rock outcrops are exposed in the canyon walls, except where the bedrock is marked by a covering of talus and soil. Unlike Segment A, the outcrops are more numerous, much more vertical and dominant, and there are massive granite cliffs that tower over river.



Several trails and four-wheel drive roads access the South Platte River in remote Wildcat Canyon.

Fisheries - this segment contains nationally renowned brown and rainbow trout populations and habitat. The fishery in this segment is solely supported by self-reproducing rainbow and brown trout, and as such, is designated as Colorado Wild Trout Water. The section of river contains the second highest amount of habitat of the study segments (next to Segment D). The area is recognized by the Division of Wildlife as an important quality trout fishery in the state. Along with other study segments of the South Platte, this segment is a nationally important producer of brown and rainbow trout and draws people from all over the region. Although the size of the trout is not exceptional as in other segments, the catch rates are quite high due to the abundance of fish present.

Wildlife - This segment contains Pawnee montane skipper butterfly populations and habitat. The Pawnee montane skipper qualifies under the wildlife population OR Value defined for this analysis. The montane skipper is a globally-rare sub-species found only in the area of Platte Canyon from near South Platte up to approximately 7,400 feet in eleva-

tion. To add to the significance of this value, this sub-species of the skipper is listed in the *Federal Register* (52 FR 36176) as a Threatened species under the Endangered Species Act. Populations occur in this segment upstream to the Corral Creek area. The habitat of the butterfly has been created by the river, over time, resulting in the current canyon topography.

South Platte River (downstream from Cheesman Reservoir - Segments D & E)

From the base of Cheesman Dam to the impoundment waters of Strontia Springs Reservoir, the South Platte River canyon drops approximately 700 feet in elevation (from 6,700 feet to 6,000 feet). The narrowest and steepest gradient on the South Platte is between the base of Cheesman Dam to the Wigwam property boundary. The river drops approximately 300 feet within this three-mile stretch (Segment D). Between the Wigwam property and the community of Nighthawk, the canyon is much more open and broader, with an approximate drop of 200 feet in elevation within a fourteen-mile stretch (up-

per end Segment E). The gradient and narrowness of the canyon again increases from this point, dropping approximately 300 feet, a distance between Nighthawk and the Strontia impoundment waters, a distance of almost six miles (lower end Segment E).

Several creeks and gulches drain into the South Platte between Cheesman and Strontia Springs reservoirs. Many, like Jenny Gulch and Saloon Gulch, are of low volume or are intermittent in nature. Others, such as Horse Creek, Sugar Creek and Pine Creek, are permanent but also of low volume.



Cheesman Dam and the upper termini of Segment D in Cheesman Canyon.

Segment D - The 3.1-mile section of the South Platte River from below Cheesman Dam downstream to the upstream boundary of the Wigwam Club property (the NW 1/4 of the NW 1/4, Section 29, Township 9 South, Range 70 West). The first mile below Cheesman Dam is owned by the City and County of Denver, and the next two miles are National Forest System lands. It is the finding of this Eligibility/Classification document that Segment D possesses the following Outstandingly Remarkable Values:

Recreational - Outstanding fishing and dispersed recreation opportunities such as hiking and scenic viewing are present. This segment in Cheesman Canyon attracts people from all over the region for hiking, fly-fishing, and scenic viewing in its rugged boulder strewn canyon. The canyon is one of the most heavily fished sections in the State of Colorado

and receives the heaviest fishing use in the Front Range. The Gill Trail, which parallels the river, is heavily used by anglers, hikers, nature observers, and photographers. Outfitters and guides permitted by the South Platte Ranger District cater to local, national and international clients. This area is also the site of the annual Masterfly Tournament sponsored by Trout Unlimited. The tournament is used as a fundraiser to enhance the South Platte River corridor.

Fisheries - Segment D contains nationally renowned brown and rainbow trout populations and habitat. This segment contains exceptionally high fish habitat and is a nationally important producer of wild brown and rainbow trout. According to the Colorado Division of Wildlife (CDOW), there are more than 9,000 miles of trout streams in Colorado. This

stretch, represents 3 miles of the 112.5 miles of wild trout streams, and 3 of the 167.8 miles of Gold Medal trout streams in the the state. Wild Trout waters contain fish raised entirely within the natural environment and not stocked with hatchery fish. Gold Medal waters provide outstanding angling opportunities for large trout. Cheesman Canyon is considered the "crown jewel" with more than 500 pounds of fish over 14" per surface area. The CDOW ranks this among the most productive trout streams in the state if not the country. According to the USDI-Fish and Wildlife Service (USFW), Resource Category 1 waters are unique on a national basis and are irreplaceable in kind.

Wildlife - Segment D contains Pawnee montane skipper butterfly populations and habitat. The Pawnee montane skipper qualifies under the wildlife population OR Value defined for this analysis. The montane skipper is a globally rare sub-species found only in the area of Platte Canyon from near South Platte up to approximately 7,400 foot elevation. To add to the significance of this value, this sub-species of the skipper is listed in the *Federal Register* (52 FR 36176) as a Threatened species under the Endangered Species Act. The habitat of the butterfly has been created by the river, over time, resulting in the current canyon topography.

Segment E - The South Platte River from the upstream boundary of the Wigwam Club property downstream to the high water line of Strontia Springs Reservoir (19.5 miles). Approximately 50 percent of the land is National Forest System land; 45 percent is owned by the City and County of Denver; and 5 percent is privately owned. It is the finding of this Eligibility/Classification document that Segment E possesses the following Outstandingly Remarkable Values:

Recreational - Outstanding dispersed and developed recreation such as: camping, picnicking, hiking, fishing, scenic driving, and other day-use.

The quality and diversity of developed and dispersed recreation opportunities along this and the

accessibility and proximity of the area to major metropolitan areas provides an excellent year-round recreation resource. The recreational study for the *Two Forks EIS* indicated that the Recreational Visitor Day (RVD) use for the project area exceeds 304,000 RVDs on public land (this includes an area larger than the river corridor). However, most of this visitor use was projected to occur along the river, including the North Fork. A survey conducted by the District in 1993 lists the wide range of activities which occur within Segment E and Segment H. In addition to the premier fly-fishing activity that occurs in the upper (60%) portion of this, the Paralyzed Veterans of America hosts an annual three day fishing derby and an outing for over 750 persons with a disability and their families, senior citizens, and developmentally disabled youths. This event occurs near the historic site of Twin Cedars at the lower end of the segment. The area is also popular for waterfowl hunting. This segment is considered the best recreational river within the region of analysis primarily because of the amount and diversity of opportunities presented to such a large population base.

Fisheries - Segment E contains nationally renowned brown and rainbow trout populations and habitat. The Colorado Division of Wildlife lists the South Platte from the Wigwam Club to the confluence with the North Fork as Gold Medal waters, approximately 85 percent of this segment's length. The USFW Resource Category 1 rating extends from the Wigwam Club to Scraggy View Picnic Grounds, approximately 45 percent of the segment, and Resource Category 2 extends from Scraggy View to Strontia Springs Reservoir. Gold Medal and Resource Category 1 waters were previously described under Segment D. Resource Category 2 waters are also Outstandingly Remarkable in that they represent aquatic habitat that must be mitigated in kind for no net loss.

Wildlife - Pawnee montane skipper butterfly and habitat.

(See description in Segment D)



The South Platte River near Deckers - Segment E.

North Fork of the South Platte River - Segments F, G, and H

Headwater tributaries for the North Fork are located high on the eastern slope of the Continental Divide at 12,500 feet in elevation. The tributaries combine to form the main stem of the river at approximately 11,300 feet. The North Fork flows in an easterly direction for approximately 51 miles before reaching the South Platte River at an elevation of 6,050 feet. Numerous small intermittent and perennial streams contribute to the flow.

The North Fork has three distinct segments. Segment F is from the headwaters to Kenosha Gulch near the town of Webster. This segment is known as Hall Valley. The landscape is a result of alpine glaciation, with a primary geologic substrata composed of the granitic Kenosha batholith. Elevation changes approximately 3,500 feet within the 9.7-mile segment. The overall topography is representative of a typical high mountain glacial valley, with narrow and

steep tributary canyons, open vistas interrupted by glacial ridges, and alpine to sub-alpine vegetation.

Segment G, from Kenosha Gulch near Webster to Insmont, includes the community of Estabrook. The river valley geology changes from the granitic batholith to a schist-gneiss complex, and the valley is much broader with less gradient. The river parallels an ancient fault, with the elevation dropping 1,520 feet in approximately 17.5 miles. Glacial and river gravels form flat terraces along the river. Most of the river is paralleled by US Highway 285. Numerous ranches, communities, and houses are found in this section, taking advantage of the open topography and transportation network. The water from Roberts Tunnel enters the river in this section three miles downstream from the community of Webster. The Forest Service maintains a work center at Buffalo Creek.

Segment H is from Insmont to the confluence with the South Platte River. The North Fork canyon takes on different characteristics within this 22.9-mile seg-

ment. The overall effect is a narrow and confined river canyon. The gradient rapidly drops 800 feet within the first seven miles. Near the town of Pine, the topography becomes less steep for the next five miles, with the gradient dropping 150 feet. Near the community of Riverview, the canyon again becomes narrower and steeper, dropping 1,500 feet in the next eleven miles before reaching the confluence. Population density within this segment is low as there are only a few small communities in this area and many of the dwellings are occupied on a seasonal basis. The channel has been modified in spots, and the banks have been stabilized in places during the construction of the historic railroad grade and more recently by county road work.

The entire length of Segment H is paralleled by either roads, trails or the historic (abandoned) railroad grade. Access to the river is restricted in places by private lands, but the majority is accessible to the general public. Jefferson County has recently developed the Pine Valley Ranch near Pine as a day-use Open Space park. Lands managed by Denver Water and the U.S. Forest Service, from near Buffalo Creek to the confluence, are also restricted to day-use only. National Forest land in the Crossons area is open for dispersed recreational use. A portion of the land at Crossons is privately owned where non-motorized access only is allowed.

Segment F - The North Fork of the South Platte River from the headwaters downstream to its confluence with Kenosha Gulch (9.7 miles). Approximately 65 percent of the lands National Forest system lands and the rest is in private ownership. Also included in this analysis is the upper 2.3-mile portion of Segment G above the Roberts Tunnel. It is the finding of this Eligibility/Classification document that Segment F and the upper 2.2-mile section of Segment G possesses no outstandingly remarkable values.

Segment G - The North Fork of the South Platte River from its confluence with Kenosha Gulch downstream 17.5 miles to the upstream boundary of the Berger property (the NW 1/4 of the SW 1/4, Section 34, Township 7 South, Range 72 West) near Insmont. Approximately 14.5 miles of Segment G are private lands and approximately 3 miles are National Forest System lands.

This segment was not examined for outstandingly remarkable values downstream from the Roberts

Tunnel because it did not meet the basic free-flowing eligibility criteria. In the short stretch above the Roberts Tunnel, it was evaluated and found similar to Segment F and no outstandingly remarkable values were identified. Consequently, Segment G is considered ineligible for designation as a component of the National Wild and Scenic Rivers System.

Segment H - The North Fork of the South Platte River from the upstream boundary of the Berger property near Insmont, downstream to within 1/4 mile of its confluence with the South Platte River (22.9 miles). It is the finding of this Eligibility/Classification document that Segment H possesses the following outstandingly remarkable values:

Recreational - The quality and diversity of dispersed recreation opportunities along this segment and the accessibility and proximity of the area to major metropolitan areas provides an outstanding year-round recreation resource. Kayaking, and dispersed recreation such as picnicking, fishing, hiking, riding, scenic driving, and other day-uses are very popular in this area.

The upper portion of this segment, above Buffalo Creek, contains Class IV and V whitewater rapids, and is considered to be one of the premier kayaking waters within the region due to the presence of the rapids and the longer length of the season. Its unique value is attributed to its level of difficulty, as well as sustained seasonal flows. Kayakers can still run the North Fork after other rivers in the region have passed their peak flows. This is due to the importation of water through the Roberts Tunnel. Kayakers who use the area are accustomed to frequent changes in flow volumes that result from the operation of Denver Water's delivery system.

The lower portion of the North Fork, between Buffalo Creek and the confluence, is important to all levels of kayakers and one of the few areas in the region most suitable for teaching entry-level kayaking.

The portion between Buffalo Creek and the confluence is heavily used by summer home residents, some year-round residents, and the general public. The majority of the land is owned by the City and County of Denver and is currently managed by Denver Water as a day-use area.

This segment also contains the Pine Valley ranch, a Jefferson County Open Space Park which contains

group picnic sites, an amphitheatre, several trails, and striking rock outcrops. The park is very popular regionally for picnicking and hiking.

Wildlife - This segment contains Pawnee montane skipper butterfly populations and habitat, and peregrine falcon habitat. The significance of the skipper butterfly has been described under Segment D. There is a peregrine nest site immediately adjacent to the corridor on Cathedral Spires. The nest is outside the study corridor but the one-mile protective management buffer around the nesting site overlaps the river corridor. The study corridor provides important foraging habitat for the falcon. The nesting site and associated foraging habitat are considered to be of regional importance. The site was the last site to be abandoned during the peregrine decline of the 1960s and thus the habitat in this segment is considered to be outstandingly remarkable.

Cultural - The Estabrook Historic District and the North Fork Historic District, including the Denver South Park and Pacific Railroad grade, are outstanding heritage resources in this segment. The State Historical Preservation Office (SHPO) provided input on whether the two river corridors contained outstandingly remarkable cultural values. The SHPO examined all the known National Register sites in the corridor and determined that within the North Fork corridor between the Berger property and the confluence there are two outstand-

ingly remarkable historic sites. These two sites are listed with the National Register of Historic Places (NRHP) for their association with the transportation and entertainment/recreation elements of Colorado history.

The two outstandingly remarkable cultural sites are the Estabrook Historic District (approximately 1/2 mile of the river corridor on either side of the community of Estabrook) and the North Fork Historic District which includes the North Fork corridor 1/4 mile west of Pine to 100 feet east of the South Platte Hotel. Included within the North Fork Historic District, but separate from the district designation, are several other historic sites which are also considered outstandingly remarkable on a regional level. The Denver South Park and Pacific Railroad grade between South Platte and Pine is included as one of these sites. (NOTE: A segment of this railroad grade, between the North Fork and Estabrook Historic Districts, has not been officially assessed for the NRHP, but may present a better physical representation of this historic period than the segments currently listed.)

Other values for this segment were evaluated including scenic, geologic, and fisheries and were found to be significant but not outstandingly remarkable. Vegetation/ecological values were not considered significant.



Headwaters of the North Fork River - Segment F.

Eligibility Determination

Seven of the eight study segments and a portion of the eighth meet the minimum eligibility require-

ments as specified by the Wild and Scenic Rivers Act. They are all found to be free-flowing and have at least one OR value present. These OR values are represented in the following chart:

CHART III-1

OUTSTANDINGLY REMARKABLE VALUES FOR THE EIGHT SEGMENTS STUDIED IN THIS EIS

Outstandingly Remarkable Values									
Study River	Cultural Resources Historic	Cultural Resources Prehistoric	Fisheries	Geologic	Recreational	Scenic	Wildlife	Vegetation/ Ecological	Other Values
North Fork Confluence to Insmont (Segment H) Roberts Tunnel to headwaters (Segments F and a portion of Segment G)	X				X		X		
South Platte Upstream from Cheesman Reservoir (Segment A) (Segment B) (Segment C) Downstream from Cheesman Reservoir (Segments D & E)			X X X	X X X	X	X X	X X	X	X

CHART III-2

OUTSTANDINGLY REMARKABLE VALUES FOR OTHER DESIGNATED WILD AND SCENIC RIVERS
IN COLORADO

		Outstandingly Remarkable Values									
		Cultural Resources Historic	Cultural Resources Prehistoric	Fisheries	Geologic	Recreational	Scenic	Wildlife	Vegetation/ Ecological	Water Volume & Quantity	
Study River											
Cache la Poudre						X	X			X	

3.5 Classification

River segments found eligible were classified as to their most restrictive potential classifications as either "Wild," "Scenic," or "Recreational," based upon the level of development and degree of naturalness present in the river corridor.

Classification Methods. The Wild and Scenic Rivers Act requires that eligible rivers be classified as one of the following:

1. Wild river areas - Those river or sections of river that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.
2. Scenic river areas - Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.
3. Recreational river areas - Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

The overriding determinant for classification decisions is the degree of naturalness, or inversely, the

degree of evidence of man's activity in the river area. A determination is based upon the four major topics addressed in the classification definitions of Wild, Scenic, and Recreational rivers. These topics are:

1. Water Resources Development
2. Shoreline Development
3. Accessibility
4. Water Quality

The appropriate classification of the study segments was analyzed for each of these topics. Those individual determinations were then considered as a whole to determine whether the study segments should be classified as Wild, Scenic, or Recreational in the event of inclusion within the National Wild and Scenic Rivers System. This analysis was conducted using the framework suggested by the 1982 joint guidelines developed by the Secretaries of Agriculture and Interior. This framework is best displayed in the following chart from the September 7, 1982 Federal Register, which published the *National Wild and Scenic Rivers System; Final Revised Guidelines for Eligibility, Classification and Management of River Areas*. This chart provides an excellent summary of the more lengthy narrative in the *Guidelines*. It is not intended to stand alone and is applied in this analysis in the context of the longer narrative material and in context with applicable Wild and Scenic River legislation.

**CHART III-3
CLASSIFICATION MATRIX**

ATTRIBUTE	WILD	SCENIC	RECREATIONAL
Water Resource Development	Free of impoundment.	Free of impoundment.	Some existing impoundment or diversion. The existence of low dams, diversions, or other modifications of the waterway is acceptable, provided the waterway remains generally natural and riverine in appearance.
Shoreline Development	Essentially primitive. Little or no evidence of human activity. The presence of a few inconspicuous structures, particularly those of historic or cultural value, is acceptable. A limited amount of domestic livestock grazing or hay production is acceptable. Little or no evidence of past timber harvest. No ongoing timber harvest.	Largely primitive and undeveloped. No substantial evidence of human activity. The presence of small communities or dispersed dwellings or farm structures is acceptable. The presence of grazing, hay production, or row crops is acceptable. Evidence of past or ongoing timber harvest is acceptable, provided the forest appears natural from the riverbank.	Some development. Substantial evidence of human activity. The presence of extensive residential development and a few commercial structures is acceptable. Lands may have been developed for the full range of agricultural and forestry uses. May show evidence of past and ongoing timber harvest.
Accessibility	Generally inaccessible except by trail. No roads, railroads, or other provision for vehicular travel within the river area. A few existing roads leading to the boundary of the river area is acceptable.	Accessible in places by road. Roads may occasionally reach or bridge the river. The existence of short stretches of conspicuous or longer stretches of inconspicuous roads or railroads is acceptable.	Readily accessible by road or railroad. The existence of parallel roads or railroads on one or both banks as well as bridge crossings and other river access points is acceptable.
Water Quality	Meets or exceeds Federal criteria or federally approved State standards for aesthetics, for propagation of fish and wildlife normally adapted to the habitat of the river, and for primary contact recreation (swimming) except where exceeded by natural conditions.	No criteria prescribed by the Wild and Scenic Rivers Act. The Federal Water Pollution Control Act Amendments of 1972 have made it a national goal that all waters of the United States be made fishable and swimmable. Therefore, rivers will not be precluded from scenic or recreational classification because of poor water quality at the time of their study, provided a water quality improvement plan exists or is being developed in compliance with applicable Federal and State laws.	

3.6 Classification Summary

A detailed analysis of the classification of each study river segment was prepared as a part of the Eligibility Determination and Classification document process (See Appendix A). If the rivers or river segments are designated, these are the most restrictive inventoried classifications that can be implemented. Less restrictive classifications can however, be recommended in any alternative selection. The classifications are listed in Chart III-4 and are briefly summarized below:

Segment A: This segment is paralleled by a gravel county road, contains several other National Forest System roads, a small 5 foot concrete dam, a Boy Scout Camp, several bridges, and numerous National Forest developed campgrounds, parking areas, and several picnic areas. It is classified as "Recreational" (8.0 miles) due to the amount of road access and the amount of water resource and shoreline development.

Segment B: This segment is paralleled by gravel county and National Forest System Roads. It is also intersected by several roads including U.S. Highway 24. It includes the 150 acre Lake George, a small but lengthy earthen dam which surrounds at least half the Lake, a cemetery, several bridges, a National Forest System campground and trailhead, several rural subdivisions, and the community of Lake George. Numerous user-created trails are evident along both river banks. It is classified as "Recreational" (6.0 miles) because of the amount of road access and water resource and shoreline development.

Segment C: This segment is almost entirely National Forest System lands and is undeveloped and primitive. The corridor does contain a very small amount of undeveloped land owned by Denver Water near Cheesman Reservoir and several abandoned cabins on National Forest System land. Forest Development Trail #654 parallels the river for several miles, and several National Forest System four-wheel drive roads bisect the corridor and cross the South Platte River near the mouth of Corral and Longwater Creeks. Despite some motorized access

this segment is classified as "Wild" (9.0 miles) due to its undeveloped and primitive nature and lack of water resource and shoreline development. If designated as a Wild and Scenic River with a "Wild" classification some of the motorized access may be prohibited.

Segment D: This segment is accessible at either end by foot from the Gill Trail. Some cultural development has occurred in the past, primarily relating to mining and fishing activities. Numerous non-system trails are evident along both river banks. It is classified as "Wild" due to the lack of road access and lack of water resource and shoreline development.

Segment E: This segment is paralleled by paved and gravel roads. Several small communities and isolated houses are located along the river and there are several bridges and developed picnic and camp sites. Numerous parking areas that accommodate the large number of day-users and anglers. Several resorts and private camps are also located in this segment. This segment is classified as "Recreational" due to road access and the amount of water resource and shoreline development.

Segment H: This segment on the North Fork is classified as "Recreational" from the confluence with the South Platte River to Cliffdale and from Estabrook to the upstream end of the Berger property since it is paralleled by an historic railroad grade, graveled county roads, and contains several residential communities, a highly developed recreation area (Jefferson County's Pine Valley Ranch), numerous bridges and dwellings, and minor diversions and channel work.

Segment H2: This 4.9-mile segment, located within Segment H, lies between the downstream side of the old stone house downstream of Estabrook to the Section line between Sections 29 and 30 downstream of Cliffdale, and is classified as "Scenic" since the area is predominately undeveloped National Forest System lands with very limited access. There is an old abandoned railroad grade though the area, a footbridge, some small check dams, and a few dwellings at Crossons, but the area remains largely primitive and undeveloped.

**CHART III-4
CLASSIFICATIONS OF THE STUDY SEGMENTS**

Segment	Classification	Length in Miles
A	Recreational	8.7
B	Recreational	7.7
C	Recreational	10.4
D	Wild	3.1
E	Recreational	19.5
H1	Recreational	1.5
H2	Scenic	4.6
H3	Recreational	16.5
TOTAL	Wild Scenic Recreational	3.1 4.9 64.3
TOTAL MILES		72.3



The North Fork below Grant - Segment G.

3.7 Eligibility Summary

The South Platte River from Elevenmile Dam (downstream from fence on Denver Water special-use area) downstream to the high water line of Cheesman Reservoir (upstream of the stream gauge) meets the minimum eligibility requirements as specified by the Wild and Scenic Rivers Act. **Thus, Segments A, B, and C, are found to be free-flowing and contain outstandingly remarkable scenic (Segments A and C), recreation (Segment A), geologic (Segments A and C), fish (Segments A, B, and C), and wildlife values (Segment C).**

The South Platte River, from downstream of the stream gauge weir below Cheesman Reservoir to the backwaters of Strontia Springs Reservoir (6029 foot contour), also meets the minimum eligibility requirements as specified by the Wild and Scenic Rivers Act. **Thus, Segments D and E are found to be free-flowing and contain outstandingly remarkable recreation, fish, and wildlife values.**

The North Fork of the South Platte River, from the upstream boundary of the Berger property near Insomont, to the confluence with the South Platte, also meets the minimum eligibility requirements as specified by the Wild and Scenic Rivers Act. **Segment H is found to be free-flowing and contains outstandingly remarkable recreation, wildlife, and cultural values.**

The North Fork of the South Platte River, from its headwaters to its confluence with Kenosha Gulch near Webster, is found to be free-flowing but possesses no outstandingly remarkable values. **As a result, this segment (Segment F) is ineligible for inclusion into the National Wild and Scenic River System.**

The North Fork of the South Platte River, from its confluence with Kenosha Gulch near Webster to the upstream boundary of the Berger property near Insomont (**Segment G**), is found not to be free-flowing and is thus, ineligible for inclusion into the National Wild and Scenic River System.

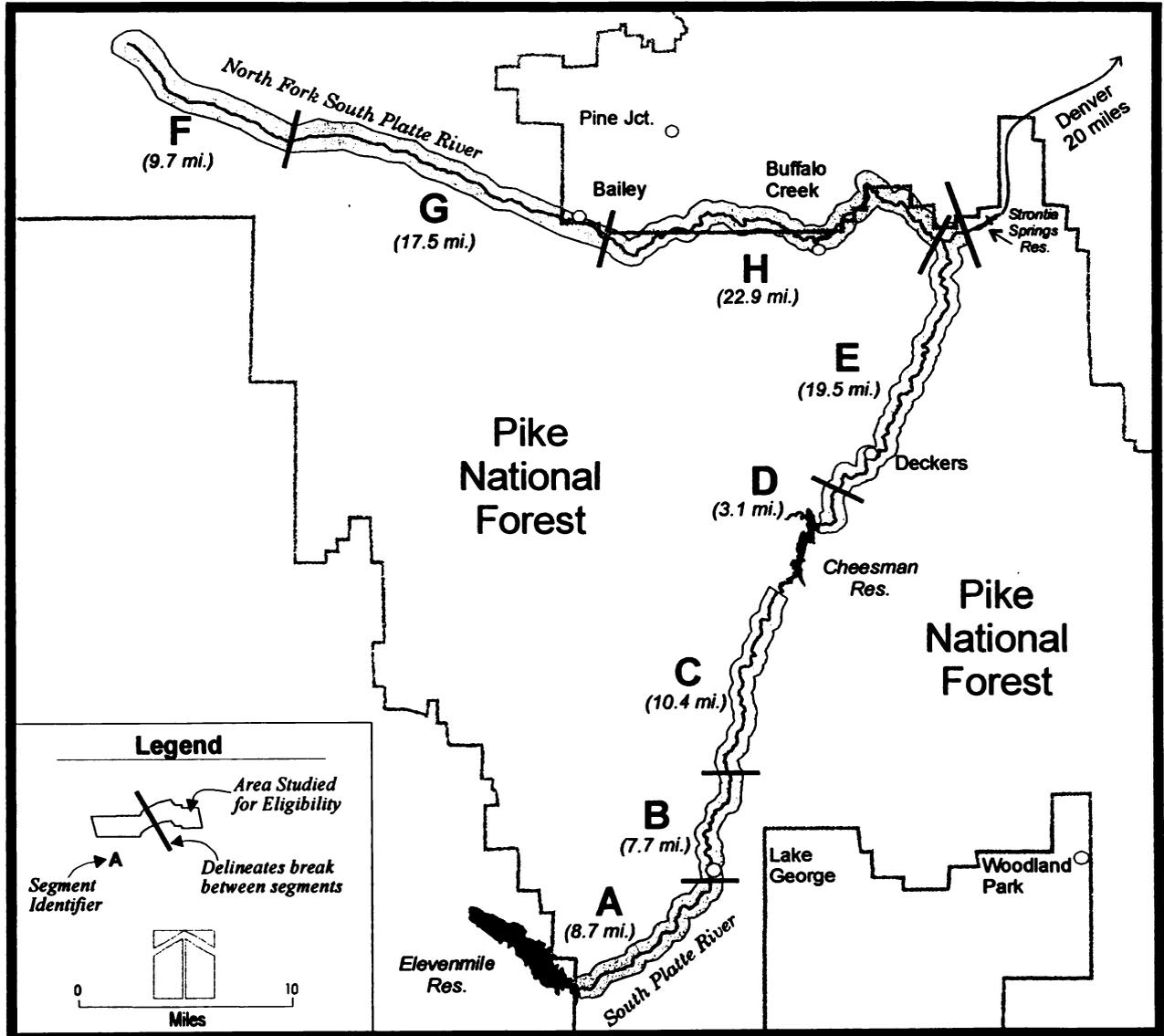


The Community of Crossons on the North Fork - Segment H2.

South Platte River and North Fork of the South Platte River
Wild and Scenic River Study

Map III-1

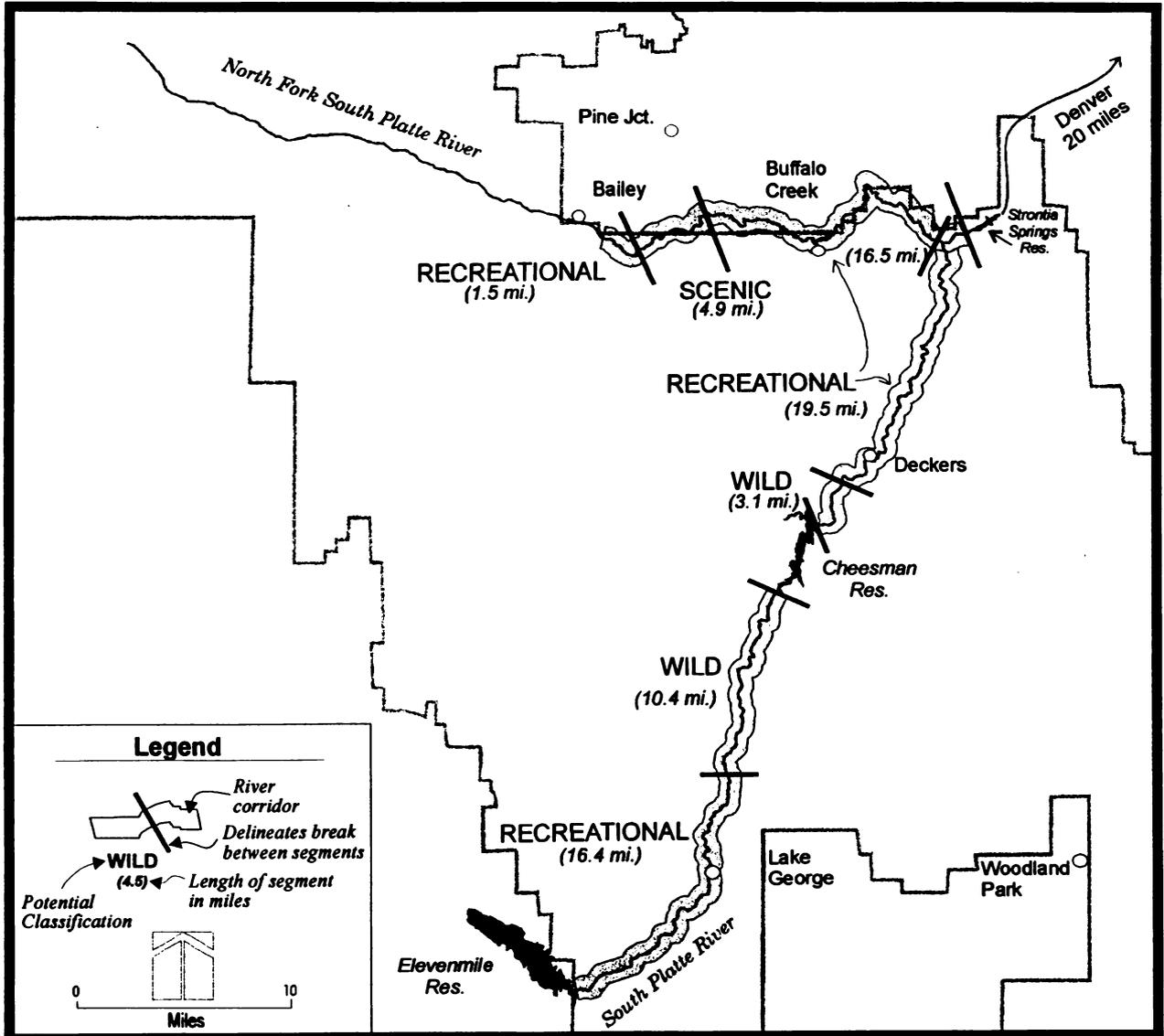
River Segments Studied for Eligibility



South Platte River and North Fork of the South Platte River
Wild and Scenic River Study

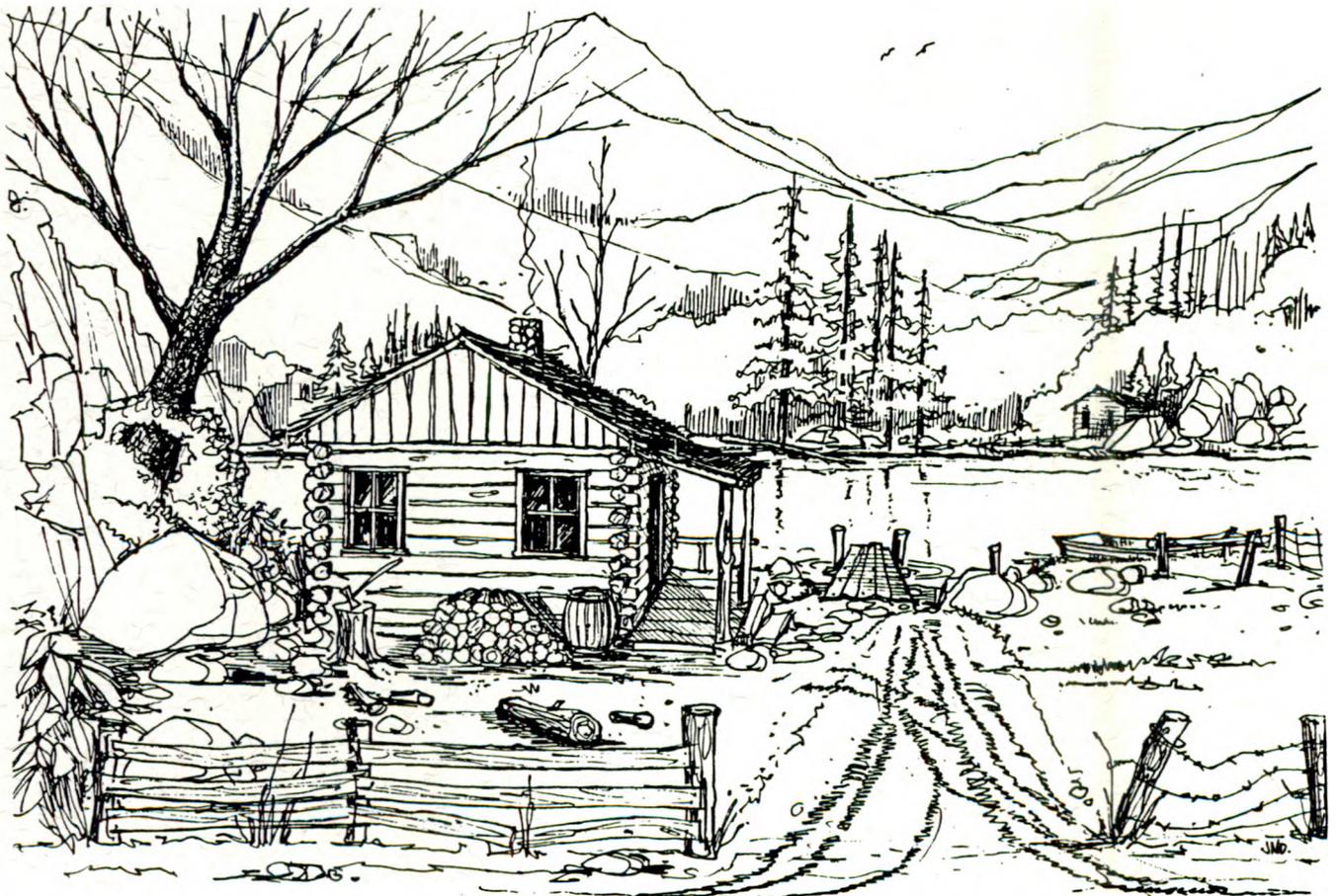
Map III-2

Eligible Segments with Potential Classification



Chapter IV

Alternatives Including the Proposed Action



4.1 Purpose of this Chapter

This chapter introduces the issues and alternatives developed during the study process. The study analyzed each of the study rivers for their suitability for designation as a component of the National Wild and Scenic Rivers System.

For this study, nine alternatives were developed and evaluated by an interdisciplinary group of Forest Service resource specialists (ID Team). Alternative A1, the "no action" alternative required by NEPA, describes the current management of the study river corridors under the Forest Plan. This best addresses the concerns of potential water storage, continued water delivery, current water operations, channel maintenance, and potential and/or perceived impacts to private landowners.

Alternative A2 is a "no action with outstandingly remarkable values protected" alternative. This addresses the concerns of potential water storage, continued water delivery, current water operations, channel maintenance, potential and/or perceived impacts to private landowners, and protection of the OR values. Because Alternative A2 would be a form of cooperative management by local governments, water resource agencies, and other entities, it potentially includes a variety of mechanisms to afford protection to the outstandingly remarkable values of the river. Detailed information about these mechanisms, such as agreements among water suppliers, counties, state agencies, and others, and their effect on river values and the uses of lands and waters in the study corridor is not available at this time.

Alternative B recommends the designation of the study rivers at their most protective inventoried classifications. This maximizes the protection and enhancement of free-flow, water quality, and the OR values in the study area.

Alternatives C, D, F, G, I, and J, present differing combinations or classifications of rivers or river segments that also protect and enhance the free-flow, water quality, and OR values on the segments recommended for designation. Alternatives E and H were considered but eliminated from detailed study (see Section 4.4).

Alternative C recommends the designation of the same rivers as Alternative B, but at a less protective

classification than inventoried from Beaver Creek to Cheesman Reservoir. This alternative better addresses concerns related to continued off-highway vehicle (OHV) use in the area. It also would provide additional river protection over non-designation while allowing a wider range of natural resource management than with a more protective classification.

Alternative D recommends the same segments and classifications of the South Platte River as Alternative B, but finds the North Fork unsuitable for designation. This protects and enhances the South Platte River at the most protective classification while addressing the concerns of potential water storage, continued water delivery, current water operations, channel maintenance, and potential and/or perceived impacts to private landowners in the North Fork study corridor.

The emphasis of Alternative F is to protect and enhance the OR values while minimizing the amount of private land and the potential and/or perceived impacts associated with included private land, and with Denver Water's 1931 USDI ROW for a reservoir (from the confluence of the North Fork and the South Platte to Deckers). It includes recommending the designation of one segment of the North Fork and four segments on the South Platte River that are entirely on National Forest System land and free of encumbrances.

Alternative G recommends the designation of the South Platte upstream from Cheesman Reservoir with the same classifications as Alternative B. It finds the North Fork unsuitable for designation. This alternative protects and enhances the OR values above Cheesman Reservoir while addressing the concerns of potential water storage, continued water delivery, current water operations, channel maintenance, and potential and/or perceived impacts to private landowners on the North Fork and the South Platte downstream from Cheesman Reservoir.

Alternative I recommends the designation of the South Platte upstream from Corral Creek with a "Scenic" classification upstream to Beaver Creek and a "Recreational" classification from Beaver Creek to Elevenmile Dam. It finds the North Fork unsuitable for designation. This alternative protects and enhances the OR values above Cheesman Reservoir while addressing the concerns of additional potential water storage, continued water de-

livery, current water operations, channel maintenance, and potential and/or perceived impacts to private landowners on the North Fork and the South Platte downstream from Cheesman Reservoir.

Alternative J recommends segments similar to Alternative D, but excludes the portion of the South Platte from the North Fork confluence to Strontia Springs Reservoir. It also finds the North Fork unsuitable for designation. Classifications are the same as Alternative D, except that in Wildcat Canyon, a 3-mile segment from 1/4 mile downstream of Corral Creek to 1/4 mile upstream from Hackett Gulch, is recommended as "Scenic" and not "Wild", and the portion of the South Platte downstream from the North Fork confluence is found not suitable for designation. This protects and enhances the outstandingly remarkable values in the South Platte study corridor, addresses the OHV use in the area, and addresses the concerns of potential water storage, continued water delivery, current water operations, channel maintenance, and potential and/or perceived impacts to private landowners in the North Fork study corridor.

Section 4.2 discusses the key study issues that formed the basis for developing the alternatives. Section 4.3 describes the alternatives considered in detail. Section 4.4 displays alternatives that were not considered in detail and includes why they were not considered further.

Factors that were considered in determining the rivers' suitability include:

1. The characteristics which make the river a worthy addition to the National System; i.e., outstandingly remarkable values (scenery, recreation, geologic, vegetation/ecologic, fisheries, wildlife, historic cultural, prehistoric cultural, and traditional use cultural values).
2. The amount of private lands within the study corridors and the present use of that land.
3. All present and reasonable foreseeable potential uses of the land and waters within the river corridors that would be enhanced, foreclosed, or curtailed if they were included in the National wild and Scenic Rivers System.
4. Public, state and local government interest in designation of the rivers.
5. Key issues identified by the public or ID Team.
6. Any other issues and concerns identified by the public.

In developing alternatives, the Forest Service has considered all relevant issues that the public raised during the scoping process. The alternatives which are considered in detail in this chapter reflect pertinent issues, concerns, current conditions, and provide for a full range of reasonable management options for the study rivers as required by NEPA.

4.2 Key Study Issues

Several key issues guided the development and evaluation of the suitability of the study rivers. All of these issues were identified through the public involvement process. In addition, these same issues were identified by the ID Team. The issues also encompass the suitability factors specified in Forest Service guidelines on Wild and Scenic River evaluation.

Fisheries

Changes in river management could affect resident fish species, primarily spawning and rearing areas for resident fish. Both study corridors contain important fisheries populations which include wild brown and rainbow trout.



Many residences and businesses in the lower portions of the North Fork and South Platte River are on lands owned by Denver Water.

Clean, cool water is required to support healthy trout populations. It is important to recognize that numerous other activities within the drainage basin, outside of this river segment, have an impact on both water quality, and resident fish populations.

Specific concerns:

- Protection of remarkable wild-trout fishery so close to a major metropolitan area. This includes, but is not limited to: maintenance and enhancement of fish populations and habitats and the direct and indirect impacts and cumulative effects on fish populations.
- Maintenance and enhancement of riparian habitat and stream structure.

Maintenance and enhancement of water quality/flows.

- The possibility of projects being implemented which have detrimental impacts on the short-term, but are beneficial over the long-term (e.g., road improvements or stream habitat improvement which produces short-term siltation, but over the long-term reduces siltation or improves fisheries habitat).

The issue is: How to best protect and enhance the wild resident trout populations in the corridors.

Wildlife

Changes in river management could affect options for management of numerous game and nongame species. Of particular interest are big game species, primarily mule deer, bighorn sheep, and Rocky Mountain elk and their respective wintering habitats. Additionally, numerous species of furbearers (e.g., mink, otter, raccoon, etc.), nongame mammals and birds utilize the areas on a year-round basis. The corridors contain portions of the sole remaining

habitat of the Pawnee Montane Skipper butterfly. The corridors also provide wintering habitat for bald eagles and peregrine falcons nest just outside the North Fork corridor and extensively utilize the corridor to find prey. The Pawnee Montane Skipper and peregrine falcon are listed as endangered and the bald eagle is listed as threatened under the Federal Endangered Species Act. Additionally, any loss of riparian cover could have an adverse effect on a wide variety of game and nongame animal species.

Specific concerns:

- Protection of endangered and threatened species and their habitat.
- Protection of migration routes and connecting corridors.
- Winter range for bighorn sheep, elk, and deer
- Nongame species populations and habitat
- Impacts to and on adjacent, private lands
- Accessibility (e.g., access of wildlife to habitat and protection of wildlife from various human-caused pressures)

The issue is: How to best protect and enhance the game and nongame species in the corridors.

Social and Economic Considerations

Changes in how the river corridors are managed can alter the mix and the scope of economic opportunities as well as the mix and magnitude of impacts on social values.

Specific concerns (with Federal Wild and Scenic River designation):

- Potential growth limitations, quality of life, and economic impacts to Denver Metropolitan area imposed by designation, i.e., flow regulation, storage limitations, takings, impairment of municipalities water development plans, and potential cost of alternate water supply studies.
- Importance of recreation and tourism supported by the study rivers to local economies, and the possible impacts to these economies from designation/non-designation.

- Issues of equity, i.e., those who benefit from changes are rarely the same as those who are negatively affected
- Protection of the quality of life in the Front Range though protection of its scenic and recreational treasures.
- Mistrust of Federal government.
- Fear of more federal control of citizens' lands and lives.
- Fear of the loss of a way of life.
- Additional costs of counties to help administer a Wild and Scenic corridor.
- Recognition that the amenities of the corridors may have a social and economic value in their own right.
- Unavailability of mineral resources or timber by acts of government.
- Fear of another layer of bureaucracy and waste of taxpayer's money.

The issue is: How to manage the corridors to protect and enhance the OR values while minimizing social and economic impacts to local private landowners and the water providers and water users in the Denver and Colorado Springs Metropolitan areas.

Recreation

Changes in river management could affect recreational use of the river. Recreation use of the the areas has an economic, social, and biological influence on the local counties.

Specific concerns:

- Motorized - non-motorized use opportunities, especially the opportunity for continued motorized use between Cheesman Reservoir and Lake George.
- Conflicts between public recreational use such as mountain bikes and hikers on the Gill Trail and motorized use and non-motorized use between Cheesman Reservoir and Lake George.

- Types of use - camping, fishing, hiking, driving for pleasure associated with a riverine environment.
- Level of recreation development (access points, campground development, etc.).
- Importance of preserving one of the best river-related recreation experiences (fishing, hiking, camping, wildlife viewing, driving for pleasure) in close proximity to the Denver metropolitan area.
- Importance of the area as a recreational safety valve for a natural recreation experience, ie. solitude.
- Ensurance of primitive backcountry recreational opportunities in portions of the study area.
- Importance of the fly-fishing (most technically challenging area in state) and family-oriented fishing activities associated with the rivers.
- Prevention of overuse during peak seasonal periods.
- Quality and kind of recreation experience.
- Possible overuse because of designation.

The issue is: How to best provide opportunities for a quality river-related recreation experience in the future.

Scenery and Geology

Changes in river management could affect the scenic and geologic qualities of the study corridors.

Steadily increasing recreational use is already having its effect.

Specific concerns:

- Change in scenic quality due to human disturbance, planned/unplanned.
- Changes in vegetation.
- Scenic impact of exploration and development of the mineral resources.
- Scenic impact due to inundation.

The issue is: How to protect and enhance the scenic and geologic qualities of the corridors.

Cultural Resources (Including Archaeological Resources)

Changes in river management could affect cultural resource sites.

Specific concerns:

- Protection of historic sites associated with historic railroad use.
- Interpretation of historic and prehistoric uses and peoples of the area.
- Identification of sites, where appropriate, with signs and brochures.

The issue is: How to protect the cultural resources in the corridors.



One of the many scenic vistas in Elevenmile Canyon.

Water Developments (Construction of dams or diversions for water storage)

Increased water supply needs for the Denver Metropolitan area and other Front Range communities is inevitable. Changes in how the rivers are managed may affect opportunities for water storage, diversions, and dam construction.

Specific concerns:

This key issue addresses the concerns of potential water storage, continued water delivery, current water operations, channel maintenance, water supplies and distribution for the Denver metropolitan area, and potential and/or perceived impacts to private landowners.

Ability to construct water storage to meet the growing residential, industrial, and agricultural needs of the Denver metropolitan area.

Ability to implement current and planned water developments and channel maintenance in the study corridors. This includes flows on the North Fork due to releases from the Roberts Tunnel and increased flows in the South Platte due to additional storage, water brought in from outside the drainage, or flow changes and reservoir drawdowns due to conjunctive use.

Ability to maintain flexibility of a high quality, reliable, economic, raw water delivery system including: operations, flows, timing of releases, storage, off-channel reservoirs, diversion, channelization, and exchanges. This also includes the management of these flows to protect resource values, recreational concerns, property protection, and other considerations.

Flexibility for stream improvement work to manage flows and protect riverine environment.

Concern in some communities to replace their dependence on non-renewable ground water

by acquiring additional surface supplies or recharging the aquifers with excess surface water.

- Loss of agricultural production by conversion of agricultural water rights for municipal use.
- Concerns that designation will cause metropolitan water needs to come from other sources that may cause more negative impacts elsewhere.
- Threat of loss of OR values by inundation.
- Threat of damage or inundation of landowners property rights.
- Foreclosure, due to designation, of potential dam construction, diversions, and water storage.

The issue is: How best to ensure the protection and enhancement of the OR values while minimizing the effects on the current and future water supply of the Denver metropolitan area.

Landowner Rights

Changes in how the rivers are managed may affect landowners latitude in managing and/or developing their property.

Specific concerns:

- Ability of Denver Water's right to exercise a 1931 USDI ROW to build a reservoir from just below the confluence of the North Fork and the South Platte Rivers (Two Forks site) to just above the community of Deckers.
- Protection of Estabrook or Cheesman expansion dam and reservoir sites for future water storage.
- Effect on values of that ROW and other land owned by Denver Water due to possible Wild and Scenic River designation.
- Effect on water and storage rights or the exercising of those rights (those currently in use, approved but not in use, and those in the planning stages).

- Ability to operate and develop the two rivers to fully use existing and future water rights.
- Protection of private landowners property from fee-title condemnation for construction of water developments or reservoirs.
- Impact upon private land by recreationists.
- Limitations on economic activities.
- Limitations on activities which change appearance of river corridors.
- Loss of self-determination in land management decisions and associated feelings.
- Fear of additional interference, regulation, or review processes by a government agency, ie. threat of scenic easement condemnation.
- Increasing levels/layers of bureaucracies.
- Landowner liability.
- Fear of scenic easement condemnation.
- Potential increase or reduction in land management costs.
- Potential increase or reduction in revenue of the land to the landowner.
- Changes in desirability of owning the land.
- Potential affect of local zoning.

The issue is: How to protect and enhance the OR values while minimizing the effect on private and municipal landowners.

4.3 Description of Alternatives

This section presents the nine alternatives considered in detail.

Alternative A1

This alternative is the "no action" or "no change" alternative. It describes the existing situation and serves as a baseline to evaluate the other alternatives. Under this alternative, current management of

the river corridors would continue under the Forest Plan and none of the study rivers would be recommended for addition to the National Wild and Scenic Rivers System or for any other special Federal designation.

Adoption of this alternative would mean that no new programs, protection measures, or designations would be implemented. There would be no further efforts to coordinate management activities in the corridors beyond what currently exists. The corridor boundaries for Alternative A are shown in the Map IV-1.

Alternative A2 (Proposed Action)

This alternative is the "no action with OR values protected" alternative. It is an outgrowth of a concept originally posed as Alternative H during scoping, and it responds to an expression of interest raised by interested parties to find a non-Federal solution to the challenge of protecting the rivers' OR values. Under this alternative, OR values are protected by measures other than adding the rivers to the National Wild and Scenic River System. In other words, this alternative would be a substitute for designation. It may involve establishment of locally-generated agreements, ordinances, legislation, and other measures as needed to accomplish this end. The kinds of measures that might be employed to achieve protection of OR values could include:

Formation of a River Management Board to provide recommendations on river management.

Flow agreements between responsible parties to ensure protection of outstandingly remarkable values.

Development of new partnerships and formalization of old cooperative agreements to improve resource protection.

County zoning to protect current recreation use and provide resource protection.

Amendment of the Forest Plan (USFS), North-east Planning Area Plan (BLM), and Royal Gorge Plan (BLM), where necessary to provide better protection for the outstandingly remarkable values and related resources in the study corridor. For National Forest System lands, this could include adding special management area

status in the study corridor similar to what exists in Elevenmile Canyon.

Purchase of scenic easements, land ownership exchanges, and rights-of-way from willing sellers, where needed, to better protect the area.

Purchase or exchange for properties and water rights in the study corridor from willing sellers to ensure better resource protection.

County or other local government acquisition of additional properties for park or open space from willing sellers in the study corridor.

This alternative should attempt to emulate Alternative B to the extent feasible. Implementation of this alternative would have to occur in stages: (1) a locally generated package of measures protecting the rivers' values would have to be put in place--i.e., agreements signed, laws and ordinances passed, etc., 2) the Forest Service would accordingly decide that, because protection of OR values is satisfactorily achieved by this package of measures, it would not be necessary to find the study rivers suitable for designation, and 3) the rivers would consequently not be recommended for addition to the National Wild and Scenic Rivers System and they would be released from further protection under the Wild and Scenic Rivers Act.

As of this writing this alternative has not been developed in detail. Its potential viability is speculative at this time. It must be described more fully and additional analysis conducted to permit evaluation for viability. Important questions need to be answered regarding how river values could be protected and whether those measures will prove reliable over the long run. Meaningful public involvement by interested parties will be necessary to identify achievable local solutions. Then the measures that have been identified will have to be implemented. An additional phase of work would therefore be needed to further develop this alternative, seek public comment on it, and determine how well it might provide a substitute for designation under the Wild and Scenic Rivers Act. The corridor boundaries for Alternative A2 are shown in the Map IV-1.

Alternative B

Alternative B finds all eligible river segments suitable and recommends them for designation at their

most protective classifications. The goal of this alternative is to add all eligible river segments to the Wild and Scenic Rivers System, maximizing protection and enhancement of the OR values, free-flow, water quality, and maintaining system integrity. This alternative was developed as a result of concerns to ensure the best protection of the river's natural environment and OR values. In this alternative, all of the eligible segments of the two study rivers totaling 72.3 miles would be recommended for addition to the National Wild and Scenic Rivers System. Classification would be in accordance with potential classifications as listed in Chart IV-2 and would total 13.5 miles "Wild", 4.9 miles "Scenic", and 53.9 miles "Recreational".

The corridor boundaries would average 1/4 mile from each river bank; the exact boundary location would be determined as part of the management plan process after the river was designated. The corridor boundaries for Alternative B are shown Map IV-2.

Alternative C. Like Alternative B, Alternative C finds all eligible river segments suitable and recommends them for designation. All segments are recommended at their most protective classification, except that the classification of the 10.4-mile segment of the South Platte River from Cheesman Reservoir to Beaver Creek is changed from "Wild" to "Scenic". The goal of this alternative is to add all eligible river segments to the Wild and Scenic Rivers System, provide protection and enhancement of the OR values, maintain system integrity, and follow the current Forest Plan direction. This alternative was developed as a result of concerns to ensure the best protection of the river's natural environment and OR values while allowing a wider range of natural resource management including continued OHV use between Beaver Creek and Cheesman Reservoir. In this alternative, all of the eligible segments of the two study rivers totaling 72.3 miles would be recommended for addition to the National Wild and Scenic Rivers System. Classification would be in accordance with potential classifications as listed in Chart IV-3 and would total 3.1 miles "Wild", 15.3 miles "Scenic", and 53.9 miles "Recreational".

The corridor boundaries would average 1/4 mile from each river bank; the exact boundary location would be determined as part of the management plan process after the river was designated. The

corridor boundaries for Alternative C are shown in Map IV-3.

Alternative D

Alternative D finds all eligible South Platte River segments suitable and recommends them for designation at their most protective classification, but finds the North Fork unsuitable for designation. The goal of this alternative is to add all eligible South Platte River segments to the Wild and Scenic Rivers System, maximizing protection and enhancement of the OR values, and maintaining system integrity. This alternative was developed as a result of concerns to ensure the best protection of the South Platte River's natural environment and OR values. The chief assumptions of this alternative are that: 1) although there are also outstandingly remarkable values on the North Fork, these are not as significant as those on the South Platte; 2) there are current water operations associated with the Roberts Tunnel fluctuations that might be adversely affected by designation; 3) there is already one designated Wild and Scenic River in this physiographic province (Cache la Poudre); and 4) only the highest quality rivers should be recommended for designation.

In this alternative, all eligible segments on the South Platte River totaling 49.4 miles would be recommended for addition to the National Wild and Scenic Rivers System. Classification would be in accordance with potential classifications as listed in Chart IV-4 and would total 13.5 miles "Wild" and 35.9 miles "Recreational".

The corridor boundaries would average 1/4 mile from each river bank; the exact boundary location would be determined as part of the management plan process after the river was designated. The corridor boundaries for Alternative D are shown in Map IV-4.

Alternative F

Alternative F recommends the designation of one small segment on the North Fork and four small segments of the South Platte that are entirely on National Forest System land and have no encumbrances. The goal of this alternative is to protect the OR values while minimizing the potential and/or perceived impacts associated with private land and Denver Water's 1931 USDI ROW for a reservoir from

the confluence of the North Fork and South Platte to Deckers.

In this alternative, five segments of the two rivers totaling 26.2 miles would be recommended for addition to the National Wild and Scenic Rivers System. These segments include a segment entirely on the National Forest between Estabrook and Crossons on the North Fork with a "Scenic" classification; and segments on the South Platte River entirely on the National Forest between Elevenmile Dam and Lake George, Tappan Gulch and Vermillion Creek with a "Recreational" classification; and between Beaver Creek and Cheesman Reservoir and Cheesman Dam and the Wigwam property with a "Wild" classification. Classification would be in accordance with potential classifications as listed in Chart IV-5 and would total 13.5 miles "Wild", 2.6 miles "Scenic", and 10.1 miles "Recreational".

The corridor boundaries would average 1/4 mile from each river bank; the exact boundary location would be determined as part of the management plan process after the river was designated. The corridor boundaries for Alternative F are shown in Map IV-5.

Alternative G

Alternative G finds all eligible segments of the South Platte upstream from the gauging station above Cheesman Reservoir, 26.8 miles, suitable and recommends them for designation at their most protective classification. This alternative finds the North Fork unsuitable for designation. The goal of this alternative is to provide protection for some of the OR values while lessening the potential and/or perceived impacts associated with private land and Denver Water's 1931 USDI ROW for a reservoir from the confluence of the North Fork and South Platte to Deckers. It also addresses the concerns of continued OHV use between Beaver Creek and Cheesman Reservoir.

The chief assumptions of this alternative are that: 1) although there are also outstandingly remarkable values on the North Fork, these are not as significant as those on the South Platte; 2) there are current water operations associated with the Roberts Tunnel fluctuations that might be adversely affected by designation; 3) there is already one designated Wild and Scenic River in this physiographic province (Cache la Poudre); and 4) there are potential

storage sites downstream from Cheesman Reservoir that would be foreclosed by designation.

Classification would be in accordance with potential classifications as listed in Chart IV-6 and would total 10.4 miles "Wild" and 16.4 miles "Recreational".

The corridor boundaries would average 1/4 mile from each river bank; the exact boundary location would be determined as part of the management plan process after the river was designated. The corridor boundaries for Alternative G are shown in Map IV-6.

Alternative I

Alternative I recommends the designation of the 6.0-mile stretch of the South Platte from Corral Creek to Beaver Creek with a "Scenic" classification and the 16.4-mile stretch of the South Platte from Beaver Creek to Elevenmile Dam with a "Recreational" classification. This alternative finds the North Fork unsuitable for designation. This goal of this alternative is similar to Alternative G, to protect and enhance OR values upstream from Corral Creek while lessening the potential and/or perceived impacts associated with private land and Denver Water's 1931 USDI ROW for a reservoir from the confluence of the North Fork and South Platte to Deckers. This alternative also addresses the protection and enhancement of OR values upstream from Corral Creek while addressing the concerns of additional potential water storage (especially from a potential Cheesman expansion), continued water delivery, current water operations, and channel maintenance. It also addresses the concerns of continued OHV use between Beaver Creek and Cheesman Reservoir.

The goal of this alternative is to add only those South Platte River segments to the Wild and Scenic Rivers System that have the least potential adverse effect on water delivery and potential storage. The chief assumptions of this alternative are that: 1) although there are also outstandingly remarkable values on the North Fork, these are not as significant as those on the South Platte to warrant potential designation; 2) there are current water operations associated with the Roberts Tunnel fluctuations that might be adversely affected by designation; 3) there is already one designated Wild and Scenic River in this physiographic province (Cache la Poudre); and 4) there are potential storage sites downstream

from Corral Creek that would be foreclosed by designation.

Classification would be in accordance with potential classifications as listed in Chart IV-7 and would total 6.0 miles "Scenic", and 16.4 miles "Recreational".

The corridor boundaries would average 1/4 mile from each river bank; the exact boundary location would be determined as part of the management plan process after the river was designated. The corridor boundaries for Alternative I are shown in Map IV-7.

Alternative J. (Proposed Action)

Alternative J finds portions of the South Platte River from the confluence of the North Fork to Elevenmile Dam suitable and recommends them for designation into the National Wild and Scenic Rivers System. Recommended classifications are: "Recreational" from the North Fork confluence to the Wigwam Club property, "Wild" from the Wigwam Club property to Cheesman Dam, "Wild" from Cheesman Reservoir to 1/4 mile downstream from Corral Creek, "Scenic" from 1/4 mile downstream from Corral Creek to 1/4 mile upstream from Hackett Gulch, "Wild" from 1/4 mile upstream from Hackett Gulch to the Beaver Creek confluence, and "Recreational" from the Beaver Creek confluence to Elevenmile Dam. The North Fork is found unsuitable for designation. The goal of this alternative is to recommend the best South Platte River study segments for addition to the Wild and Scenic Rivers System, provide protection and enhancement of the OR values, and maintain system integrity. This alternative was developed to balance the concerns of water delivery and storage with the protection of the area's natural environment and OR values while still meeting present uses. The chief assumptions of this alternative are that: 1) although there are also outstandingly remarkable values on the North Fork, these are not as significant as those on the South Platte; 2) there are current water operations associated with the Roberts Tunnel fluctuations that might be adversely affected by designation; 3) there is already one designated Wild and Scenic River in this physiographic province (Cache la Poudre); 4) only the highest quality rivers should be recommended for designation; 5) the South Platte River between its confluence with the North Fork and Strontia Springs Reservoir does not have the outstandingly remarkable values that are as significant

as the rest of the South Platte; and 6) there are important motorized recreation opportunities in portions of Wildcat Canyon that can be maintained without impacts to the area's OR values.

In this alternative, eligible segments on the South Platte River totaling 48.1 miles would be recommended for addition to the National Wild and Scenic Rivers System. Classification would be in accordance with potential classifications as listed in Chart IV-8 and would total 10.5 miles "Wild", 3.0 miles "Scenic", and 34.6 miles "Recreational".

The corridor boundaries would average 1/4 mile from each river bank; the exact boundary location would be determined as part of the management plan process after the river was designated. The corridor boundaries for Alternative J are shown in Map IV-8. More detail is shown in maps IV-9 and IV-10.

4.4 Alternatives Not Considered in Detail and Eliminated from Further Study

This section describes the alternatives that were identified during the study process, but eliminated from further study.

Designation with State Administration

Since the State of Colorado does not have any State Scenic Waterway or State Protected River System legislation and the majority of the lands in the study corridors are managed by the USDA Forest Service, this alternative was eliminated from further study. Private lands make up about 1/3 of the study corridor, with some segments of the study corridor containing little or no private land. Even fewer of the lands are under BLM or County management. Neither the State, Counties, or BLM were interested, at this time, in serving as the lead agency for managing or administering the study corridor under the Wild and Scenic Rivers Act.

National Recreation Area (NRA) Designation

Designation of the study corridor and portions of adjacent lands into a National Recreation Area in lieu of wild and scenic river designation was considered but eliminated from further study. The NRA concept received little or no support during public scoping. In addition, a NRA could cause greater

impacts on private land and private land uses as compared to wild and scenic river designation.

Special Legislation to Prevent Federally Approved or Assisted Dams

The concept of special legislation addressing only the issue of dam construction was considered but not carried forward in the analysis process since its impacts would be similar to those of the alternatives recommending designation. With little or no public support during the scoping process, special legislation was determined to be an uncertain process, at this time, to recommend and carry through to implementation.

Special Management Area Designation administered by the Forest Service or the State of Colorado

Various alternatives seeking Congressional approval for special area designation (National River, National Heritage River, ect.) or for State designation and administration of a special area (such as on the Arkansas River), in lieu of wild and scenic river designation, were considered but eliminated from detailed study since: 1) all action alternatives provided better resource protection; 2) no specific alternative was put forth by any government agency during scoping and the general proposals that were, received little support; 3) the majority of the corridor is currently administered by the USDA Forest Service and State administration could result in extra costs and potential conflicts in an area mostly managed by the Forest Service, and 4) some form of special area designation could be considered in more detail under Alternative A2.

Development of an Advisory or River Management Board

An alternative, based solely on the development of a formal advisory board to better manage and protect the river and associated corridor by improving coordination of those involved in the use of the area was considered but eliminated from detailed study. Under this alternative, the study corridor would not be added to the National Wild and Scenic Rivers System but a formal advisory board or River Management Board would be established to better protect the area in addition to existing mechanisms and management plans currently in place.

The board would develop a management plan and provide an ongoing forum for coordination and overseeing of river management activities.

Development of a river management board as the primary emphasis of an alternative was eliminated from further detailed study since: 1) the Board, by itself, would have little if any authority to implement its recommendations and thus could not ensure protection of the OR values, 2) additional advisory board or management direction, without other agreements, would not prevent inundation by reservoirs, and 3) a River Management Board along with other protective measures could be an integral part of Alternative A2, or other alternatives.

Other Combinations of River Classifications

All river segments were considered in Alternative B at their most protective classifications and at less protective classifications in other alternatives based on public scoping. There were numerous other combinations of potential river classifications that were considered for designation. These were eliminated from detailed study since: 1) most of the potential classifications were already covered by Alternatives B, C, D, F, G, I, and J; and 2) no comments or key issues identified the need to reduce the protection of other potential classifications.

Alternative E - This alternative recommended the addition of two segments of the South Platte River to the National Wild and Scenic Rivers System, downstream of the stream gauge weir below Cheesman Dam to the Wigwam property with a "Wild" Classification and between the Wigwam property and Scraggy View with a "Recreational" classification. Its purpose was to recommend designation of the portions of the study rivers that contain the most outstanding trout populations. This alternative was included in the preliminary alternatives that were mailed to the public in February 1996. It was eliminated from detailed study since it received few if any favorable responses during the public comment period. Most people either favored designation or non-designation of the entire South Platte study corridor. Alternatives B, C, D, and J, already include all of the area described in Alternative E, and there were no public concerns between Strontia Springs Reservoir and Cheesman Dam that were not already addressed in other alternatives.

Alternative H - This "cooperative management" alternative was listed early in the analysis process. It arose in direct response to an instruction in the Wild and Scenic Rivers Act to consider measures to protect the area's OR values without Wild and Scenic River designation. The Forest Service felt that Alternative H, as described, was insufficiently detailed to evaluate its ability to ensure the protection of the area's OR values. The concept of this alternative is embodied in Alternative A2.

4.5 Monitoring

If any of the study corridor is designated as a Wild and Scenic River, the Forest Service, as the administering agency, would be required to identify what monitoring is already taking place, coordinate with other entities, and develop and implement a monitoring plan to ensure that the OR values, free-flow, and water quality, are protected and enhanced. The method of review and corrective action would be incorporated in the river management plan.



Small developed campgrounds are nestled in forested areas along the South Platte River in Elevenmile Canyon.

**CHART IV-1
ALTERNATIVES A1 AND A2
SEGMENTS RECOMMENDED
FOR DESIGNATION**

Segment	Length (miles)	Classification	Description
None Recommended	0		No River Segments Recommended

**CHART IV-2
ALTERNATIVE B
SEGMENTS RECOMMENDED
FOR DESIGNATION**

Segment	Length (miles)	Classification	Description
A&B - South Platte	16.4	Recreational	From Elevenmile Dam (downstream from fence on Denver Water's special-use area) downstream to Beaver Creek (northernmost boundary of private land).
C - South Platte	10.4	Wild	From Beaver Creek downstream to the high water line of Cheesman Reservoir (upstream of the stream gauge).
D - South Platte	3.1	Wild	From Cheesman Dam (downstream of the stream gauge weir) downstream to the the Wigwam property (southern end).
E - South Platte	19.5	Recreational	From the Wigwam property downstream to the high water line of Strontia Springs Reservoir (6029 foot contour).
H - North Fork	1.5	Recreational	From Insmont downstream to Estabrook (downstream side of stone house).
H - North Fork	4.9	Scenic	From Estabrook downstream to Cliffdale (the Section line between Sections 29 and 30 east of Cliffdale).
H - North Fork	16.5	Recreational	From Cliffdale downstream to within 1/4 mile of the confluence with the South Platte River.
TOTAL	72.3		

**CHART IV-3
ALTERNATIVE C
SEGMENTS RECOMMENDED
FOR DESIGNATION**

Segment	Length (miles)	Classification	Description
A&B - South Platte	16.4	Recreational	From Elevenmile Dam (downstream from fence on Denver Water's special-use area) downstream to Beaver Creek (northernmost boundary of private land).
C - South Platte	10.4	Scenic	From Beaver Creek downstream to the high water line of Cheesman Reservoir (upstream of the stream gauge).
D - South Platte	3.1	Wild	From Cheesman Dam (downstream of the stream gauge weir) downstream to the the Wigwam property (southern end).
E - South Platte	19.5	Recreational	From the Wigwam property downstream to the high water line of Strontia Springs Reservoir (6029 foot contour).
H - North Fork	1.5	Recreational	From Insmont downstream to Estabrook (downstream side of stone house).
H - North Fork	4.9	Scenic	From Estabrook downstream to Cliffdale (the Section line between Sections 29 and 30 east of Cliffdale).
H - North Fork	16.5	Recreational	From Cliffdale downstream to within 1/4 mile of the confluence with the South Platte River.
TOTAL	72.3		

**CHART IV-4
ALTERNATIVE D
SEGMENTS RECOMMENDED FOR DESIGNATION**

Segment	Length (miles)	Classification	Description
A&B - South Platte	16.4	Recreational	From Elevenmile Dam (downstream from fence on Denver Water's special-use area) downstream to Beaver Creek (northernmost boundary of private land).
C - South Platte	10.4	Wild	From Beaver Creek downstream to the high water line of Cheesman Reservoir (upstream of the stream gauge).
D - South Platte	3.1	Wild	From Cheesman Dam (downstream of the stream gauge weir) downstream to the the Wigwam property (southern end).
E - South Platte	19.5	Recreational	From the Wigwam property downstream to the high water line of Strontia Springs Reservoir (6029 foot contour).
TOTAL	49.4		



The "Narrows" on the lower portion of the South Platte Study corridor.

**CHART IV-5
ALTERNATIVE F
SEGMENTS RECOMMENDED
FOR DESIGNATION**

Segment	Length (miles)	Classification	Description
A - South Platte	8.1	Recreational	From Elevenmile Dam (downstream from fence on Denver Water's special-use area) downstream to Lake George (southern boundary of private property upstream from Lake George - Exclusive of Boy Scout Camp Alexander).
B - South Platte	2.0	Recreational	National Forest System land between Tappan Gulch and Vermillion Creek.
C - South Platte	10.4	Wild	From Beaver Creek downstream to the high water line of Cheesman Reservoir (upstream of the stream gauge).
D - South Platte	3.1	Wild	From Cheesman Dam (downstream of the stream gauge weir) downstream to the the Wigwam property (southern end).
H - North Fork	2.6	Scenic	From National Forest System lands downstream from Estabrook, downstream to Pike National Forest Boundary.
TOTAL	26.1		

**CHART IV-6
ALTERNATIVE G
SEGMENTS RECOMMENDED
FOR DESIGNATION**

Segment	Length (miles)	Classification	Description
A&B - South Platte	16.4	Recreational	From Elevenmile Dam (downstream from fence on Denver Water's special-use area) downstream to Beaver Creek (northern boundary of private land).
C - South Platte	10.4	Wild	From Beaver Creek downstream to the high water line of Cheesman Reservoir (upstream side of the stream gauge).
TOTAL	26.8		

**CHART IV-7
ALTERNATIVE I
SEGMENTS RECOMMENDED
FOR DESIGNATION**

Segment	Length (miles)	Classification	Description
A&B - South Platte	16.4	Recreational	From Elevenmile Dam (downstream from fence on Denver Water's special-use area) downstream to Beaver Creek (northern boundary of private land).
C - South Platte	6.0	Wild	From Beaver Creek downstream to Corral Creek.
TOTAL	22.4		

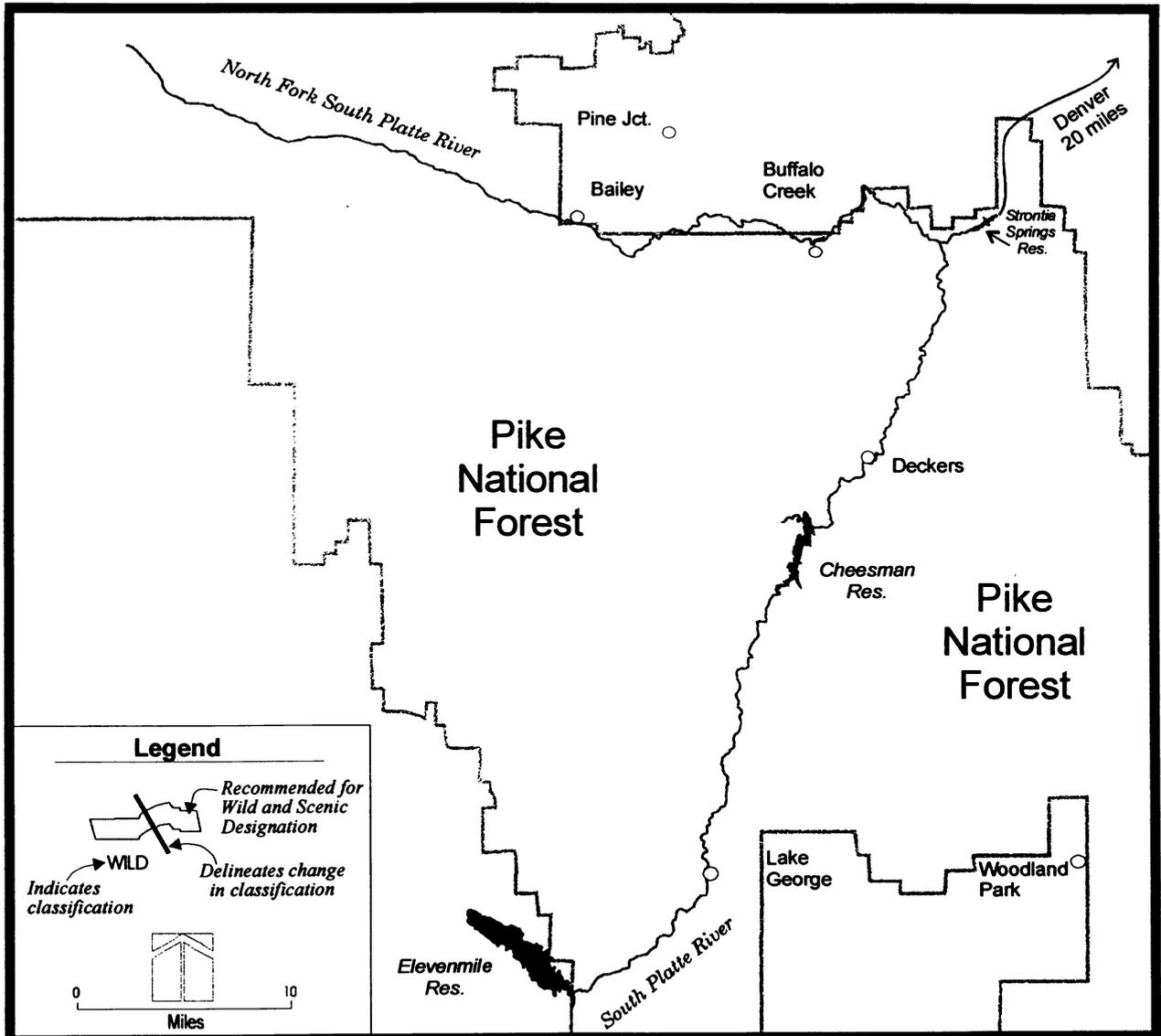
**CHART IV-8
ALTERNATIVE J
SEGMENTS RECOMMENDED
FOR DESIGNATION**

Segment	Length (miles)	Classification	Description
A&B - South Platte	16.4	Recreational	From Elevenmile Dam (downstream from fence on Denver Water's special-use area) downstream to Beaver Creek (northernmost boundary of private land).
C - South Platte	2.9	Wild	From Beaver Creek downstream to 1/4 mile upstream from Hackett Gulch.
C - South Platte	3.0	Scenic	From 1/4 mile upstream from Hackett Gulch downstream to 1/4 mile downstream of Corral Creek.
C - South Platte	4.5	Wild	From 1/4 mile downstream of Corral Creek to water line of Cheesman Reservoir (upstream of the stream gauge).
D - South Platte	3.1	Wild	From Cheesman Dam (downstream of the stream gauge weir) downstream to the the Wigwam property (southern end).
E - South Platte	18.2	Recreational	From the Wigwam property downstream to confluence with the North Fork (Section line between Sections 25 and 36, T. 7 S., R. 70 W.)
TOTAL	48.1		

South Platte River and North Fork of the South Platte River
Wild and Scenic River Study

Map IV-1

Alternatives A1, A2

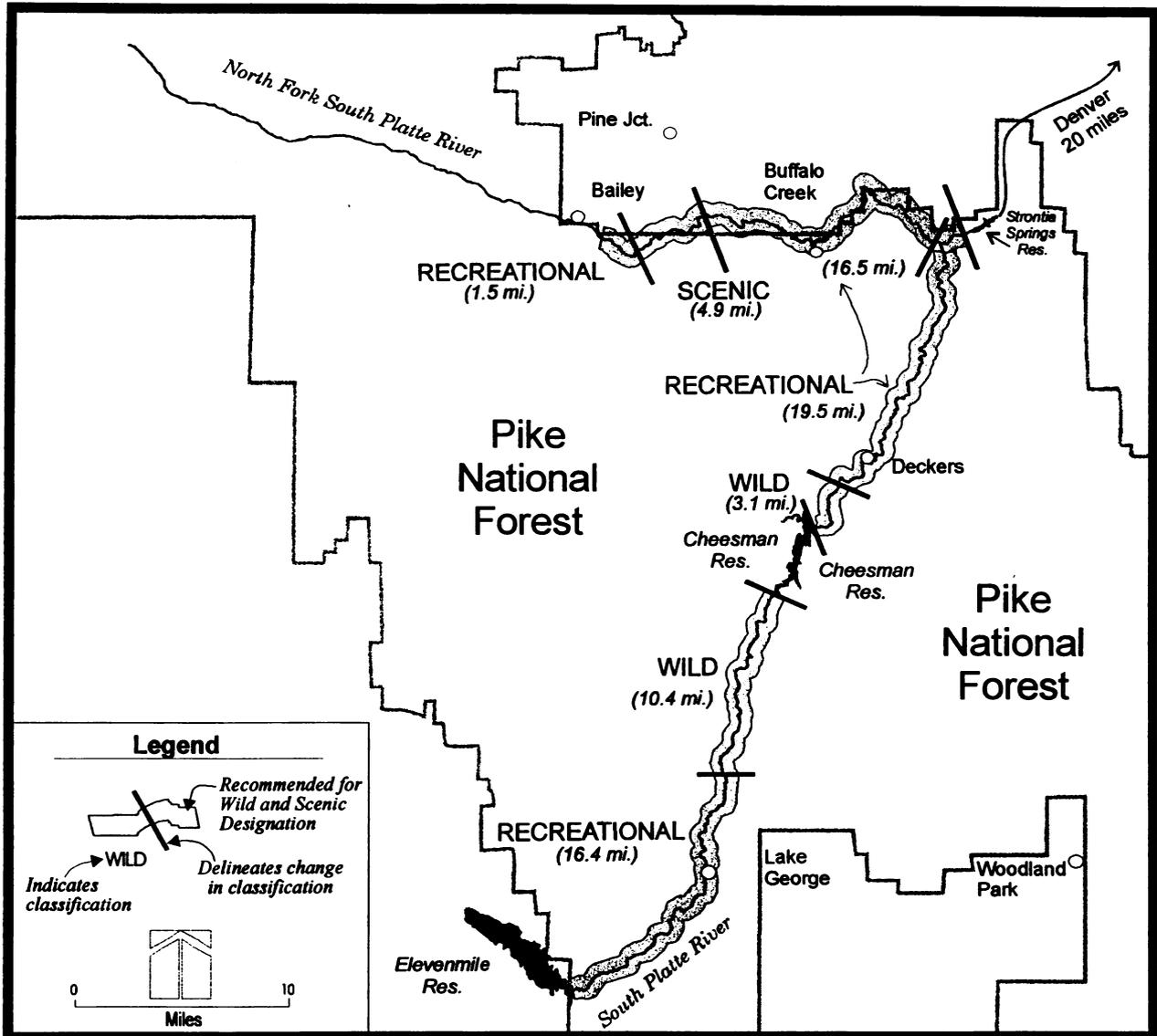


No action - No segments recommended for designation.

South Platte River and North Fork of the South Platte River
Wild and Scenic River Study

Map IV-2

Alternative B

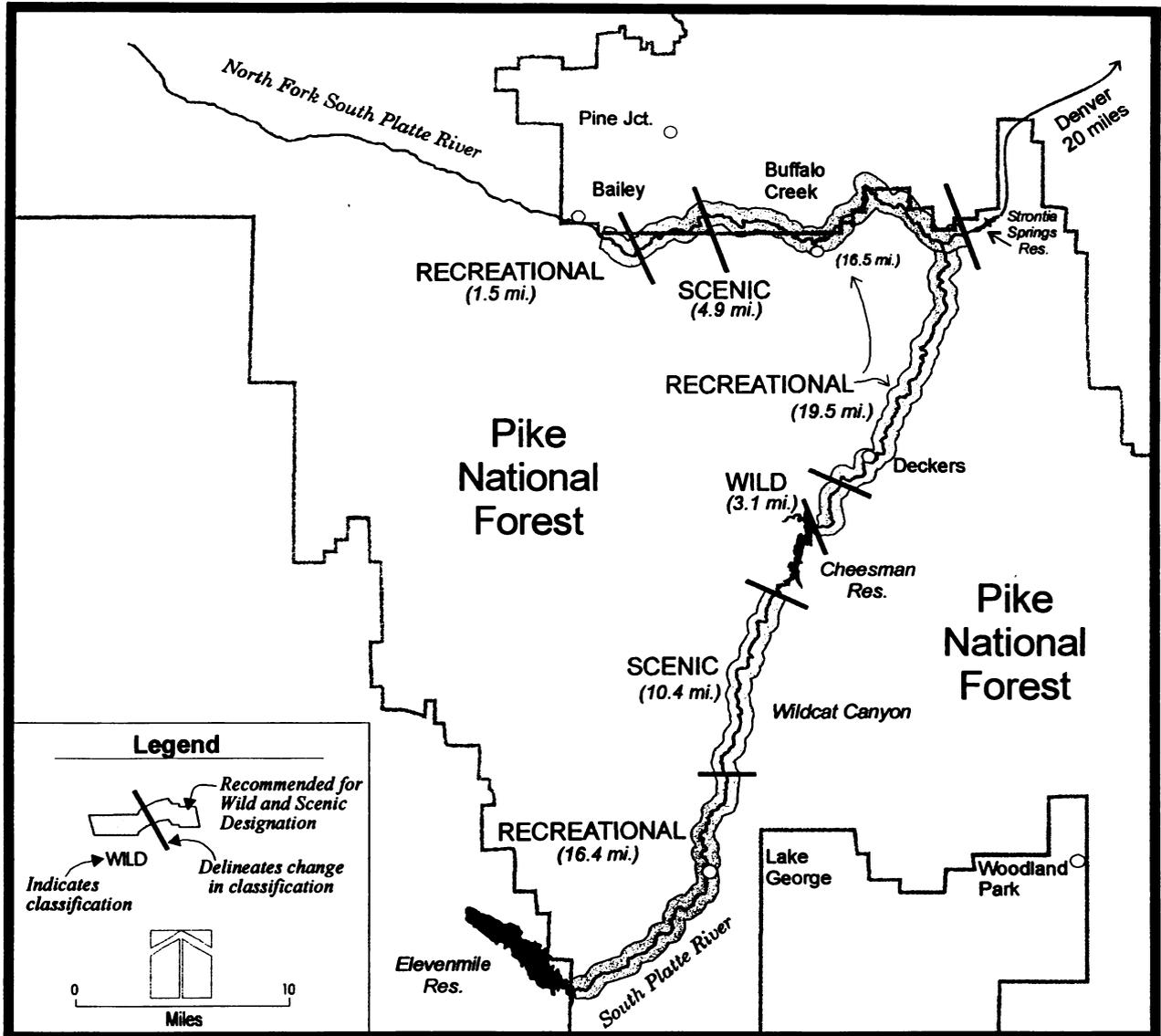


Maximizes protection and enhancement of Outstandingly Remarkable Values.

South Platte River and North Fork of the South Platte River
Wild and Scenic River Study

Map IV-3

Alternative C

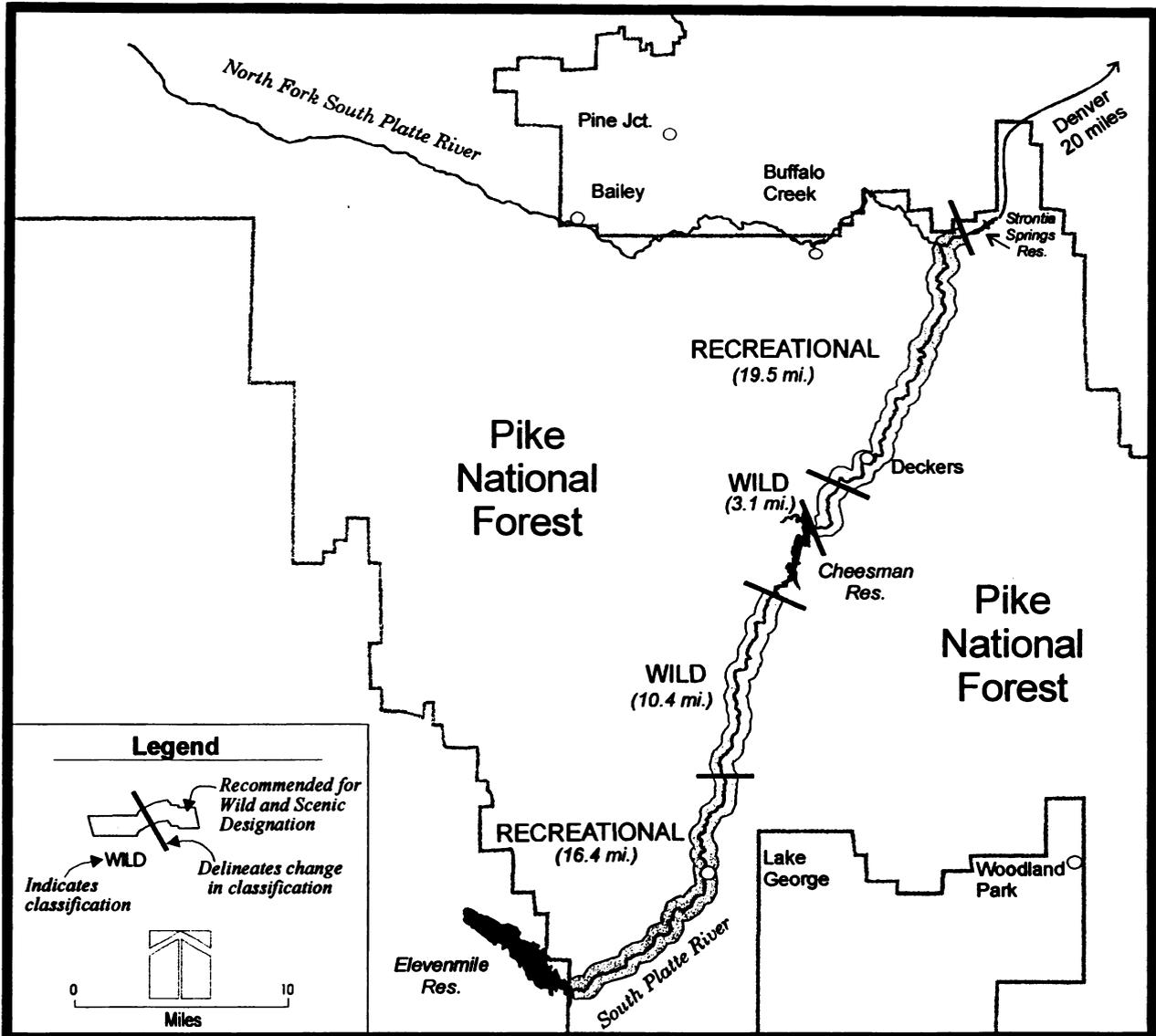


Protects and enhances Outstandingly Remarkable Values while allowing for off-highway vehicle use in Wildcat Canyon south of Cheesman Reservoir.

South Platte River and North Fork of the South Platte River
Wild and Scenic River Study

Map IV-4

Alternative D

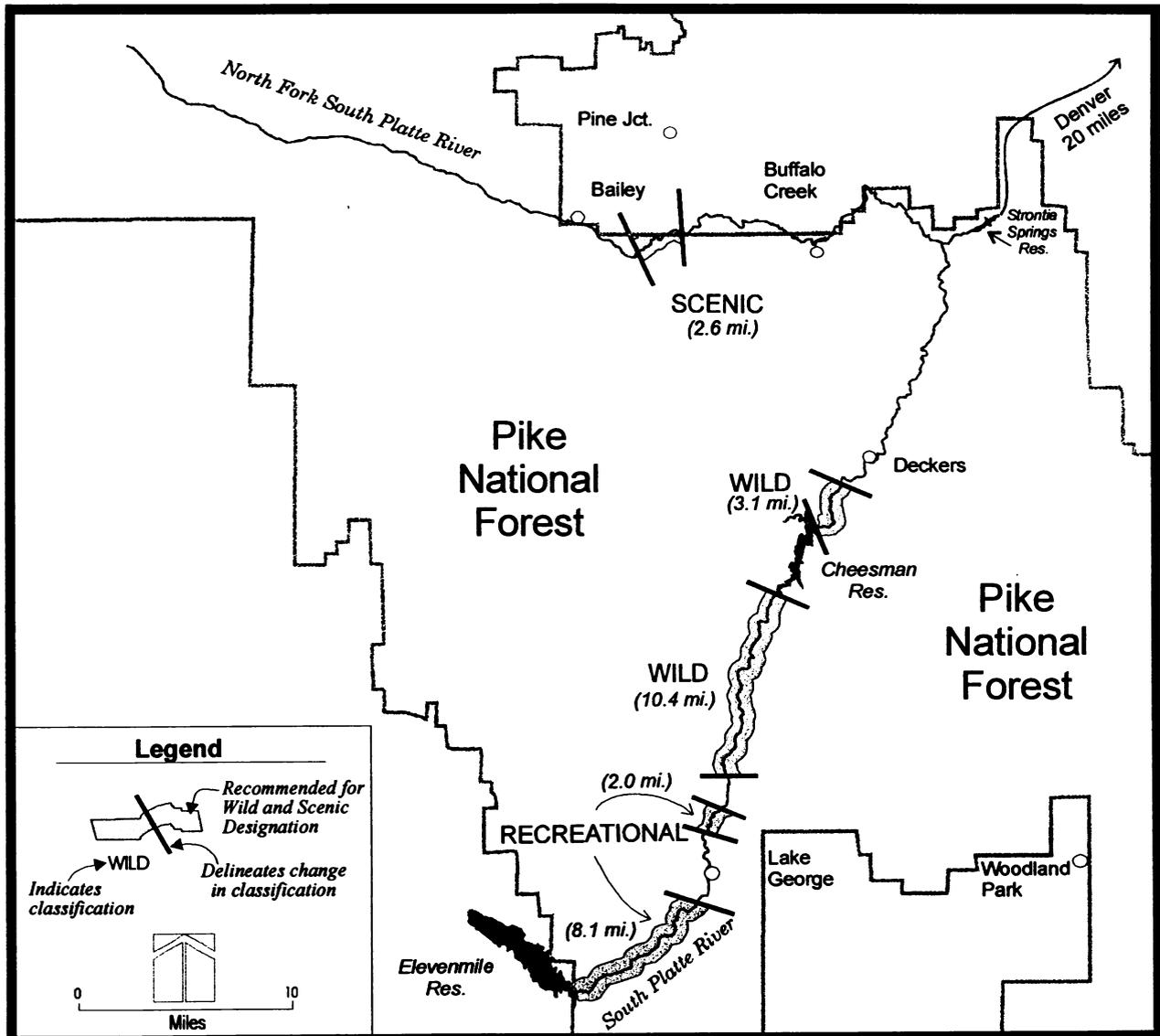


Provides for (1) protection and enhancement of Outstandingly Remarkable Values and (2) water delivery, by recommending the South Platte for designation while not recommending the North Fork.

South Platte River and North Fork of the South Platte River
Wild and Scenic River Study

Map IV-5

Alternative F

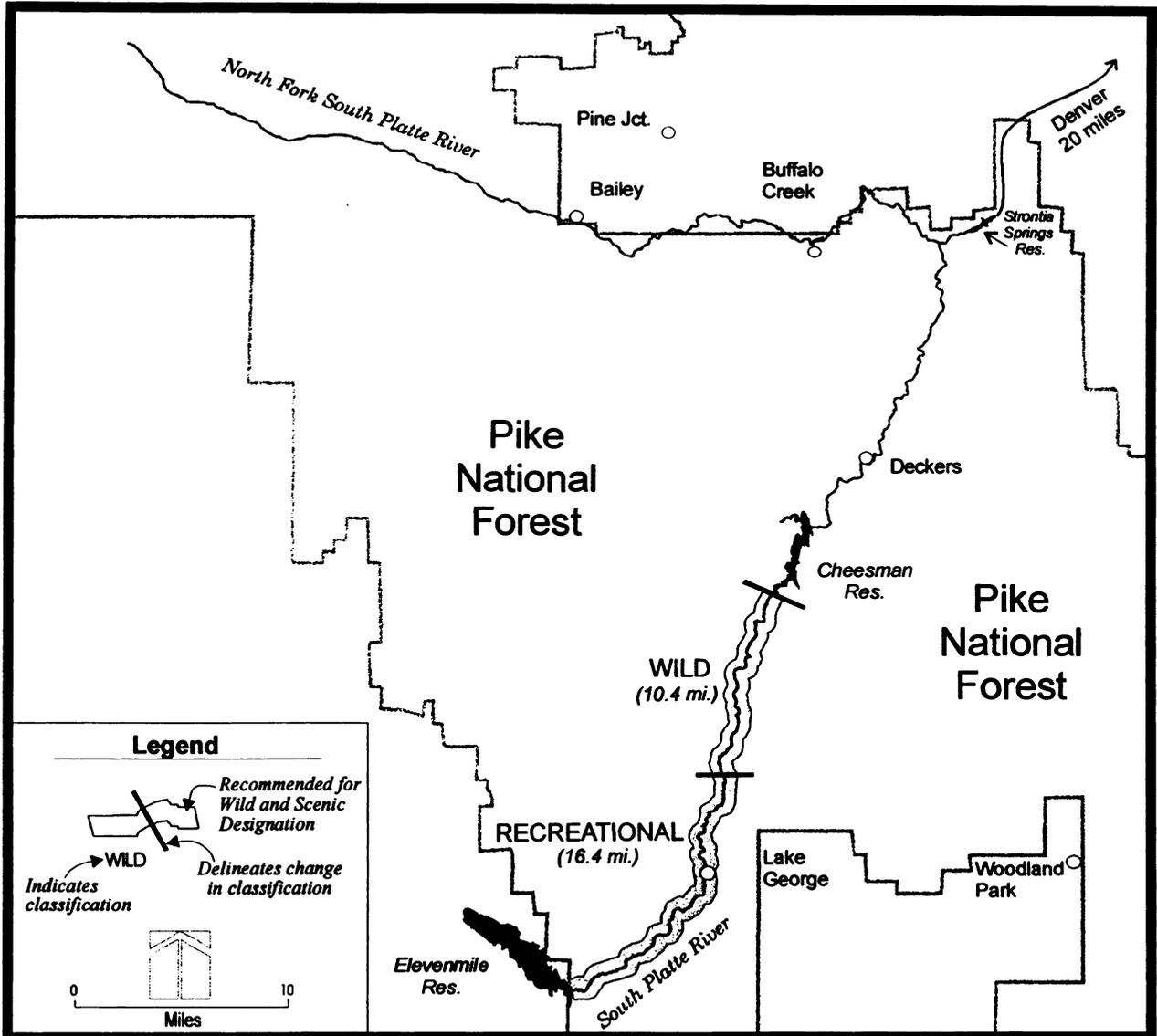


Maximizes protection and enhancement of Outstandingly Remarkable Values on Federal lands only.

South Platte River and North Fork of the South Platte River
Wild and Scenic River Study

Map IV-6

Alternative G

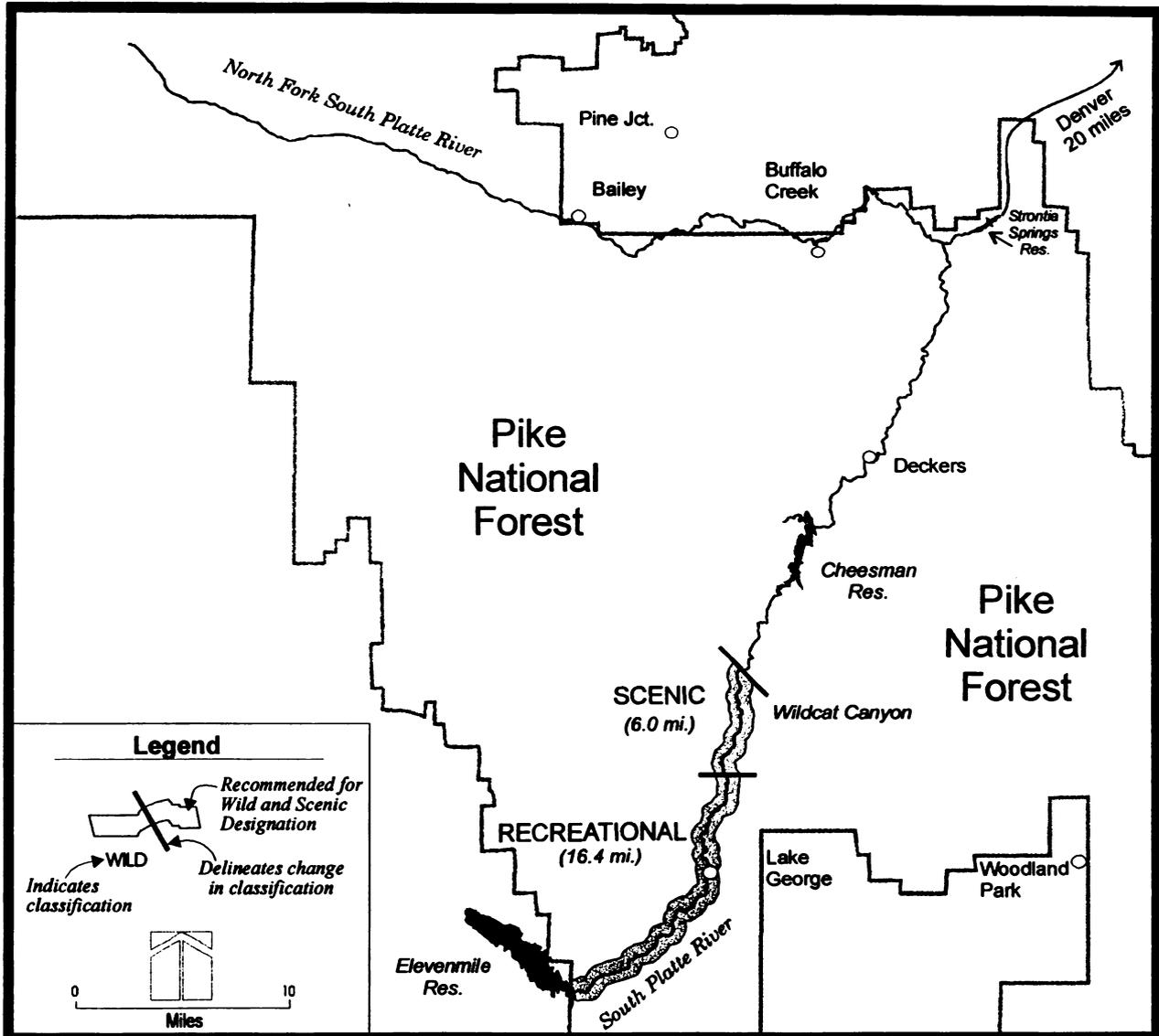


Maximizes protection and enhancement of Outstandingly Remarkable Values on areas of the South Platte River upstream from Denver Water's reservoir right-of-way.

South Platte River and North Fork of the South Platte River
Wild and Scenic River Study

Map IV-7

Alternative I

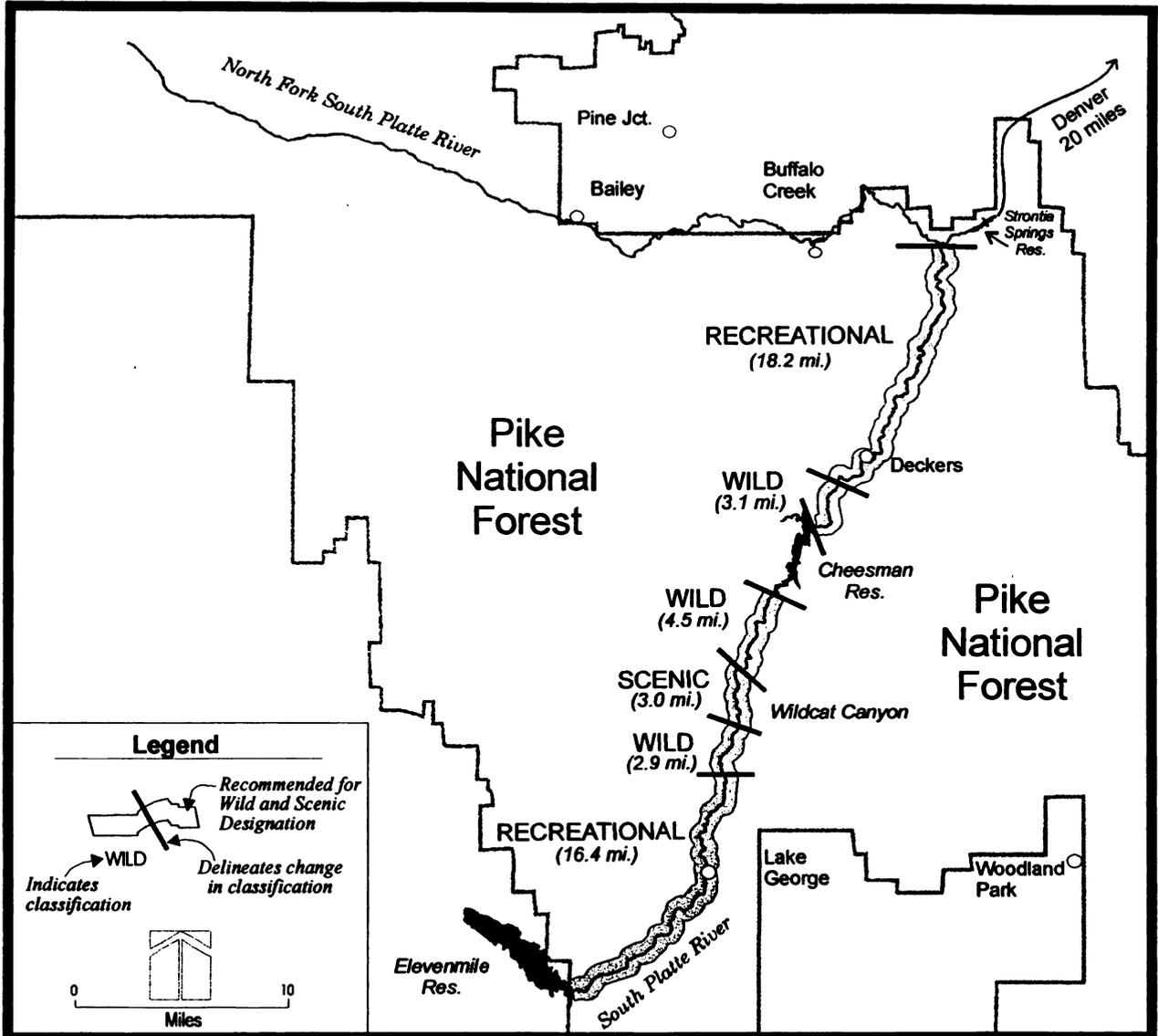


Protects and enhances Outstandingly Remarkable Values on areas of the South Platte River upstream from potential expansion of Cheesman Reservoir, while allowing for off-highway vehicle use in Wildcat Canyon south of Cheesman Reservoir.

South Platte River and North Fork of the South Platte River
Wild and Scenic River Study

Map IV-8

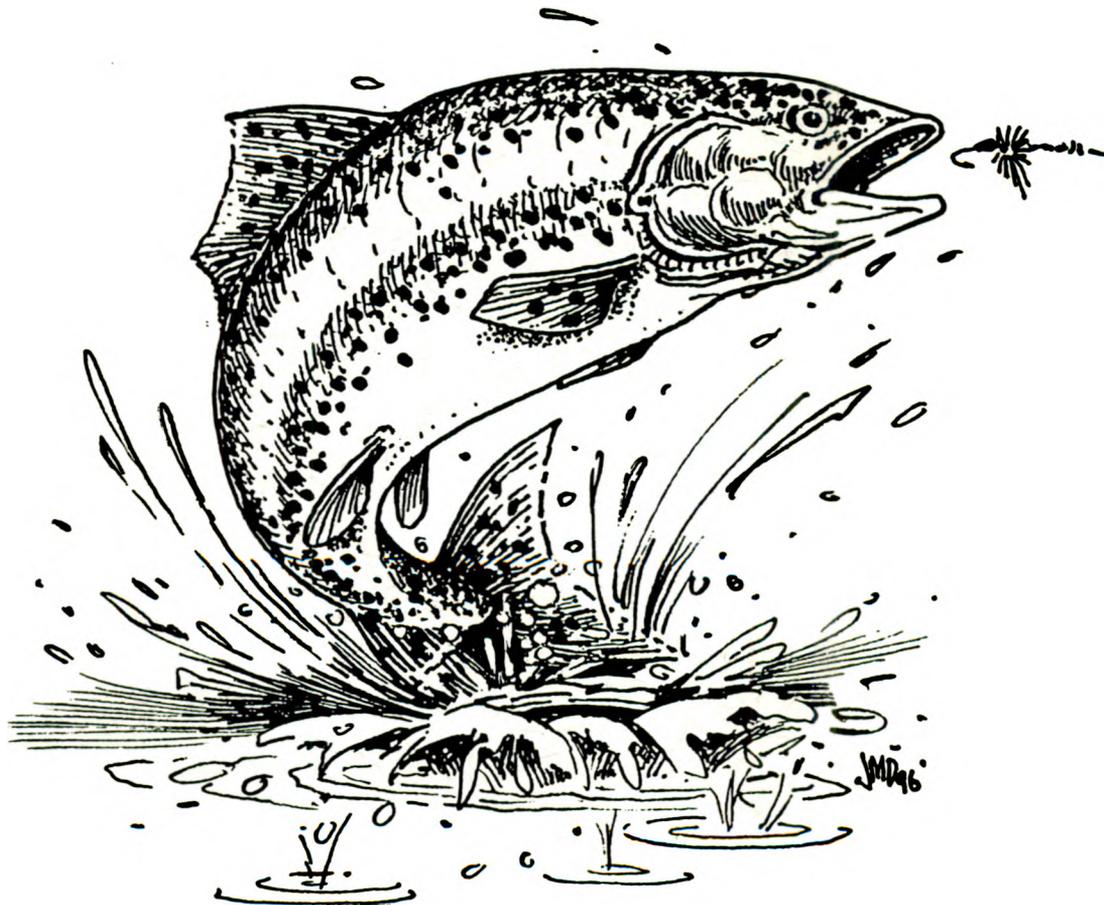
Alternative J



Provides for (1) protection and enhancement of Outstandingly Remarkable Values and (2) water delivery by recommending the South Platte for designation while not recommending the North Fork. Also, allows for current off-highway vehicle use in Wildcat Canyon south of Cheesman Reservoir.

Chapter V

Environmental Consequences



5.1 Purpose of This Chapter

This chapter describes the effects of each alternative on the environment, and how these effects relate to the key issues so that effects of the alternatives can be understood.

In each of the following sections, the impacts on key issues and resources that would occur if no additional actions are taken are described under Alternative A1, the "no action" alternative. Alternative A2 is the "no action with outstandingly remarkable values protected" alternative. This alternative has not been developed in detail. Its potential viability is speculative at this time. Thus, this alternative is not analyzed in the following section. If Alternative A2 can be further defined at a later date, the effects of implementation will be included in a Supplemental DEIS.

The impacts of the other "action" alternatives (Alternatives B, C, D, F, G, I, and J) on issues and resources are estimated based upon the additional actions that would be taken under each alternative. Impacts can be beneficial (positive) or adverse (negative) and result from the action directly, or indirectly. Impacts can be permanent, long-lasting (long-term), or temporary (short term).

The scope of this analysis includes three types of effects (see 40 CFR 1508.7 and 1508.8):

Direct effects. These effects are caused by the action and occur at the same time and place. Direct effects on resources were analyzed for all the alternatives and are described in this chapter.

Indirect effects. These effects are caused by the action and are later in time or farther in distance but are still reasonably foreseeable. Indirect effects on resources were analyzed for all the alternatives and are described in this chapter.

Cumulative effects. These effects result from incremental and collective impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what person or agency (Federal or non-Federal) undertakes those actions. Cumulative effects on resources were analyzed for all alternatives in this chapter.

The area of influence, or area of potential cumulative effect, is different for each resource. The effects of all past, present, and reasonably foreseeable actions occurring on all lands, regardless of ownership, in the corridor, and in some cases, near the corridor, are considered in the effects analysis.

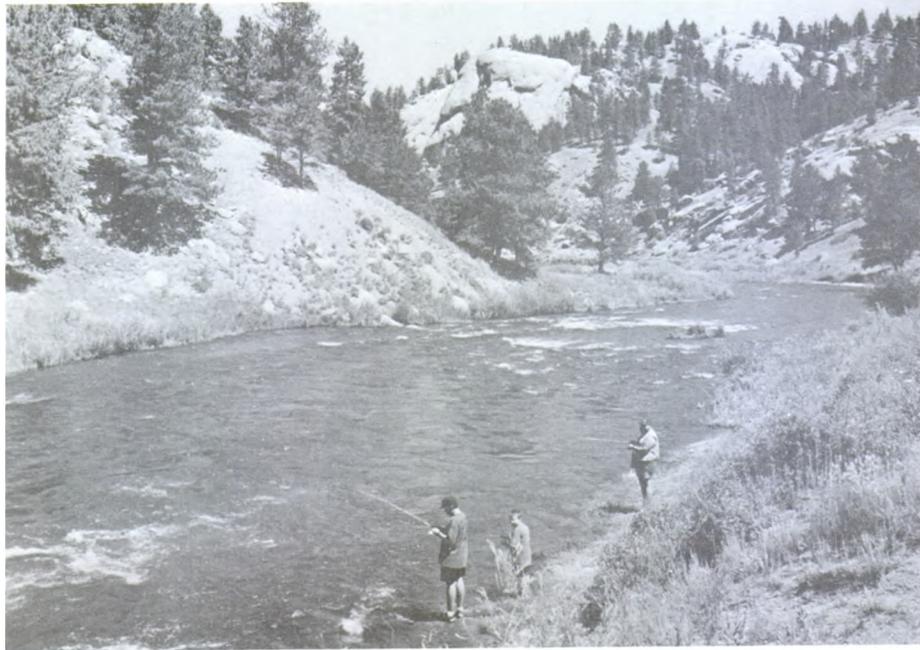
It is important to note that the effects analyzed in this chapter relate only to alternatives developed in analyzing the suitability of the study rivers for inclusion in the National Wild and Scenic Rivers System. Detailed effects of other proposals, such as construction of a reservoir, are beyond the scope of this DEIS.

Rivers not recommended for designation would be managed under the appropriate management direction contained in the Forest Plan.

Section 5.20 summarizes the environmental impacts of each alternative on the key study issues in table format. The chart in Section 5.21 lists the additional Federal costs for implementing each of the alternatives. Section 5.22 lists the basis for the two proposed actions and Section 5.23 discusses the public review of this document. Refer to the alternatives in Chapter IV.

5.2 Environmental Components Not Affected Under All Alternatives

Analysis of the alternatives for the following factors revealed no effects on the environment that would represent a significant change from the present situation for air quality, climate, geomorphology, geology, grazing, landforms, and soils.



The area is known for its exceptional fishery which draws anglers from all over the region.

5.3 Fisheries

Changes in river management could impact resident fish species, primarily their spawning and rearing areas. Clean, cool water, and appropriate flows at the right season are required to support the habitat necessary for healthy fish populations.

It is important to recognize that numerous other activities within the drainage basin, outside of this river segment, have an impact on both water quality, and resident fish populations.

Alternative A1 - No Action

As in all alternatives, the Colorado Division of Wildlife would continue to manage fish populations within the study area.

Habitat Characteristics - There is no Federal prohibition of major dams, diversions, or water development projects under this alternative. The potential

would exist for dam construction, diversions, or other water developments within the corridors which could have direct adverse effects on the flow regimes and existing habitat for wild trout populations. There would be greater potential in this alternative for operational changes at existing water developments which could result in a considerable change in habitat and resultant decrease in trout production. Although changes in flows at certain times of the year could result in a beneficial change in trout habitat, it would most likely be detrimental to the population. Any new diversions or other water developments could potentially affect the amount and timing of flows and thus aquatic habitat.

Because of the potential for increased use in the study area, increased sedimentation could occur from the development of visitor facilities such as campgrounds, picnic grounds, parking areas, trails, trailheads, and increased private development. Increased human activity in the area will also reduce the effectiveness of the fisheries habitat. However,

attempts are being made to manage use in a way that reduces sediment from reaching the stream channel. Sediment from adjacent roads would continue to provide sediment into the stream channels, restricting fish habitat. There is less potential in this alternative for funding activities to enhance fish habitat or reduce sedimentation as compared to the other alternatives.

There would be low potential for Federal funding for easement and or fee-title acquisition of fish habitat and riparian areas from willing sellers as with the other alternatives.

Fishery Management - Segments of the South Platte River are currently managed under a variety of regulations. Special management areas would continue, with stocking and normal regulations maintained in most areas. Stocking of catchable fish would continue in normal regulation areas, while a variety of management options would be considered to produce quality fisheries in the special regulation areas.

Attempts would continue to reduce erosion and subsequent sedimentation in the river. However, increased use as the front range develops may result in further sedimentation. Increased use as a result of construction of roads and trails could result in intensified management and use restrictions.

Angler Use - Angler use is highly variable in the study area. With the population of the front range increasing dramatically, angler use will most likely increase in all segments. As the development encroaches on the area and the population in the state increases, angler use will also increase. Access could also increase as roads and trails are improved and/or developed in sections that now have limited access.

Alternative B

This alternative has substantial potential to provide excellent protection and enhancement for fish populations and their respective habitats within the designated corridors for enjoyment by future generations. This is due primarily to three factors: 1) It prohibits Federally authorized water projects; 2) Designation would ensure additional monitoring and the protection and enhancement of water quality in all eligible segments and the Fisheries out-

standingly remarkable values in all of the eligible segments where it has been identified (Segments A, B, C, D, and E); and, 3) There would be greater potential for additional Federal funding for easement and/or fee-title acquisition of fish habitat and riparian areas from willing sellers. This alternative provides additional Wild and Scenic River direction to the Forest Service to manage other river related resources such as recreation and transportation in ways that could enhance the fishery. Thus, water quality, flows, and riparian habitat could be better protected as compared with the other alternatives. This would include the development of a management plan, increased emphasis on partnerships to improve fisheries and fisheries habitat, monitoring of water quality and flows, and Federal financial and technical assistance. Management plan direction would lead to positive cumulative effects from additional recreation developments and additional road construction measures which could reduce sedimentation. Partnerships could be more successful in acquiring funds and implementing fishery enhancements due to the guarantee that no major water projects would be built. Monitoring of water quality and flows would provide information needed to measure progress toward attaining goals to protect fisheries. Limited Federal financial and technical assistance, both inside and outside the corridor, would be available for projects such as fencing and riparian restoration that could result in water quality improvements.

The construction of minor structures for improvement of fish habitat would be considered compatible in all segments provided they do not affect the free-flowing river and protect or enhance outstandingly remarkable values.

Habitat Characteristics - This alternative would provide the best protection for all eligible segments in the study area. Under this alternative, habitats influenced by flow levels would be maintained to meet the appropriate designations. Road maintenance and associated impacts would be more restrictive in this alternative than in alternative A1. Sedimentation would be reduced in most segments. Recreational impacts would probably decrease in some of the segments where access is limited. However, because of the designation, use could increase in more accessible segments. Habitat conditions would improve, or at a minimum, remain constant, throughout the study area.

Fishery Management - Special management areas would continue, with stocking and normal regulations maintained in most areas. Stocking of catchable fish would continue in normal regulation areas, while a variety of management options would be considered to produce quality fisheries in the special regulation areas. The designation of some segments to more restrictive use, and possibly improved habitat conditions, may warrant a change in regulation to reflect the increased fishery potential.

The potential would be high to implement management practices to reduce erosion and subsequent sedimentation in the river. Habitat improvement techniques may be used to improve riparian and stream channel conditions, to provide a higher quality experience.

Angler Use - Angler use may or may not increase. The possible closure of some roads could result in reduced access to some fishing areas. However, the increased desirability of the area to visitors that are interested in experiencing a higher quality and more pristine fishery will probably draw more visitors to the area.

Alternative C

Habitat characteristics, fishery management and angler use under this alternative would be similar to Alternative B, except that the designation of the 10.4 miles of Segment C "Wildcat Canyon" as "Scenic" instead of "Recreational" would lead to the following changes.

Habitat Characteristics - Like Alternative B, this alternative would provide the best protection for all eligible segments in the study area, except that the protections of Segment C in Wildcat Canyon would be slightly less than with Alternatives B, D, F, G and J, but much more than with Alternatives A1 and I. This alternative would provide more area of habitat protection than with any of the alternatives except Alternative B. This alternative would provide protection for the aquatic habitats in most of the study area. Under this alternative, habitats influenced by flow levels would be maintained to meet the appropriate designations. Road maintenance and associated impacts would be more restrictive in this alternative than is currently being realized. However, additional roads and trails could be constructed in the Wildcat Canyon area, but much less than with Alternatives A1 and I. Sedimentation would be re-

duced in most segments. Recreational impacts would probably decrease in many of the segments identified. However, there is the possibility of more access in the Wildcat Canyon area, as compared to Alternatives B, D, F, G, and J possibly resulting in increased sedimentation. Habitat conditions would probably increase, or at a minimum, remain constant throughout the study area.

Fishery Management - Special management areas would continue, with stocking and normal regulations maintained in most areas. Stocking of catchable fish could continue in normal regulation areas, while a variety of management options would be considered to produce quality fisheries in the special regulation areas. However, the designation of some segments to more restrictive use, and possibly improved habitat conditions may warrant a change in regulation to reflect the increased fishery potential.

The potential to reduce erosion and subsequent sedimentation in the river would be high, but not as high as in Alternative B, especially in Wildcat Canyon. Habitat improvement techniques may be used to improve riparian and stream channel conditions, to provide a higher quality experience.

Angler Use - Angler use would probably increase. The increased desirability of the area to visitors that are interested in experiencing a higher quality and more pristine fishery will probably draw more people to the area. The overall quality of the camping experience will increase as a result of this designation, although, the use in Wildcat Canyon could increase if access is improved into the area.

Alternative D

Habitat Characteristics - Like Alternative B, this alternative would provide the best protection for all eligible segments on the South Platte study area. Management of the North Fork corridor would be identical to alternative A1. This alternative would provide more area of habitat protection than Alternatives A1, F, G, I, and J, but less than with Alternatives B and C. There is no Federal prohibition of dams or diversions for the eligible segments on the North Fork under this alternative. Management of the eligible South Platte corridors would be identical to Alternative B. On the South Platte, habitats influenced by flow levels would be maintained to meet the appropriate designations. Roads and associat-

ed impacts would be more restrictive in this alternative than is currently being realized. Sedimentation would be reduced along the South Platte and could increase along the North Fork. Habitat conditions would probably increase, or at a minimum, remain constant throughout the South Platte study area but could decrease on the North Fork study area.

Fishery Management - Special management areas would continue, with stocking and normal regulations maintained in most areas. Stocking of catchable fish could continue in normal regulation areas, while a variety of management options would be considered to produce quality fisheries in the special regulation areas. However, the designation of the South Platte segments to more restrictive use, and possibly improved habitat conditions may warrant a change in regulation to reflect the increased fishery potential.

Attempts would continue to reduce erosion and subsequent sedimentation in the river. Habitat improvement techniques may be used to improve riparian and stream channel conditions, to provide higher quality habitat.

Angler Use - Angler use may or may not increase. The possible closure of roads in some areas may result in reduced access to fishing areas. However, the increased desirability of the area to visitors that are interested in experiencing a higher quality and more pristine fishery will probably draw more people to the area. There are areas present in the system that provide both experiences, and both can have high or moderate use. The quality of use will increase as a result of this designation along the South Platte.

Alternative F

Habitat Characteristics - This alternative would prohibit major dams and diversions in most of the aquatic habitats administered by the Forest Service in the study area. This would provide more area of habitat protection than Alternatives A1, G, and I, but less than with the other alternatives. Under this alternative, habitats influenced by flow levels would be maintained to meet the appropriate designations. Under this alternative, there is no Federal prohibition of dams or diversions for the eligible North Fork segments, except for the 2.6-mile "Scenic" segment (H2), nor for the area of the South Platte in segment E, nor for the private lands around Lake George.

Management of the designated corridors would be identical to Alternative B. In these areas, habitats influenced by flow levels would be maintained to meet the appropriate designations. This may result in protections in flows similar to Alternative B since both study rivers include segments recommended for designation. Roads and associated impacts may be somewhat more restrictive in this alternative than is currently being realized. Sedimentation would be reduced slightly in most segments on federally administered lands. However, due to the non-contiguous nature of the land boundaries, impacts could occur. Recreational impacts would probably decrease in designated segments. Habitat conditions would probably improve, or at a minimum, remain constant throughout the designated portions of Federal lands in the study area, but could decrease on the areas not recommended for designation.

This alternative would protect the 2.6-mile section of the North Fork (Segment H2) from potential unundation by a dam or other development. One of the most important areas in the study corridor for fish habitat and fish populations, from above Deckers to Scraggy View on the South Platte, would not be protected under this alternative.

Fishery Management - Special management areas would continue, with stocking and normal regulations maintained in most areas. Stocking of catchable fish could continue in normal regulation areas, while a variety of management options would be considered to produce quality fisheries in the special regulation areas. However, the designation of some segments to more restrictive use, and possibly improved habitat conditions may warrant a change in regulation to reflect the increased fishery potential. The fragmented nature of the designated segments may make regulation more difficult.

Attempts would continue to reduce erosion and subsequent sedimentation in the river. Habitat improvement techniques may be used to improve riparian and stream channel conditions on the designated areas to provide a higher quality habitat.

Angler Use - Angler use may or may not increase. However, the increased desirability of the area to visitors that are interested in experiencing a higher quality and more pristine fishery will probably draw more people to the area. The quality of angling ex-

perience will probably remain similar to Alternative A1.

Alternative G

Habitat Characteristics - This alternative would provide the same protection for the aquatic habitats in the study area upstream of Cheesman Reservoir as in Alternative B. However, there would be no protection of aquatic habitat downstream of the Reservoir or on the North Fork of the South Platte River. This alternative would provide more area of habitat protection than Alternatives A1 and I, but less than with the other alternatives. There is no Federal prohibition of major dams, diversions, or water developments for the eligible North Fork segments and for the eligible South Platte segments downstream from Cheesman Dam. Management of the South Platte corridors upstream from Cheesman Reservoir would be identical to Alternative B. On these areas, habitats influenced by flow levels would be maintained to meet the appropriate designations. Roads and associated impacts would be more restrictive in this alternative upstream from Cheesman Reservoir than is currently being realized. Sedimentation would be reduced in the designated segments. Recreational impacts would probably decrease in designated segments. Habitat conditions would probably improve, or at a minimum, remain constant throughout the South Platte study area upstream from Cheesman Reservoir, but could decrease on the South Platte below Cheesman Reservoir and along the North Fork study area.

The most important area in the study corridor for fish habitat and fish populations, from Cheesman Dam to Scraggy View on the South Platte, would not be protected under this alternative.

Fishery Management - Special management areas would continue, with stocking and normal regulations maintained in most areas. Stocking of catchable fish could continue in normal regulation areas, while a variety of management options would be considered to produce quality fisheries in the special regulation areas. However, the designation of some segments to more restrictive use, and possibly improved habitat conditions may warrant a change in regulation to reflect the increased fishery potential.

Attempts would continue to reduce erosion and subsequent sedimentation in the river. Habitat im-

provement techniques may be used to improve riparian and stream channel conditions, to provide a higher quality habitat.

Angler Use - Angler use may increase in all segments as the population of Colorado increases. The possible closure of some roads may result in reduced access to fishing areas in the study corridors upstream from Cheesman Reservoir. However, the increased desirability of the area to visitors that are interested in experiencing a higher quality and more pristine fishery will probably draw more people to the area. The quality of angling use will increase as a result of this designation.

Alternative I

Habitat Characteristics - This alternative would provide the same protection for the aquatic habitats in the study area upstream of Corral Creek as in Alternatives C and A. However, there would be no protection of aquatic habitat downstream of Corral Creek or on the North Fork of the South Platte River. This alternative would provide slightly more area of habitat protection than Alternative A1, but less than with the other alternatives. There is no Federal prohibition of major dams, diversions, or water developments for the eligible North Fork segments and for the eligible South Platte segments downstream from Corral Creek. On eligible South Platte segments upstream from Corral Creek, habitats influenced by flow levels would be maintained to meet the appropriate designations. Sedimentation would be reduced throughout the designated segments except that additional roads and trails could be constructed in the Wildcat Canyon area, but much less than with Alternatives A1, C, and J. Recreational impacts would probably decrease in many of the segments identified. However, there is the possibility of more access in the Wildcat Canyon area, as compared to all other Alternatives except Alternatives A1, C, and J. Recreational impacts would probably decrease in the segments identified. Habitat conditions would probably increase or at a minimum remain constant in the study areas upstream from Corral Creek; however, major habitat changes could occur in all the remaining segments.

The most important area in the study area for fish habitat and fish populations, from Cheesman Dam to Scraggy View on the South Platte, would not be protected under this alternative.

Fishery Management - Special management areas would continue, with stocking and normal regulations maintained in most areas. Stocking of catchable fish could continue in normal regulation areas, while a variety of management options would be considered to produce quality fisheries in the special regulation areas. However, the designation of some segments to more restrictive use, and possibly improved habitat conditions may warrant a change in regulation to reflect the increased fishery potential.

Attempts would continue to reduce erosion and subsequent sedimentation in the river. Habitat improvement techniques may be used to improve riparian and stream channel conditions, to provide a higher quality habitat.

Angler Use - Angler use may or may not increase. Access to fishing areas upstream from Corral Creek may increase. However, the increased desirability of the area to visitors that are interested in experiencing a higher quality and more pristine fishery will probably draw more people to the area. The quality of use will increase as a result of this designation in the study area upstream from Corral Creek.

Alternative J - Proposed Action

Habitat Characteristics - Like Alternative D, this alternative would provide the best protection for all eligible segments on the South Platte study area, except that the protections of a 3.0-mile portion of Segment C in Wildcat Canyon would be slightly less than with Alternatives B, D, F, G but much more than with Alternatives A1 and I. No protections however would be provided for the .3-mile section of the South Platte River from the North Fork confluence to Strontia Springs Reservoir and for the entire North Fork study area. Management of the North Fork corridor and the .3-mile non-designated South Platte segment would be identical to alternative A1. There is no Federal prohibition of dams or diversions under this alternative for the North Fork. Management of the South Platte corridors would be similar to Alternative D. On the South Platte, habitats influenced by flow levels would be maintained to meet the appropriate designations. Road maintenance and associated impacts would be more restrictive in this alternative than is currently being realized. Sedimentation would be reduced along the South Platte and could increase along the North

Fork. However, additional roads and trails could be constructed in the 3.0-mile "Scenic" segment in the Wildcat Canyon area which could lead to more sedimentation in this area than in Alternatives B, D, F, and G. There is the possibility of more access in the Wildcat Canyon area and the use in the 3.0-mile portion of Wildcat Canyon could increase if access is improved into the area.

Habitat conditions would probably increase, or at a minimum, remain constant throughout the South Platte study area but could decrease on the North Fork study area.

Fishery Management - Special management areas would continue, with stocking and normal regulations maintained in most areas. Stocking of catchable fish could continue in normal regulation areas, while a variety of management options would be considered to produce quality fisheries in the special regulation areas. However, the designation of the South Platte segments to more restrictive use, and possibly improved habitat conditions may warrant a change in regulation to reflect the increased fishery potential.

Attempts would continue to reduce erosion and subsequent sedimentation in the river. Habitat improvement techniques may be used to improve riparian and stream channel conditions, to provide a higher quality habitat.

Angler Use - Angler use may or may not increase. The increased desirability of the area to visitors that are interested in experiencing a higher quality and more pristine fishery will probably draw more people to the area. There are areas present in the system that provide both experiences, and both can have high or moderate use. The quality of use will increase as a result of this designation along the South Platte.

5.4 Wildlife

As described in the affected environment section, the study area contains a diverse mix of vegetation from wetlands to upland forests. This mix of vegetation creates diverse habitat for wildlife to help meet their feeding, cover and breeding requirements. All of the acres within the study corridor are considered wildlife habitat except for the areas occupied by roads and facilities. Segments C, D, E, and H have

been determined to possess outstandingly remarkable values for wildlife.

Designation of the study area, or lack of designation will provide varying amounts of protection for wildlife habitat and will affect the management of the corridor for wildlife in the future.

Alternatives providing the best protection for wildlife habitat, in order, from most protective to least protective are: Alternative B, C, D, J, F, G, I, and A1. This is based on the number of river miles that are protected as well as the significance of the wildlife or habitat within those river miles.

During scoping, the public raised the issue of the effects of designation on downstream threatened and endangered species such as the whooping crane, piping plover and least tern and on associated habitat of the sandhill crane. If the study area, or segments of the study area are designated, the construction of a federally authorized dam and reservoir on those segments would be precluded. Currently, the study segments are free-flowing. With designation, they will continue to be free-flowing and flows exiting the study area, presumably, would not be significantly altered. Wild and Scenic designation will not alter existing downstream water allocations or determine the quantity of water that eventually reaches habitats of downstream threatened and endangered species. Without Wild and Scenic designation, future dam and reservoirs proposals could be considered. If one is proposed that would "cause a new depletion or facilitate the continued depletion" of the South Platte River, consultation with the U.S. Fish and Wildlife Service (Service) through Section 7 of the Endangered Species Act would be required. The Service would determine the effects of the proposed project on downstream species such as the whooping crane.

Alternative A1 - No Action

In this alternative, the current management activities that affect wildlife and its habitat will not change. The Forest Plan will continue to be the primary document guiding management of the study area. Recreation will continue to be the major management emphasis in the corridor. Fuelwood removal, prescribed fires, the treatment of noxious weeds, and cattle grazing are some of the management activities that will continue as they have in the past. The Colorado Division of Wildlife will continue to enforce

its regulations as it has in the past. Any proposed project that may affect TES species will continue to be subject to the Endangered Species Act and Forest Service Sensitive Species policy. These laws do not, however, guarantee the protection of a species' entire population or habitat.

Given the predicted population increase within Colorado, the study area will likely experience incremental habitat losses from the development of private lands and development of visitor facilities such as campgrounds, picnic grounds, parking areas, trails, and trailheads on public lands. Increased human activity in the area will also reduce the effectiveness of the habitat. Secondary negative effects include the increased risk of wildfire and the introduction of non-native species, particularly noxious weeds.

There would be low potential for Federal funding for easement and/or fee-title acquisition of riparian areas and other important wildlife habitats from willing sellers as with the other alternatives.

Non-designation under Alternative A1 would not remove the potential for dam and reservoir construction in the study area. While specific impacts would be addressed in detail at the time of such a proposal, past inundation proposals in the study area have determined habitat capability losses for mule deer, elk, bighorn sheep, turkey and beaver; habitat losses of winter range, wildlife concentration areas, migration corridors and lambing grounds; and the loss of diverse vegetation types such as riparian, wetlands, mountain shrubs and mountain grasslands. Habitat for threatened and endangered species such as the peregrine falcon and bald eagle would have been impacted by construction and clearing, inundation of foraging sites, alteration of existing fishery resources, and increased recreation facilities and human intrusions.

Alternative B

This alternative has the potential to provide additional protection for wildlife and its habitat for enjoyment by future generations. This is due primarily to four factors: 1) federally authorized dam and reservoir construction and the associated loss of habitat capability, special habitats (winter range), diverse vegetation types, and threatened and endangered species habitat could not occur, 2) designation would ensure additional protection, inventory, moni-

toring, and potential funding for wildlife values on all segments, 3) the protection and enhancement of the wildlife outstandingly remarkable values would be ensured on all areas where it has been identified (Segments C, D, E, and H), and 4) there would be the potential for additional Federal funding for easement and/or fee-title acquisition of wildlife habitat from willing sellers.

Designation would tend to protect wildlife travel corridors, prohibit new roads and motorized use in "Wild" segments, and limit new construction and new river crossings in "Scenic" segments, which would reduce disturbances to wildlife. This alternative provides additional Wild and Scenic River direction to the Forest Service to manage other resources such as recreation, livestock, transportation and timber in order to protect the wildlife outstandingly remarkable value. Most importantly, less recreation development and road construction could result from this alternative than with any of the other alternatives. This would provide favorable cumulative effects by providing habitat linkage and connectivity with other undeveloped drainages, particularly along Segment C, Wildcat Canyon. Accessibility for future wildlife habitat improvements projects may be constrained, especially in Segment C, Wildcat Canyon.

Alternative C

The effects on wildlife under this alternative would be the same as Alternative B, except that the 10.4-mile section of Segment C would be managed as "Scenic" and not "Wild". This would allow some roads and motorized use in Segment C that would not be allowed under Alternative B. In the past, motorized use of portions of Segment C have impacted riparian and wetland habitat. Unofficial roads have also impacted upland areas, some of which is threatened Pawnee montane skipper butterfly habitat. There would still be favorable cumulative effects by providing habitat linkage and connectivity with other undeveloped drainages but it may not be as effective as Alternative B. The protection and enhancement of the wildlife outstandingly remarkable values would be ensured on all areas where it has been identified (Segments C, D, E, and H).

Alternative D

The effects on wildlife under this alternative would be the same as Alternative B, except that the

22.9-mile section H of the North Fork would not be recommended for designation. The effects for Section H would be the same as with Alternative A1. The protection of the wildlife outstandingly remarkable values would be ensured in Segments C, D, and E, but not in Segment H.

Alternative F

The effects on wildlife under this alternative would be similar to Alternative D except that an additional 2.6-mile area on the North Fork would be recommended for designation (Segment H2), a 19.5-mile segment of the South Platte downstream from the Wigwam Club property (Segment E) would not be designated, and two small sections totaling 6.3 miles around Lake George would not be designated. The effects would be the same as Alternative B for the designated segments and the same as Alternative A1 for the non-designated segments. The protection of the wildlife outstandingly remarkable values would not be ensured on the South Platte downstream from the Wigwam Club property (Segment E), but only in Segments C and D.

Alternative G

The effects on wildlife under this alternative would be identical to Alternative B on the South Platte upstream from Cheesman Reservoir, and identical to Alternative A1 on the North Fork and the South Platte downstream from Cheesman Reservoir. The protection of the wildlife outstandingly remarkable values would not be ensured downstream from Cheesman Reservoir and on the North Fork (Segments D, E, and H).

Alternative I

The effects on wildlife under this alternative would be identical to Alternative C upstream from Corral Creek, and identical to Alternative A1 downstream from Corral Creek. The protection of the wildlife outstandingly remarkable values would not be ensured on the South Platte downstream from Corral Creek and on the North Fork (Segment D, E, H, and 4.4 miles of Segment C). Only 6.0 miles of Segment C would receive protection of the wildlife outstandingly remarkable values.

Alternative J - Proposed Action

The effects on wildlife under this alternative would be the same as Alternative D, except that the 3.0-mile section of Segment C would be managed as "Scenic" and not "Wild". This alternative would allow some roads and motorized use in this 3.0-mile segment C that would not be allowed under Alternative B. In the past, motorized use of portions of Segment C have impacted riparian and wetland habitat. Unofficial roads have also impacted upland areas, some of which is threatened Pawnee montane skipper butterfly habitat. There would still be favorable cumulative effects by providing habitat linkage and connectivity with other undeveloped drainages but it may not be as effective as Alternative B. Like Alternative D, the protection of the Wildlife Outstandingly Remarkable Values would be ensured in Segments C, D, and E, but not in Segment H.

5.5 Social and Economic Considerations

Designation of river segments under the Wild and Scenic Rivers Act could affect the metro areas of Denver or Colorado Springs and local communities near the corridors. These effects could include water supplies and associated costs, recreation-generated jobs and income, production of forest commodities, such as timber and minerals, and revenue/cost implications to local governments. Effects on population and economic growth are not discussed here (see Section 2.18).

Effects Common to All Alternatives

Local communities would continue to see a 3 percent or 4 percent growth in recreation and associated expenditures at local businesses. Small changes in recreation due to designation would not result in significant changes in local jobs and income. Production of timber and minerals from the study area and consequent jobs associated with the production would be negligible. For these reasons, local communities near the study corridors should expect the same changes in business employment and income regardless of the alternative.

Because recreation use is not expected to change dramatically with any level of designation, counties should not expect significant changes in road or law

enforcement costs associated with each alternative. Counties may decide that some zoning changes may be necessary with designation; the cost to make and maintain these changes were not estimated, but are not expected to be significant.

Forest Service receipts from sales of timber or recreation use fees over the foreseeable future are very small. Consequently, counties that share in Forest Service receipts, receive payments in lieu of taxes (PILT), or receive sales tax receipts from concession-operated Forest Service recreation sites, should expect the same negligible changes regardless of the alternative.

Amenities and the quality of life are often associated with the protection of outstandingly remarkable values, whether accomplished through formal river designation or not. Dollar expressions rarely capture and convey those values adequately. No attempt is made here to quantify those values in dollar terms. The reader is encouraged to consider those values when reading sections covering recreation, scenery, cultural resources, wildlife, and fisheries.

Alternative A1 - No Action

The Colorado Division of Local Government and the Denver Regional Council of Governments have incorporated reasonably foreseeable actions in their projections of population growth in the area of influence. For this reason, cumulative socio-economic effects have been incorporated into the No Action alternative. Projected population changes to 2020 of about 1.25 percent annually and associated effects (e.g. water supply needs) would not be considered significant. This determination is made when considering very high growth rates of the late 1970s or early 1990s, and their associated effects. Effects described under other alternatives are incremental changes.

Opportunities for developing and managing additional surface water supplies through dams and reservoirs would not be precluded. With all opportunities retained, costs to water providers (and passed on to metro area residents and businesses) would be the lowest possible. Even though the South Platte is one of the most regulated rivers in the county, community uses of water in the South Platte, such as Mayor Webb's initiative to maintain flows near downtown, would have the maximum opportunity to succeed. Calls on the river by the

U.S. Fish and Wildlife Service for downstream uses by the whooping crane in Nebraska would have the least impact of the alternatives.

Alternatives B and C

Opportunities for developing and managing additional surface water supplies through federally authorized dams and reservoirs in the study corridors would be precluded. With such opportunities precluded, future costs to water providers (and passed on to metro area residents and businesses) may be the highest in these alternatives. Because the South Platte is highly regulated, community and other uses of water in the South Platte would likely be limited. Designation could affect how future water obligations can be met. For example, if downstream flows are changed to meet needs for whooping crane habitat in Nebraska, additional costs to water users in the metro area would be likely.

Alternatives D and F

Opportunities for developing and managing additional surface water supplies through dams and reservoirs in the study corridors would be limited, but not precluded. Flow management in the North Fork could be affected. With some opportunities precluded, costs to water providers (and passed on to metro area residents and businesses) would be higher than Alternative A but lower than B or C. Because the South Platte is one of the most regulated rivers in the county, community and other uses of water in the South Platte would likely be limited. New obligations for South Platte water, such as those anticipated by the whooping crane in Nebraska, may have a significant impact because of designation. Additional costs to water users in the metro area are likely because of these obligations. Cumulatively, these effects may be significant.

Alternatives G and J (Proposed Action)

Opportunities for developing and managing additional surface water supplies through dams and reservoirs in the study corridors would be limited, but not precluded. Flow management in the North Fork would not be affected. With some opportunities precluded, costs to water providers (and passed on to metro area residents and businesses) would be higher than Alternative A but lower than B through F. Because the South Platte is one of the most regulated rivers in the county, community and other uses

of water in the South Platte may be limited. New obligations for South Platte water, such as those anticipated by the whooping crane in Nebraska, would be far less likely to have a significant impact because of designation. Additional costs to water users in the metro area would not be likely because of these obligations. Cumulatively, these effects are not likely to be significant.

Alternative I

Nearly all opportunities for developing and managing additional surface water supplies through dams and reservoirs would not be precluded. With nearly all opportunities retained, future costs to water providers (and passed on to metro area residents and businesses) would be the lowest possible of the alternatives except for A1. Even though the South Platte is one of the most regulated rivers in the county, opportunities for community uses of water in the South Platte, such as Mayor Webb's initiative to maintain flows near downtown, would not be foreclosed. Calls on the river by the U.S. Fish and Wildlife Service for downstream uses by the whooping crane in Nebraska would have the minimum impact. Additional costs to water users in the metro area would not be likely because of these obligations. Cumulatively, these effects are not likely to be significant.

5.6 Recreation

Changes in river management could affect recreational use of the river. Recreation use of the area has an economic, social, and biological influence on the local counties.

Effects Common to All Alternatives

In all alternatives the State's authority over boating safety is unaffected. Law and regulation regarding boating on rivers, including passage of watercraft through reaches bounded by private lands, would be applicable in all alternatives.

Alternative A1 - No Action

This alternative accommodates the current recreation use patterns as directed by the Forest Plan but allows for more recreation developments in the area. New recreational facilities would be analyzed on a case by case basis for consistency with the Forest

Plan. Commercial outfitting and guiding would continue to be administered by special use permit. Additional operations may be permitted if consistent with the Forest Plan.

Recreation use is expected to continue to increase annually, but would likely increase somewhat less rapidly than with the Wild and Scenic River designation proposed in Alternatives B through J. Road construction and timber harvest under the Forest Plan could reduce the opportunities for solitude and primitive recreation experiences in the potential "Wild" and "Scenic" sections of the study corridors. The Recreational Opportunity Spectrum (ROS) for the study corridors would remain Rural for Segments A, B, E, and H; Semi-Primitive motorized for Segment C from Corral Creek to Vermillion Creek; and Semi-Primitive non-motorized on Segment C from Corral Creek to Cheesman Reservoir and on Segment D.

Motorized off-highway vehicle (OHV) recreation opportunities in the potential "Wild" segments would continue to be available (especially the areas of current OHV use such Wildcat Canyon. Additional motorized opportunities including opportunities for sightseeing would become available with any new road construction in the study corridors.

This alternative leaves open the potential for major dams, diversions, and water developments in the study corridors. If this should occur, those recreation opportunities based on the freeflowing river as currently exists could be irretrievably lost.

If no additional water resource projects were to occur, recreation uses are expected to increase by 3-4 percent annually on National Forest System lands. Extensive partnership efforts with Denver Water, Colorado Division of Wildlife, four-wheel drive clubs and other organizations would continue to provide quality recreation opportunities and additional resource protection in the area.

Opportunities to provide additional recreation facilities along the study corridors and in areas including Segment H2 of the North Fork and Segment C of the South Platte would not be affected.

Alternative B

Annual recreation use on National Forest System lands is expected to increase slightly over Alterna-

tive A1 as rivers receive more publicity through designation. If designation does attract more users to the river corridor, and mitigation measures were not taken, it could cause cumulative impacts such as habitat degradation, and visible impacts such as vegetation loss at campsites and foot trails, bank erosion, and increased litter.

A river management plan would be developed which would include mitigating measures to protect the natural resources in the corridor from increasing recreation use. Any increases in use would be monitored any measures taken to mitigate any impacts on private lands and OR values as determined by the management plan. If necessary, this could include limiting dispersed camping sites, access, parking, or user numbers, or providing appropriate facilities compatible with the classification.

This alternative is likely to maintain the current recreation use patterns, except that motorized OHV use could be reduced in Segment C. Additional measures to protect current recreation values would be specified in a river management plan which would include special measures to protect and enhance the Recreation OR values in Segments A, D, E, and H.

This alternative generally limits developed recreation construction in the river corridors. It precludes the construction of major public-use areas such as large developed campgrounds, administrative sites, and interpretive centers in the "Wild" segments of the river corridors. Recreational development in "Scenic" segments could occur if such structures were screened from the river. Recreational development along "Recreational" segments would allow major public use areas and campgrounds in close proximity to the river as long as the OR values were protected. However, this classification does not require extensive recreation development. Disabled access would be increased as recreation sites are improved in "Recreational" and "Scenic" segments.

The opportunities for solitude in the "Wild" sections in Segments C and D would be enhanced and maximized under this alternative. The ROS would move from Semi-Primitive Motorized to Semi-Primitive Non-Motorized and Primitive in these areas. Motorized recreation opportunities in these areas would be prohibited. This would ensure the protection of the high quality non-motorized dispersed recreation

opportunities in these areas, but would eliminate a very popular Sem-Primitive motorized experience in Wildcat Canyon (Segment C). The ROS would move from Rural to Semi-Primitive Motorized or Semi-Primitive non-motorized depending on the management plan for the area. This would lead to the protection of the area's backcountry nature and would discourage, but not prohibit, roads and recreation development in these segments. The ROS spectrum would remain Rural for Segments A, B, E, and H1.

Even more extensive partnership efforts with Denver Water, Colorado Division of Wildlife, four-wheel drive clubs and other organizations would be pursued with potential additional Federal funding to provide additional protections to the recreational OR value in the area.

This alternative prohibits the potential for federally approved dams, diversions, and water development projects in the river corridors. Recreation opportunities and activities dependent on the free-flowing river would be preserved.

Alternative C

The effects of Alternative C would be similar to Alternative B except that this alternative is most likely to maintain the current recreation use patterns, including motorized OHV use in Wildcat Canyon.

The opportunities for solitude in the "Wild" section in Segment D would be enhanced and maximized under this alternative. The ROS would move from Semi-Primitive Non-Motorized to Primitive in these areas. Motorized recreation opportunities in these areas would be prohibited. This would ensure the protection of the high quality non-motorized dispersed recreation opportunities in these areas. The ROS would move from Rural to Semi-Primitive Motorized or Semi-Primitive Non-Motorized depending on the management plan for the area. Segment C would remain Semi-Primitive Motorized. This would lead to the protection of the area's current OHV use and backcountry nature and would discourage, but not prohibit, new roads and recreation development in this segment. The ROS class would remain Rural for Segments A, B, E, and H.

Alternative D

The effects of this alternative are the same as Alternative B on the South Platte corridor and the same as Alternative A1 for the North Fork corridor.

Alternative F

The effects of the alternative would be similar for National Forest System lands as with Alternative B except that no protections from major dams, diversions, and water developments and no protections for recreation OR values would be provided downstream from the Wigwam Club property on the South Platte and the North Fork in Segments H3 and H1.

Alternative G

The effects of this alternative is the same as Alternative B on the South Platte corridor upstream from Cheesman Reservoir. It is the same as Alternative A1 for the South Platte corridor downstream from Cheesman Reservoir and for the entire North Fork corridor.

Alternative I

The effects of this alternative is the same as Alternative C on the South Platte corridor upstream from Corral Creek. It is the same as Alternative A1 for the South Platte corridor downstream from Corral Creek and for the entire North Fork corridor.

Alternative J - Proposed Action

The effects of the alternative would be the same as Alternative D except for a .3-mile section of the South Platte downstream from the confluence which is the same as Alternative A1 and a 3.0-mile segment of Wildcat Canyon which would be the same as Alternative C. Segment C would remain Semi-Primitive Motorized. This would lead to the protection of the area's current OHV use and backcountry nature and would discourage, but not prohibit, new roads and recreation development in these segments.

5.7 Scenery

Changes in river management could affect the scenic qualities of the river corridor.

Alternative A1 - No Action

Visual Condition Categories (VCC) under Alternative A1 would maintain the current conditions in the study corridors as specified in the Forest Plan (see Chapter II - Scenery). The VCCs for the area along the river in the study corridor ranges from II to V throughout the river corridor with Type II predominating. These represent areas in which changes in the landscape are not visually evident to the average person unless pointed out. Type IV represent areas in which changes in the landscape are strong and would be obvious to the forest visitor. The area along the river in Elevenmile Canyon (Segment A), the South Platte downstream from the Wigwam Club (Segment E), and the North Fork downstream from Ferndale to the confluence (most of Segment H3) meet this category. Type V represents areas in which changes in the landscape are strong and would be obvious to the average visitor. The South Platte around Lake George (Segment B) and the North Fork upstream from Ferndale (Segments H1 and H2) generally meet this category. What this means is that the visual qualities of the National Forest System and BLM lands already are high. In addition Denver Water manages most of its lands in the area to protect the water quality of their water delivery system, provide recreation, and to protect other natural resources in the area which lead to protection of the area's scenic qualities. Current county zoning has also been effective in limiting development in most segments. The potential for future water resource developments would not be foreclosed. In the event a dam were constructed, the resulting reservoir would result in an irretrievable loss of the free-flowing nature and existing scenic character of the rivers.

There would not be additional funding to manage scenery in the corridors or for Federal technical assistance to landowners. Federal easement and/or land exchange from willing sellers to protect scenery under the Wild and Scenic Rivers Act would be unlikely.

Alternative B

Under this alternative, the Forest Service would prepare a management plan which would review and modify the current VCCs, both inside and outside the study corridors to ensure the protection and enhancement of OR values. Special attention would

be given to scenery on the South Platte in Segments A and C where it is an OR value. Federal funding and technical assistance may be earmarked for the corridor, in addition to funding already available under existing National Forest programs.

Visual Quality Objectives (VQOs) could be more restrictive than with Alternative A1 and could move toward Preservation in the "Wild" areas, remain Retention in the Foreground, and change for the "Scenic" segments from Partial Retention to Retention in the Middleground (areas seen outside the study corridor). VQOs of the "Recreational" segments would remain the same as with Alternative A1.

These changes would have an affect on the amount and type of potential timber harvest and type of facilities and recreational developments allowed both in the corridors and as seen in the middle-ground areas outside the corridors. Under these more restrictive VQOs, vegetation management treatments both within and adjacent to the corridors would not be visible from roads and recreation areas within the corridors. No scheduled timber harvest would be allowed within the "Wild" segments and silvicultural treatments within the other segments and in areas visible from the corridors would be limited by the VQO. Since future mining claims would be prohibited in "Wild" segments and additional restrictions placed on timber harvest, roads, and recreational developments, this alternative would provide better protection of scenery over a greater area than with other alternatives.

There is a greater risk to maintaining the existing visual quality over time as posed by potential catastrophic fires and insect and disease than with Alternative A1. The results may or may not be perceived as negative, depending on the size, location, and preferences of the viewer. The risk will be diminished over time as prescribed fire is employed to improve forest stand conditions, but not as much as with Alternative A1 due to limitations on road construction, timber harvest, and silvicultural treatments.

There would be a greater likelihood of additional funding to improve scenery in the recommended river corridors and for Federal technical assistance. Federal easement and/or land exchange from willing sellers to protect scenery under the Wild and Scenic Rivers Act could occur.

No federally approved dams could be constructed in the corridors thus preventing any irretrievable loss of the existing scenic character of the rivers due to reservoirs or dam construction.

Alternative C

The effects of this alternative would be similar to Alternative B, except there would be 10.4 less miles of "Wild" and 10.4 miles of "Scenic" classifications. This alternative still provides greater protection of scenery than with all alternatives except Alternative B.

Alternative D

The effects of this alternative would be similar to Alternative B for the South Platte and similar to Alternative A1 for the North Fork. This alternative provides greater protection of scenery than alternatives A1, F, G, I, and J.

Alternative F

The effects of this alternative would be similar to Alternative B upstream from the Wigwam Club property and similar to Alternative A1 for the North Fork and the South Platte downstream from the Wigwam Club property. This alternative provides greater protection of scenery than alternatives A1, G and I.

Alternative G

The effects of this alternative would be similar to Alternative B upstream from Cheesman Reservoir and similar to Alternative A1 for the North Fork and the South Platte downstream from Cheesman Dam. This alternative provides greater protection of scenery than alternatives A1 and I.

Alternative I

The effects of this alternative would be similar to Alternative B upstream from the Wigwam Club property and similar to Alternative A1 for the North Fork and the South Platte downstream from the Wigwam Club property. This alternative provides less protection of scenery than with any alternatives except Alternative A1.

Alternative J - Proposed Action

The effects of this alternative would be similar to Alternative D except that one would be a 3.0-mile "Scenic" rather than "Wild" portion of Segment C in Wildcat Canyon and a .3-mile portion of the South Platte below the confluence would not be included in the designation. This alternative provides greater protection of scenery than alternatives A1, F, G, and I.



One of the many scenic vistas along the South Platte in the Pike National Forest. National Forest System land makes up more than sixty percent of the study corridor.

5.8 Cultural Resources

Cultural resources have been identified within or adjacent to all river segments and corridors considered for this analysis. The North Fork corridor (Segment H) contains the North Fork Historic District which has been identified as outstandingly remarkable. There are other historic and prehistoric properties within the corridors such as the grade and associated features of the Midland Railroad in Elevenmile Canyon (Segment A), which although not considered outstandingly remarkable, are or may be eligible to the National Register of Historic Places. None of the alternatives contain any proposed actions that would physically impact or otherwise directly affect any historic or prehistoric cultural property. Alternatives that specify wild and scenic designation for portions of either or both the North Fork or the South Platte may lead to future actions that would provide additional protections for cultural resources.

Alternative A - No Action

Alternative A would maintain the current conditions and management strategies without the protections afforded by wild and scenic designation. There would be no direct impacts on cultural resources with the implementation of this alternative. Significant (National Register or State Register eligible cultural properties or "sites") would be protected on federal or state lands, and sites on private lands would be unprotected. There would be no mandate for enhancement of significant sites, for example, for site interpretation or other public use. However, there would still be the opportunity for partnerships with other governments and interested parties that could include interpretation and protection of cultural resources.

Implementation of this alternative could allow federally approved dam construction, diversions, or other water developments within the study corridors

which, if constructed, could potentially affect significant cultural sites.

Alternative B

Implementation of Alternative B would designate the eligible and suitable portions of the study corridors at their most protective inventoried classifications. Management plans would be developed for each river corridor; the plans would include provisions for the protection and enhancement of outstandingly remarkable resources, including cultural properties. Implementation of Alternative B would have no direct effects. Indirect effects would be beneficial: Implementation of the management plans would mean more protection for cultural sites and could encourage interpretation of the outstandingly remarkable sites, for example, the North Fork Historic District. Cultural surveys implemented through the provisions of the corridor management plans would lead to the identification, protection, and interpretation, if warranted, of currently unknown significant sites. The prohibition of dams and additional limitations on roads, timber harvest, scenery intrusions, motorized use and mining entry would further protect cultural sites.

Alternative C

Designation would be essentially the same as Alternative B, although, the segment from Beaver Creek to Cheesman Reservoir would in the "Scenic" classification. The effects on cultural resources should be very similar to those described for Alternative B.

Alternative D

There would be no additional protection of significant sites on the North Fork. All sites, whether on government or private lands on the North Fork, would be vulnerable to dam construction and inundation. In this eventuality, some cultural resource values could be preserved through mitigation. There would be no provisions for added protection or interpretation of cultural sites on the North Fork that might occur if the river corridor was designated. Indirect effects on cultural sites located within the South Platte main stream corridor will be the same as described for Alternative B.

Alternative F

Selection of Alternative F would designate four segments on the South Platte and one segment on the North Fork; private lands and the stretch of the river contained in the Denver Water Board's 1931 Reservoir reserve would not be designated. There would be no direct effects resulting from selection of this alternative. The potential for indirect effects would be increased because of the greater likelihood of dam construction and derivative destruction and inundation of cultural sites. Fewer cultural sites would be protected, interpreted or otherwise enhanced when compared to Alternatives B, C, D, or J. The cultural sites in the segments of the South Platte corridor upstream from Cheesman Reservoir including Midland Railroad grade would be afforded the additional protection and enhancements inherent in designation.

Alternative G

Implementation of Alternative G would designate the South Platte corridor upstream from Cheesman Reservoir. The effects of implementing this alternative would be very similar to those estimated for Alternative F. The only difference is that the cultural resources within the single segment on the North Fork designated in Alternative F including the grade of the Denver, South Park, and Pacific Railroad, would not be afforded additional protection.

Alternative I

Alternative I is very similar to Alternative G. The effects are the same as for that alternative, except that cultural properties in 4.4 additional miles of Wildcat Canyon (Segment C) would not benefit from the added protection afforded by Wild and Scenic River designation.

Alternative J - Proposed Action

Alternative J is very similar to Alternative D. The effects are the same as for that alternative, except that .3 miles of the South Platte downstream from the North Fork confluence would not be protected. Thus the entire North Fork including the South Platte Hotel would not be afforded additional protections under this alternative.

5.9 Water Developments Construction of Dams or Diversions for Water Storage

Maintenance of free-flow, the protection of water quality, and the protection and enhancement of the area's outstandingly remarkable values is a primary concern when considering streams for inclusion into the National Wild and Scenic Rivers System. On the study segments, the principle threat to the area's natural resources would be their inundation by the construction of dams or diversions that would deplete the flows. Secondary threats would include dams, diversions and other water developments off site.

On the other hand, increased water supply needs for the Denver metropolitan area and other Front Range communities is forecasted. Changes in how the rivers are managed will affect opportunities for water storage, diversions, and dam construction.

There would be no effect on Denver Water's approved ROW for a 346,000 acre-foot reservoir near the confluence of the North Fork and the South Platte.

Alternative A1 - No Action

There would be no Federal prohibitions for the construction of dams under the Wild and Scenic Rivers Act. Additional dams, water impoundments, and diversions could occur within the constraints of a number of existing State and Federal regulations.

Proponents of such projects argue that construction of dams could provide additional water storage to help meet the growing residential and industrial needs of the Denver metropolitan area, a more efficient water delivery system, additional reservoir-based recreation, additional flood control, groundwater recharge through the conjunctive use concept, and additional hydropower generation which would contribute to local and regional power supplies.

Natural resources, including some of the area's outstandingly remarkable values would continue to be subject to the potential effects of inundation by reservoirs or by the construction of dams or diversions that would affect the flows. In addition, private land-

owners could be displaced within the study corridors.

The opportunity to implement current and planned water developments such as channel straightening, bank stabilization, diversions, and other modifications of the waterway would not be subject to any mitigation under the Wild and Scenic Rivers Act. Current water operations, releases, flows, timing, storage, importation of water, exchanges, and the management of the current and future water delivery system could not be affected by Wild and Scenic River designation. This would result in less future costs to water suppliers in the Denver metropolitan area and less impacts to private lands from property damage.

Current water quality standards and flow management practices would apply and no additional water quality standards or flow restrictions would be imposed though Wild and Scenic River designation. Thus, there would be no impact from the Wild and Scenic Rivers Act on the ability to operate and develop the North Fork and the South Platte to fully use existing and future water rights.

Opportunities to replace portions of communities' dependence on groundwater with surface supplies or potentially recharging aquifers with excess surface water in the South Platte basin would not be foreclosed.

The demand for conversion of existing agricultural water supplies to municipal and industrial use may be less than with other alternatives which reduce opportunities for new water storage projects in the study corridors.

Alternative B

The inclusion of all study segments into the National Wild and Scenic Rivers System would prohibit the licensing by the Federal Power Commission of the construction of any dam, water conduit, reservoir, powerhouse, transmission line, or other project works under the Federal Power Act. In addition, no department or agency of the United States would assist by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river was designated. The most significant effect of designation under the Wild and Scenic Rivers Act would be to prohibit future im-

poundment of these rivers by any major water resource project requiring Federal approvals, subject to prior existing rights.

Water suppliers in the Denver metropolitan area would have to plan for any new water storage, diversion and transmission facilities to be located outside the designated corridor. Opportunities to replace portions of communities' dependence on groundwater with surface supplies or recharging aquifers with excess surface water in the South Platte basin by the construction of reservoirs in the study corridors would be foreclosed. The demand for conversion of agricultural water supplies to municipal and industrial use may be greater than with the other alternatives since new dams could not be built in the designated corridor to increase water storage.

The opportunity to implement ongoing and planned water delivery improvements such as channel modification, bank stabilization, diversions, and other modifications of the waterway would be subject to an evaluation of effects on the free-flowing condition of the river, and the protection and enhancement of the outstandingly remarkable values. Most operations and facilities that existed prior to designation could continue. New activities however, could not occur unless their impacts could be mitigated, or they contribute directly to enhancing the outstandingly remarkable values. On the North Fork this could lead to impacts on the management of the current and planned delivery system, increased costs, additional Federal agency review of maintenance projects, and reductions of flows in low flow periods. On the South Platte, since there are few, if any, current or planned water delivery improvements necessary to maintain the system, there would be little or no impact to the system's operation management.

Designation would lead to an increase in public awareness of the area and thus more stringent environmental concerns and involvement of local citizens and environmental groups in its management. This would better protect the area's values but could add increased costs, regulations, restrictions, and possible litigation to existing water delivery in the area.

Designation would also require that any direct affects of activities tributary to or above a designated river will need to be planned and implemented with its impacts to the designated reaches in mind. If

impacts to the designated river can be directly related to off-reach or upstream reach activities then those project must have impacts mitigated. This could require increased Visual Quality Objectives outside the designated corridor and limitations of projects that would inundate or unreasonably diminished the values for which the river segments were designated.

There would be no effect on Denver Water's approved ROW for a 346,000 acre-foot reservoir near the confluence of the North Fork and the South Platte, because the Wild and Scenic River designation would be subject to that reservation. However, if additional discretionary Federal approvals were required, Denver would not be able to obtain these approvals because the Act prohibits all Federal agencies from approving any permit for a water resources project that would have a direct and adverse effect on the values for which the segment was designated.

The effect on land values and private development in the corridor is highly speculative. The corridor lies within one of the fastest growing counties in the United States. If the corridor were designated, the value of private lands may increase if potential purchasers and developers were less concerned about future inundation. If Denver Water determined not to construct a reservoir, then its extensive land holdings in the corridor might be considered excess and sold or exchanged with another entity. If these lands did go into private ownership, then there is a likelihood that the resulting development of additional homes, private recreation businesses and commercial enterprises on what is now vacant land would change the current recreation and visual characteristics of the river corridor. It is also possible that such lands could be exchanged into Federal ownership, with the result being greater limitation to future development.

Designation assures the current water quality of the streams. The Clean Water Act provides authority for States to classify streams as to beneficial use and describe the water quality parameters that will be tested to monitor that classification quality. It is the State of Colorado policy to classify waters in designated wild rivers as constituting an outstanding natural resource and, therefore, subject to anti-degradation rules. If the waters within the designated reach do not meet state standards for the beneficial use classification of the stream then

there would need to be an improvement process. This would lead to definite water quality improvements but would add additional costs to landowners from whose lands the contaminants arise. Under the Wild and Scenic Rivers Act water quality is automatically raised to an anti-degradation category under State standards. Although it is unlikely that this would affect the current water delivery system, it is possible under a worst-case scenario that improvements in water quality caused by the importation of water into the system could cause an increase in water quality that would have to be maintained. This could lead to some major impacts to water delivery and impact the exercise of water rights, limit management options of the water delivery system, and increase costs. If water quality is below current standards, this could require water quality improvements before importation which could limit management options and increase costs.

Generally speaking, existing water rights are not affected by designation. The Forest Service would likely file for a water right on unappropriated flows to protect river values from adverse changes associated with the possible filing for water rights by other parties. This would not impact existing uses of water rights but would prohibit future water development.

It is highly unlikely, but possible under the Wild and Scenic Rivers Act, that the Forest Service would condemn and purchase existing water rights. This right is limited because the Act specifies that designation shall not be construed as a reservation of the waters of such streams for purposes other than those specified in the Act or in quantities greater than necessary to accomplish these purposes. Water rights have status as a property right and cannot be taken without just compensation.

It is also possible under the Wild and Scenic Rivers Act that the nature and timing for the exercise of existing rights may be also be altered if required to protect the values for which the river was designated. No specific potential flow or timing changes were evaluated in the DEIS. Because there are myriad possible ways water right holders can implement their rights, including trades and exchanges with other holders and other water delivery systems, it is not possible to predict whether there would be any actual effect on or cost to holders of existing rights.

Designation could impact timing and flow quantity options at existing water resource facilities. While

natural ranges of flows, including high flows, are needed to maintain stream channels, increasing the duration of high flows (at or near bankfull discharge) well beyond natural ranges has been shown to damage stream banks, so designation could result in regulations that limit the artificially-extended durations of high flows. This would provide better protection to the streambanks and aquatic resources, but could limit timing and flow options for water delivery and storage. Low flows within the study corridors have for the most part been favorably affected by releases from upstream impoundments, because the resulting flows are above the historic low flow levels. These higher than normal low flows are beneficial to the aquatic resources of the river. However, if timing or volume of releases were to go below historic low flow levels, there could be adverse impact to aquatic resources. If such operational changes were to occur and the river were designated as a Wild and Scenic River, then the Forest Service could seek regulations that would ensure aquatic resource protection. These regulations could affect timing and quantity of flow options for water delivery and storage.

Alternative C

The effects of alternative C would be the same as Alternative B.

Alternative D

The effects of the inclusion of the South Platte into the National Wild and Scenic Rivers System would be the same as Alternative B for the South Platte and the lower 1/4 mile of the North Fork. They would be the same as Alternative A, for the remainder of the North Fork with the following exceptions. Since the extreme lower portion of the North Fork would lie within the designated corridor the same potential restrictions on water quality, timing, and flows specified under Alternative B could also apply to this small 1/4-mile section of river. These restrictions could indirectly impact the operation of the entire river below the Roberts Tunnel and flows brought through the tunnel just as if the entire North Fork study river were designated.

Alternative F

The effects of adding five segments of National Forest System lands within the study rivers would have similar effects as Alternative B above Cheesman

Reservoir and on the North Fork. No private lands would be involved so many of Denver Water's current operations in the North Fork would not be subject to review for compliance with the Wild and Scenic Rivers Act unless they inundated or unreasonably diminished the values for which the upstream or downstream wild and scenic river segments were designated. Potential water storage opportunities in the undesignated segments are not foreclosed.

Alternative G

This alternative would have the same effects as Alternative B on the South Platte above Cheesman Reservoir. Potential water storage opportunities in the undesignated segments are not foreclosed.

Alternative I

This alternative would have the same effects as Alternative B on the South Platte above Corral Creek. Potential water storage sites in the undesignated segments are not foreclosed.

Alternative J - Proposed Action

This alternative would have the same effects as Alternative D on the South Platte above the North Fork confluence and the same effects as Alternative A for the North Fork and the South Platte below the North Fork confluence. Potential water storage sites in the undesignated segments are not foreclosed.



The community of Trumbull is located along the South Platte River in Segment E.

5.10 Landowner Rights

Changes in how the rivers are managed may affect landowners latitude in managing and/or developing their property.

Some of the landowners' concerns are perceived rather than actual, since designation has little affect on private land. It could however, have a definite affect on some water and storage rights.

Effects Common to All Alternatives

The ability of a landowner to reduce impacts from recreationists, prevent trespass, as well as any changes to a landowner's liability in the event a recreationist is hurt while on private land is not affected in any alternative. Under all the alternatives, private landowners are not required to allow members of the public to use private lands. Recreation uses are expected to increase on National Forest System lands with or without designation. It is possible that designation may slightly increase this use and thus, potential trespass, since rivers receive more publicity through designation. Any increases in use would be monitored and measures taken to mitigate any impacts on private lands and OR values as determined by the management plan. If necessary, this could be mitigated by increased partnerships, signing, and Federal funding in the designated area or by limiting dispersed camping sites, access, parking, or user numbers.

Effects to local zoning are the same for all alternatives but may vary among the counties. In Colorado, counties have a substantial degree of latitude in developing their land use planning programs but are subject to overall State zoning direction. Designation does not give the Federal Government any authority to change local zoning, but the Forest Service may work with the counties to try to influence zoning in areas where the identified OR values are threatened in all alternatives except in Alternative A1.

Because more than 50 percent of the lands in the corridor are publicly owned, there would be no possibility for condemnation of private lands for fee-title or for scenic easements.

The Forest Plan encourages coordination of land use activities with intermingled landowners and cooperation in developing mutually needed road systems. There is no legal authority, however for extending that cooperation to areas on about 1/3 of the North Fork corridor that lies outside the National Forest. The Plan also stresses the importance of providing reasonable access across the National Forest to private parcels surrounded by public land. The Forest Service has no authority to regulate construction, economic activity, or zoning on private land. The Forest Service also has no authority to regulate road building on private land.

The Forest Plan encourages land exchanges with willing landowners to acquire private parcels in areas where water quality, wildlife, fisheries, recreation, geologic, scenic, or cultural values are of high importance, as well as in those areas where resource values may benefit.

The regulation of timber harvest on private lands would come under State Forestry Regulations.

Alternative A1 - No Action

For those landowners who place a high value upon stability of land use, the continuance of current management increases their sense of self determination as compared to other alternatives which add more perceived regulation and bureaucracy. The likelihood of incompatible uses on adjacent lands affecting their own property would be diminished.

There would be no additional need for landowner contact with with any additional local, State or Federal agencies.

Alternative B

This alternative adds all eligible study segments of the study rivers to the National System. The Federal lands in the corridors would be managed by the Forest Service to protect free-flow and to protect and enhance the OR values of each river segment. The effects on private land would be identical to Alternative A, except that in the event that a proposed activity on private land would adversely affect the OR values or free-flow, the Forest Service would work with the landowner to resolve the conflict. The Forest Service would have no authority to determine zoning or set other restrictions on private lands.

Potential limitations on economically productive activities would remain the same as in Alternative A, except to the extent the Forest Service acquired lands from willing sellers.

Federal administrators can benefit willing landowners through cooperative projects and technical assistance. There would be an additional potential for for willing sellers to be compensated through the sale of easements, yet retain ownership of their land. There would also be potential for landowners to sell their land to the Federal government, potentially benefiting landowners who wish to sell but cannot find other buyers.

There could be some feelings of a loss of self-determination depending on the individual. This would mostly be perceived since the Federal government would have little if any authority over private lands. Some landowners however, would have a positive perception about the increased market that this alternative may generate for their property. To the extent that land use is stabilized and impoundments precluded, landowners also may find owning land within the river corridor more desirable. Because this alternative would be seen as increasing the presence of the Federal Government, it would be perceived negatively by many as an additional layer of bureaucracy and as an additional threat to the autonomy of the residents of the counties.

Community members and corridor users would find their feelings of self determination largely governed by whether they agree or disagree with the management strategy achieved by each individual easement or Federal purchase. Most local landowners favor designation except in the portions of the North Fork River upstream from Buffalo Creek.

For individual landowners, the actual impacts of dealing with the Forest Service should not change from Alternative A, except for the possibility of easement condemnation in extreme cases, and that landowners are assured that dams would not be built.

Federal agency policies specify that acquisition of easements through condemnation is a last resort to protect free-flow and to ensure the protection and enhancement of OR values. Nonetheless, fear of easement condemnation would be heightened by the perception that the Forest Service would have both the funds and the ability to resolve intractable conflicts through condemnation.

Fear of condemnation could be further reduced by the development of a river management plan that identifies the desired future condition of the area.

Alternative C

This Alternative is the same as Alternative B.

Alternative D

The effects of this alternative are the same as Alternative B for the South Platte corridor and the same as Alternative A1 for the North Fork corridor.

Alternative F

The effects of the alternative would be the same as Alternative A1 since there are no private lands in the corridor recommended for designation.

Alternatives G

The effects of this alternative is the same as Alternative B on the South Platte corridor upstream from Cheesman Reservoir. It is the same as Alternative A1 for the South Platte corridor downstream from Cheesman Reservoir and for the entire North Fork corridor.

Alternative I

The effects of this alternative is the same as Alternative B on the South Platte corridor upstream from Corral Creek. It is the same as Alternative A1 for the South Platte corridor downstream from Corral Creek and for the entire North Fork corridor.

Alternative J. - Proposed Action

The effects of the alternative would be the same as Alternative D except for a .3-mile section of the South Platte downstream from the confluence which is the same as Alternative A1.

5.11 Vegetation and Ecology

Changes in river management could affect the vegetation and ecology in the river corridors. Alternatives with the most protection of vegetation and ecology are in order from most protective to least: B, C, D, J, F, G, I, and A.

Alternative A - No Action

The study corridor would continue to be managed according to direction in the Forest Plan. Most of the

corridor is within Management Prescription 2B, where roaded-natural recreation opportunities are the emphasis. In this prescription, vegetation management has to be compatible with the recreation emphasis but some timber harvest could be allowed. Road construction and recreational facilities construction within vegetated areas could also be allowed. Smaller portions of segments E, H2 and H3 are within Management prescription 7A, where timber production is the management emphasis. Timber harvest has already occurred in these areas and there are no plans for future sales at this time. Segment H2 also contains Management Prescription 5B, where big game winter range is emphasized. Any vegetation management has to be compatible with the needs of big game. The Forest Plan and Regional policy would continue to provide protection for threatened, endangered and sensitive (TES) plant species during any project action. No TES plant species are known to occur in the study area. Diverse plant communities and riparian vegetation in the study corridors would be subject to inundation by dams.

Alternative B

Additional emphasis would be placed on the inventory and protection of diverse plant communities along all the recommended river corridors. In addition, the Federal dam prohibitions would ensure the protection of all designated areas from inundation. The Forest Service would prepare a river management plan and administer the recommended rivers under the National Wild and Scenic Rivers Act which would protect and enhance the OR values in the corridor, leading to more protection of the area's ecosystems. Thus, this alternative provides the best protection of vegetation and ecological values than with the other alternatives.

Alternative C

This alternative would be similar to Alternative B, except for the 3.0-mile classification of "Scenic" rather than "Wild" for a portion of the South Platte in Wildcat Canyon (Segment C). Existing off-highway vehicle use would continue and the development of unofficial routes could impact both riparian and upland vegetation. This may be mitigated through partnerships but previous experience has indicated that law enforcement would continue to be needed in the area. Mineral leasing could also occur, caus-

ing some impact on vegetation but this use is very unlikely in the area.

Alternative D

The effects of this alternative would be similar to Alternative B for the South Platte segments and Alternative A1 for the North Fork segments.

Alternative F

The effects of this alternative would be similar to Alternative D except that an additional 2.6-mile area on the North Fork would be recommended for designation (Segment H2), a 19.5-mile segment of the South Platte downstream from the Wigwam Club property (Segment E) would not be designated, and two sections totaling 6.3 miles around Lake George would not be designated.

Alternative G

The effects under this alternative would be similar to Alternative C on the South Platte upstream from Cheesman Reservoir, and similar to Alternative A1 on the North Fork and the South Platte downstream from Cheesman Reservoir.

Alternative I

The effects under this alternative would be similar to Alternative C upstream from Corral Creek, and similar to Alternative A1 downstream from Corral Creek.

Alternative J - Proposed Action

The effects under this alternative would be similar to Alternative D, except for the 3.0-mile section of Segment C where the effects would be similar to Alternative C.

5.12 Timber

Changes in river management resulting from designation have the potential to limit timber management options and opportunities. Additionally, management actions taken in the corridor would have either positive or negative impact upon the health of adjoining timberlands.

Although the actual amount of timber harvested is relatively low, continued withdrawal of additional

suitable acres from the timber base has a cumulative impact on the overall timber supply in the local market area.

None of the alternatives will have any affect on private landowners return from commercial timberlands. Designation could encourage some landowners to lessen timber harvest on private lands within designated Wild and Scenic River corridors. All current land use practices such as timber harvest, as well as home construction, mining, grazing, farming, etc..., could continue. Alternatives with the least impact on the availability of timber resources and the best opportunity to improve forest health are in order: A1, I, C, G, J, D, F, and B.

Alternative A1 - No Action

There would be no direct effects. Timber harvest on Federal lands would proceed under direction specified in the Forests Land and Resource Management Plan. Under this alternative, the study corridors would contain 11,200 suitable acres that are capable of producing a potential of approximately 129,920 cubic feet of wood annually. There has been no commercial harvest however, on Federal lands in the corridors in the past 50 years.

There would be no direct effects on forest health. The existing management direction under the Forest Plan provides for vegetative management to maintain and improve forest health. Where allowed by the Forest Plan, tree stands could be thinned to improve health of individual trees which would provide resistance to various insects and pathogens. Defoliated trees could be removed through sanitation and salvage harvests. Species diversity would be encouraged to provide healthier stands over the long term.

Alternative B

Under this alternative, the 3.1-mile "Wild" section of Segment D in Cheesman Canyon and 10.4-mile section of Segment C would be removed from the suitable base. This would reduce the suitable acres in the corridors by 3,947 acres to 7,253 acres. The corridors could produce approximately 84,135 cubic feet per year.

In those portions of the recommended study corridors with a "Wild" classification opportunities for vegetative management to maintain and improve

forest health would be allowed only under emergency conditions for insect and disease control, fire, natural catastrophe, or public safety. A "Wild" classification would also preclude road construction, and thus increase the cost of managing forest health. In these areas, tree stands could not be thinned commercially to improve health of individual trees which would lead to less resistance to various insects and pathogens. Species diversity would not be encouraged and stand health would be the result of natural events over the long term. The effects on forest health in the recommended study corridors with a classification of "Recreational" or "Scenic" would be similar to Alternative A1, except that there would be some indirect adverse affect on forest health since new road construction and bridge crossings would be more limited and increased visual quality objectives and OR value protection would place more limitations on harvest methods and amounts. Overall opportunities to protect forest health would be more costly under this alternative than all others.

Potential timber production on suitable Federal land in the corridors would be reduced slightly as compared to Alternative A1 due to constraints imposed by designation. These constraints include more restrictive road and bridge access, higher Visual Quality Objectives, and additional measures to ensure the protection and enhancement of OR values.

Timber management, road construction, and other ground-disturbing activities outside the designated river corridors could not diminish the OR values within the corridors. This could pose some limitations on silvicultural techniques which may result in higher cost or reduced volume of harvest in the drainage outside the corridors.

Alternative C

Under this alternative, the 3.1-mile "Wild" section in Cheesman Canyon (Segment D) would be removed from the suitable base. This would reduce the suitable acres in the corridors by 680 acres to 10,520 acres. The corridors would produce approximately 122,032 cubic feet per year.

There might be some direct effects on forest health. In those portions of the recommended study corridors with a "Wild" classification opportunities for vegetative management to maintain and improve forest health would be allowed only under emergency conditions for insect and disease control, fire,

natural catastrophe, or public safety. A "Wild" classification would also preclude road construction on this 3.1-mile segment, and thus increase the cost of managing forest health. In these areas, tree stands could not be commercially thinned to improve health of individual trees which would lead to less resistance to various insects and pathogens. Species diversity would not be encouraged and stand health would be subject to natural processes over the long term. The effects on forest health in the recommended study corridors with a classification of "Recreational" or "Scenic" would be similar to Alternative A1, except that there would be some indirect adverse affect on forest health since road construction and bridge crossings would be more limited and increased visual quality objectives and OR value protection would place a few more limitations on harvest methods and amounts. Overall opportunities to protect forest health would be less costly under this alternative than with Alternatives G, J, D, F, and B.

Potential timber production on suitable Federal land in the corridors would be reduced slightly as compared to Alternative A1 but less than Alternative B, due to constraints imposed by designation. Constraints include more restrictive road and bridge access, higher Visual Quality Objectives, and additional measures to ensure the protection and enhancement of OR values.

Timber management, road construction, and other ground-disturbing activities outside the designated river corridors could not diminish the OR values within the corridors. This would pose some limitations on silvicultural techniques which may result in higher cost or reduced volume of harvest in the drainage outside the corridors.

Alternative D

Under this alternative, the 3.1-mile "Wild" section of Segment D in Cheesman Canyon and 10.4-mile section of Segment C in Wildcat Canyon would be removed from the suitable base. This would reduce the suitable acres in the corridors by 3,947 acres to 7,253 acres. The corridors could produce approximately 84,135 cubic feet per year.

Overall opportunities to protect forest health would be less under this alternative than with Alternatives A1, I, C, G, and J.

Potential timber production on suitable Federal land in the corridors would be reduced slightly as compared to Alternative A1, due to constraints imposed by designation. These constraints may include more restrictive road and bridge access, higher Visual Quality Objectives, and additional measures to ensure the protection and enhancement of OR values.

Timber management, road construction, and other ground-disturbing activities outside the designated river corridors could not diminish the OR values within the corridors. This would pose some limitations on silvicultural techniques which may result in higher cost or reduced volume of harvest in the drainage outside the corridors.

Alternative F

Under this alternative, the 3.1-mile "Wild" section of Segment D in Cheesman Canyon and 10.4-mile section of Segment C in Wildcat Canyon would be removed from the suitable base. This could reduce the suitable acres in the corridors by 3,947 acres to 7,253 acres. The corridors would produce approximately 84,135 cubic feet per year.

Adverse effects of designation or the opportunity to manage forest health would be similar to Alternative B for those segments designated. Overall opportunities to protect forest health would be less under this alternative than with all alternatives except Alternative B.

Potential timber production on suitable Federal land in the corridors would be reduced slightly as compared to Alternative A1 due to constraints imposed by designation. Constraints include more restrictive road and bridge access, higher Visual Quality Objectives, and additional measures to ensure the protection and enhancement of OR values.

Timber management, road construction, and other ground-disturbing activities outside the designated river corridors could not diminish the OR values within the corridors. This would pose some limitations on silvicultural techniques which may result in a minor reduction in harvest in the drainage outside the corridors.

Alternative G

Under this alternative, the 10.4-mile section of Segment C in Wildcat Canyon would be removed from the suitable base. This would reduce the suitable acres in the corridors by 3,267 acres to 7,933 acres. The corridors would produce approximately 92,023 cubic feet per year.

Adverse effects on the opportunity to manage forest health in the designated segments is similar to Alternative B. Overall opportunities to protect forest health would be greater under this alternative than with all alternatives except Alternatives A1, I, and C.

Potential timber production on suitable Federal land in the corridors would be reduced slightly as compared to Alternative A1 due to constraints imposed by designation. Constraints include more restrictive road and bridge access, higher Visual Quality Objectives, and additional measures to ensure the protection and enhancement of OR values.

Timber management, road construction, and other ground-disturbing activities outside the designated river corridors could not diminish the OR values within the corridors. This would pose some limitations on silvicultural techniques which may result in higher cost or reduced volume of harvest in the drainage outside the corridors.

Alternative I

Under this alternative, no acres would be removed from the suitable base. The study corridors would contain 11,200 suitable acres that are capable of producing a potential of approximately 129,920 cubic feet of wood annually.

Forest health and other impacts would be similar to Alternative A1 on the North Fork and downstream from Cheesman Reservoir and similar to Alternative C upstream from Cheesman Reservoir. Overall opportunities to protect forest health would be greater under this alternative than with all alternatives except Alternative A1.

Alternative J - Proposed Action

Under this alternative, the 3.1-mile "Wild" section of Segment D in Cheesman Canyon and a 7.4-mile portion of Segment C in Wildcat Canyon would be removed from the suitable base. This would reduce

the suitable acres in the corridors by 3,042 to 8,158 acres. The corridors could produce approximately 94,633 cubic feet per year.

Adverse effects on the opportunities to manage forest health would be similar to Alternative B. Overall opportunities to protect forest health would be less under this alternative than with Alternatives A1, I, C, and G.

Potential timber production on suitable Federal land in the corridors would be reduced slightly as compared to Alternative A1, due to constraints imposed by designation. Constraints include more restrictive road and bridge access, higher Visual Quality Objectives, and additional measures to ensure the protection and enhancement of OR values.

Timber management, road construction, and other ground-disturbing activities outside the designated river corridors could not diminish the OR values within the corridors. This would pose some limitations on silvicultural techniques which may result in higher cost or reduced volume in harvest in the drainage outside the corridors.

5.13 Transportation

Changes in river management could have an impact on transportation use and opportunities.

Alternative A - No Action

This alternative does not affect existing transportation uses and systems within the study corridors. It is the current situation as specified in the Forest Plan and serves as the baseline to which other alternatives may be compared. Roads could be constructed into any portions of the river corridor but would require the preparation of a separate Environmental Analysis or Environmental Impact Statement.

The likelihood of new roads except for housing developments in most areas is considered low. Existing roads in Segment C in Wildcat Canyon, such as the off-highway vehicle road that crosses the South Platte from Corral Creek (FDR 540), turns south and parallels the west bank for a mile, then fords the South Platte and climbs out of the canyon to the east near Longwater Gulch (FDR 221) would remain open. The Hackett Gulch Road (FDR 220) which goes down to the river would remain open but the

ford has been closed. The four-wheel drive Northrup Gulch Road (FDR 206) was closed several years ago about 1/4 mile from the river to mitigate erosion and protect resource values would remain closed in all alternatives. The Metberry Creek Road (FDR 205) which currently goes to the river, is planned to be closed below Custer Cabins to reduce erosion on a 1/4-mile steep section in all alternatives. These open roads are very valuable to the motorized community as they represent a level of challenge in four-wheeling that is not abundant near the Front Range. Four-wheel drive and off-highway vehicle clubs would continue to work with the Forest Service to ensure the protection of resource values in this area. Additional routes in the area might be opened as long as resource values could be protected under the Forest Plan.

Alternative B

Under Alternative B all 13.5 miles of "Wild" segments would be closed to motorized vehicles, and no road construction would be allowed. Protection of the area's primitive characteristics would be ensured. Future access for natural resource management in these areas would be severely limited. This alternative would have little effect on current access in Cheesman Canyon (Segment D), but it would eliminate off-highway vehicle use in Wildcat Canyon (Segment C). This would have a direct impact on off-highway vehicle use in the canyon and eliminate one of the more popular recreation uses in the area. A management plan would be written that would minimize river crossings in designated segments and add additional protections to limit impacts of roads on the outstandingly remarkable values. This may reduce some future road construction in the "Scenic" and "Recreational" segments.

Alternative C

The effects of this alternative would be the same as Alternative B, except that no motorized vehicle road or area closures would result in Wildcat Canyon. River crossings in designated segments would be minimized and additional constraints on road building would limit its impacts on the outstandingly remarkable values. This may reduce some future road construction in "Scenic" and "Recreational" segments. Partnerships would be further encouraged with four-wheel drive and off-highway vehicle clubs would continue to work with the Forest Service to ensure the protection of resource values in Wildcat

Canyon. Additional routes in the area might be opened as long as the OR Values could be protected and enhanced.

Alternative D

Like Alternative B, all 13.5 miles of "Wild" segments would be closed to motorized vehicles, and no road construction would be allowed. Protection of primitive characteristics would be ensured. Future access for natural resource management in these areas would be severely limited. This alternative would have little effect on current access in Cheesman Canyon (Segment D), but it would eliminate off-highway vehicle use in Wildcat Canyon (Segment C). This would have a direct impact on off-highway vehicle use in the canyon and eliminate one of the more popular recreation uses in the area. There would be additional constraints on road construction and river crossings in "Scenic" and "Recreational" segments. Additional mitigation measures would be added to protect OR values on the "Recreational" segments upstream from Wildcat Canyon. No additional road construction mitigation measures would occur in the 2.6-mile portion of Segment H2 on the North Fork as in Alternatives B or F.

Alternative F

Effects on all 13.5 miles of "Wild" segments would be the same as Alternative B. Like Alternative A, additional mitigation measures on road construction would occur in the 2.6-mile portion of Segment H2 on the North Fork as in Alternatives B or F and on the "Recreational" segments on National Forest System lands upstream from Wildcat Canyon. No additional road construction mitigation measures would be imposed on National Forest System lands in Segment E on the South Platte.

Alternative G

Effects on the 10.4 miles of "Wild" segments in Wildcat Canyon (Segment C) would be similar to Alternative B. Additional mitigation measures on road construction would occur on the "Recreational" segments on National Forest System lands upstream from Wildcat Canyon. No additional road construction mitigation measures would be imposed on National Forest System lands in Segment E on the South Platte or Segment H2 on the North Fork.

Alternative I

The effects of this alternative would be the same as Alternative C on the South Platte upstream from Cheesman Reservoir and the same as Alternative A1 on the North Fork and on the South Platte downstream from Cheesman Dam.

Alternative J - Proposed Action

In this alternative 3.1 and 7.4 miles of "Wild" segments in Cheesman Canyon (Segment D) and portions of Wildcat Canyon (Segment E) would be closed to motorized vehicles, and no road construction would be allowed. Protection of primitive characteristics would be ensured in these areas. Future access for natural resource management in these areas would be severely limited. This alternative would have little effect on current access in Cheesman Canyon since the area has no roads and the Gill Trail is closed to off-highway vehicles. This alternative would have little effect on existing off-highway vehicle use in Wildcat Canyon. Partnerships would be further encouraged with four-wheel drive and off-highway vehicle clubs would continue to work with the Forest Service to ensure the protection of resource values in Wildcat Canyon. Additional routes in the area might be opened as long as the OR Values could be protected and enhanced.

5.14 Minerals

Designation as a Wild and Scenic River could directly impact potential locatable (hardrock minerals such as gold, silver, feldspar, mica), leasable (oil, gas, coal), and salable (sand gravel, stone) mineral development in the area.

Alternative A - No Action

Alternative A would have no effect on current or potential mineral claims within the study corridors. Only the developed recreation areas are currently permanently withdrawn from future mineral entry.

Alternatives B, C, D, F, G, and J

Under this alternative all "Wild" portions of the study corridors would be withdrawn from future mineral entry. Although the potential for these minerals is low, there are still the potential for finds or new

minerals that were not commercial viable in the past.

Existing claims in the "Wild" segments would continue to be valid and could continue to be worked under approved operating plans. In all designated segments, existing mineral activity would be conducted in a manner that minimizes surface disturbance, sedimentation, pollution, and visual impairment which could add additional protections to revised operating plans.

Alternative C

No areas would be withdrawn from mineral entry under this alternative. In all designated segments, existing mineral activity would be conducted in a manner that minimizes surface disturbance, sedimentation, pollution, and visual impairment which could add additional protections to revised operating plans.

5.15 Adverse Environmental affects that Cannot be Avoided

None of the alternatives contain management directions that would directly create unavoidable adverse environmental affects. It is conceivable that the lack of additional action under Alternative A1 could lead to adverse affects on river corridor resources at some time in the future, but this would depend on the nature of the threat and the ability of existing resource protection mechanisms to address it. For example, a major or minor dam or water diversion project in the study area could adversely affect all the natural resources mentioned in this report, as well as create a decisive level of conflict.

5.16 Local Short-term Uses of the Environment and the Maintenance And Enhancement of Long-term Productivity

All of the "action" alternatives contain measures that are designed to preclude dam construction, diversions, hydropower development, and other water projects that could adversely affect river values. While the relative level of protection afforded against such dams and water projects varies among the alternatives and is subject to debate, the intent of each is consistent. None of the alternatives contains specific actions that require a substantial

loss of short-term use in order to achieve long-term protection.

5.17 Irreversible and Irrecoverable Commitments of Resources

The alternatives in this document deal with resource conservation rather than resource development activities. Irreversible or irretrievable commitments of resources are not contemplated by any of the alternatives. Alternative A1 does recognize the potential for decisions outside the scope of this document to make irreversible and irretrievable commitments of resources.

None of the "action" alternatives call for any irreversible or irretrievable commitments of resources.

5.18 Cumulative Effects

Cumulative effects have been previously addressed in this chapter under the specific resource headings such as timber, fisheries, recreation, wildlife, and social and economic. There are no other known cumulative effects.

5.19 Other Impacts

Biodiversity

The issue of biodiversity was addressed by considering its major components such as wildlife, fisheries, and scenery (vegetation) as well as issues such as maintaining the free-flowing condition of the river, and levels of naturalness within the river corridor.

Consumers, Civil Rights, Minority Groups and Women

None of the alternatives would have a significant impact upon these issues. Information on associated impacts is located in the discussions on socio-economic impacts.

Prime Farmlands

There are no prime farm lands within the study corridor.

Threatened and Endangered Species

The anticipated affects to these species have previously been discussed in the vegetation, wildlife, and fish sections of this chapter.

Wetlands and Floodplains

All "action" alternatives consider and protect wetlands and floodplains. Under Alternative A1 it is possible that dam construction, diversions, hydropower development, or water diversion projects could occur which could have a definite impact on wetlands and floodplains. The effects would be addressed in the EIS for a specific project if the project received the necessary permits, licenses, and approval by the appropriate Federal agencies.

5.20 Additional Federal Implementation Costs for Each Alternative

Chart V-1 summarizes the additional cost to the Federal Government, above the current level, for implementing each alternative.

These costs are based on Fiscal Year 1997 dollar values and have been separated into three categories for each alternative. The three categories include costs associated with the management plan, land and easement acquisition, and administration of the Wild and Scenic River.

5.21 Basis for the Proposed Actions

This Draft Legislative Environmental Impact Statement (LEIS) identifies two proposed actions based upon the information contained in the study, consideration of issues identified by the public, and the consensus of the ID Team. These proposed actions will be reevaluated depending on the comments received during the comment period on the Draft LEIS. If further efforts lead to a more definitive Alternative A2 which appears worthy of detailed evaluation, a Supplemental DEIS may be prepared and an additional comment period offered prior to preparation of the Final EIS. The Secretary of Agriculture makes the decision to release the Final EIS and identify the preferred alternative after reviewing the Forest Service's recommendation.

The Forest Service has identified the two proposed actions as an either/or pair. The proposed action is

to implement either Alternative J or Alternative A2. These alternatives are described briefly below:

Alternative J - In this alternative, 48.1 miles of the South Platte River from its confluence with the North Fork to the special-use fence line below Elevenmile Dam meet both the eligibility and suitability requirements for inclusion in the National Wild and Scenic River System. It recommends that these river segments be added to the National System with USDA Forest Service administration and with the classifications as describes in Chart I-3 and Map I-9.

Alternative A2 - In this alternative, measures developed and implemented by non-Federal parties protect river values and there is no recommendation for Wild and Scenic River designation. At this time, however, such measures have not been specifically identified or implemented. Further development of this alternative is required prior to additional consideration by the Forest Service. Alternative A2 would require that mechanisms be put in place by non-Federal entities that would afford a level of protection to river values in the eligible segments generally equivalent to Alternative J, before the Forest Service could conclude that its obligation to protect the rivers' OR Values under the Wild and Scenic Rivers Act could be set aside (see Map I-8).

The proposed actions are posed in an either/or sense because, while Alternative J is seen by the Forest Service as providing the best balance of competing uses, there may be a viable but unexplored alternative that could achieve protection through locally-generated measures. The either/or framework is employed to make clear that if a viable Alternative A2 cannot be devised and implemented in a reasonable period of time, then the Forest Service will proceed to recommend designation as described in Alternative J.

Alternatives A2 and J may be of different scope. In identifying Alternative J as the proposed designation alternative, the Forest Service weighed the impacts of the various alternatives and concluded that Alternative J struck the best balance between competing uses in protecting river values. If Alternative A2 is further developed from information obtained during the comment period, it may not necessarily

be restricted to the river segments recommended for designation in Alternative J. Rather, it should consider the full range of values in all eligible segments (see Alternative B) and look at balancing competing uses through means other than Congressional designation. An outcome different from Alternative J may emerge. The Forest Service will then have to evaluate that alternative in terms of its success in protecting river values.

Alternative J was identified over all other designation alternatives and over no-action (Alternative A1) as the proposed action because:

- The South Platte Study River above the North Fork confluence has several characteristics that make the river a worthy addition to the National System:

1) the area is in close proximity to the Denver/Colorado Springs metropolitan areas and contains a variety of river-related recreation opportunities including camping, picnicking, and sightseeing that draw people from all over the region;

2) the South Platte Study River contains some of the best wild trout populations and habitat in the State, and is known nationally if not internationally for its fishery;

3) the South Platte study corridor and surrounding sideslopes contains some of the habitat of the Pawnee montane skipper butterfly, which along with populations on the North Fork is found in no nowhere else in the world; and

4) the Wildlife, Fisheries, and geologic outstandingly remarkable values are not represented by other established Wild and Scenic Rivers in the State.

- It ensures the protection and the enhancement of the South Platte's outstandingly remarkable values, other river-related resources, and the river's free-flowing condition.

- It provides a reasonable balance between strong proponents for the designation of all segments and strong opponents of any designation at all.

- It recommends for designation that section of the study area with the highest quality, variety, and quantity of outstandingly remarkable values.
- It best complements the Forest Service's current river-related recreation emphasis in the area.
- It has very few possible conflicts with existing uses.
- It would ensure the protection of the South Platte's current fisheries population and habitat, the South Platte's current mix of dispersed and developed recreation use, and the semi-primitive motorized recreation experience above Cheesman Reservoir as long as the outstandingly remarkable values were protected and enhanced.

Alternative A2, although not developed in detail in the DEIS, may have the potential to accomplish similar protection as Alternative J without Wild and Scenic River designation.

Alternative A1 was not chosen as a proposed action because the outstandingly remarkable values and other issues that were dependent upon a free-flowing river on the South Platte were thought so important that some measure of protection is warranted. These values include fish, wildlife, recreation, scenery, geology, and cultural resources. It was also not chosen since the South Platte was felt to be a worthy addition to the National Wild and Scenic Rivers System.

Alternatives B and C were not chosen because: 1) the North Fork was not felt a worthy addition to the National Wild and Scenic River System, and 2) designation of portions of the North Fork corridor or of the South Platte corridor below the confluence with the North Fork could lead to some impacts on Denver Water's current delivery system on the North Fork. Denver Water's water rights and the Robert's Tunnel capacity exceed the river's capability to carry the potential flows. Intensive channel improvements, relocation, channelization, rip rap, check dam, and other maintenance work is required to protect the private property in the area. Although the trend is toward Denver Water acquiring resource easements to minimize potential property damage, the area still requires constant maintenance which could be further impacted by Wild and Scenic River designation. Designation of the North Fork under these alternatives would also have in-

cluded areas outside the National Forest boundaries, the largest proportions of private lands in the corridor, and the areas where Wild and Scenic River designation had the most local opposition. In addition, Alternative B would have prohibited the existing motorized use on the Longwater Gulch and Corral Creek four-wheel drive roads where extensive cooperative efforts have been underway with motorized recreation groups to mitigate resource impacts in the area.

Although Alternative F addressed all the private concerns (no private land is included) it was not chosen as one of the proposed actions because it: 1) represented a fragmented approach to protecting the outstandingly remarkable values and other issues that were dependent upon a free-flowing river on the South Platte; 2) results in the same effects on the North Fork delivery system as Alternatives B and C; and, 3) the 2.6-mile North Fork section was not felt a worthy addition to the National System, and (4) the alternative received little or no support.

Alternatives G and I were not chosen because they: 1) failed to protect the area of the South Platte that contained the best outstandingly remarkable values in the study area (fisheries and recreation); and, 2) received little or no support.

Alternatives J and D are similar and provide many of the same effects. Alternative J was chosen over Alternative D as a proposed action since designation of the South Platte below the North Fork confluence under Alternative D would include the lower 1/4 mile of the North Fork which may result in many of the same restrictions on the North Fork water delivery system as Alternatives A, C, and F. In addition, Alternative D would have prohibited the existing motorized use on the Longwater Gulch and Corral Creek four-wheel drive roads where extensive cooperative efforts have been underway with motorized recreation groups to mitigate resource impacts in the area.

5.22 Public Review of this Document

After the public comment period, this Draft LEIS will be revised based on the comments received. If the revisions, including the further development of Alternative A2, provide significant new information, a Supplemental DEIS may be prepared and an additional comment period offered. If the Forest Supervi-

sor chooses to recommend any portions of the river for designation, the Final LEIS will be forwarded through the Secretary of Agriculture to the President. The President then submits the document to Congress for approval. If Congress then designates any portions of the river as components of the Na-

tional Wild and Scenic Rivers System, a management plan would be prepared by the Forest Service. The plan would include detailed procedures for implementing the preferred alternative, including developing final boundaries for the river corridor(s).



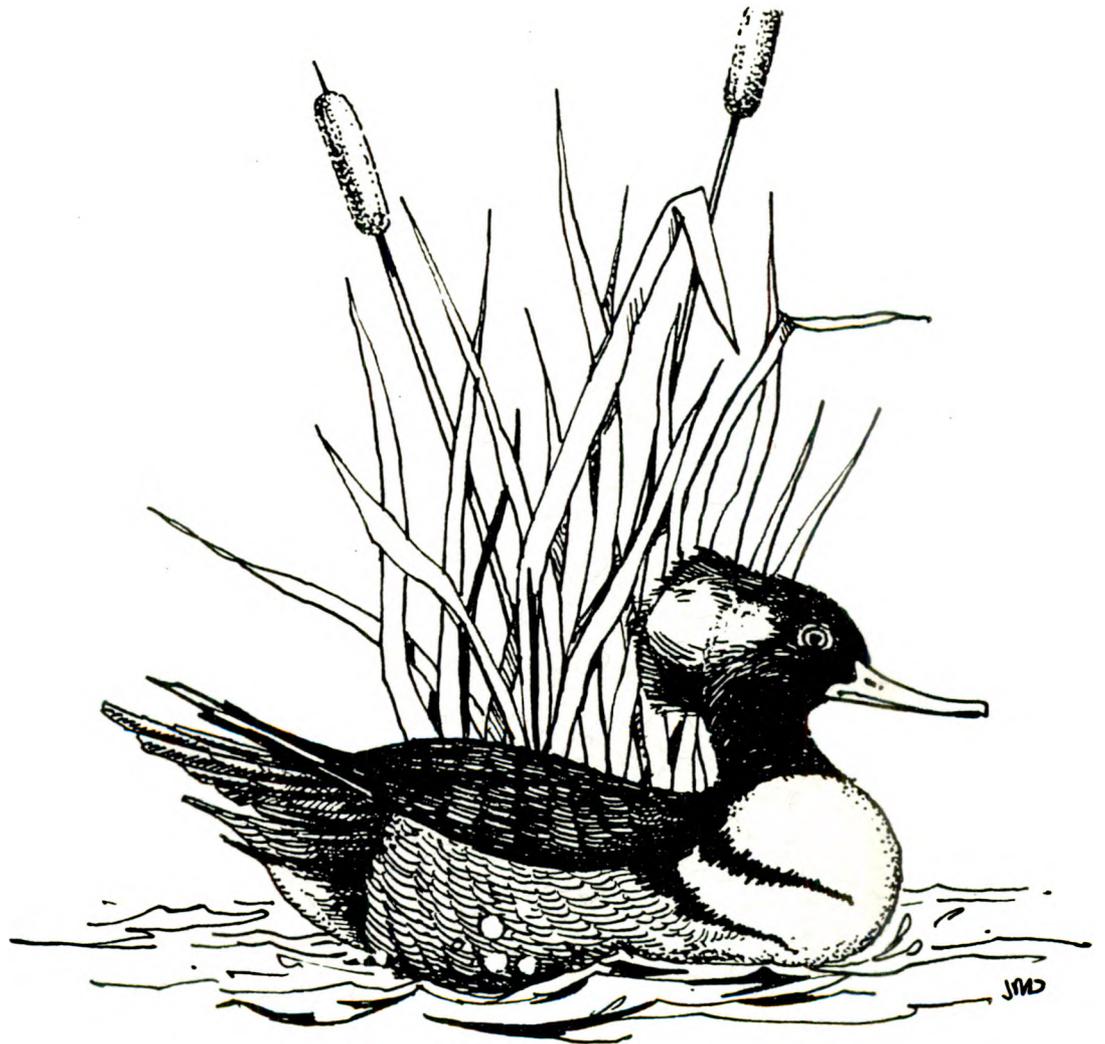
A county road is located a few feet above the entire length of Segment H3 on the North Fork.

**CHART V-1
FEDERAL IMPLEMENTATION COSTS**

		ALTERNATIVES									
	Alternative A1	Alternative A2	Alternative B	Alternative C	Alternative D	Alternative F	Alternative G	Alternative I	Alternative J		
Management Plan	N/A	NA	\$200,000 one time cost	\$190,000 one time cost	\$150,000 one time cost	\$120,000 one time cost	\$110,000 one time cost	\$100,000 one time cost	\$160,000 one time cost		
Land and Easement Acquisition	No Change	No change	Costs may be incurred for potential exchanges and future easements	Costs may be incurred for potential exchanges and future easements	Costs may be incurred for potential exchanges and future easements	Costs may be incurred for potential exchanges and future easements	Costs may be incurred for potential exchanges and future easements	Costs may be incurred for potential exchanges and future easements	Costs may be incurred for potential exchanges and future easements		
Administration of Wild & Scenic River	No Change	No change	\$80,00 annual cost	\$75,000 annual cost	\$60,000 annual cost	\$40,000 annual cost	\$40,000 annual cost	\$30,000 annual cost	\$55,000 annual cost		
Total Cost	No Change	No change	\$200,000 one time cost, \$80,00 annual costs. Plus costs incurred for potential exchanges and future easements	\$190,000 one time cost, \$75,000 annual costs. Plus costs incurred for potential exchanges and future easements	\$150,000 one time cost, \$60,000 annual costs. Plus costs incurred for potential exchanges and future easements	\$120,000 one time cost, \$40,000 annual costs. Plus costs incurred for potential exchanges and future easements	\$110,000 one time cost, \$40,000 annual costs. Plus costs incurred for potential exchanges and future easements	\$100,000 one time cost, \$30,000 annual costs. Plus costs incurred for potential exchanges and future easements	\$160,000 one time cost, \$55,000 annual costs. Plus costs incurred for potential exchanges and future easements		

Chapter VI

Distribution of the Draft Report



6.1 List of Agencies, Organizations, and Persons to Whom the DEIS Was Sent

DISTRIBUTION OF THE DRAFT LEIS

Copies of the Wild and Scenic River Study Report and Draft Legislative Environmental Impact Statement were distributed or made available to the following federal, state and local government agencies, elected officials, organizations, and those individuals who provided comments during scoping or who indicated a desire to remain on the mailing list. In addition, copies were made available at many Forest Service offices and libraries in the affected communities:

Elected Officials

U.S. Congress - Colorado

Congresswoman Diana DeGette
Congressman Joel Hefley
Congressman Scott McInnis
Congressman Dan Schaefer
Congressman Robert Schaffer
Congressman David Skaggs

Senator Wayne Allard
Senator Ben Nighthorse Campbell

U.S. Congress - Nebraska

Representative Doug Bereuter
Representative Jon Christensen
Representative Bill Barrett

Senator Chuck Hagel
Senator Bob Kerrey

State of Colorado

Governor Roy Romer
State Representative Jeanne Adkins
State Representative Vickie Agler
State Representative Debbie Allen
State Representative Norma Anderson
State Representative Barry Arrington
State Representative Chuck Berry
State Representative Doug Dean
State Representative Mary Ellen Epps
State Representative Jeanne Faatz
State Representative Russell George
State Representative Ken Gordon
State Representative Dorothy Gotlieb
State Representative Tony Grampsas
State Representative Daniel Grossman

State Representative Maryanne Keller
State Representative Martha Kreutz
State Representative Doug Lamborn
State Representative Ron May
State Representative Andy McElhany
State Representative Gary McPherson
State Representative Carl Miller
State Representative Marcy Morrison
State Representative Phil Pankey
State Representative Mary Paschall
State Representative Penn Pfiffner
State Representative Paul Schauer
State Representative Larry Schwarz
State Representative William Sinclair
State Representative Bryan Sullivant
State Representative Shirleen Tucker
State Representative Jennifer Veiga
State Representative Suzanne Williams
State Representative Brad Young

State Senator Tom Blickensderfer
State Senator Ken Chlouber
State Senator Mike Coffman
State Senator Jim Congrave
State Senator Charles Duke
State Senator Michael Feeley
State Senator Sally Hopper
State Senator Elsie Lacy
State Senator Richard Mutzenbaugh
State Senator Ed Perlmutter
State Senator Ray Powers
State Senator Bill Schroeder
State Senator MaryAnne Tebedo
State Senator Frank Weddig
State Senator Jeffrey Wells
State Senator Dottie Wham

State of Nebraska

Governor Ben Nelson

Colorado County Government

Arapahoe County Commissioners
Chaffee County Commissioners
City and County of Denver
Clear Creek County Commissioners
Custer County Board of Commissioners
Douglas County Commissioners
El Paso County Commissioners
Fremont County Board of Commissioners
Jefferson County Commissioners
Lake County Commissioners
Park County Board of Commissioners
Pueblo County Board of Commissioners
Teller County Commissioners

Colorado Local Agencies

Chaffee County Planning Commission
Chaffee County Administration
Douglas County Planning Commission
Douglas County Planning Department
El Paso County Attorney
Jefferson County Planning and Zoning Department
Jefferson County Attorneys
Jefferson County Intergovernmental Relations
Jefferson County Open Space
Park County Planning Department
Pikes Peak Area Council of Governments
Teller County Economic Development Council

Colorado Municipal Government

City of Cherry Hills Village
City of Colorado Springs
City of Denver
Cities of Pine and Bailey
Denver Water
Town of Leadville

Tribal Governments

Cheyenne-Arapaho Tribes of Oklahoma
- George Sutton
Comanche Tribal Council - Wallace Coffey
Kiowa Tribe, Kiowa Business Council
- Joseph Goombi
Southern Ute Tribal Council - Alden Naranjo

Federal Agencies

U.S. Department of Agriculture -

Animal and Plant Health Inspection Service
Forest Service, Arapaho/Roosevelt National Forests
Forest Service, Bighorn National Forest
Forest Service, Black Hills National Forest
Forest Service, Cimarron National Grassland
Forest Service, Comanche National Grassland
Forest Service, GMUG National Forests
Forest Service, Leadville District
Forest Service, Medicine Bow National Forest
Forest Service, Nebraska National Forest
Forest Service, Pikes Peak District
Forest Service, Rio Grande National Forest
Forest Service, RMFRES
Forest Service, Rocky Mountain Region
Forest Service, Routt National Forest
Forest Service, Salida District
Forest Service, San Carlos District
Forest Service, San Juan National Forest
Forest Service, Shoshone National Forest
Forest Service, South Park District

Forest Service, South Platte District
Forest Service, White River National Forest
Natural Resource Conservation Service
OPA Publications Stockroom
Rural Electrification Administration
National Agricultural Library

U.S. Department of Commerce -

NOAA Ecology and Conservation Division

U.S. Department of the Air Force -

Deputy Assistant Secretary of the Air Force
for the Environment, Safety and Occupational
Health

U.S. Department of the Army -

Army Corps Of Engineers, Washington, D.C.
Army Corps Of Engineers, Omaha District
Army Corps Of Engineers, Tri Lakes Project
Deputy Assistant Secretary of the Army

U.S. Department of the Navy -

Naval Observatory, Naval Oceanographic Division
Office of Chief of Navy Operations

U.S. Department of Energy -

Federal Energy Regulatory Commission
Office of Environmental Compliance

U.S. Department of Health and Human Services -

Office of General Counsel
Office of the Secretary

U.S. Department of Housing and Urban Development -

Office of the Secretary

U.S. Department of Justice -

General Litigation Section

U.S. Department of Labor -

Office of the Secretary

U.S. Department of the Interior -

Bureau of Mines
Bureau of Land Management, Canon City District
Bureau of Land Management, Casper District

Bureau of Land Management, Colorado State Office
Bureau of Land Management, Minerals
Bureau of Land Management, Washington Office
Bureau of Reclamation
Fish and Wildlife Service
Geological Survey
Geological Survey, Water Resource Division
Minerals Management Service
National Park Service
National Park Service, Air Quality Division
National Park Service, Rocky Mountain Region
Office of Environmental Affairs
Office of Environmental Project Review
Office of Equal Opportunity
Office of Secretary of the Dept. of the Interior
Natural Resource and Conservation Service

U.S. Department of Transportation -

Federal Aviation Administration
Federal Highway Administration
Federal Railroad Administration
Office of the Secretary, USDOT
U.S. Coast Guard

U.S. Government Independent Agencies -

Advisory Council on Historic Preservation
Environmental Protection Agency, Administrator
Environmental Protection Agency, Region VII
Environmental Protection Agency, Region VIII
General Services Administration

Equal Employment Opportunity Commission
Federal Power Commission, Chairman
Interstate Commerce Commission
Office of Architectural/Environmental Preservation

State and Local Agencies

Colorado State Agencies

Colorado Air Pollution Control Division
Colorado Department of Natural Resources
Colorado Department of Parks and Recreation
Colorado Department of Transportation
Colorado Division of Wildlife
Colorado Geological Survey
Colorado Historical Society
Colorado Joint Review Process
Colorado Oil and Gas Commission
Colorado Public Utilities Commission
Colorado State Forest Service - CSU
Colorado State Forester
Colorado Water Conservation Board
Southeastern Colorado Water Conservancy District

Nebraska State Agencies

Nebraska Department of Agriculture
Nebraska Department of Economic Development,
Division of Travel and Tourism
Nebraska Department of Environmental Quality
Nebraska Department of Water Resources
Nebraska Game and Parks Commission
Nebraska Natural Resources Commission

Colorado Libraries

Baca County Library
Canon City Library
Denver Public Library
Douglas County Library
Jefferson County Library
Lake County Public Library
Lakewood Library
McClelland Library
Park County Library
Penrose Public Library
Pikes Peak Library District
Salida Regional Library
Teller County Library
Woodruff Library

Universities and Educational Organizations

Baker University
Colorado History Museum
Colorado Mountain College
Colorado Outward Bound School
Colorado State University
Community College of Denver
CSU Extension Office
University of Colorado
University of Colorado, Environmental Center
University of Colorado, Environmental Law Society
University of Colorado, Wilderness Study Group
University of Southern Colorado
Wildlife Management Institute

Organizations, Interest Groups and Businesses

11 Mile Ranch Association
ACZ
Aguerre Ranch Inc.
American Mountain Foundation
Argyle Properties Inc.
Balltown Lounge
Bear Creek Farms Water and Sanitation District
Bear Creek Water and Sanitation District
Bear Trap Ranch
Brady Family Trust
Buffalo Park Chapel Association
Business and Professional Women

Carlson, Hammond and Paddock
Colorado National Bank of Denver Trust
Colorado Welcome Center
Consolidated Gas Company
Croterie Club
Crystal Lake Resort Properties Ltd.
Cuchara Valley Ranch
Dames and Moore
De Luca Ranches Inc.
Dilley Cattle Company
Elk Creek Crux
ENSR Consulting and Engineering
Everett Land and Cattle Company, Inc.
Fairfield and Woods P.C.
Frum Family Trust
Glen Isle Resort
Granite Store
H T C Escrow Company
H.C. Mills Land and Cattle Company
Hiner Cattle Corporation
Hoover Brothers Ranch
Horse Creek Campground and Saloon
Humane Society of the United States
Karl Bell Associates, Architects/Planners
Karney Cattle Company
Lake George Fire Protection District
Land and Water Fund of the Rockies
Latimer and Associates
Leadville Medical Center
Leadville Research and Development Corporation
Locke Farm
Luthern Valley Retreat
Martin Marietta Denver Aerospace
Max Dercum Consulting Services
Mcmurry Land and Livestock Company
Meridian Metropolitan District
Metropolitan Denver Water Authority
Metropolitan Water Providers
Monarch Ski Resort
Montgomery Enterprises
Mooredale Ranch Resort Inc.
Mountain Community Church
Mountain View Village No. 62
Mule Creek Outfitters
Mvp Trust Phase One
NADP
New Discovery Ventures, Ltd.
North Fork Library Association
North Fork Volunteer Fire Department
NPCA-Conservation Information
Orcutt Ranches, Inc.
Outdoor And Travel Photography
Pan Ark Lodge
Park Nations
Parker Water and Sanitation District
Phyllis A. Jensen Company
Pic Technologies

Pine Community Church
Pine Ranch Associates, Ltd.
Pinery Water and Wastewater District
Plain Vanilla Graphics
Platte Canyon Outdoor Resource Committee
Platte Canyon Water and Sanitation District
Pleasant View Water and Sanitation District
Poulson Odell and Peterson
Powers Elevation Company Inc.
Public Safety and Operations
Reis Ranches
Resolution Enterprises
Rivercliffe Ranch
Rocky Mountain Memorials
Rocky Mountain Recreation Company
Rolla Lions Club
Rolla Royal Rangers
Roth Family Partnership
Roxborough Park Foundation
Sammons Ranch
Santa Cruz Technologies
Save Park County
Scientific Software-Intercomp
SHB Agra
Silver Tip Lodge
Ski Cooper
Southgate Water District
Southwest Kansas Groundwater
Spearpoint Mountain Resources Inc.
Sportsmen Paradise Inc.
St. Vincent General Hospital
Stella C. White Trust
Suburban Water Suppliers W&SR Task Force
Summemar West
Sun Dog Automotive
Swan Hereford Ranch
Swayback Ranch Fishing Club Inc.
Tametic Committee
The Irland Group
The Scanga Ranch
Thomas and Thomas
Trail West Lodge
Trumbull Community Volunteer Fire Department
Trust Company of Oklahoma
Twin Lakes Associates Inc.
Twin Lakes Nordic Inn
Vranesh and Raisch
Watkins Ranches
Wigwam Investment Company
Wildhorn Realty and Development Inc.
Winston Associates Inc.
Woodward Clyde Consultant
Wright Engineering
4-Wheeling America
Aiken Audubon Society
Allright Mining and Development Inc.
Alpine Property Owners Association

American Forest and Paper Association
American Rivers Inc.
American White Water Affiliation
American Wilderness Alliance
Amoco Production Company
Anadarko Petroleum Corporation
Ancient Forest Rescue
Antra Resources Corporation
Arco
Aspen Acres Campground
Audubon Society - Arkansas Valley
Audubon Society - Denver
Audubon Society - Evergreen Naturalists
Audubon Society - Foothills
Audubon Society - Heart Of The Rockies
Audubon Society - National
Beard Oil Company
Big Horn 4X4 Club
Bioersity Legal Foundation
Buena Vista Snowmobile Club
Campo Grazing Association
Chaffee County Farm Bureau
CHEC-Forest Watch
Cherry Creek Village Water District
Chevron USA Inc.
Cimarron Sportsman's Club
Cities Service Company
Coastal Oil And Gas Corporation
Colo. Association of 4-Wheel Drive Clubs Inc.
C.A. 4-WD., C.I. Northern District
Colorado Cattlemans Association
Colorado Environmental Center
Colorado Environmental Coalition
Colorado Farm Bureau
Colorado Forestry Association
Colorado GO-4's 4WD Club
Colorado Interstate Gas Company
Colorado Motorized Trail Riders
Colorado Mountain Club
Colorado Mountain Club - El Pueblo Group
Colorado Mountain Club - Pikes Peak Chapter
Colorado Mountain Trail Riders Association
Colorado Native Plant Society
Colorado Open Lands
Colorado Ski Country USA
Colorado Snowmobile Association
Colorado Snowmobile Club
Colorado Trail Foundation
Colorado Trout Unlimited
Colorado University Wilderness Study Group
Colorado Wildlife Federation
Colorado Woolgrowers Association
Custer County Action Association
Custer County Stock Growers Association
Ducks Unlimited
Ef! Wolf Action Network
Environmental Defense Fund

Environmental Strategies Inc.
Exxon Company USA
Exxon Exploration Company
Fairplay Snowmobile Club
Ford County Sportsman Club
Friends of Gold Camp Road
Friends of The Bow/Biodiversity Associates
Grant County Ducks Unlimited
Greens/Green Party USA, Wildlands and Forests
Greenwood Metropolitan District
Greenwood South Metropolitan District
Hawkins Oil and Gas Inc.
Heart of the Rockies Snowmobile Club
High Country River Rafters
High Plains Gun Club
High Riders Snowmobile Club
Huerfano Valley Citizens Alliance
International Order of Rocky Mountain Goats
Intermountain Forest Industry Association
Izaak Walton League of America
Kenosha Trout Club
Kim Grazing Association
Ladd Petroleum
Land and Water Fund
Lincoln Park Metropolitan District
London Mine Venture
Marathon Oil Company
Metropolitan Water Providers
Midwest 4 Wheel Drive Association
Mile Hi Jeep Club
Mile-Hi Snowmobile Club
Minerals Exploration Coalition
Mobil Oil Corporation
Mountain States Forestry
Mountain States Legal Foundation
National Wildlife Federation
Native American Rights Fund
Natural Resources Conservation Services
Natural Resources Defense Council
Nature Conservancy
North Range Ridge Runners
Northern Natural Gas Company
Oil and Gas Conservation Commission
Oxy USA Inc.
Panhandle Eastern Pipeline Company
Park County Mining Association
People for the West
Phillips Petroleum Company
Pikes Peak Enduro Club
Point Rock Riders
Pritchett Grazing Association
Public Service Company of Colorado
Pueblo County Farm Bureau
Pueblo Snowmobile Club
Pueblo West Sportsmen's Association
Quail Mountain Citizens Alliance
Quail Mountain Citizens Association

Reclamation Planners Group
Red Rock 4 Wheelers
Ridge Runners 4-Wheel Drive Club
Rivercliffe Ranch
Rocky Mountain 4-Wheel Drive Club
Rocky Mountain Canoe Club
Rocky Mountain Ecosystem Defense
Rocky Mountain Oil and Gas Association
Rolling Om Ranch
RRMMC
Sandhill Sportsman Club
Sangre De Cristo Mountain Council
Sangre De Cristo RC&D
Sangre Snow Runners
Santa Fe Trail Riders
Senior Citizen's Club
Sierra Club
Sierra Club, Boulder Group
Sierra Club, Legal Defense Fund Inc.
Sierra Club, Mt. Evans Group
Sierra Club, Pikes Peak Group
Sierra Club, Rachel Carson Group
Sierra Club, Rocky Mountain Chapter
Sierra Club, Sangre De Cristo Group
Sinapu
Southern Rockies Ecosystem Project
St. Mary Minerals
Stone Forest Industries Inc.
Teller County Alliance Property Owners

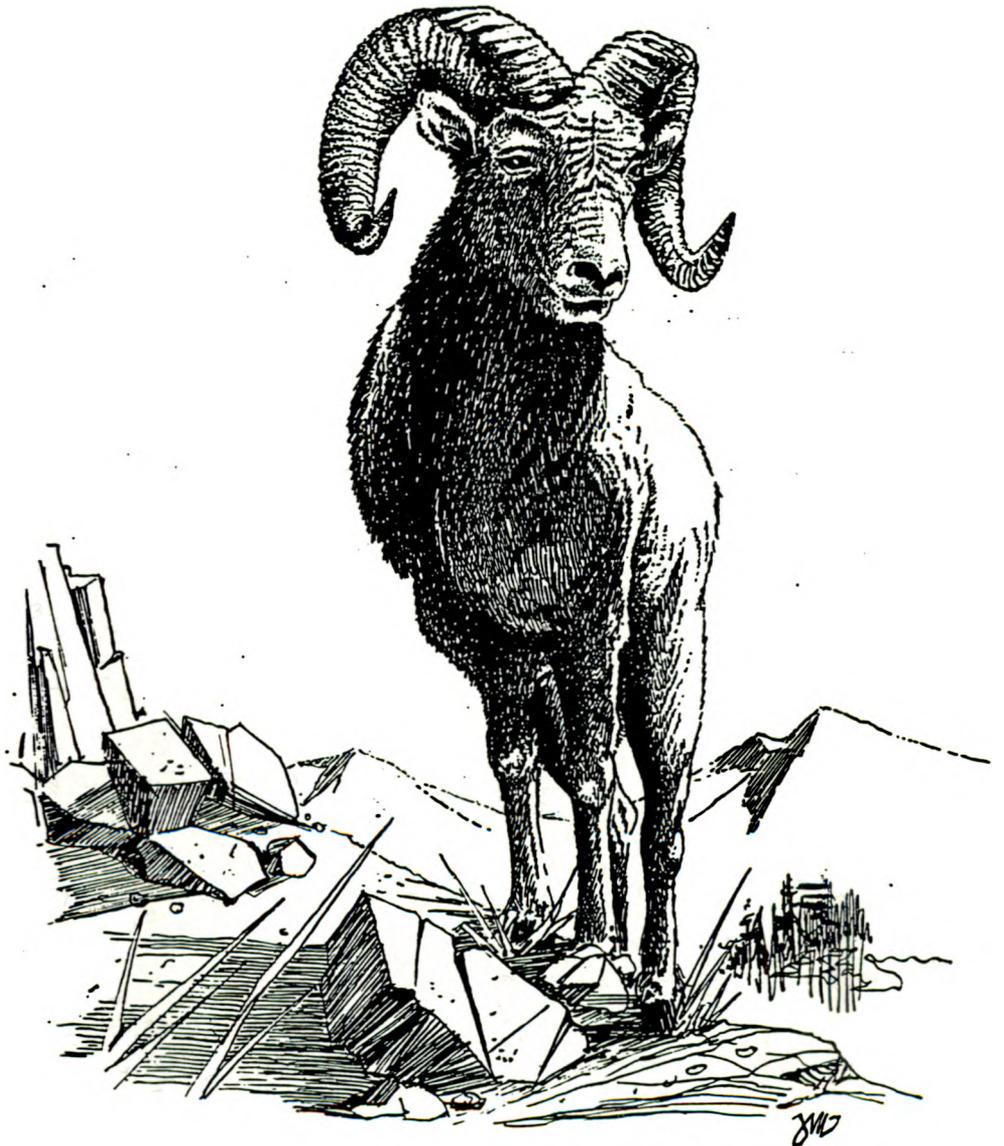
Texaco Exploration And Production Inc.
The Consolidated Mutual Water Company
The Evergreen Naturalists Audubon Society Inc.
The Nature Place
Timpas Grazing District
Trailhead Ventures
Trailridge Runners Inc.
Trapper Lake Sierra Club
Trout Unlimited
Trout Unlimited, American River
Trout Unlimited, Cheyenne Mountain Chapter
Trout Unlimited, Cutthroat Chapter
Trout Unlimited, Pueblo Chapter
Trout Unlimited, West Denver Chapter
United Sportsmen's Council Of Colorado
Upper Arkansas Watershed Forum
Valley Timber Company
Western Colorado Congress
Wigwam Club, Inc.
Wilderness Society
Wyoming Outdoor Council
Yates Petroleum Corporation

Interested Individuals

Copies of the draft Study Report/EIS will be sent to individuals who submitted comments during scoping and/or who requested a copy.

Chapter VII

List of Preparers



7.1 List of Preparers

Interdisciplinary Team The following members comprise the Interdisciplinary Team for the study report:

<u>Name</u>	<u>Responsibility/Discipline</u>
Steve Davis	Team Leader, Natural Resource Planner, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands
Gary Barranco	Forest Economist, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands
Denise Bohon	District Fisheries and Wildlife Staff, South Platte Ranger District, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands
Rusty Dersch	Regional Geologist, Rocky Mountain Region, USDA Forest Service
Chuck Harnish	Watershed Staff, Rocky Mountain Region, USDA Forest Service
Al Kane	Forest Archaeologist, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands
Sharon Kyhl	Recreation and Interpretation Forester, South Park Ranger District, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands
Steve Priest	District Recreation and Lands Staff, South Platte Ranger District, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands
Mike Retzlaff	Regional Economist, Rocky Mountain Region, USDA Forest Service
Lance Tyler	Forest Recreation Staff, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands
Steve Vest	Forestry Technician - Timber, South Platte Ranger District, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands
Neal Weierbach	Forest Landscape Architect, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands
Erik Taylor	Range Conservationist, South Park Ranger District, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands
Dave Winters	Fisheries and Wildlife Staff Officer, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands

Other Contributors

<u>Name</u>	<u>Responsibility/Discipline</u>
Barb Timock	Public Affairs, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands

Dan Bishop	Engineering, Soils, and Water Staff Officer, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands
Jeff Bruggink	Soil Scientist, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands
Pam DeVore	District Ranger, South Platte Ranger District, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands
Dennis Haddow	Regional Wild and Scenic Rivers Coordinator, Rocky Mountain Region, USDA Forest Service
Dan Jiron	District Ranger, South Park Ranger District, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands
John Hill	Forest Planner, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands
Marsha Kearney	Resources Staff Officer, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands
Clint Kyhl	Timber, Recreation, and Minerals Forester, South Park Ranger District, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands
Heidi Pfosch	Land Surveyor, Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands
Pete Zwaneveld	Planning and Environmental Coordinator, Northeast Area Planning Unit, Royal Gorge Resource Area, Canyon City District, Bureau of Land Management

Photographs

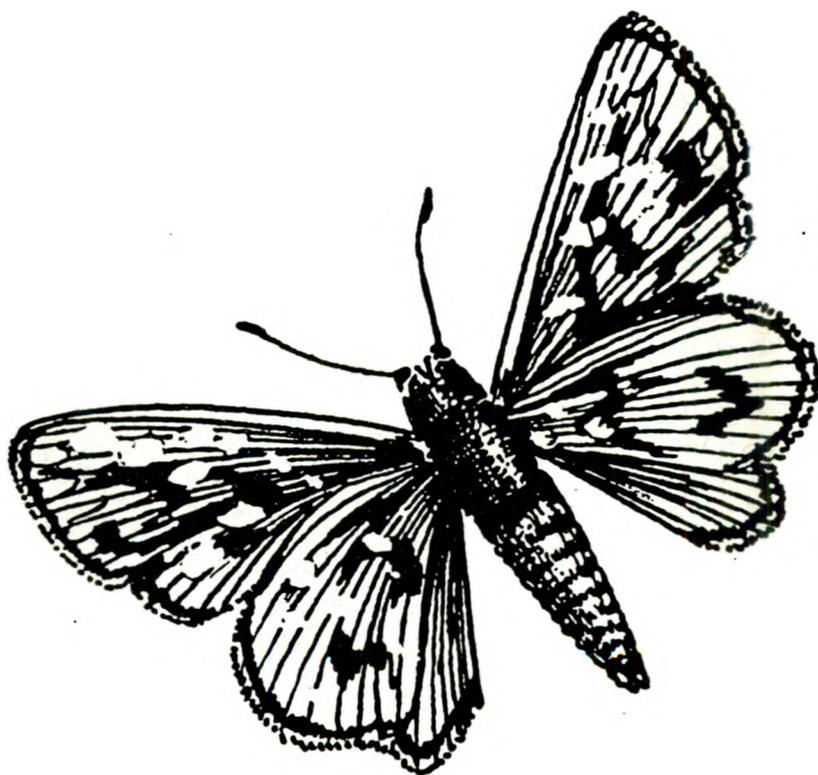
Steve Davis	Pike and San Isabel National Forests, Comanche and Cimarron National Grasslands
Dean Lundeen	USFS Retired
Lee Patton	Southern Rockies Ecosystem Project
Robert Roseen	Southern Rockies Ecosystem Project

And the files of the Pike and San Isabel National Forests,
Comanche and Cimarron National Grasslands

Graphics

Jim Dickson	Pike and San Isabel National Forests Comanche and Cimarron National Grasslands
-------------	---

Appendices



Appendix A

APPENDIX A

**WILD AND SCENIC RIVER
ELIGIBILITY AND CLASSIFICATION
DETERMINATION**

for the

SOUTH PLATTE RIVER

and the

**NORTH FORK OF THE
SOUTH PLATTE RIVER**

**PIKE AND SAN ISABEL NATIONAL FORESTS
COMANCHE AND CIMARRON NATIONAL NATIONAL GRASSLANDS**

SOUTH PLATTE AND SOUTH PARK RANGER DISTRICTS

Douglas, Jefferson, Park, and Teller Counties, Colorado

June 1996

TABLE OF CONTENTS

	Page
I. Executive Summary	1
II. Introduction	2
National Wild and Scenic River System	2
Previous Studies	3
Purpose	3
III. Eligibility Analysis	4
Free-Flowing Character	4
Segments Studied	5
Finding	7
Outstanding Remarkable Value Analysis	7
IV. Criteria for Rating Outstandingly Remarkable Values	8
Scenic	8
Recreational	8
Geologic	8
Vegetation/Ecological	8
Fisheries	8
Wildlife	9
Cultural	9
Other Resource Values	9
V. Specific Description of Values	10
Scenic	10
Recreational	10
Geologic	12
Vegetation/Ecological	12

	Fisheries	13
	Wildlife	14
	Cultural	14
VI.	Outstandingly Remarkable Value Findings	15
	South Platte River	15
	Segment D	15
	Segment E	16
	North Fork of the South Platte River	17
	Segment F	18
	Segment G	19
	Segment H	19
	Other Important Values	20
VII.	Eligibility Determination	21
VIII.	Classification	21
	Introduction	21
	Classification Determination	24
	Segment Analysis	24
IX.	Interim Management	24
X.	References	25
	Appendices	26
	Appendix A - Vicinity Map	26
	- South Platte Map	27
	- North Fork Map	28
	Appendix B - Previous River Studies	29
	Appendix C - Segment Summaries	31

I. EXECUTIVE SUMMARY

The Pike and San Isabel National Forests and Comanche and Cimarron National Grasslands is conducting a study to determine the eligibility and classification of the North Fork of the South Platte River and segments of the South Platte River for potential designation as a component of the National Wild and Scenic Rivers System.

This document is a revision of the Preliminary Wild and Scenic River Eligibility and Classification Report that was released on July 28, 1995. The revision incorporated comments received during the public scoping process which closed May 31, 1996.

The purpose of this report is to document determinations concerning:

1. The eligibility of these segments for inclusion in the National Wild and Scenic Rivers System.
2. Potential classification of these segments as a "Recreational," "Scenic," or "Wild" river.

This study includes an area 1/4 mile each side of the ordinary high water mark of the entire 50.1-mile mainstem of the North Fork of the South Platte River from its headwaters to its confluence with the South Platte River (Segments F, G, H), and 22.6-mile portion of the South Platte River from below Cheesman Dam to the high water line of Strontia Springs Reservoir (Segments D & E).

The eligibility of these river segments for Wild and Scenic River (W&SR) designation is being determined under the provisions found in Section 5(d)(1) of the Wild and Scenic Rivers Act of 1968 (P.L. 90-542 *et seq.*).

To be eligible for inclusion in the National Wild and Scenic Rivers System a river must meet both of the following criteria:

1. It must be free-flowing, and;
2. possess one or more Outstandingly Remarkable Values (OR Values).

The 22.9-mile portion of the North Fork of the South Platte River from the upstream boundary of the Berger property, near Insmont, downstream to within 1/4 mile of its confluence with the South Platte River (Segment H) and the 22.6-mile portion of the South Platte River downstream from the stream gage below Cheesman Dam to the high water line of Strontia Springs Reservoir (Segments D & E) meet both eligibility requirements. They are free-flowing and possess the following Outstandingly Remarkable Values:

1. **Recreational (Segments D, E, H)**
2. **Fisheries (Segments D & E)**
3. **Wildlife (Segments D, E, H)**
4. **Cultural (Historic) Resources (Segment H)**

Classification as a "Wild", "Scenic", or "Recreational" river area is determined by the level of water resource development, shoreline development, accessibility, and water quality. "Wild" rivers are the most primitive rivers in the W&SR system, "Scenic" rivers are largely primitive but somewhat developed, and "Recreational" rivers are the most developed rivers in the W&SR system.

The 3.1-mile section (Segment D) of the the South Platte River, downstream from the stream gage below Cheesman Dam downstream to the upstream boundary of the Wigwam Club property (NW 1/4 of the NW 1/4 Section 29, Township 9 South, Range 70 West), is classified as a potential "Wild" river .

The 4.9-mile portion of Segment H, from the downstream side of the stone house near Estabrook to the Section line between Sections 29 and 30, downstream from Cliffdale, is classified as a potential "Scenic" river .

The remainder of Segment H as well as the other 64.3 miles of eligible segments are classified as potential "Recreational" river segments.

A comprehensive river study will be conducted in the future, including a suitability report and accompanying legislative environmental impact statement, to determine if the eligible segments are suitable for addition to the National Wild and Scenic Rivers System. If the recommendation is to include all or part of these river segments in the W&SR System, the suitability study and legislative environmental impact statement will be submitted to Congress for a final decision. In the interim, the Forest Service is required to maintain the eligibility and classification of the eligible segments until a final determination is made (FSH 1909.12, Chapter 8).

II. INTRODUCTION

Section 5(d)(1) of the Wild and Scenic Rivers Act, P.L. 90-542 *et seq*, requires all Federal agencies to consider potential national wild, scenic, and recreational river areas in all planning for the use and development of water and related land resources. FSM 1924 states "consideration of the potential wild and scenic rivers is an inherent part of the ongoing land and resource management planning process." The North Fork of the South Platte River (Segments F, G, H) and two segments of the South Platte River (Segments D & E) are being considered for potential Wild and Scenic River designation under the provisions of Section 5(d)(1) of the W&SR Act and as per direction given in the following documents:

Federal Register, National Wild and Scenic Rivers System; Final Revised Guidelines for Eligibility, Classification and Management of River Areas, (Guidelines), September 1982 (47 FR 39454-39461).

Forest Service Manual, FSM 2354.

Forest Service Handbook, FSH 1909.12, Chapter 8.

Revision Desk Guide, Rocky Mountain Region, (Revision Guide), Chapter 8, September 1993.

For the purposes of this analysis, the Forest Service has established a study area 1/4-mile wide from either side of the ordinary high water mark of the study rivers. The maps included in Appendix A show the area being considered.

National Wild and Scenic River System

The National Wild and Scenic Rivers System currently includes a total of 10,744 miles of river on 151 river segments throughout the United States. These designated rivers are managed under the provisions of the W&SR Act to preserve or enhance their Outstandingly Remarkable Values in the future. The Act encourages a cooperative management relationship between the various levels of government and private organizations or landowners along designated river corridors.

Previous Studies

Several major Federal reports have been written regarding National Wild and Scenic Rivers eligibility status for portions of the South Platte and the North Fork of the South Platte Rivers. These studies concluded that portions of the rivers meet eligibility standards for Wild and Scenic River designation.

In 1972 the "Western U.S. Water Plan, Streams and Stream Systems, Working Document," a multi-agency report, said that the South Platte River has "free-flowing values" and "should be appropriately considered and evaluated in Federal planning."

In 1974, "A Conceptual Proposal for a South Platte Canyons Free-Flowing Recreational River" published by the Bureau of Recreation, found that the river was eligible for Wild and Scenic river protection.

In 1977, the Bureau of Outdoor Recreation's "Water and Land Resources Management Study for Metropolitan Denver and South Platte River and Tributaries, Colorado, Wyoming, and Nebraska" lists the South Platte as "free-flowing" and "potential regional park", "general park", or "recreation area".

The National Rivers Inventory (NRI), published by the National Park Service in 1982, included the South Platte River from below Elevenmile Dam to the high water line of Cheesman Reservoir (upstream from Segments D and E in this study). It concluded that these segments (A, B, and C) have outstanding values which make them potentially eligible for consideration for addition into the National Wild and Scenic Rivers System. The NRI did not however, include any of the segments under consideration in this eligibility analysis.

In 1984, the eligibility and classification of Segments A, B, and C was analyzed as part of the Forest planning process for the Pike and San Isabel National Forests and Comanche and Cimarron National Grasslands. The Forest Plan determined that all three segments were eligible for inclusion in the National Wild and Scenic River System. Each segment is considered free-flowing, with outstandingly remarkable scenic, recreational, geologic, fish, and wildlife values. Additional information can be found in Appendix F of the FEIS for the Forest Plan. Because these river segments were identified through the forest planning process, they are recognized as study rivers under the provisions of Section 5(d)(1) of the Wild and Scenic Rivers Act (P.L. 90-542 et seq). No further evaluation is included in this eligibility document for these segments of the river.

In May 1988, the Rocky Mountain Regional Office of the National Park Service evaluated the South Platte River from below Cheesman Dam to its confluence with the North Fork of the Platte River (Segments D & E) for possible inclusion in the NRI. In their letter to the Director of the National Park Service they found that the river "possesses outstandingly remarkable recreational, fish, historic, and other (endangered species) values." Furthermore, their field inspection "disclosed no characteristics which would cause the stream to be considered ineligible as a Recreational component of the Wild and Scenic Rivers System." This was not however, an official Eligibility Study, and the finding was later withdrawn by the National Park Service at the request of Rocky Mountain Regional Forester Gary Cargill.

Purpose

This document presents the methods and results of the eligibility and classification analyses.

The purpose of this analysis is to determine whether the North Fork of the South Platte River and Segments D and E of the South Platte River meet the minimum requirements for addition to the National Wild and Scenic Rivers System. Although there have been other studies, opinions, or findings concerning the eligibility of the river segments under study here, none constituted an official eligibility study under the Wild and Scenic Rivers Act. This document is the official eligibility study and constitutes the final eligibility and classification determination for these study segments.

The Wild and Scenic Rivers Act specifies that to be eligible, a river must have two characteristics: it must be free-flowing, and it must possess one or more OR values. These resources include, but are not limited to the scenic, recreational, geologic, fish and wildlife, historic, and cultural values of the river and its corridor.

River segments found eligible are classified as either "Wild", "Scenic", or "Recreational", based on the level of development and access in the study corridor.

The sole purpose of this document is to make an eligibility determination and to classify the eligible segments. If any segments are found eligible, a comprehensive river study and suitability determination will be completed at a later date under the provisions of the National Environmental Protection Act (NEPA). The river study and environmental impact statement would include public involvement and take into consideration the social and economic trade-offs of designating the study corridor as a wild and scenic river, as well as alternative methods of managing the river corridor.

III. ELIGIBILITY ANALYSIS

The South Platte River and the lower portion of the North Fork of the South Platte River have been intensively studied in the past. These studies, listed in Appendix B, range from recreational to developmental analyses, and include previous attempts to secure permits to build dams and previous attempts to determine the eligibility of these study segments for potential addition to the National Wild and Scenic Rivers System.

The most recent study is the Metropolitan Denver Water Supply EIS (Two Forks EIS) published in 1988 by the U.S. Army Corps of Engineers. This included a proposal for a dam just below the confluence of the South Platte and North Fork of the South Platte Rivers and other associated projects. The Two Forks EIS was used as a primary source of data for this eligibility and classification analysis. Additional studies and discussions relevant to the analysis were also used to determine the eligibility and classification of the river segments.

To be eligible for inclusion in the National Wild and Scenic Rivers System a river must meet both of the following criteria:

1. It must be free-flowing, and;
2. possess one or more OR values.

FREE-FLOWING CHARACTER

The Wild and Scenic Rivers Act (Section 15b) defines free-flowing as:

"...existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway. The existence, however, of low dams, diversion works, and other minor structures ... shall not automatically bar its consideration for inclusion: Provided, that this shall not be construed to authorize, intend, or encourage future construction of such structures within components of the national wild and scenic rivers system."

The Federal Register Guidelines relating to free-flow state:

"There may be some existing impoundments, diversions and other modifications of the waterway having an impact on the river area. Existing low dams, diversion works, rip-rap and other minor structures will not bar recreational classification, provided the waterway remains generally natural and riverine in appearance."

Four major reservoirs are located above the South Platte River section currently under analysis in this study. They are Antero, Spinney Mountain, Elevenmile, and Cheesman. Two reservoirs are also situated immediately below the sections currently under analysis. These include Strontia Springs and Chatfield. Operational flows of the South Platte River between Cheesman Dam and Strontia Springs Reservoir fluctuate tremendously, from a minimum of 1.6 cubic feet per second (cfs) to a maximum of 4,580 cfs.

The Federal Register Guidelines state:

"The fact that a river segment may flow between large impoundments will not necessarily preclude its designation. Such segments may qualify if conditions within the segments meet the criteria."

There are no major reservoirs or impoundments on North Fork of the South Platte River, but free-flowing conditions are affected in its central portion due to human-caused dams, diversions, impoundments, and modifications for municipal, residential, and agricultural use, and to protect the channel from additional flows from the Roberts Tunnel. Flows of the North Fork are heavily augmented with western slope waters which are brought to the river via this tunnel from Dillion Reservoir.

The Wild and Scenic Rivers System currently includes a number of rivers which are regulated by reservoirs or have augmented flows. One of these rivers is the Cache la Poudre in northern Colorado. The Cache la Poudre has similar regulated flow conditions as segments of the South Platte River and North Fork of the South Platte River under study here.

Segments Studied

In accordance with the procedures specified in the Revision Desk Guide for the Rocky Mountain Region, the rivers were divided into segments for analysis purposes. These segments include:

Segment D - The 3.1-mile section of the South Platte River downstream from the stream gage below Cheesman Dam downstream to the upstream boundary of the Wigwam Club property (NW 1/4 of the NW 1/4 Section 29, Township 9 South, Range 70 West).

Segment E - The South Platte River from the upstream boundary of the Wigwam Club property downstream to the high water line of Strontia Springs Reservoir (6029 foot contour) (19.5 miles).

Segment F - The North Fork of the South Platte River from the headwaters downstream to its confluence with Kenosha Gulch (9.7 miles).

Segment G - The North Fork of the South Platte River from its confluence with Kenosha Gulch downstream to the upstream boundary of the Berger property (NW 1/4 of the SW 1/4, Section 34, Township 7 South, Range 72 West), near Insmont (17.5 miles).

Segment H - The North Fork of the South Platte River from the upstream boundary of the Berger property, near Insmont, downstream to within 1/4 mile of its confluence with the South Platte River (22.9 miles).

There are existing impoundments, diversions, and other modifications in all of the river segments that have some impact on the river area. These include existing diversion dams, check dams, rip-rap, stream monitoring gages, jetties, channel relocation, tire and rock walls, bridges, pipes, and culverts. For example, in Segment H, there are six diversion dams, numerous check dams, and evidence of bank stabilization associated with the historic railroad grade and from the County gravel road (Survey of Man-Made Alterations - Denver Water). In Segments D, E, F, and H these developments do not affect the natural or riverine appearance of the area.

Segment G, below the Roberts Tunnel, was found not to be "free-flowing" as defined by the Wild and Scenic Rivers Act. Although there are no major impoundments or reservoirs within this segment, the river has been principally altered by human activities leaving the majority of the segment no longer in a natural riverine appearance.

These activities include three major activities designed to control the flow and potential flooding of the river and affect its free-flowing characteristics. These activities affect the river bed, the river's appearance, resources associated with the river, and other values located in this segment of the river corridor.

The first is associated with the Colorado Department of Transportation (CDOT) which conducts numerous road improvements along the US Highway 285 transportation corridor. Between the towns of Webster and Bailey, CDOT has relocated the bed of the North Fork in at least 20 locations. In 1988, between the towns of Grant and Webster, approximately 30% of the channel was relocated. In addition to the channel relocation work, extensive bank shoring (rip-rapping), channel clearing, small islands and meanders removal, rock and earthen dams construction, and thousands of cubic yards of wetland and riparian zones have been backfilled or removed. River banks have been steepened, vegetation has been removed, shoulders have been gravelled or paved, and in some areas the banks have been built up so that the river appears more like a canal.

The second major activity affecting the North Fork's free-flowing characteristic within this segment is administered by the Denver Water Department. Approximately 16 miles of the river channel between the town of Grant to the National Forest boundary near Estabrook have been channelized. Most of this activity has occurred from Grant through the property owned by the National Farmers Union below Bailey (upstream from Segment H). The river channelization (done primarily to deepen the underwater canyon called a "thalweg") was conducted to accommodate the increased water flows from the Dillon Reservoir to the North Fork via the Roberts Tunnel. Much of the natural material normally found in this type of river such as woody debris, large rocks and boulders, or river plants, are absent. Constant maintenance of the channel is necessary because the river valley gradient is low. The deepening of the thalweg combined with the increased flow velocity and volume, and the colder water temperatures of the imported waters have affected the historical fisheries value of the North Fork and have altered the outward appearance of the river by producing a "manicured" effect.

Both projects have rip-rapped or otherwise stabilized the river bed and banks in many locations. Natural occurring features of a river such as logs, rocks and vegetation have been removed. Tributary streams have been re-routed, and numerous culverts and bridges installed. With all the changes and modifications to portions of Segment G downstream from the Robert's Tunnel, it has lost its natural appearance and is more of an artificial channel.

A third impact to the natural appearance and affecting the free-flowing characteristics of the North Fork between the Roberts Tunnel and the start of Segment H, near Insmont, is the result of local residents, agriculturalists, tourist facilities, and ranching outfits. To support this developed environment, there are small reservoirs, numerous stock ponds, canals, and other water diversion sites. This overall impact, when considered by itself, is relatively minor and would not necessarily remove this portion of Segment G from eligibility consideration. When combined with the other two activities, the overall effect leads to the not free-flowing determination.

There are a few locations within this of the North Fork that appear natural or are otherwise unaffected as a result of these three activities. To attempt to list these few locales as components of the Wild and Scenic River System, would result in excessive segmentation.

Finding

All the study segments are considered free-flowing except for Segment G, downstream from the Roberts Tunnel. Channel modifications and diversions are present, particularly on Segment H and the lower portion of Segment D, but they are not considered significant enough to affect the free-flowing nature of the river. Segment G has undergone extensive alteration by human activities downstream from the Roberts Tunnel and includes over 20 diversion dams, numerous check dams, the outlet for the Roberts Tunnel, channel relocations, and countless other human-made intrusions and modifications to the river bed, channel, banks, and vegetation (Survey of Manmade Alterations - Denver Water), leaving a majority of the segments no longer in a natural riverine condition.

OUTSTANDINGLY REMARKABLE VALUE ANALYSIS

The Wild and Scenic Rivers Act specifies that the eligibility for the Wild and Scenic River System shall be based on "outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values" of the river or its immediate environment. Although a river or river segment may contain multiple outstandingly remarkable values, only one remarkable outstanding value is necessary to qualify the river or river segment as eligible." Some values were determined to be important or "significant" to the river corridor or local area, but were not found to be outstandingly remarkable when viewed at a national or regional level. The regional level defined for this study is the Front Range which includes the Colorado portions of the South Platte and Laramie River watersheds in Colorado (USDA Forest Service, Revision Desk Guide, Rocky Mountain Region).

Although the determination of value significance is a matter of informed judgement and interpretation, the process used by the Forest Service has been standardized to provide consistency. This process includes the following analysis and verification techniques:

- The use of an interdisciplinary team with technical expertise related to each of the values being analyzed.
- Consideration of uniqueness and rarity at a regional and national level.
- Values must be river related in that they owe their existence or contribute to the functioning of the river system and its environment.
- The use of qualitative guidelines to help determine significance
- Verification by other experts in the subject area.

The analysis of OR values followed the Forest Service's approach. These findings will be subject to external review when the river study is completed.

Forest Service specialists provided current information on river-related values in the corridor. The categories that have been considered include:

Scenic

Recreational

Geologic

Vegetation/Ecological

Fisheries

Wildlife
Cultural
Other Resource Values

IV. CRITERIA FOR RATING OUTSTANDINGLY REMARKABLE VALUES

SCENIC

The landscape elements of landform, vegetation, water, color, and related factors result in notable or exemplary visual features and/or attractions. When analyzing scenic values, additional factors such as seasonal variations in vegetation, scale of cultural modifications, and the length of time negative intrusions are viewed may be considered. Scenery and visual attractions may be highly diverse over the majority of the river or river segment length and not common to other rivers in the geographic region.

RECREATIONAL

Recreational opportunities are, or have the potential to be, unique enough to attract visitors from outside the geographic region. Visitors would be willing to travel long distances to use the resource for recreational purposes. River-related opportunities could include, but are not limited to: sightseeing, wildlife observations, photography, hiking, fishing, hunting, and boating. Other criteria includes diversity, level of use, quality, uniqueness, naturalness, and length of seasonal use.

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

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

GEOLOGIC

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

VEGETATION/ECOLOGICAL

The river or area within the study corridor contains nationally or regionally important populations of indigenous plant species. Of particular significance are species considered to be unique or populations of federally listed or candidate threatened and endangered species. When analyzing vegetation, additional factors such as diversity of species, number of plant communities, and cultural importance of plants may be considered.

FISHERIES

Fish values may be judged on the relative merits of either fish populations and/or habitat - or a combination of these river-related conditions.

Populations. The river is internationally, nationally or regionally an important producer of fish species. Of particular significance is the presence of wild stocks and/or Federally or State listed or candidate

threatened, endangered, and sensitive species. Diversity of species is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

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

WILDLIFE

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

Populations

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

Habitat

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

CULTURAL

The river or area within the study corridor contains a site(s) or feature(s) associated with a significant event, an important person, or a cultural activity of the past that was rare, unusual, has exceptional human interest value(s), or is one-of-a-kind in the geographic region. A historic site(s) and/or feature(s) in most cases is 50 years old or older; a prehistoric site is older than recorded history. Sites may have national or regional importance for interpreting cultural history; may be rare and represent an area where a culture or cultural period was first identified and described; may have been used concurrently by two or more cultural groups; or may have been used by cultural groups for rare or sacred purposes.

Of particular significance are sites or features listed by the Colorado State Historic Preservation Office to be eligible for inclusion in the National or State Register of Historic Places on a regional, state, or national level of significance.

OTHER RESOURCE VALUES

The goal of this eligibility analysis is to determine whether the rivers or river segments meet the minimum requirements to be added to the National Wild and Scenic Rivers System. Information on river-related values in addition to those listed above was considered in the analysis process; however, separate sections on each resource present in the study corridor were not developed unless existing information indicated that a resource or value was clearly outstanding or notable in the region. The assessments of all river-related values will be considered in depth in the suitability study process.

V. SPECIFIC DESCRIPTION OF VALUES

SCENIC

The scenic beauty of the South Platte and North Fork of the South Platte River corridors has received wide acclaim since at least the 1880s and has been well documented in books, magazines, and newspapers. In both cases, the river and river canyon are distinctive visual features. The streams are largely composed of clear, smooth water interspersed with deep pools and sections of white water flowing over boulders. Rock outcrops of pink and gray granite and riverside stands of willow are common along the river corridor. Jagged outcrops and massive rounded boulders of Pikes Peak granite are combined with steep vegetated slopes, providing a variety of visual relief. Vegetation types range from wetland and riparian species such as willows and tall grasses that grow within the flood plain, to cottonwoods, pines, spruces and drier forbs and short grasses ranging up the valley slopes. Wildflowers of various hues bloom from March through October. In the fall, the cottonwoods, aspens, vines and willows contrast their reds and yellows with the blue-greens of the spruce-fir forests. Local and regional newspapers highlight the South Platte River and North Fork of the South Platte River corridors as places for exceptional viewing of fall foliage.

The area's popularity for scenic viewing is enhanced by its accessibility from trails or paved and gravelled roads which parallel the majority of the river segments under study. Prior to construction of today's modern transportation network, wagon and coach roads, and later railroads and spurs, provided access to much of the area. Because of the many bends and curves of the river, and subsequently the river road, there are ample opportunities to view the crystal clear waters, diverse vegetation patterns and landforms. The lower portions of the study area are included and are highly visible from the Colorado Trail. The diverse landform and vegetation community supports a variety of animal life. All add to the scenic viewing enjoyment and overall attraction of the river corridor.

The scenery of the area figured into the economic growth and success of the early railroad days. In the 1880s railroads paralleled portions of the study segments bringing tourists into the area to enjoy the scenery and fisheries values. The river canyon's beauty was prominently featured in the advertisements for the Denver South Park and Pacific Railway Company. Remnants of this historic resource are still visible today, and provide history buffs and others with additional scenic viewing opportunities.

Chapter 4 of the Two Forks EIS (Volume 1) sums up the significant visual resources. The EIS describes the area as composed of rugged mountain foothills characterized by forested slopes, rock outcrops, and jagged peaks, with a grassy flood plain in a narrow canyon. The banks of the South Platte River support stands of riparian vegetation which contrast with coniferous vegetation on the hillsides. Deciduous trees and shrubs, such as cottonwood and willow, as well as grassy meadows line the river. The fine branching patterns of these deciduous trees and shrubs soften the texture of surrounding hillsides, and the fall color of the leaves is highly distinct. The scenic quality is also attributed to the diversity of distinct natural (geologic and landform) features found. Some of the more notable features include Skull Rock, Long Scraggy Peak, Noddle Heads, Eagle Rock, and the Chutes. Although most of these features are located outside the study corridor, these distinctive geologic formations provide visual interest and serve as regional landmarks.

RECREATIONAL

The recreation features of the study corridor are generally described by the Two Forks EIS. It states that the South Platte River is a significant recreation resource since it is one of three Front Range rivers in Colorado having an annual flow in excess of 200,000 acre-feet. The portion of the South Platte River in the project study area (the same area as for this Wild and Scenic analysis), represents a limited resource of large river canyons. Its proximity to a large urban area makes it an important and unique recreation resource for the Front Range of Colorado. Public lands and the existing road system make this (area) highly accessible to a large population center...The combination of proximity, accessibility, and fishing quality near a large metropolitan area is unique, and the fishing opportunity is considered

to be a significant resource (pp. 4-98, 4-100.) Recreation use on the National Forest portion of the study area is estimated at 300,000 Recreation Visitor Days which accounts for 10 percent of the recreational use on the Pike-San Isabel National Forests.

The dispersed recreation activities are a significant recreation resource in the regional area. The natural stream gradients, level areas, vegetation patterns, and scenic quality along the river provide a variety of dispersed recreation activities. These activities include camping, picnicking, swimming, tubing, sunbathing, motorcycle use, scenic viewing, rock climbing, and organized activities such as volleyball and horseshoes. The majority of these activities are day use activities and are related to the presence of the river either directly, such as for boating, tubing and fishing, or indirectly, such as for scenic viewing. The capacity of the canyon bottom and the designated parking and developed camping are also important to activities such as hiking and off-highway vehicle (OHV) use, which are only marginally related to the river resource.

The project study area includes over 27 miles of white-water boating opportunities, which are a significant recreational resource. This includes approximately 7 miles of the North Fork below Buffalo Creek, 14 miles on the South Platte from Deckers to the North Fork confluence, and 6 miles on the South Platte from Reservoir to Riverside Campgrounds in Elevenmile Canyon. The South Platte River and the North Fork which are used by over 12,000 kayakers and canoeists each year...and represents 70 percent of the river boating activity on the Pike National Forest. The study area offers a broad range of white-water boating opportunities, from Class I to Class V (International Scale of Difficulty). The white-water boating opportunity is an especially valuable resource in that it is close to Metropolitan Denver and there are river segments that are suitable for teaching and practicing boating skills.

Kayakers have been able to access the upper portion of the North Fork at the town of Bailey and at property owned by the Farmer's Home Union located downstream from Bailey. Pine Valley Ranch, part of the Jefferson County Open Space park system will provide "take out" points for watercrafts, parking and other amenities that will increase kayak and other recreation uses. River take out points within or downstream of the town of Pine have often presented problems with private land owners. The section of the river between Pine Valley Ranch and the community of Buffalo Creek (approximately three miles) is privately owned and access to the river is not generally open to the public.

Much of the popularity of the South Platte is due to its unique capability to accommodate a wide variety of recreation activities in one location. This diversity of recreation opportunities within the project study area contributes significantly to the popularity and uniqueness of the site (pp. 4-100, 4-101). The same can be said of the North Fork of the South Platte River below Kenosha Creek.

Developed recreation facilities in the study area include four National Forest campgrounds between the Wigwam Club and Strontia Springs Reservoir, with a combined capacity of over 520 people at one time. There are 12 other campgrounds within a half hour drive of the river that can accommodate another 2,400 people. In addition to the campsites on the South Platte, there are three developed picnic areas that can accommodate 56 persons at one time, numerous trailheads, and two campgrounds on the North Fork of the South Platte River in Segment F. Other cultural recreational attractions in the study include three private resorts, two private fishing clubs, a YMCA camp, and a private campground. There are also 222 recreation cabins in the area, 21 on public lands. The private resorts, cabins, and fishing clubs and a YMCA camp are directly linked to the river and its recreation values.

Rock climbing, or mountaineering, is a popular activity in the area. *South Platte Rock Climbing*, (Hubbel and Rolofson, 1988), is devoted specifically to the South Platte and North Fork. Although most of the climbs associated with the South Platte River are outside the 1/2-mile wide river corridor, the access for these climbs are within the corridor. Primary routes associated with this area of the South Platte River include Top Of The World, Malay Archipelago, and Noddle Heads. There is a lack of comparative data with which to judge the geology and rock climbing values to other regional areas. The lower North Fork area within and adjacent to this 1/4-mile river corridor is a popular rock climbing area and is highlighted in many sporting goods stores and at least two rock climbing books. Many of the popular

rock climbing sites are privately owned and permission to climb on or cross private property to gain access to public climbing spots must first be obtained from the landowner. Within the South Platte and North Fork River area, the North Fork area is higher rated.

Special user groups play a large part in the use and management of the South Platte River. Youth groups such as scouting organizations do public service projects on the river each year. Other service groups, such as Trout Unlimited, also do yearly projects designed to protect and enhance the river while promoting their organization. Trout Unlimited also holds their annual Masterfly fishing event in Cheesman Canyon. The Paralyzed Veterans of America provides recreation opportunities for senior citizens and mentally challenged youths as well as for their own membership, on an annual basis.

GEOLOGIC

The corridor from Cheesman to Strontia exhibits notable geologic and/or physiographic landmarks that are located in or visible from the study corridor. These include Cathedral Spires, Cheesman Canyon, Dome Rock, Skull Rock, Long Scraggy Peak, the "Chutes", the Noddle Heads, and Eagle Rock.

According to Chronic (1980), the predominant geologic formation is Pikes Peak Granite, "a beautiful pink granite that contains stubby interlocking crystals of glass-like quartz and flat-faced white and pink feldspar, with a liberal sprinkling of hornblende and black flaky mica (p. 95)". Formed from an ancient batholith of molten rock about a billion years ago, the weathering of Pikes Peak Granite follows joint planes, separating boulders and rounding the protruding angular edges. Along the river, the erosion of the granite has formed knobs, massive cliffs, and pinnacles of monumental rounded blocks. Many dikes in this area have large crystals of feldspar, smoky quartz and mica. In other places, particularly near the confluence, the granite is cut by pegmatite dikes. Elsewhere it may be cut by white veins composed of muscovite and white milky quartz.

VEGETATION/ECOLOGICAL

The area on the South Platte River from Cheesman Dam to Strontia Springs Reservoir and an area on the North Fork of the South Platte from the upstream end of the Berger property, near Insmont, to 1/4 mile from the confluence (Segments D, E, H) contain riparian and wetland areas important to the health of the river and associated wildlife in the Front Range area of Colorado. Of particular importance is the prairie gayfeather (*Liatris punctata*), necessary for the survival of the Pawnee montane skipper butterfly. Cheesman Canyon may also contain habitat for the spotted owl. The river corridor from Cheesman Canyon to below Scraggy View (Segment D and part of Segment E) has been identified as potential habitat for the Ute-Ladies Tresses orchid, a threatened species.

Habitat types of increasing concern to the State and to the nation are wetland and riparian zones. According to the Two Forks EIS, there are at least 431 acres of wetland along the South Platte River from Cheesman Dam to Strontia Springs Reservoir. Some of this acreage includes the lower five miles of the North Fork above the confluence.

Segments D, E, and H each contains habitat types and diversity which are important and essential to the survival of several wildlife species, some of which are threatened, endangered, or sensitive. The potential for vegetative threatened species, the Ute-Ladies Tresses orchid, is very good. A number of wetland and riparian areas are located along these segments. Although the diversity of vegetative habitats supports the wildlife diversity and the vegetative diversity also contributes to the Recreational OR Value, Vegetative/Ecological was not found to be Outstandingly Remarkable.

FISHERIES

The fisheries within the analysis area has been best summed up by Region VIII of the U.S. Environmental Protect Agency in the 1990 report *Recommended Determination to Prohibit Construction of Two Forks Dam and Reservoir Pursuant to Section 404(c) of the Clean Water Act* (EPA Report). Data supporting the population and habitat are presented as follows on page 22 of the EPA Report:

"The fishery in the Two Forks dam and reservoir area (Segments D, E, H) is an extremely valuable and unique resource. The Colorado Division of Wildlife (COW) examined the historic records concerning the South Platte fisheries and concluded that the entire South Platte basin upstream from Denver possessed a phenomenal native fishery prior to initial settlement of the Denver area. By the late 1880's this quality fishery was being actively promoted by the railroads in an effort to attract fare-paying fishermen. This large area of quality fishery has been reduced to limited portions of the basin today, much of which is in the Two Forks dam and reservoir area.

In recognition of the value and uniqueness of the remaining resource, the Colorado Wildlife Commission and the USF&WS each selected the South Platte River in the inundation area for special status. The Colorado Wildlife Commission has designated the stretch of the mainstem of the South Platte from Cheesman Dam to the town of South Platte as a Gold Medal trout fishery, one of the highest quality habitats for trout which offers the greatest potential for trophy trout fishing and angling success. The primary game fish in the area are rainbow and brown trout.

The USF&WS has designated portions of the stream in the inundation area as Resource Category 1, indicating the "habitat to be impacted is of high value for evaluation species and is unique and irreplaceable on a national basis or in the ecoregion section." The main stem of the South Platte from Cheesman Dam downstream to the Scraggy View picnic area has been designated as Resource Category 1 (p. 21.)

The USF&WS concluded this stretch of stream is unique because of: 1) its combination of high biomass numbers and the large average size of the trout present; 2) the ability of the habitat to support these highly valued populations given the frequent adverse conditions resulting from the operation of Cheesman dam; 3) the ability of the stream reach to provide public fishing within reach of the large metropolitan population; and 4) the stream reach is the best of the Gold Medal segments in the State" (EPA Report, p. 21.).

In addition to the above EPA findings, the USF&WS has rated the South Platte River as Resource Category 2 habitat from the Scraggy View Picnic Ground to the confluence with the North Fork. This habitat is defined as being relatively scarce or becoming scarce. Mitigation goals provide for no net loss of in-kind habitat value.

In addition to its Gold Medal Waters status, the portion of the South Platte River from Cheesman Dam to the Wigwam Club (Segment D) is listed by the DOW as Wild Trout Waters, meaning the area is not stocked but consists of a self-sustaining trout population.

The study area has historically provided excellent recreational fishing opportunities, but the natural fishery capability and fish biomass has been altered by human manipulation. The excellent fish population (biomass) in Segment D and much of Segment E can be attributed to the tailwater effect of Cheesman Dam. Much of the fish biomass in Segment F however, can be attributed to the DOW fish stocking program. Despite these impacts, the habitat and fish populations draw strong year-round angling use from throughout the region.

WILDLIFE

The Two Forks EIS, the EPA Report, and FS data have determined that the area from Cheesman to Strontia and the first 7 miles of the North Fork contains a highly diverse set of wildlife, including threatened and endangered and sensitive species. The Mexican spotted owl is a threatened species and has been reported in an area less than 6 air-miles from Deckers. Cheesman Canyon (Segment D) has potential owl habitat. Peregrine falcons, an endangered species, have nested adjacent to the lower North Fork study corridor on Cathedral Spires and utilize the study area for feeding. The nest site was the last site on the eastern slope to be abandoned during the peregrine decline in the 1960s and was occupied in 1993, 1994, 1995, and 1996 with four young successfully fledged in 1994 and two falcons successfully fledged in 1996. The bald eagle, a threatened species, uses Cheesman Canyon and other segments on the South Platte and lower North Fork for its wintering grounds. The Waterton Canyon area (lower portions of Segments D and H) contains a unique low-elevation Rocky Mountain bighorn sheep herd. In addition, the entire stretch of the South Platte from Cheesman to Strontia (Segment D-E) and portions of Segment H on the North Fork of the South Platte River, is home to the threatened Pawnee montane skipper butterfly.

Other sensitive species such as the osprey exist within the area; not all sensitive species have been surveyed for, and there is the high potential for other species, primarily birds, to be present.

Three segments (D, E, H) contain a mixture of various habitat types and structural stages which contribute to a rich habitat diversity. Certain key vegetation cover types provide essential feeding areas for wildlife, and are low in availability. These include high-evaluation riparian areas, mountain grasslands and shrubs, willows and sedges, pastures, and the grass-forb and shrub-seedling stages of forested types. All of these habitats are prime feeding habitats for elk, deer, and bighorn sheep.

According to the Two Forks EIS, "The diversity components...are important to many species for different portions of their life cycles...they are particularly important to deer and elk for feeding...they are considered to be relatively scarce and extremely valuable." (p.4-47).

CULTURAL

Numerous cultural heritage resources exist within the two segments between Cheesman Dam and Strontia Springs Reservoir, and from Insmont to the confluence. The cultural resource reconnaissance surveys conducted for the Two Forks project resulted in the recording of 45 sites between Cheesman Dam and Strontia Springs Reservoir (Segments D-E), which were determined eligible for the National Register of Historic Places. Many of these would be suitable for interpretation and/or scientific research. The Denver South Park and Pacific Railroad Grade, the Pine Historic District and the Estabrook Historic District have been officially listed with the National Register; all are located within Segment H. Cheesman Dam, just outside Segment D, is listed as a National Engineering Landmark.

Prehistoric Native American sites have been documented that exceed 7,000 years in age. However, little data is available that fully explores this period. Only one prehistoric site, a rockshelter located in Segment F, has been examined in any great detail. The previous surveys show that the corridors were used by Native Americans since early Archaic (ca. 7,000 years ago) up to the historic present. It is logical to assume that prehistoric use and/or occupation within the corridor occurred earlier than this.

Historic sites important to our understanding of the past are also present, and reflect themes relating to transportation, recreation, and engineering. Ferguson (1993) states that the first historic Euro-american contact in the area was in 1805, when a Kentuckian named James Purcell was chased to South Park "with an angry band of Sioux hot on his trail" (*Rocky Mountain Walks*, p. 174). In 1806 Zebulon Pike made his first exploration up the South Platte, also traveling to South Park.

The Platte River was a major gateway for the westward migration of Euro-americans, with travelers following both the North and South Platte Rivers. Pierre and Paul Mallet, travelling from St. Louis, lead

an early (1739) exploration party, and named the river Riviere la Platte because of the flat shallow waters. Between 1800 and 1840, the South Platte River and the North Fork saw mainly trappers seeking fur-bearing animals. In 1858, at least two settlements formed at the junction of Cherry Creek and the South Platte River, known as Placer Camp and Montana City. By the 1850's the search for precious minerals was well underway. Between 1859 - 1860, the boom days had hit Tarryall Creek, upriver of Cheesman Dam, between the South Platte River and South Park. The boom led to organized stage, express and freight line service, and during the 1860's, upwards of 70,000 people emigrated to the Rocky Mountains. In 1860 the Denver, Auraria and Colorado Wagon Road Company and the Denver and South Park Stage Company was formed, serving the traffic up the South Platte and the North Fork. In 1862 the Tarryall and Arkansas River Wagon Road Company offered some competition as a toll and stage road servicing the upper South Platte canyon area above present day Cheesman Reservoir.

Between 1868 and 1870, thousands of pine and spruce were logged in the Platte canyons, primarily the North Fork, and floated to Denver for construction of the Denver Pacific and Kansas Pacific Railroad (Poor, 1949.) This is the only historical evidence found regarding the navigable activities of these rivers.

Between 1870 and 1880, Denver's population grew from 4,760 to 35,000 people, precipitating a "railroad war" between various political and commercial factions. In 1868 the first railroad route up the South Platte was undertaken by the Denver South Park and Pacific Railway, and by January of 1879, the railroad had reached Hall's Valley and crossed Kenosha Pass for South Park. By October of 1942 the line was abandoned, and the longest narrow gage line in the United States was dismantled.

VI. OUTSTANDINGLY REMARKABLE VALUE FINDINGS

SOUTH PLATTE RIVER

From the base of Cheesman Dam to the impoundment waters of Strontia Springs Reservoir, the South Platte River canyon drops approximately 700 feet in elevation (from 6,700 feet to 6,000 feet). The narrowest and steepest gradient on the South Platte is between the base of Cheesman Dam to the Wigwam property boundary. The river drops approximately 300 feet within this three-mile stretch (Segment D). Between the Wigwam property and the community of Nighthawk, the canyon is much more open and broader, with an approximate drop of 200 feet in elevation within a fourteen-mile stretch (upper end Segment E). The gradient and narrowness of the canyon again increases from this point, dropping approximately 300 feet, a distance between Nighthawk and the Strontia impoundment waters, a distance of almost six miles (lower end Segment E).

Several creeks and gulches drain into the South Platte between Cheesman and Strontia Springs reservoirs. Many, like Jenny Gulch and Saloon Gulch, are of low volume or are intermittent in nature. Others, such as Horse Creek, Sugar Creek and Pine Creek, are permanent but also of low volume.

Segment D: The 3.1-mile section of the South Platte River includes the section from below Cheesman Dam downstream to the upstream boundary of the Wigwam Club property (the NW 1/4 of the NW 1/4, Section 29, Township 9 South, Range 70 West). The first mile below Cheesman Dam is owned by the City and County of Denver, and the next two miles are National Forest System lands. It is the finding of this Eligibility/Classification document that Segment D possesses the following Outstandingly Remarkable Values:

Recreational - Fishing, and dispersed recreation such as: hiking and scenic viewing.

This segment in Cheesman Canyon attracts people from all over the region for hiking, flyfishing, and scenic viewing in its rugged boulder-strewn canyon. The canyon is one of the most heavily fished sections in the State of Colorado and receives the heaviest fishing use in the Front Range. The Gill Trail, which parallels the river, is heavily used by anglers, hikers, nature observers, and photographers. Outfitters and guides permitted by the South Platte Ranger District cater to local,

national and international clients. This area is also the site of the annual Masterfly Tournament sponsored by Trout Unlimited. The tournament is used as a fundraiser to enhance the South Platte River corridor.

Fisheries - Nationally renowned brown and rainbow trout populations and habitat.

The fisheries value for Segment D includes population and habitat. This segment contains exceptionally high fish habitat and is a nationally important producer of wild brown and rainbow trout. According to the Colorado Division of Wildlife (CDOW), there are more than 9,000 miles of trout streams in Colorado. This stretch represents 3 miles of the 112.5 miles of wild trout streams, and 3 of the 167.8 miles of Gold Medal trout streams in the the state. Wild Trout waters contain fish raised entirely within the natural environment and are not stocked with hatchery fish. Gold Medal waters provide outstanding angling opportunities for large trout. Cheesman Canyon is considered the "crown jewel" with more than 500 pounds of fish over a 14 square foot surface area. The CDOW ranks this among the most productive trout streams in the state if not the country. According to the USDI-Fish and Wildlife Service (USFW), Resource Category 1 waters are unique on a national basis and are irreplaceable in kind.

Wildlife - Pawnee montane skipper butterfly populations and habitat.

The Pawnee montane skipper qualifies under the wildlife population OR Value defined for this analysis. The montane skipper is a globally rare sub-species found only in the area of Platte Canyon from near South Platte up to approximately 7,400' elevation (Pague, et.al., 1993; Carlson, 1991). To add to the significance of this value, this sub-species of the skipper is listed in the *Federal Register* (52 FR 36176) as a Threatened species under the Endangered Species Act. The habitat of the butterfly has been created by the river, over time, resulting in the current canyon topography.

Other values for this segment were evaluated including scenic, geologic, and cultural and were found to be significant but not Outstandingly Remarkable. The geologic features do contribute to the Recreational ORV's, but were not in themselves found to be Outstandingly Remarkable. Vegetation/ Ecological was not considered significant.

Segment E: The South Platte River from the upstream boundary of the Wigwam Club property downstream to the high water line of Strontia Springs Reservoir (19.5 miles). Approximately 50% of the land is National Forest System land; 45% is owned by the City and County of Denver; and 5% is privately owned. It is the finding of this Eligibility/Classification document that Segment E possesses the following Outstandingly Remarkable Values:

Recreational - Dispersed and developed recreation such as: camping, picnicking, hiking, fishing, scenic driving, and other day-use.

The quality and diversity of developed and dispersed recreation opportunities along this segment and the accessibility and proximity of the area to major metropolitan areas provides an excellent year-round recreation resource. The recreational study for the *Two Forks EIS* indicated that the Recreational Visitor Day (RVD) use for the project area exceeds 304,000 RVD's on public land (this includes an area larger than the river corridor). However, most of this visitor use was projected to occur along the river, including the North Fork. A survey conducted by the District in 1993 (Maguire and Alden, 1994) lists the wide range of activities which occur within Segment E and Segment H. In addition to the premier flyfishing activity that occurs in the upper (60%) portion of this, the Paralyzed Veterans of America hosts an annual three-day fishing derby and an outing for over 750 persons with a disability and their families, senior citizens, and developmentally disabled youths. This event occurs near the historic site of Twin Cedars at the lower end of the segment. The area is also popular for waterfowl hunting. This segment is considered the

best recreational river segment within the region of analysis primarily because of the amount and diversity of opportunities presented to such a large population base.

Fisheries - Nationally renowned brown and rainbow trout populations and habitat.

The fisheries value for Segment E includes population and habitat. The Colorado Division of Wildlife lists the South Platte from the Wigwam Club to the confluence with the North Fork as Gold Medal waters, approximately 85% of this segment's length. The USFW Resource Category 1 rating extends from the Wigwam Club to Scraggy View Picnic Grounds, approximately 45% of the segment, and Resource Category 2 extends from Scraggy View to Strontia Springs Reservoir. Gold Medal and Resource Category 1 waters were previously described under Segment D. Resource Category 2 waters are also Outstandingly Remarkable in that they represent aquatic habitat that must be mitigated in kind for no net loss.

Wildlife - Pawnee montane skipper butterfly and habitat.

(See description in Segment D)

Other values for this segment were evaluated including scenic, geologic, and cultural and were found to be significant but not Outstandingly Remarkable. Vegetation/Ecological was not considered significant.

NORTH FORK OF THE SOUTH PLATTE RIVER

Headwater tributaries for the North Fork are located high on the eastern slope of the Continental Divide at 12,500 feet in elevation. The tributaries combine to form the main stem of the river at approximately 11,300 feet. The North Fork flows in an easterly direction for approximately 51 miles before reaching the South Platte River at an elevation of 6,050 feet. Numerous small intermittent and perennial streams contribute to the flow.

The North Fork has three distinct segments. The first is from the headwaters to Kenosha Gulch near the town of Webster (Segment F). This segment is known as Hall Valley. The landscape is a result of alpine glaciation, with a primary geologic substrata composed of the granitic Kenosha batholith. Elevation changes approximately 3,500 feet within the 9.7-mile segment. The overall topography is representative of a typical high mountain glacial valley, with narrow and steep tributary canyons, open vistas interrupted by glacial ridges, and alpine to sub-alpine vegetation.

The second segment is from Kenosha Gulch, near Webster, to Insmont near the community of Estabrook (Segment G). The river valley geology changes from the granitic batholith to a schist-gneiss complex, and the valley is much broader with less gradient drop. The river parallels an ancient fault, with the elevation dropping 1,520 feet in approximately 17.5 miles. Glacial and river gravels form flat terraces along the river. Most of the river is paralleled by US Highway 285. Numerous ranches, communities, and houses are found in this section, taking advantage of the open topography and transportation network. The water from Roberts Tunnel enters the river in this section three miles downstream from the community of Webster. The Forest Service maintains a work and visitor information center along the river corridor.

The third segment (Segment H) is from Insmont to the confluence with the South Platte River. The North Fork canyon takes on different characteristics within this 22.9-mile segment. The overall effect is a narrow and confined river canyon. The gradient rapidly drops 800 feet within the first seven miles. Near the town of Pine, the topography becomes less steep for the next five miles, with the gradient dropping 150 feet. Near the community of Riverview, the canyon again becomes narrower and steeper, dropping 1,500 feet in the next eleven miles before reaching the confluence. Population density within this segment is low as there are only a few small communities in this area and many of the dwellings are occupied on a seasonal basis. The channel has been modified in spots, and the banks have been

stabilized in places during the construction of the historic railroad grade and more recently by county road work.

The entire length of Segment H is paralleled by either roads, trails or the historic (abandoned) railroad grade. Access to the river is restricted in places by private lands, but the majority of this segment is accessible to the general public. Jefferson County has recently developed the Pine Valley Ranch near Pine as a day-use Open Space park. Lands jointly managed by the Denver Water Department and the U.S. Forest Service, from near Buffalo Creek to the confluence, are also managed for day-use only. National Forest land in the Crossons area at the upper end of the segment is open for dispersed recreational use. A portion of the land at Crossons is privately owned where non-motorized access only is allowed.

Segment F: The North Fork of the South Platte River from the headwaters downstream to its confluence with Kenosha Gulch (9.7 miles). Approximately 65% of the lands are National Forest System lands and the rest is in private ownership. Also included in this analysis is the upper 2.3-mile portion of Segment G above the Roberts Tunnel. It is the finding of this Eligibility/Classification document that Segment F and the upper 2.2-mile section of Segment G possess no Outstandingly Remarkable Values.

Other values for this segment were evaluated and were found to be significant but not Outstandingly Remarkable. These include the following:

Scenic: In terms of scenic value, the terrain in the area is moderately varied with steep, stable and broad slopes. Rock forms, although present are not distinct or unusual in appearance. Rounded hills, ridges and peaks are not visually dominant. Minor lateral canyons are present.

Vegetation is moderately varied with interspersed patterns and common diversity in plant species or seasonal color. Vegetation offers a normal range of size, form, color, texture and spacing. In this segment the stream channel flows mostly through heavy stands of conifer vegetation. Views from the stream and of the stream are extremely limited except in the upper portion of Segment G where the stream parallels US Highway 285. Also, as a result of the heavy vegetation, sunlight to the stream is limited. The valley offers spring color from wildflowers and fall colors from the aspen.

Waterforms are varied with moderate numbers of water bodies, snow patterns and streams of varying size. Special features are only occasionally present. Poor water quality is found both in surface and ground water. Water clarity from the headwaters to the confluence with Handcart Gulch is excellent. However, below Handcart Gulch water clarity is very poor. The water is cloudy as a result of sediment loads. The high iron content in the water flowing from Handcart Gulch has stained the rocks and stumps in the stream channel. Several stretches of the stream are covered with timbers lying bank to bank, some with rootballs attached. In several locations the stream is heavily braided as a result of dams created by either beavers or flood debris.

Recreation: The lack of recreational fishing may contribute to the lesser amount of recreational use when compared to other parts of the drainage. There are developed recreation facilities which include a picnic area, campground and dispersed campsites located along the river in Segment F. These facilities are assessed as being relatively small, clean, and in good shape but they are not regarded as "destination" sites attracting visitors from outside the Denver metro area or for lengthy stays. Recreation opportunities are present on this segment but nothing outstandingly remarkable.

Geologic: The area is a part of the Front Range, an anticlinal northerly trending feature composed of igneous and metamorphic rocks. The highest portion of the area is the Continental Divide, which has been subjected to glacial action. Some spectacular geologic features occur in this area but nothing outstandingly remarkable.

Fisheries: There are no Outstandingly Remarkable Fisheries values recorded for this area. Up to the confluence of Handcart Creek the stream is murky and obviously polluted with mine drainage. It appears more or less sterile.

Wildlife: The headwaters are habitat for mountain goats. There are sections near US Highway 285 that are critical winter range for deer. These values have local significance but are not outstandingly remarkable. There are no documented threatened or endangered species associated with this segment of the river.

Cultural: There are some cultural values significant to the area but nothing outstandingly remarkable on a national or regional level. No prehistoric sites have been recorded to date. The recorded mining-related resources in Segment F (the Whale and Missouri Mines, the Whale Mill, the tramway, Hallstown, and the Hallstown Smelter) and the railroad resources (railroad grade, and Webster site including the charcoal ovens) are determined locally significant and could be potentially eligible for the National Register of Historic Places but have not been formally evaluated.

Vegetation/Ecological: The area was found to be typical of other high mountain valleys in the region. Primary tree species were Englemann and Colorado blue spruce, subalpine fir, scattered stands of aspen. Lower elevations contained stands of ponderosa pine with scattered Douglas-fir on the north and east aspects. Vegetation/Ecological was not considered significant.

Segment G: The North Fork of the South Platte River from its confluence with Kenosha Gulch downstream 17.5 miles to the upstream boundary of the Berger property (the NW 1/4 of the SW 1/4, Section 34, Township 7 South, Range 72 West) near Insmont. Approximately 14.5 miles of Segment G are private lands and approximately 3 miles are National Forest System lands.

This segment was not examined for Outstandingly Remarkable Values downstream from the Roberts Tunnel because it did not meet the basic free-flowing eligibility criteria. In the short stretch above the Roberts Tunnel, it was evaluated and found similar to Segment F and no Outstanding Remarkable Values were identified. Consequently, Segment G is considered ineligible for designation as a component of the National Wild and Scenic Rivers System.

Segment H: The North Fork of the South Platte River from the upstream boundary of the Berger property near Insmont, downstream to within 1/4 mile of its confluence with the South Platte River (22.9 miles). It is the finding of this Eligibility/Classification document that Segment H possesses the following Outstandingly Remarkable Values:

Recreational - Kayaking, and dispersed recreation such as picnicking, fishing, hiking, riding, scenic driving, and other day-uses.

The quality and diversity of dispersed recreation opportunities along this segment and the accessibility and proximity of the area to major metropolitan areas provides an excellent year-round recreation resource. The Maguire and Alden (1994) survey conducted for the District shows the popularity of the segment as a day-use site.

The upper portion of the North Fork section (between the Buffalo Creek and the South Platte confluence) contains Class IV and V whitewater rapids, and is considered to be one of the premier kayaking waters within the region due to the presence of the rapids and the longer length of the season (Bowers, 1994; Baker, 1994). Its unique value is attributed to its level of difficulty, as well as sustained seasonal flows (National Park Service, 1995). Kayakers can still run the North Fork after other rivers in the region have passed their peak flows. This is due to the importation of water through the Roberts Tunnel. Kayakers who use the area are accustomed to frequent changes in flow volumes that result from the operation of Denver Water's delivery system.

The lower portion of the North Fork, between Buffalo Creek and the confluence, is important to all levels of kayakers and one of the few areas in the region most suitable for teaching entry-level kayaking.

The portion between Buffalo Creek and the confluence is heavily used by summer home residents, some year-round residents, and the general public. The majority of the land is owned by the City and County of Denver and is currently managed by the Denver Water Department as a day-use area.

This segment also contains the Pine Valley Ranch, a Jefferson County Open Space Park which contains group picnic sites, an amphitheatre, several trails, and striking rock outcrops. The park is very popular regionally for picnicking and hiking.

Wildlife - Pawnee montane skipper butterfly populations and habitat, peregrine falcon habitat.

The significance of the skipper butterfly has been described under Segment D. There is a peregrine nest site immediately adjacent to the corridor on Cathedral Spires. The nest is outside the study corridor but the one-mile protective management buffer around the nesting site overlaps the river corridor. The study corridor provides important foraging habitat for the falcon. The nesting site and associated foraging habitat are considered to be of regional importance. The site was the last site to be abandoned during the peregrine decline of the 1960s and thus the habitat in this segment is considered to be outstandingly remarkable.

Cultural - Estabrook Historic District and North Fork Historic District including the Denver South Park and Pacific Railroad grade.

The State Historical Preservation Office (SHPO) provided input on whether the two river corridors contained Outstandingly Remarkable Cultural Values. The SHPO examined all the known National Register sites in the corridor and determined that within the North Fork corridor between the Berger property and the confluence there are two outstandingly remarkable historic sites. These two sites are listed with the National Register of Historic Places (NRHP) for their association with the transportation and entertainment/recreation elements of Colorado history.

The two outstandingly remarkable cultural sites are the Estabrook Historic District (approximately 1/2 mile of the river corridor on either side of the community of Estabrook) and the North Fork Historic District which includes the North Fork corridor 1/4 mile west of Pine to 100 feet east of the South Platte Hotel. Included within the North Fork Historic District, but separate from the district designation, are several other historic sites which are also considered outstandingly remarkable on a regional level (Hartmann, 1994.) The Denver South Park and Pacific Railroad grade between South Platte and Pine is included as one of these sites. (NOTE: A segment of this railroad grade, between the North Fork and Estabrook Historic Districts, has not been officially assessed for the NRHP, yet presents a better physical representation of this historic period than the segments currently listed.)

Other values for this segment were evaluated including scenic, geologic, and fisheries and were found to be significant but not Outstandingly Remarkable. Vegetation/Ecological was not considered significant.

OTHER IMPORTANT VALUES

In addition to the values identified above, there are other values for the river corridors. The South Platte and North Fork Rivers are important corridors through which water is used by the City of Denver and other Front Range municipalities, as well as downstream for agricultural and irrigation purposes. The water is also used to sustain downstream ecological factors, including sensitive, threatened and

endangered species. The free-flowing characteristics therefore have important hydrologic considerations.

The economic value of the area, locally and regionally, is important due to the river's recreational values, fisheries values, and rural lifestyles in the proximity of a large metropolitan area.

Finally, the synergistic values of Segments D, E, and H are also important. The overall beauty of the canyons, the free-flowing waters in a semi-arid environment, the presence of wildlife, and the proximity to the Front Range metropolitan area provide a setting unique to the region.

Although there are other important or significant values identified for the river segments studied here, none of these values were determined to be outstandingly remarkable.

VII. ELIGIBILITY DETERMINATION

The South Platte River, from Cheesman Reservoir to Strontia Springs Reservoir, meets the minimum eligibility requirements as specified by the Wild and Scenic Rivers Act. **Thus, Segments D and E are found to be free-flowing and contain outstandingly remarkable recreation, fish, and wildlife values.**

The North Fork of the South Platte River, from the upstream boundary of the Berger property near Insmont, to the confluence with the South Platte, also meets the minimum eligibility requirements as specified by the Wild and Scenic Rivers Act. **Segment H is considered free-flowing and contains outstandingly remarkable recreation, wildlife, and cultural values.**

The North Fork of the South Platte River, from its headwaters to its confluence with Kenosha Gulch near Webster, is found to be free-flowing but possesses no Outstandingly Remarkable Values. **As a result, this segment (Segment F) is ineligible for inclusion into the National Wild and Scenic River System.**

The North Fork of the South Platte River, from its confluence with Kenosha Gulch near Webster to the upstream boundary of the Berger property near Insmont (**Segment G**), **is found not to be free-flowing and is thus, ineligible for inclusion into the National Wild and Scenic River System.**

VIII. CLASSIFICATION

INTRODUCTION

The Wild and Scenic Rivers Act requires that eligible rivers be classified as one of the following:

1. **Wild river areas** - Those rivers or sections of river that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.
2. **Scenic river areas** - Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.
3. **Recreational river areas** - Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

The appropriate classification of each study segment will be analyzed from the perspective of the topics contained in the classification definitions. Those individual determinations will then be considered as a whole to determine whether the river segments should be classified as a Wild, Scenic, or Recreational River in the event of inclusion within the National Wild and Scenic River System. This analysis will be conducted using the framework suggested by the 1982 joint guidelines developed by the Secretaries of Agriculture and Interior. This framework is best displayed by the following chart from the September 7, 1982 Federal Register, which published the *National Wild and Scenic Rivers System; Final Revised Guidelines for Eligibility, Classification and Management of River Areas*. This chart provides an excellent summary of the more lengthy narrative in the *Guidelines*. It is not intended to stand alone and is applied in this analysis in the context of the longer narrative material and in context with applicable Wild and Scenic River legislation. There are four major topics addressed in the classification definitions of Wild, Scenic, and Recreational rivers. These topics are: Water Resource Development, Shoreline Development, Accessibility, and Water Quality.

ATTRIBUTE	WILD	SCENIC	RECREATIONAL
Water Resource Development	Free of impoundment.	Free of impoundment.	Some existing impoundment or diversion. The existence of low dams, diversions, or other modifications of the waterway is acceptable, provided the waterway remains generally natural and riverine in appearance.
Shoreline Development	Essentially primitive. Little or no evidence of human activity. The presence of a few inconspicuous structures, particularly those of historic or cultural value, is acceptable. A limited amount of domestic livestock grazing or hay production is acceptable. Little or no evidence of past timber harvest. No ongoing timber harvest.	Largely primitive and undeveloped. No substantial evidence of human activity. The presence of small communities or dispersed dwellings or farm structures is acceptable. The presence of grazing, hay production, or row crops is acceptable. Evidence of past or ongoing timber harvest is acceptable, provided the forest appears natural from the riverbank.	Some development. Substantial evidence of human activity. The presence of extensive residential development and a few commercial structures is acceptable. Lands may have been developed for the full range of agricultural and forestry uses. May show evidence of past and ongoing timber harvest.
Accessibility	Generally inaccessible except by trail. No roads, railroads, or other provision for vehicular travel within the river area. A few existing roads leading to the boundary of the river area is acceptable.	Accessible in places by road. Roads may occasionally reach or bridge the river. The existence of short stretches of conspicuous or longer stretches of inconspicuous roads or railroads is acceptable.	Readily accessible by road or railroad. The existence of parallel roads or railroads on one or both banks as well as bridge crossings and other river access points is acceptable.
Water Quality	Meets or exceeds Federal criteria or Federally approved State standards for aesthetics, for propagation of fish and wildlife normally adapted to the habitat of the river, and for primary contact recreation (swimming) except where exceeded by natural conditions.	No criteria prescribed by the Wild and Scenic Rivers Act. The Federal Water Pollution Control Act Amendments of 1972 have made it a national goal that all waters of the United States be made fishable and swimmable. Therefore, rivers will not be precluded from scenic or recreational classification because of poor water quality at the time of their study, provided a water quality improvement plan exists or is being developed in compliance with applicable Federal and State laws.	

CLASSIFICATION DETERMINATION

The overriding determinant for classification decisions is the degree of naturalness, or inversely, the degree of evidence of man's activity in the river area. It is determined that the potential classifications of the 3.1-mile segment of the South Platte River from below Cheesman Dam downstream to the upstream boundary of the Wigwam Club property (Segment D) is classified as a potential "Wild" river. The remainder of the eligible segments, the North Fork of the South Platte River from the Berger property to the confluence with the South Platte (Segment H), and the South Platte River from the Wigwam property downstream to the high water line of Strontia Springs Reservoir (Segment E), are classified as potential "Recreational" river segments.

SEGMENT ANALYSIS

Segment D: This segment is accessible at either end by the Gill (foot) trail. Some cultural development has occurred in the past, primarily relating to mining and fishing activities. Numerous non-system trails are evident along both river banks. It is recommended as "Wild" because the area within this segment lacks road access and human development.

Segment E: This segment is paralleled by paved and gravel roads. Several small communities and isolated houses are located along the river and there are several developed picnic and camp sites. Numerous parking areas accommodate the large number of day-users and anglers. Several resorts and private camps are also located in this segment. This segment is recommended to be classified as "Recreational" due to road access and the amount of human development.

Segments H1 and H3: These segments, including the North Fork from the upstream end of the Berger property to the downstream side of the old stone house downstream of Estabrook (Segment H1 - 1.5 miles) and from the Section line between Sections 29 and 30 downstream of Cliffdale to 1/4-mile from the confluence of the South Platte (Segment H3 - 16.5 miles), are classified as "Recreational" since they are paralleled by an historic railroad grade and graveled county roads, and contain developed recreation areas (such as Jefferson County's Pine Valley Ranch), numerous dwellings, and minor diversions and channel work.

Segment H2: This 4.9-mile segment, from the downstream side of the old stone house downstream of Estabrook to the Section line between Sections 29 and 30 downstream of Cliffdale, is classified as "Scenic" since the area is predominately undeveloped National Forest System lands with very limited access. There is an old abandoned railroad grade through the area, a footbridge, some small check dams, and a few dwellings at Crossons, but the area remains largely primitive and undeveloped.

IX. INTERIM MANAGEMENT

As a river segment identified for study via the land management planning process (Section 5(d)(1) study river), a 1/2 mile wide corridor (1/4 mile from average high water mark on both sides of the river) will be managed to protect river eligibility and classification. Interim management requirements are in effect until the river study and resulting decision process is complete. These interim management guidelines only apply to Federal lands and have no effect on private lands within the study corridor.

1. To the extent the Forest Service is authorized under law to control stream impoundments and diversions, the free-flowing characteristics of the identified river segments cannot be modified.

2. OR values of the identified river area must be protected and, to the extent practicable, enhanced. This will be accomplished by applying direction found in FSH 1909.15, Chapter 8 (Interim Management Direction for Section 5(d)(1) Study Rivers) and forest plan standards and guides for Management Area 7 (Wild and Scenic Rivers).
3. Management and development of the identified river and its corridor cannot be modified to the degree that eligibility or classification would be affected (i.e., classification cannot be changed from wild to scenic or scenic to recreational).

To ensure these interim management responsibilities are met, an analysis of potential effects on free-flow and OR values of all proposed projects within and adjacent to the study corridor shall be completed and documented by the interdisciplinary team.

X. REFERENCES

In addition to the previous studies cited in Appendix B, the following sources were used for this analysis:

Hartmann, James E.
1994 Colorado Historical Society, letter on file

Maguire, Patti and Dr. Howard Alden
1994 *South Platte River Corridor Recreation User Study Report*. Manuscript on file, South Platte Ranger District, Morrison, CO. 80465.

National Park Service, September 8, 1995 letter on file.

Obmascik, Mark
1993 "South Platte River No. 1 attraction demands attention." *Denver Post*, April 14, 1993, p.8D, Denver, CO.

Pague, Christopher A., Renee Rondeau, Mark Duff.
1993 *Natural Heritage Inventory of Jefferson County, Colorado*. Prepared for Jefferson County Open Space, Colorado Natural Heritage Program, University of Colorado Museum, Boulder, CO. 80309-0315.

Rocky Mountain News Staff
1988 "Area near Two Forks valued at \$2 billion." *Rocky Mountain News*, June 3, 1988, Denver, CO.

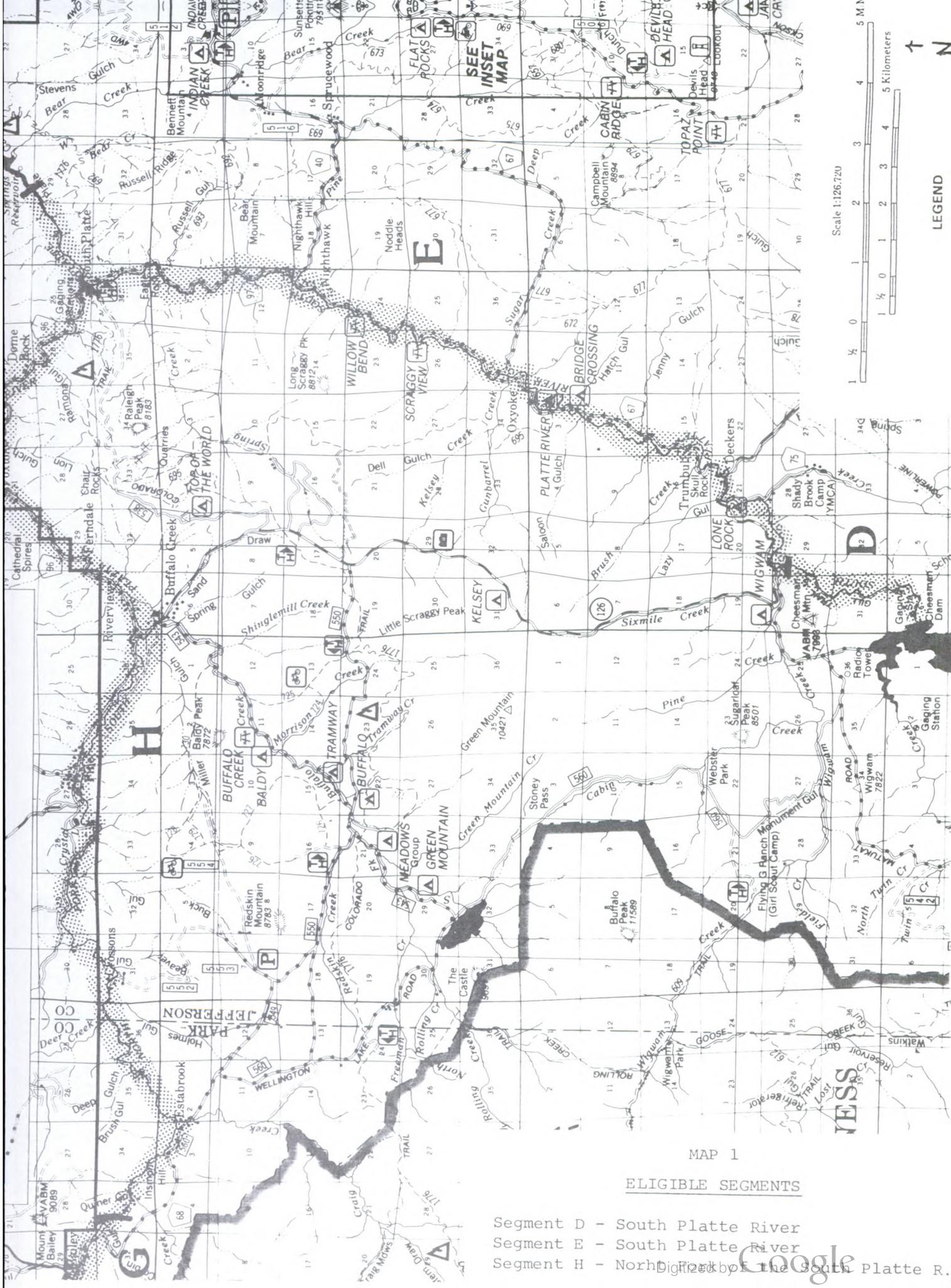
Survey of Man-Made Alterations to the North Fork of the South Platte River. Denver Water 1994.

USDA Forest Service, "Revision Desk Guide", Rocky Mountain Region 1994.

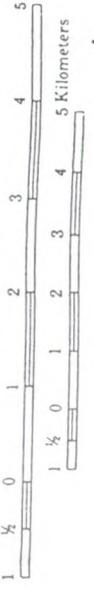


Vicinity Map





Scale 1:126,720



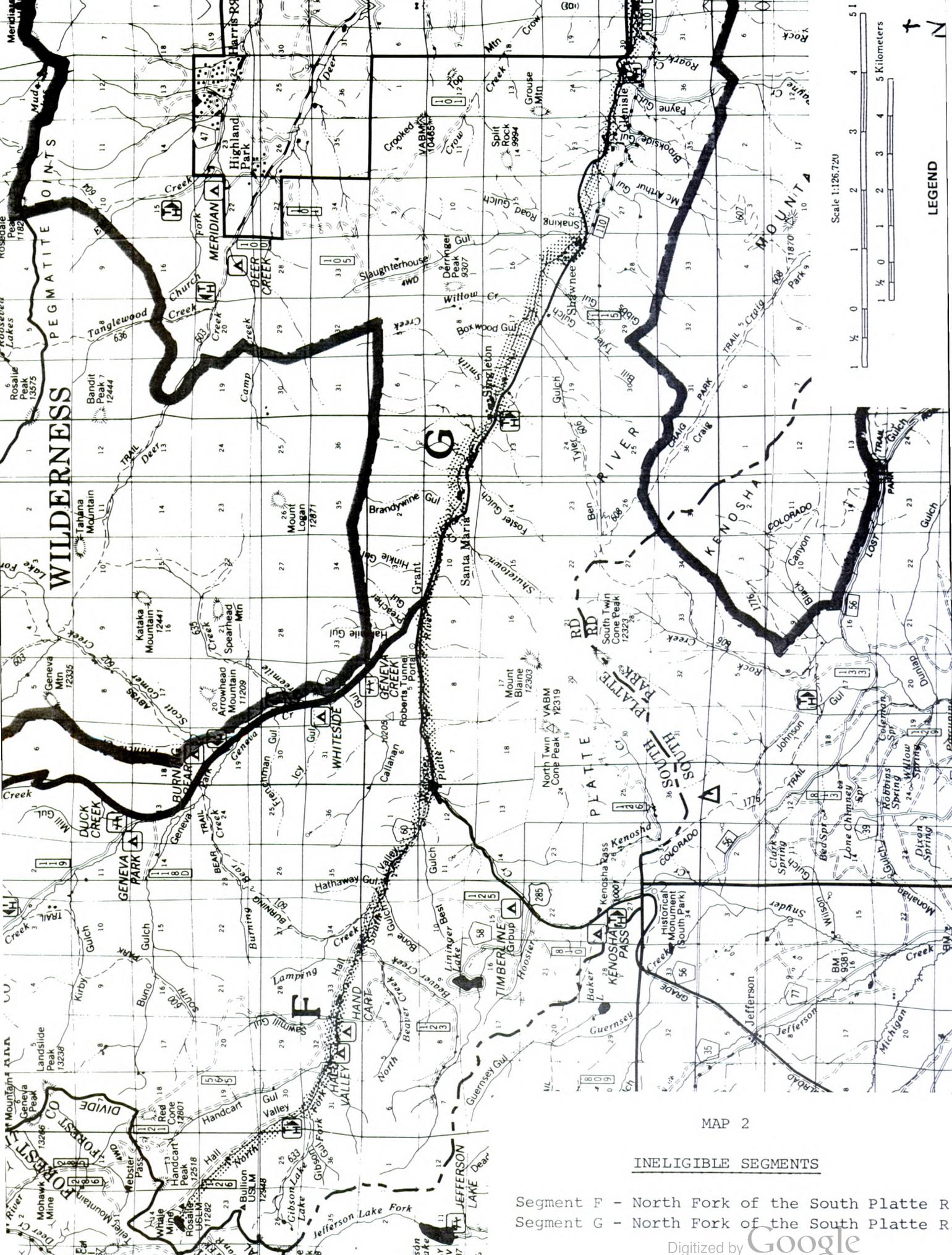
LEGEND

MAP 1

ELIGIBLE SEGMENTS

- Segment D - South Platte River
- Segment E - South Platte River
- Segment H - North Platte River





MAP 2

INELIGIBLE SEGMENTS

- Segment F - North Fork of the South Platte R
- Segment G - North Fork of the South Platte R

APPENDIX B - PREVIOUS STUDIES

The Eligibility Determination relied upon previously documented studies, supplemented with field trips and more recent documentation. Studies include:

Western U.S. Water Plan: Streams and Stream Systems. Working Document, Bureau of Outdoor Recreation, Part 2 "Other Rivers with Identified Free-Flowing Values." 1972. This document identified 56 miles of the South Platte River, from Elevenmile Reservoir to Waterton, as a free-flowing river that should be considered and evaluated during the BOR's planning process for Wild and Scenic Rivers.

A Conceptual Proposal for a South Platte Canyons Free-Flowing Recreational River (And Identification of Related Potentials). Draft, Bureau of Outdoor Recreation, Mid-Continent Region, Denver. June, 1974. The draft tentatively identified the South Platte from Cheesman to Waterton, and the North Fork from Bailey to the confluence, as a Recreational River component, and from Cheesman to Elevenmile as a Scenic River component.

Assessment of South Platte River for Wild and Scenic River Designation. U.S. Forest Service. n.d. This report was published by the Forest Service as an alternative to the proposed Two Forks and Ferndale water storage projects. The report looked at the South Platte's South and Middle Forks, the North Fork from Ferndale to the confluence, and the South Platte from Elevenmile to Waterton. The report appears to have been written post 1980. The assessment was based upon previous Guidelines and disqualified certain segments because of cultural development, length, and flow sizes. All of the South Platte qualified, as did the North Fork from Ferndale down. The Middle and South Forks would have but for the small size and cultural development.

Heritage Conservation Resource Assessment; Cultural Development Scoring Sheet. Unpublished documentation, Nationwide Rivers Inventory, n.d. Conducted as part of the Nationwide Rivers Inventory, the documentation addressed which rivers would qualify as NRI rivers for later suitability studies for Wild and Scenic River status. The South Platte from the confluence to Cheesman and from above Cheesman to Elevenmile qualified, as did all of the North Fork.

The Nationwide Rivers Inventory. National Park Service. 1982. The inventory listed the South Platte from Elevenmile to Cheesman as qualified.

Metropolitan Denver Water Supply Final EIS. Corps of Engineers. 1988. The baseline study for this report, the EIS listed numerous unique and outstanding resource values, but did not address the South Platte below Cheesman or the North Fork for Wild and Scenic River status.

Regional Director Memorandum to the Director, National Park Service, 1988, on American Rivers' request to have a segment of the South Platte River evaluated for the Nationwide Rivers Inventory. The letter requested the Director to list the South Platte from Cheesman to the confluence as a segment of the NRI system. The letter identified recreational, fish, historic and endangered species Outstandingly Remarkable Values.

Recommended Determination to Prohibit Construction of Two Forks Dam and Reservoir Pursuant to Section 404(c) of the Clean Water Act. U.S. Environmental Protection Agency. 1990. This report recommended denial of a 404 permit for Two Forks based upon the adverse effects to the unique fisheries, wildlife and recreation of the area. The report also cites past Wild and Scenic studies for the South Platte and North Fork.

Final Determination of the U.S. Environmental Protection Agency's Assistant Administrator for Water Pursuant to Section 404(c) of the Clean Water Act Concerning the Two Forks Water Supply Impoundments Jefferson and Douglas Counties, Colorado. 1990.

APPENDIX C - SUMMARIES

SOUTH PLATTE RIVER:

Two segments are recommended as Eligible. The segment lengths total 22.6 miles. Approximately 12.6 miles are within the Pike National Forest, approximately 8 miles are owned by the City and County of Denver, Colorado, and approximately 2 miles are owned by private clubs or individuals.

SEGMENT D:

From Cheesman Dam (downstream of the stream gage weir) downstream to the Wigwam Club property (southern end).

Classification: "Wild"

Outstandingly Remarkable Value(s):

RECREATIONAL - Fishing, and dispersed recreation such as hiking and scenic viewing.
FISHERIES - Nationally renowned brown and rainbow trout populations and habitat.
WILDLIFE - Pawnee montane skipper butterfly populations and habitat.

Legal Description:

T9S; R70W; S 29-32. T10S; R70W; S 6.
Douglas and Jefferson Counties.

Segment Length: 3.1 miles.

<i>Land Ownership:</i>	National Forest	2.19 miles.
	City and County of Denver (DWD)	0.91 miles.

SEGMENT E:

From the Wigwam Club Property (southern end) downstream to the high water line of Strontia Springs reservoir (6029 foot contour).

Classification: "Recreational"

Outstandingly Remarkable Values:

RECREATIONAL- Dispersed and developed recreation such as camping, picnicking, hiking, fishing, scenic driving, and other day-use.
FISHERIES - Nationally renowned brown and rainbow trout populations and habitat.
WILDLIFE - Pawnee montane skipper butterfly and habitat.

Legal Description:

T7S; R69W; S 19, 20, 29, 30, 31.
T7S; R70W; S 25, 36.

T8S; R69W; S 6, 7, 18.
T8S; R70W; S 1, 12, 13, 23-26, 34, 35.
T9S; R70W; S 2, 3, 9, 10, 15, 16, 20-22, 28-30.
Douglas and Jefferson Counties.

Segment Length: 19.5 miles.

<i>Land Ownership:</i>	National Forest	10.41 miles.
	Private	2.0
	City and County of Denver (DWD)	7.09 miles.

NORTH FORK OF THE SOUTH PLATTE RIVER:

Three segments were identified, but only Segment H is recommended as being eligible. Segment lengths total 50.26 miles. Approximately 14.17 miles are within the Pike National Forest, 17.7 miles are privately owned, 17.62 miles are owned by the City and County of Denver, Colorado, and .77 miles are owned by Jefferson County.

Segment F:

From its headwaters downstream to Kenosha Gulch, near Webster (also known as the Hall Valley).

Classification: Not classified - ineligible

Outstandingly Remarkable Values: None.

Legal Description:

T6S; R76W; S 13, 14, 23-25.
T6S; R75W; S 30-34.
T7S; R75W; S 1-3, 12.
Park County.

Segment Length: 9.70 miles.

<i>Land Ownership:</i>	National Forest	6.47 miles.
	Private	3.23 miles.

SEGMENT G:

From Kenosha Gulch, near Webster, downstream to Insmont (upstream boundary of Berger property).

Classification: Not classified - ineligible - not free-flowing downstream from Roberts Tunnel, no Outstandingly Remarkable Values upstream from Roberts Tunnel.

Outstandingly Remarkable Values: None

Legal Description:

T7S; R75W; S 12.
T7S; R74W; S 3-13
T7S; R73W; S 16-18, 20-23, 25-27.
T7S; R72W; S 28, 29, 30, 32, 33, NW1/4, SW1/4.
Park County.

Segment Length: 17.50 miles.

<i>Land Ownership:</i>	National Forest	3.03 miles.
	Private	14.47 miles.

SEGMENT H:

From Insmont (upstream end of Berger property) to within 1/4 mile of the confluence with the South Platte River.

Divided into 3 subsections for classification:

SEGMENT H1 - (.5 miles):

From Insmont (upstream end of Berger property) downstream to Estabrook (downstream side of old stone house).

SEGMENT H2 - (4.9 miles):

From Estabrook (downstream side of old stone house) to Cliffdale (Section line between Sections 29 and 30 east of Cliffdale).

SEGMENT H3 - (16.5 miles):

From Cliffdale (Section line between Sections 29 and 30 east of Cliffdale) to within 1/4 mile of the confluence with the South Platte River.

Classification: Segments H1 and H3 - "Recreational", Segment H2 - "Scenic"

Outstandingly Remarkable Values:

RECREATIONAL - Kayaking, and dispersed recreation such as picnicking, fishing, hiking, riding, scenic driving, and other day-uses.

WILDLIFE - Pawnee montane skipper butterfly populations and habitat.

CULTURAL - Pine and Estabrook Historic Districts; D SP & P Railroad Grade.

Legal Description:

T7S; R72W; S 25, 33, NE1/4, SE1/4, S 34, 35, 36.
T8S; R72W; S 2,3.

Park County.

T7S; R71W; S 26-31, 33-36.

T8S; R71W; S 1

T7S; R70W; S 16, 20-23, 25, 26, 29-32.

T8S; R70W; S 6

Jefferson County.

***Segment Length:* 22.9 miles.**

<i>Land Ownership:</i>	National Forest	4.67 miles.
	Bureau of Land Management	0.2 miles
	Pvt., Jeff. Co Parks, City/County of Denver	18.03 miles.

Appendix B

APPENDIX B

WILD AND SCENIC RIVERS ACT

¹An Act

To provide for a National Wild and Scenic Rivers System, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that

SEC. 1. (a) This Act; may be cited as the "Wild and Scenic Rivers Act".

(b) It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations. The Congress declares that the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes.

(c) The purpose of this Act is to implement this policy by instituting a national wild and scenic rivers system, by designating the initial components of that system and by prescribing the methods by which and standards according to which additional components may be added to the system from time to time.

SEC. 2 (a) The national wild and scenic rivers system shall comprise rivers (i) that are authorized for inclusion therein by Act of Congress, or (ii) that are designated as wild, scenic or recreational rivers by or pursuant to an act of the legislature of the State or States through which they flow, that are to be permanently administered as wild, scenic or recreational rivers by an agency or political subdivision of the State or States concerned, that are found by the Secretary of the Interior, upon application of the Governor of the State or the Governors of the States concerned, or a person or persons thereunto duly appointed by him or them, to meet the criteria established in this Act and such criteria supplementary thereto as he may prescribe, and that are approved by him for inclusion in the system... Upon receipt of an application under clause (ii) of this subsection, the Secretary shall notify the Federal Energy Regulatory Commission and publish such application in the Federal Register. Each river designated under clause (ii) shall be administered by the State or political subdivision thereof without expense to the United States other than for administration and management of federally owned lands. For purposes of the preceding sentence, amounts made available to any State or political subdivision under the Land and Water Conservation Act of 1965 or any other provision of law shall not be treated as an expense to the United States. Nothing in this subsection shall be construed to provide for the transfer to, or administration by, a State or local authority of any federally owned lands which are within the boundaries of any river included within the system under clause (ii).

¹ The Wild and Scenic Rivers Act (16 U.S.C. 1271-1287) consists of Public Law 90-542 (October 2, 1968) as amended. P.L. 99-590 (October 30, 1986) was the last Act that added generic amendments to the Act. Additional footnotes can be found following the text of the Act. (Provisions of the Wild and Scenic Rivers Act that are applicable only to specific rivers have been deleted from this version of the Act in the interest of brevity. The Federal Power Commission is now the Federal Energy Regulatory Commission).

b) A wild, scenic or recreational river area eligible to be included in the system is a free-flowing stream and the related adjacent land area that possesses one or more of the values referred to in Section 1, subsection (b) of this Act. Every wild, scenic or recreational river in its free-flowing condition, or upon restoration to this condition, shall be considered eligible for inclusion in the national wild and scenic rivers system and, if included, shall be classified, designated, administered as one of the following:

(1) Wild river areas - Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

(2) Scenic river areas - Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

(3) Recreational river areas - Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

SEC. 3 (A) The following rivers and the land adjacent thereto are hereby designated as components of the national wild and scenic rivers system:

(Designation language for individual W&S rivers)(116 listed)

(b) The agency charged with the administration of each component of the national wild and scenic rivers system designated by subsection (a) of this section shall, within one year from the date of designation of such component under subsection (a) (except where a different date is provided in subsection (a)) establish detailed boundaries therefore; which boundaries shall include an average of not more than 320 acres of land per miles measured from the ordinary high water mark on both sides of the river); determine which of the classes outlined in section 2, subsection (b), of this Act best fit the river or its various segments. Notice of the availability of the boundaries and classification, and of subsequent boundary amendments shall be published in the Federal Register and shall not become effective until ninety days after they have been forwarded to the President of the Senate and the Speaker of the House of Representatives.

(c) Maps of all boundaries and descriptions of the classifications of the designated river segments, and subsequent boundary amendments to such boundaries, shall be available for public inspection in the offices of the administering agency in the District of Columbia and in locations convenient to the designated river.

(d) (1) For rivers designated on or after January 1, 1986, the Federal agency charged with the administration of each component on the National Wild and Scenic Rivers System shall prepare a comprehensive management plan for such river segment to provide for the protection of the river values. The plan shall address resource protection, development of lands and facilities, user capacities, and other management practices necessary or desirable to achieve the purposes of this Act. The plan shall be coordinated with and may be incorporated into resource management planning for affected adjacent Federal lands. The plan shall be prepared, after consultation with State and local governments and the interested public within three full fiscal years after the date of designation. Notice of the completion and availability of such plans shall be published in the Federal Register.

(2) For rivers designated before January 1, 1986, all boundaries, classifications, and plans shall be reviewed for conformity within the requirements of this subsection within 10 years through regular agency planning processes.

SEC. 4 (a) The Secretary of the Interior or, where national forest lands are involved, the Secretary of Agriculture, or, in appropriate cases, the two Secretaries jointly shall study and submit to the President reports on the suitability or unsuitability for addition to the national wild and scenic

rivers system of rivers which are designated herein or hereafter by the Congress as potential additions to such system. The President shall report to the Congress his recommendations and proposals with respect to the designation of each such river or section thereof under this Act.... In conducting these studies the Secretary of the Interior and the Secretary of Agriculture shall give priority to those rivers (i) with respect to which there is the greatest likelihood of developments which, if undertaken, would render the rivers unsuitable for inclusion in the national wild and scenic rivers system, and (ii) which possess the greatest proportion of private lands within their areas. Every such study and plan shall be coordinated with any water resources planning involving the same river which is being conducted pursuant to the Water Resources Planning Act (79 Stat. 244; 42 U.S.C. 1962 et seq.).

Each report, including maps and illustrations, shall show among other things the area included within the report; the characteristics which do or do not make the area a worthy addition to the system; the current status of land ownership and use in the area; the reasonably foreseeable potential uses of the land and water which would be enhanced, foreclosed, or curtailed if the area were included in the national wild and scenic rivers system; the Federal agency (which in the case of a river which is wholly or substantially within a national forest, shall be the Department of Agriculture) by which it is proposed the area, should it be added to the system, be administered; the extent to which it is proposed that such administration, including the costs thereof, be shared by State and local agencies; and the estimated cost to the United States of acquiring necessary land and interests in land and of administering the area, should it be added to the system. Each such report shall be printed as a Senate or House document.

(b) Before submitting any such report to the President and the Congress, copies of the proposed report shall, unless it was prepared jointly by the Secretary of the Interior and the Secretary of Agriculture, be submitted by the Secretary of the Interior to the Secretary of Agriculture or by the Secretary of Agriculture to the Secretary of the Interior, as the case may be, and to the Secretary of the Army, the Chairman of the Federal Power Commission, the head of any other affected Federal department or agency and, unless the lands proposed to be included in the area are already owned by the United States or have already been authorized for acquisition by Act of Congress, the Governor of the State or States in which they are located or an officer designated by the Governor to receive the same. Any recommendations or comments on the proposal which the said officials furnish the Secretary or Secretaries who prepared the report within ninety days of the date on which the report is submitted to them, together with the Secretary's or Secretaries' comments thereon, shall be included with the transmittal to the President and the Congress.

(c) Before approving or disapproving for inclusion in the national wild and scenic rivers system any river designated as a wild, scenic or recreational river by or pursuant to an act of a State legislature, the Secretary of the Interior shall submit the proposal to the Secretary of Agriculture, the Secretary of the Army, the Chairman of the Federal Power Commission, and the head of any other affected Federal department or agency and shall evaluate and give due weight to any recommendations or comments which the said officials furnish him within ninety days of the date of which it is submitted to them. If he approves the proposed inclusion, he shall publish notice thereof in the Federal Register.

(d) The boundaries of any river proposed in section 5(a) of this Act for potential addition to the National Wild and Scenic Rivers System shall generally comprise that area measured within one-quarter mile from the ordinary highwater mark on each side of the river. In the case of any designated river, prior to publication of boundaries pursuant to section 3(b) of this Act, the boundaries also shall comprise the same area. This subsection shall not be construed to limit the possible scope of the study report to address areas which may lie more than one-quarter mile from the ordinary high water mark on each side of the river.

SEC. 5. (a) The following rivers are hereby designated for potential addition to the national wild and scenic river system:

(designation language for individual W&S study rivers)

(b)(4) For the purposes of conducting the studies of rivers named in subsection (a) there are authorized to be appropriated such sums as necessary..

(c) The study of any of said rivers shall be pursued in as close cooperation with appropriate agencies of the affected State and its political subdivisions as possible, shall be carried on jointly with such agencies if request for such joint study is made by the State, and shall include a determination of the degree to which the State or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the national wild and scenic rivers system.

(d)(1) In all planning for the use and development of water and related land resources, consideration shall be given by all Federal agencies involved to potential national wild, scenic and recreational river areas, and all river basin and project plan reports submitted to the Congress shall consider and discuss any such potentials. The Secretary of the Interior and the Secretary of Agriculture shall make specific studies and investigations to determine which additional wild, scenic and recreational river areas within the United States shall be evaluated in planning reports by all Federal agencies as potential alternative uses of the water and related land resources involved.

(2) The Congress finds that the Secretary of the Interior, in preparing the Nationwide Rivers Inventory as a specific study for possible additions to the National Wild and Scenic Rivers System, identified the Upper Klamath River from below the John Boyle Dam to the Oregon-California State line. The Secretary, acting through the Bureau of Land Management, is authorized under this subsection to complete a study of the eligibility of such segment for potential addition to the National Wild and Scenic Rivers System. Such study shall be completed, and a report containing the results of the study shall be submitted to Congress by April 1, 1990. Nothing in this paragraph shall affect the authority or responsibilities of any other Federal agency with respect to activities or action on this segment and its immediate environment.

SEC. 6. (a) (1) The Secretary of the Interior and the Secretary of Agriculture are each authorized to acquire lands and interests in land within the authorized boundaries of any component of the national wild and scenic rivers system designated in section 3 of this Act, or hereafter designated for inclusion in the system by Act of Congress, which is administered by him, but he shall not acquire fee title to an average of more than 100 acres per mile on both sides of the river. Lands owned by a State may be acquired only by donation or by exchange in accordance with subsection (d) of this section. Lands owned by an Indian tribe or a political subdivision of a State may not be acquired without the consent of the appropriate governing body thereof as long as the Indian tribe or political subdivision is following a plan for management and protection of the lands which the Secretary finds protects the land and assures its use for purposes consistent with this Act. Money appropriated for Federal purposes from the land water conservation fund shall, without prejudice to the use of appropriations from other sources, be available to Federal departments and agencies for the acquisition of property for the purposes of this Act.

(2) When a tract of land lies partially within and partially outside the boundaries of a component of the National Wild and Scenic System, the appropriate Secretary may, with the consent of the land owners for the portion outside of the boundaries, acquire the entire tract. The land or interest therein so acquired outside the boundaries shall not be counted against the average one-hundred-acre-per-mile fee title limitation of subsection (a)(1). The lands or interests therein outside such boundaries, shall be disposed of, consistent with existing authorities of law, by sale, lease, or exchange.

(b). If 50 per centum or more of the entire acreage outside the ordinary high water mark on both sides of the river within a federally administered wild, scenic or recreational river area is owned in fee title by the United States, by the State or States within which it lies, or by political subdivisions of those States, neither Secretary shall acquire fee title to any lands by condemnation under authority of this Act. Nothing contained in this section, however, shall preclude the use of condemnation when

necessary to clear title or to acquire scenic easements or such other easements as are reasonably necessary to give the public access to the river and to permit its members to traverse the length of the area or of selected segments thereof.

(c) Neither the Secretary of the Interior nor the Secretary of Agriculture may acquire lands by condemnation, for the purpose of including such lands in any national wild, scenic or recreational river area, if such lands are located within any incorporated city, village, or borough which has in force and applicable to such lands a duly adopted, valid zoning ordinance that conforms with the purposes of this Act. In order to carry out the provisions of this subsection, the appropriate Secretary shall issue guidelines, specifying standards for local zoning ordinances, which are consistent with the purposes of this Act. The standards specified in such guidelines shall have the object of (A) prohibiting new commercial or industrial uses other than commercial or industrial uses which are consistent with the purposes of this Act, and (B) the protection of the bank lands by means of acreage, frontage, and setback requirements on development.

(d) The appropriate Secretary is authorized to accept title to non-Federal property within the authorized boundaries of any federally administered component of the national wild and scenic rivers system designated in section 3 of this Act or hereafter designated for inclusion in the system by Act of Congress and, in exchange therefor, convey to the grantor any federally owned property which is under his jurisdiction within the State in which the component lies and which he classifies as suitable for exchange or other disposal. The values of the properties so exchanged either shall be approximately equal or, if they are not approximately equal, shall be equalized by the payment of cash to the grantor or the Secretary as the circumstances require.

(e) The head of any Federal department or agency having administrative jurisdiction over any lands or interests in land within the authorized boundaries of any federally administered component of the national wild and scenic rivers system designated in section 3 of this Act or hereafter designated for inclusion in the system by Act of Congress is authorized to transfer to the appropriate Secretary jurisdiction over such lands for administration in accordance with the provision of this Act. Lands acquired by or transferred to the Secretary of Agriculture for the purposes of this Act within or adjacent to a national forest shall upon such acquisition or transfer become national forest lands.

(f) The appropriate Secretary is authorized to accept donations of land and interests in land, funds, and other property for use in connection with his administration of the national wild and scenic rivers system.

(g)(1) Any owner or owners (hereinafter in this subsection referred to as "owner") of improved property on the date of its acquisition, may retain for themselves and their successors or assigns a right of use and occupancy of the improved property for noncommercial residential purposes for a definite term not to exceed twenty-five years or, in lieu thereof, for a term ending at the death of the owner, or the death of his spouse, or the death of either or both of them. The owner shall elect the term to be reserved. The appropriate Secretary shall pay to the owner the fair market value of the property on the date of such acquisition less the fair market value on such date retained by the owner.

(2) A right of use and occupancy retained pursuant to this subsection shall be subject to termination whenever the appropriate Secretary is given reasonable cause to find that such use and occupancy is being exercised in a manner which conflicts with the purposes of this Act. In event of such a finding, the Secretary shall tender to the holder of that right an amount equal to the fair market value of that portion of the right which remains unexpired on the date of termination. Such right of use or occupancy shall terminate by operation of law upon tender of the fair market price.

(3) The term "improved property", as used in this Act, means a detached, one-family dwelling (hereinafter referred to as "dwelling"), the construction of which was begun before January 1, 1967, (except where a different date is specifically provided by law with respect to any particular river), together with so much of the land on which the dwelling is situated, the said land being in the same ownership as the dwelling, as the appropriate Secretary shall designate to be reasonably necessary for the enjoyment of the dwelling for the sole purpose of noncommercial residential use, together with any structures accessory to the dwelling which are situated on the land so designated.

SEC. 7. (a) The Federal Power Commission shall not license the construction of any dam, water conduit, reservoir, powerhouse, transmission line, or other project works under the Federal Power Act (41 Stat. 1063), as amended (16 U.S.C. 791a et seq.) on or directly affecting any river which is designated in section 3 of this Act as a component of the national wild and scenic rivers system or which is hereafter designated for inclusion in that system, and no department or agency of the United States shall assist by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration. Nothing contained in the foregoing sentence, however, shall preclude licensing of, or assistance to, developments below or above a wild, scenic or recreational river area or on any stream tributary thereto which will not invade the area or unreasonably diminish the scenic, recreational, and fish and wildlife values present in the area on the date of designation of a river as a component of the National Wild and Scenic Rivers System. No department or agency of the United States shall recommend authorization of any water resources project that would have a direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration, or request appropriations to begin construction of any such project, whether heretofore or hereafter authorized, without advising the Secretary of the Interior or the Secretary of Agriculture, as the case may be, in writing of its intention so to do at least sixty day in advance, and without specifically reporting to the Congress in writing at the time it makes its recommendation or request in what respect construction of such project would be in conflict with the purposes of this Act and would effect the component and the values to be protected by it under this Act.

(b) The Federal Power Commission shall not license the construction of any dam, water conduit, reservoir, powerhouse, transmission line, or other project works under the Federal Power Act, as amended on or directly affecting any river which is listed in section 5, subsection (a), of this Act, and no department or agency of the United States shall assist by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river might be designated, as determined by the Secretary charged responsible for its study or approval--

(i) during the ten-year period following enactment of this Act or for a three complete fiscal year period following any Act of Congress designating any river for potential addition to the national wild and scenic rivers system, whichever is later, unless, prior to the expiration of the relevant period, the Secretary of the Interior and, where national forest lands are involved, the Secretary of Agriculture, on the basis of study, determine that such river should not be included in the national wild and scenic river system and notify the Committees on Interior and Insular Affairs of the United States Congress, in writing, including a copy of the study upon which the determination was made, at least one hundred and eighty days while Congress is in session prior to publishing notice to that effect in the Federal Register: *Provided*, That if any Act designating any river or rivers for potential addition to the national wild and scenic river system provides a period for the study or studies which exceeds such three complete fiscal year period the period provided for in such Act shall be substituted for the three complete fiscal year period in the provisions of this clause (i); and

(ii) during such interim period from the date a report is due and the time a report is actually submitted to Congress; and

(iii) during such additional period thereafter as, in the case of any river the report for which is submitted to the President and the Congress for inclusion in the national wild and scenic rivers system, is necessary for congressional consideration thereof or, in the case of any river recommended to the Secretary of the Interior under section 2(a)(ii) of this Act, is necessary for the Secretary's consideration thereof, which additional period, however, shall not exceed three years in the first case and one year in the second.

Nothing contained in the foregoing sentence, however, shall preclude licensing of, or assistance to, developments below or above a potential wild, scenic or recreational river area or on any stream tributary thereto which will not invade the area or diminish the scenic, recreational, and fish and wildlife values present in the potential wild, scenic or recreational river area on the date of designation of a river for study as provided by section 5 of this Act. No department or agency of the United States shall, during the periods hereinbefore specified, recommend authorization of any water resources project on any such river or request appropriations to begin construction of any such project, whether heretofore or hereafter authorized, without advising the Secretary of the Interior and, where national forest lands are involved, the Secretary of Agriculture in writing of its intention so to do at least sixty days in advance of doing so and without specifically reporting to the Congress in writing at the time it makes its recommendation or request in what respect construction of such project would be in conflict with the purposes of this Act and would affect the component and the values to be protected by it under this Act.

(c) The Federal Power Commission and all other Federal agencies shall, promptly upon enactment of this Act, inform the Secretary of the Interior and, where national forest lands are involved, the Secretary of Agriculture, of any proceedings, studies, or other activities within their jurisdiction which are now in progress and which affect or may affect any of the rivers specified in section 5, subsection (a), of this Act. They shall likewise inform him of any such proceedings, studies, or other activities which are hereafter commenced or resumed before they are commenced or resumed.

(d) Nothing in this section with respect to the making of a loan or grant shall apply to grants made under the Land and Water Conservation Act of 1965 (78 Stat. 897; 16 U.S.C. 4601-5 et seq.).

SEC. 8. (a) All public lands within the authorized boundaries of any component of the national wild and scenic rivers system which is designated in section 3 of this Act or which is hereafter designated for inclusion in that system are hereby withdrawn from entry, sale, or other disposition under the public land laws of the United States. This subsection shall not be construed to limit the authorities granted in section 6(d) or 14A of this Act.

(b) All public lands which constitute the bed or bank, or are within one-quarter mile of the bank, of any river which is listed in section 5, subsection (a), of this Act are hereby withdrawn from entry, sale, or other disposition under the public land laws of the United States for the periods specified in section 7, subsection (b), of this Act....

SEC. 9. (a) Nothing in this Act shall affect the applicability of the United States mining and mineral leasing laws within components of the national wild and scenic rivers system except that --

(i) all prospecting, mining operations, and other activities on mining claims which, in the case of a component of the system designated in section 3 of this Act, have not heretofore been perfected or which, in the case of a component hereafter designated pursuant to this Act or any other Act of Congress, are not perfected before its inclusion in the system and all mining operations and other activities under a mineral lease, license, or permit issued or renewed after inclusion of a component in the system shall be subject to such regulations as the Secretary of the Interior or, in the case of national forest lands, the Secretary of Agriculture may prescribe to effectuate the purposes of this Act;

(ii) subject to valid existing rights, the perfection of, or issuance of a patent to, any mining claim affecting lands within the system shall confer or convey a right or title only to the mineral deposits and such rights only to the use of the surface and the surface resources as are reasonably required to carrying on prospecting or mining operations and are consistent with such regulations as may be prescribed by the Secretary of the Interior or, in the case of national forest lands, by the Secretary of Agriculture; and

(iii) subject to valid existing rights, the minerals in Federal lands which are part of the system and constitute the bed or bank or are situated within one-quarter mile of the bank of

any river designated a wild river under this Act or any subsequent Act are hereby withdrawn from all forms of appropriation under the mining laws and from operation of the mineral leasing laws including, in both cases, amendments thereto.

Regulations issued pursuant to paragraphs (i) and (ii) of this subsection shall, among other things, provide safeguards against pollution of the river involved and unnecessary impairment of the scenery within the components in question.

(b) The minerals in any Federal lands which constitute the bed or bank or are situated within one-quarter mile of the bank of any river which is listed in section 5, subsection (a) of this Act are hereby withdrawn from all forms of appropriation under the mining laws during the periods specified in section 7, subsection (b) of this Act. Nothing contained in this subsection shall be construed to forbid prospecting or the issuance of leases, licenses, and permits under the mineral leasing laws subject to such conditions as the Secretary of the Interior and, in the case of national forest lands, the Secretary of Agriculture find appropriate to safeguard the area in the event it is subsequently included in the system....

SEC. 10 (a) Each component of the national wild and scenic rivers system shall be administered in such manner as to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values. In such administration primary emphasis shall be given to protecting its esthetic, scenic, historic, archeologic, and scientific features. Management plans for any such component may establish varying degrees of intensity for its protection and development, based on the special attributes of the area.

(b) Any portion of a component of the national wild and scenic rivers system that is within the national wilderness preservation system, as established by or pursuant to the Act of September 3, 1964 (78 Stat. 890; 16 U.S.C., ch. 23), shall be subject to the provision of both the Wilderness Act and this Act with respect to preservation of such river and its immediate environment, and in case of conflict between the provisions of these Acts the more restrictive provisions shall apply.

(c) Any component of the national wild and scenic rivers system that is administered by the Secretary of the Interior through the National Park Service shall become a part of the national park system, and any such component that is administered by the Secretary through the Fish and Wildlife Service shall become a part of the national wildlife refuge system. The lands involved shall be subject to the provisions of this Act and the Acts under which the national park system or national wildlife refuge system, as the case may be, is administered, and in the case of conflict between the provisions of these Acts, the more restrictive provisions shall apply. The Secretary of the Interior, in his administration of any component of the national wild and scenic rivers system, may utilize such general statutory authorities relating to areas of the national park system and such general statutory authorities otherwise available to him for recreation and preservation purposes and for the conservation and management of natural resources as he deems appropriate to carry out the purposes of this Act.

(d) The Secretary of Agriculture, in his administration of any component of the national wild and scenic rivers system area, may utilize the general statutory authorities relating to the national forest in such manner as he deems appropriate to carry out the purposes of this Act.

(e) The Federal agency charged with the administration of any component of the national wild and scenic rivers system may enter into written cooperative agreements with the Governor of a State, the head of any State agency, or the appropriate official of a political subdivision of a State for State or local governmental participation in the administration of the component. The States and their political subdivisions shall be encouraged to cooperate in the planning and administration of components of the system which include or adjoin State- or County-owned lands.

SEC. 11. (a) The Secretary of the Interior shall encourage and assist the States to consider, in formulating and carrying out their comprehensive statewide outdoor recreation plans and proposals for financing assistance for State and local projects submitted pursuant to the Land and Water

Conservation Fund Act of 1965 (78 Stat. 897), needs and opportunities for establishing State and local wild, scenic and recreational river areas.

(b) (1) The Secretary of the Interior, the Secretary of Agriculture, or the head of any Federal agency, shall assist, advise, and cooperate with States or their political subdivisions, landowners, private organizations, or individuals to plan, protect, and manage river resources. Such assistance, advice, and cooperation may be through written agreements or otherwise. This authority applies within or outside a federally administered area and applies to rivers which are components of the Wild and Scenic Rivers System and to other rivers. Any agreement under this section may include provisions for limited financial or other assistance to encourage participation in the acquisition, protection and management of river resources.

(2) Whenever appropriate in furtherance of this Act, the Secretary of Agriculture and the Secretary of the Interior are authorized and encouraged to utilize the following:

(A) For activities on federally owned land, the Volunteers in the Parks Act of 1969 (16 U.S.C. 18g-j) and the Volunteers in the Forest Act of 1972 (16 U.S.C. 558a-558d).

(B) For activities on all other lands, section 6 of the Land and Water Conservation Fund Act of 1965 (relating to the development of statewide comprehensive outdoor recreation plans).

(3) For purposes of this subsection, the appropriate Secretary or the head of any Federal agency may utilize and make available Federal facilities, equipment, tools, and technical assistance to volunteers and volunteer organizations, subject to such limitations and restrictions as the appropriate Secretary or the head of any Federal agency deem necessary or desirable.

(4) No permit or other authorization provided for under provision of any other Federal law shall be conditioned on the existence of any agreement provided for in this section.

SEC. 12 (a) The Secretary of the Interior, the Secretary of Agriculture, and the head of any other Federal department or agency having jurisdiction over any lands which include, border upon, or are adjacent to, any river included within the National Wild and Scenic Rivers System or under consideration for such inclusion in accordance with section 2(a)(ii), 3(a), or 5(a), shall take such action respecting management policies, regulations, contracts, plans, affecting such lands, following the date of enactment of this sentence, as may be necessary to protect such rivers in accordance with the purposes of this Act. Such Secretary or other department or agency head shall, where appropriate, enter into written cooperative agreements with the appropriate State or local official for the planning, administration, and management of Federal lands which are within the boundaries of any rivers which approval has been granted under section 2(a)(ii). Particular attention shall be given to scheduled timber harvesting, road construction, and similar activities which might be contrary to the purposes of this Act.

(b) Nothing in this section shall be construed to abrogate any existing rights, privileges, or contracts affecting Federal lands held by any private party without the consent of said party.

(c) The head of any agency administering a component of the national wild and scenic rivers system shall cooperate with the Administrator, Environmental Protection Agency and with the appropriate State water pollution control agencies for the purpose of eliminating or diminishing the pollution of waters of the river.

SEC. 13 (a) Nothing in this Act shall affect the jurisdiction or responsibilities of the States with respect to fish and wildlife. Hunting and fishing shall be permitted on lands and waters administered as parts of the system under applicable State and Federal laws and regulations unless, in the case of hunting, those lands or waters are within a national park or monument. The administering Secretary may, however, designate zones where, and establish periods when, no hunting is permitted for reasons of public safety, administration, or public use and enjoyment and shall issue appropriate regulations after consultation with the wildlife agency of the State or States affected.

(b) The jurisdiction of the States and the United States over waters of any stream included in a national wild, scenic or recreational river area shall be determined by established principles of law. Under the provisions of this Act, any taking by the United States of a water right which is vested under either State or Federal law at the time such river is included in the national wild and scenic rivers system shall entitle the owner thereof to just compensation. Nothing in this Act shall constitute an express or implied claim or denial on the part of the Federal Government as to exemption from State water laws.

(c) Designation of any stream or portion thereof as a national wild, scenic or recreational river area shall not be construed as a reservation of the waters of such streams for purposes other than those specified in this Act, or in quantities greater than necessary to accomplish these purposes.

(d) The jurisdiction of the States over waters of any stream included in a national wild, scenic or recreational river area shall be unaffected by this Act to the extent that such jurisdiction may be exercised without impairing the purposes of this Act or its administration.

(e) Nothing contained in this Act shall be construed to alter, amend, repeal, interpret, modify, or be in conflict with any interstate compact made by any States which contain any portion of the national wild and scenic rivers system.

(f) Nothing in this Act shall affect existing rights of any State, including the right of access, with respect to the beds of navigable streams, tributaries, or rivers (or segments thereof) located in a national wild, scenic or recreational river area.

(g) The Secretary of the Interior or the Secretary of Agriculture, as the case may be, may grant easements and right-of-way upon, over, under, across, or through any component of the national wild and scenic rivers system in accordance with the laws applicable to the national park system and the national forest system, respectively: Provided, That any conditions precedent to granting such easements and rights-of-way shall be related to the policy and purpose of this Act.

SEC. 14 (a) The claim and allowance of the value of an easement as a charitable contribution under section 170 and title 26, United States Code, or as a gift under section 2522 of said title shall constitute an agreement by the donor on behalf of himself, his heirs, and assigns that, if the terms of the instrument creating the easement are violated, the donee or the United States may acquire the servient estate of its fair market value as of the time the easement was donated minus the value of the easement claimed and allowed as a charitable contribution or gift.

SEC. 14A. (a) Where appropriate in the discretion of the Secretary, he may lease federally owned land (or any interest therein) which is within the boundaries of any component of the National Wild and Scenic Rivers system and which has been acquired by the Secretary under this Act. Such lease shall be subject to such restrictive covenants as may be necessary to carry out the purposes of this Act.

(b) Any land to be leased by the Secretary under this section shall be offered first for such lease to the person who owned such land immediately before its acquisition by the United States.

SEC. 15...*(applies to components of NW & S Rivers Alaska)*

SEC. 16. As used in this Act, the term--

(a) "River" means a flowing body of water or estuary or a section, portion, or tributary thereof, including rivers, creeks, runs, kills, rills, and small lakes.

(b) "Free-flowing," as applied to any river or section of a river, means existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway. The existence, however, of low dams, diversion works, and other minor structures at the time any river is proposed for inclusion in the national wild and scenic rivers system shall not automatically bar its consideration for such inclusion: *Provided*, That this shall not be construed to

authorize, intend, or encourage future construction of such structures within components of the national wild and scenic rivers system.

(c) "Scenic easement" means the right to control the use of land (including the air space above such land) within the authorized boundaries of a component of the wild and scenic rivers system, for the purpose of protecting the natural qualities of a designated wild, scenic or recreational river area, but such control shall not affect, without the owner's consent, any regular use exercised prior to the acquisition of the easement. For any designated wild and scenic river, the appropriate Secretary shall treat the acquisition of fee title with the reservation of regular existing uses to the owner as a scenic easement for the purposes of this Act. Such an acquisition shall not constitute fee title ownership for purposes of section 6(b).

SEC. 17....(*Appropriation language for specific rivers*)>

Selected Laws Amending or Related to the Wild and Scenic Rivers Act:

92-560
93-621
94-199
94-486
95-87
96-312
96-487
99-590
99-663
100-33
100-150
100-412
100-552
100-534
100-557
100-605
100-633
100-677
101-175
101-612
101-628

Appendix C

APPENDIX C

GLOSSARY OF ACRONYMS AND TERMS

Alternative - A Comprehensive management strategy; when a Federal agency is considering an action, NEPA requires the agency to develop and analyze a range of reasonable alternatives, including a "no action" or "no change" alternative. The alternatives must respond to the issues, and must show a reasonable range of actions.

Background - A term used in visual management to describe the portions of a view extending from beyond the Middleground Zone (more than 3 to 5 miles) from the observer.

Biodiversity - The relative abundance and variety of species, both plant and animal, in a given area.

Biological evaluation - A specific process required as part of an environmental assessment that evaluates the potential effects of a proposed project on Proposed, Endangered, Threatened, and Sensitive species and their habitats.

Classification - See Wild and Scenic River Areas.

Clearcutting - The cutting method that describes the silviculture system in which the old crop is cleared over a considerable area at one time. Regeneration then occurs from (a) natural seeding from adjacent stands, (b) seed contained in the slash or logging debris, (c) advance growth, or (d) planting or direct seeding. An even-aged forest usually results.

Code of Federal Regulations (CFR) - A codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government.

Council on Environmental Quality (CEQ) - An advisory council to the President established by the National Environmental Policy Act of 1969. It reviews federal programs for their effect on the environment, conducts environmental studies, and advises the President on environmental matters. (Abstracted from the National Environmental Policy Act of 1969, as Amended.)

Cultural resource - The remains of sites, structures, or objects used by humans in the past-historic or prehistoric.

Cumulative effects or impacts - Cumulative effect or impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) (or person) undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR 1508.7 - these regulations use effects and impacts synonymously)

Decision notice - The written record of the decision made after a federal agency completes an environmental assessment. The decision notice chooses one of the alternatives, or a blend of the alternatives, and may be appealed by the public. The Forest Service combines the decision notice with the FONSI (Finding of No Significant Impact) required by NEPA.

Designated corridor - A wild and scenic corridor that has been added to the Wild and Scenic Rivers System.

Developed recreation - Recreation that requires facilities that, in turn, result in concentrated use of an area. Examples of developed recreation areas are campgrounds and ski areas; facilities in these areas might include roads, parking lots, picnic tables, toilets, drinking water, ski lifts, and buildings.

Dispersed recreation - A general term referring to recreation use outside developed recreation sites; this includes activities such as scenic driving, hiking, backpacking, hunting, fishing, snowmobiling, horseback riding, cross-country skiing, and recreation in primitive environments.

Diversity - The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan.

Easements - An interest in real property that conveys use, but not ownership, of a portion of an owner's property.

Endangered species - Any species of animal or plant that is in danger of extinction throughout all or a significant portion of its range. Plant or animal species identified by the Secretary of the Interior as endangered in accordance with the 1973 Endangered Species Act.

Enhancement - Improving river corridor values above what they are today or 2) a type of VQO - see Visual Quality Objective.

Environmental Analysis - A comprehensive evaluation of alternative actions and their predictable short and long-term environmental effects, which include physical, biological, economic, social, and environmental design factors and their interactions.

Environmental Assessment - The concise public document required by the regulations for implementing the procedural requirements of the National Environmental Policy Act. (40 CFR 1508.9.2)

Floodplain - Relatively flat surfaces adjacent to active stream or river channels, formed by deposition of sediments during major floods; may be covered by water during floods:

100-year floodplain - That area that would be covered by water during the 100-year flood event.

Historic floodplain - The relatively flat area adjacent to an active stream that has been formed by depositions of river sediment, an area larger than the 100-year floodplain.

Foreground - A term used in visual management to describe the portions of a view between the observer and up to 1/4 to 1/2 mile distant.

Forest Plan - See Land and Resource Management Plan.

Forest Service Handbook (FSH) - For Forest Service use, directives that provide detailed instructions on how to proceed with a specialized phase of a program or activity.

Forest Service Manual (FSM) - A system of manuals which provides direction for Forest Service activities.

Habitat - The area where a plant or animal lives and grows under natural conditions. Habitat consists of living and non-living attributes, and provides all requirements for food and shelter.

Historic sites - Site associated with the history, tradition, or cultural heritage of national, state, or local interest, and of enough significance to merit preservation or restoration.

Interdisciplinary Team (ID Team) - A group of individuals with different training assembled to solve a problem or perform a task. The team is assembled out of recognition that no one scientific discipline is sufficiently broad to adequately solve the problem.

Irretrievable - Applies to losses of production, harvest, or commitment of renewable natural resources. For example, some or all of the timber production from an area is irretrievably lost during the time an area is used as a winter sports site. If the use is changed, timber production can be resumed. The production lost is irretrievable, but the action is not irreversible.

Irreversible - Applies primarily to the use of non-renewable resources, such as minerals or cultural resources, or to those factors that are renewable only over long time spans, such as soil productivity. Irreversible also includes loss of future options.

Key issues - The ID Team identifies and eliminates from detailed study the issues which are not significant or which have been covered by prior environmental review. The remaining issues are covered through the analysis. These issues are the key issues.

Land and Resource Management Plan - The Land and Resource Management Plan for the Pike and San Isabel National Forests; Comanche and Cimarron National Grasslands was implemented in 1984 to provide site-specific management direction for all areas administered by the unit. The Plan provides a management program reflecting a mix of management activities that allows use and protection of the Forest's resources, fulfills legislative requirements, and addresses local, regional, and national issues. Included in the plan are: management direction and long-term goals, standards and guidelines and the timing necessary to achieve those goals, monitoring and evaluation needed to ensure plan direction is carried out, assessment of the suitability of wilderness, and recommended management direction for oil and gas leasing. The 1984 plan is currently in force but will be revised in the next several years.

Management Plan - A plan guiding overall management of an area administered by a federal or state agency; plan usually includes objectives, goals, standards and guidelines, management actions, and monitoring plans (see Land and Resource Management Plan).

Maximum Modification - See Visual Quality Objective.

Middleground - A term used in visual management to describe the portions of a view extending from the foreground zone out to 3 to 5 miles from the observer.

Mitigation - Mitigation includes: (a) avoiding the impact altogether by not taking a certain action or parts of an action; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (d) reducing or elimination the impact over time by preservation and maintenance operations during the life of the action; and, (e) compensating for the impact by replacing or providing substitute resources or environments. (40 CFR Part 1508.20)

Modification - See Visual Quality Objective.

National Environmental Policy Act (NEPA) of 1969 - An act to declare a National policy which will encourage productive and enjoyable harmony between humankind and the environment, to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humanity, to enrich the understanding of the ecological systems and natural resources important to the Nation, and to establish a Council on Environmental Quality. (The Principal Laws Relating to Forest Service Activities, Agriculture Handbook No. 453, USDA, Forest Service 359 pp.)

National Forest Management Act (NFMA) - A law passed in 1976 as an amendment to the Forest and Rangeland Renewable Resources Planning Act, requiring the preparation of Regional Guides and Forest Plans and the preparation of regulations to guide that development.

Outstandingly Remarkable Values (OR values) - Term used in the National Wild and Scenic Rivers Act of 1968; to qualify as outstandingly remarkable, a resource value must be a unique, rare, or exemplary feature that is significant at a regional or national level.

Partial Retention - See Visual Quality Objective.

PETS - Proposed, endangered, threatened, or sensitive species.

Prehistoric site - An area which contains important evidence and remains of the life and activities of early societies which did not record their history.

Preservation - See Visual Quality Objective.

Public involvement - A Forest Service process designed to broaden the information base upon which agency decisions are made by (1) informing the public about Forest Service activities, plan, and decisions, and (2) encouraging public understanding about and participation in the planning processes which lead to final decision making.

Recreation Opportunity Spectrum (ROS) - A framework for stratifying and defining classes of outdoor recreation environments, activities, and experience opportunities. The settings, activities, and opportunities for obtaining experiences have been arranged along a continuum of spectrum

divided into six classes: Primitive, Semiprimitive Nonmotorized, Semiprimitive Motorized, Roded Natural, Rural, and Urban.

1. **Primitive** - Area is characterized by an essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is not permitted. The area has no facilities and no site disturbance for facilities.
2. **Semiprimitive Nonmotorized** - Area is characterized by a predominately natural or natural appearing environment of moderate to large size. Interaction between users is low, but there is often evidence of other users. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil. The area is managed in such a way that minimum on-site controls and restrictions may be present, but would be subtle. Motorized recreation use is not permitted, but local roads used for other resource management activities may be present on a limited basis. Use of such roads is restricted to minimize impacts on recreation experience opportunities. The area has no facilities except limited signing, sanitary, and safety needs in native-like rustic materials.
3. **Semiprimitive Motorized** - Area is characterized by a predominately natural or natural-appearing environment of moderate to large size. Concentration of users is low but there is often evidence of other users. The area is managed in such a way with minimum on-site controls and restrictions. Use of local primitive or collector roads with predominately natural surfaces and trails suitable for motor bikes is permitted. The area has limited facilities for signing, sanitary, and safety needs in native-like rustic materials.
4. **Roded Natural** - Area is characterized by predominately natural-appearing environments with moderate evidence of the sights and sounds of man. Such evidence usually harmonizes with the natural environment. Interaction between users may be moderate to high, with evidence of other users prevalent. Vegetative alterations are done to maintain desired visual and recreation characteristics. The area is managed with some obvious on-site controls and restrictions. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is allowed and incorporated into construction standards and design of facilities. The area has a moderate amount and complexity of facilities for comfort and convenience of the user, native materials are used but with more refinement in design.
5. **Rural** - Area is characterized by a natural environment that is culturally modified, yet attractive (ie. pastoral farmlands). Backdrop may range from alternations not obvious to dominant. Interaction between users may be high as is evidence of other users. The area is managed with obvious and prevalent on-site controls. Access and travel facilities are for individual intensified motorized use. The area has highly complex and numerous facilities with some synthetic but harmonious materials. Design is more refined. There are many convenience facilities such as flush toilets, lighting, piped in water, ect.
6. **Urban** - Area is characterized by an urbanized environment with dominant structures, traffic lights, and paved streets. The area may have a natural appearing backdrop. Recreation sites may be city parks and large resorts. Interaction between large number of users is high. The area is managed with numerous intensive on-site controls. Access

and travel facilities are highly intense, motorized, and often with mass transient supplements. The area has numerous very highly complex and dominant facilities, mostly with synthetic materials and very refined design. Convenience facilities are dominant.

Rehabilitation - Action taken to restore, protect, or enhance site productivity, water quality, or other resource values over a period of time.

Regulated harvest - Harvest on forest lands in Forest Plan management areas which include scheduled timber harvest on a regular sustainable basis. Regulated acres are the areas or acres from which this can occur. Also referred to as suitable acres.

Resident fish - Fish species that complete their entire life cycle in freshwater; non-anadromous fish; an example is rainbow trout.

Resource assessment - An evaluation of the resources and values associated with a wild and scenic river and the river corridor; the evaluation determined the level of significance of river-related values.

Retention - See Visual Quality Objective.

Riparian - Pertaining to areas of land directly influenced by water or influencing water. Riparian areas usually have visible vegetative or physical characteristics reflecting this water influence. Stream sides, lake borders, or marshes are typical riparian areas.

River corridor - Land adjacent to the Wild and Scenic River, managed along with the river to maintain and/or enhance the Outstandingly Remarkable Values (ORVs) of the river. Corridor boundaries are delineated by the geography and the ORVs encompassing not more than 320 acres per river mile.

Roadless area - Acres studied during the Roadless Area Review and Evaluation process (RARE II) which are roadless and at least 5,000 acres in size.

Salvage cuttings - Intermediate cuttings made to remove trees that are dead or in imminent danger of being killed by injurious agents.

Scenic easements - Scenic easement means the right to control the use of land (including the air space above such land) within the authorized boundaries of a component of the wild and scenic river system, for the purpose of protecting the natural qualities of a designated wild, scenic or recreational river area, but such control shall not affect, without the owner's consent, any regular use exercised prior to the acquisition of the easement. For any designated wild and scenic river, the appropriate Secretary shall treat the acquisition of fee title with the reservation of regular existing uses to the owner as a scenic easement for the purposes of this Act. Such an acquisition shall not constitute fee title ownership for purposes of section 6 (b).

Section 7 Analysis - A documented procedure, specified in the Forest Service Handbook, to evaluate water resource projects in designated Wild and Scenic River corridors. Evaluation is limited to Federal lands in the corridor and to private land in the corridor where a Federal permit or Federal funding are used. Only those projects that ensure the protection of free-flow, Outstandingly Remark-

able Values, management objectives of the river, and other resource values for which the area is designated are permitted. Also implied by Forest Service policy to all study rivers.

Scoping process - A part of the National Environmental Policy Act (NEPA process; early and open activities used to determine the scope and significance of the issues, and the range of actions, alternatives, and impacts to be considered in an Environmental Impact Statement. (40 CFR 1501.7)

Sedimentation - A process where material carried in suspension by water flows into streams and rivers, increasing turbidity and eventually settling to the bottom.

Sensitive species - Plant or animal species which are susceptible or vulnerable to activity impacts or habitat alternations. Those species that have appeared in the Federal Register as proposed for classification or are under consideration for official listing as endangered or threatened species, that are on an official State list, or that are recognized by the Regional Forester as needing special management to prevent placement on Federal or State lists.

Sensitivity level - A measure of people's concern for the scenic quality of the National Forests. Three sensitivity levels are employed, each identifying a different level of user concern for the visual environment.

Level 1 - Highest sensitivity

Level 2 - Average sensitivity

Level 3 - Lowest sensitivity

Snag - A standing dead tree.

Standards and guidelines - Bounds or constraints within which all practices in a given area will be carried out, in achieving the goals and objectives for that area. Standards and guidelines provide environmental safeguards and also state constraints prescribed by law.

Study corridor - The river segment(s) that have been found eligible and are under study for potential Wild and Scenic River designation. This includes all land within 1/4-mile of the high water mark of that segment.

Suitable acres - See Regulated harvest.

Terminus - The beginning or ending point of Congressionally designated Wild and Scenic River corridor; or as in this case, of an eligible study corridor.

Threatened species - Those plant or animal species likely to become endangered species throughout all or a significant portion of their range within the foreseeable future. (See also Endangered species.)

Unregulated Harvest - Harvest on lands in Forest Plan management areas which do not include scheduled timber harvest on a regular sustainable basis. Also referred to as unregulated or unsuitable acres.

Unsuitable - See Unregulated Harvest

Viewshed - Portion of the Forest that is seen from a major travel route, or high use location.

Visual Quality Objective (VQO) - Categories of acceptable landscape alteration measured in degrees of deviation from the natural-appearing landscape.

Preservation (P) - Ecological changes only.

Retention (R) - Management activities should not be evident to the casual Forest Visitor.

Partial Retention (PR) - Management activities remain visually subordinate to the characteristic landscape.

Modification (M) - Management activities may dominate the characteristic landscape but must, at the same time, follow naturally established form, line, color, and texture. It should appear as a natural occurrence when viewed in foreground or middleground.

Maximum Modification (MM) - Human activity may dominate the characteristic landscape, but should appear as a natural occurrence when viewed as background.

Enhancement - A short-term management alternative which is done with the express purpose of increasing positive visual variety where little variety now exists.

Visual resource - The composite of basic terrain, geologic features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors.

Watershed - The entire land area that contributes water to a drainage system or stream. Also used to describe the watersheds used for Forest level planning and analysis.

Wetlands - Areas that are inundated by surface or ground water often enough to support, and usually do support, primarily plants and animals that require saturated or seasonally saturated soil conditions for growth and reproduction.

Wild fish - Fish species that reproduce without stocking. May include native (ie. cutthroat trout) and non-native species (ie. brown and rainbow trout).

Wild and Scenic River - Those rivers or sections of rivers designated as such by Congressional action under the 1968 Wild and Scenic Rivers Act, as supplemented and amended, or those sections of rivers designated as wild, scenic, or recreational by an act of the legislature of the state or states through which they flow. Wild and scenic rivers may be classified and administered under one or more of the following categories:

1. **Wild River Areas** - Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted.

2. **Scenic River Areas** - Those rivers or sections of rivers that are free of impoundments, with watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.
3. **Recreational River Areas** - Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

Appendix D

APPENDIX D

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Appendix E

United States Forest Washington 14th & Independence SW
Department of Service Office P.O. Box 96090
Agriculture Washington, DC 20090-6090

Reply to: 2350 Date: October 20, 1992

Subject: Wild and Scenic Rivers: Evaluation of Proposed Activities

To: Regional Foresters

Enclosed for your information are two documents that provide the basis for an interim directive (ID) that will be issued to FSM 2354.7 within the next few weeks. The ID will clarify the agency's policy relative to requirements of the Wild and Scenic Rivers Act and implementing regulations (36 CFR Part 297) and provide a procedure to be used by all Regions in evaluating proposed activities which may affect wild and scenic rivers. We are providing the base documents now to give you advance opportunity to acquaint yourselves with the new procedures.

The enclosed documents include:

"Procedure to Evaluate Water Resources Projects." This document is based on a procedure developed and currently being tested in Region 6.

"Abstract of Relevant Legislation, Regulations, Manual and Handbook Direction, Legal Opinion, and Congressional Direction Related to Water Resources Projects." Included in this abstract are comments to guide consistent interpretation and application of agency policy.

The Wild and Scenic Rivers Act directs the Forest Service to protect and enhance the 'outstandingly remarkable' scenic, recreational, geologic, fish and wildlife, historic, cultural, and other values for which each river was added to the National Wild and Scenic Rivers System. To help achieve this goal, the Act prohibits, or imposes restrictions on developments and activities which would directly and adversely affect those values.

In administration of existing or potential wild and scenic rivers, the use of instream structures for fish habitat or water quality improvement, recreation facilities, road and trail bridges, and other uses are an important management consideration. Questions and conflicting opinions as to legal limitations have arisen, primarily due to varying interpretations of the Act and related agency direction. The ID will serve to clarify the direction and provide a process for consistent application throughout the Forest Service.

The evaluation of project proposals must consider the purpose and effects of a project relative to the free-flowing nature of the river, the resource values of the river and river corridor, and the management objectives for the river. The basic standard of review is whether the project will affect conditions of free-flow and have a direct and adverse effect on the values for which the river was designated. This standard is documented in both the Act and the implementing regulations for Section 7 of the Act (36 CFR Part 297).

2

Because of the specific responsibility spelled out in the Act for State fisheries agencies, and the heightened concern regarding the relationship between water resource projects, such as those designed to protect or improve fish habitat or watershed conditions, and the Wild and Scenic Rivers Act, it is particularly important that you coordinate your evaluations closely with these agencies. Coordination should also be carried out with other tribal, Federal, State, and local governmental agencies and private organizations that have a direct responsibility for, or interest in, management of the river and river corridor resources.

We are currently working closely with our Office of General Counsel to review our Section 7 implementing regulations (36 CFR Part 297) to determine what revisions are needed to improve the consistency with which the provisions of the Act are being implemented. If the regulations are eventually revised, our procedures will be changed as appropriate.

Deen Lundeen of our Recreation, Cultural Resources and Wilderness Management Staff and Harv Forsgren of our Wildlife and Fisheries Staff are available to assist you and answer questions regarding these procedures.

/s/George M. Leonard

GEORGE M. LEONARD
Associate Chief

Enclosures (2)

PROCEDURE TO EVALUATE WATER RESOURCES PROJECTS

INTRODUCTION

This paper documents a procedure which can be uniformly and consistently applied by the Forest Service to determine whether proposed water resources projects present a direct and adverse affect to designated wild and scenic river values, and thus would be prohibited under Section 7 of the Wild and Scenic Rivers Act (the "Act"), or whether the projects should be allowed to proceed because they do not meet that threshold.

The procedure also applies to congressionally identified study rivers (Section "5a" rivers), which are afforded interim protection from projects which would affect "free-flow" characteristics in Section 7(b) of the Act. Although not protected from such projects in the Act, rivers identified for study through the land management planning process (Section "5d" rivers) are also afforded protection via agency policy (Forest Service Planning Handbook (1909.12, Chapter 8.12).

The procedure may also be applied to evaluate activities proposed outside a designated or study river corridor to determine if they result in indirect effects that "invade the area or unreasonably diminish the scenic, recreational, and fish and wildlife values present in the area on the date of designation," as referenced in Section 7 (a).

This procedure paper presumes a strict interpretation of what activities would qualify as water resources projects. Water resources projects have been defined in 36 CFR Part 297 as:

"...any dam, water conduit, reservoir, powerhouse, transmission line, or other project works under the Federal Power Act, or other construction of developments which would affect the free-flowing characteristics of a Wild and Scenic River or study river."

Section 16 (b) of the Act provides a definition of "free-flow" that assists in identification of water resources projects. It states:

"Free-flowing, as applied to any river or section of a river, means existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway."

Therefore, if a proposed activity would affect a river's free-flow, or meet other criteria outlined in 36 CFR 297, it qualifies as a water resources project and the Section 7 procedure defined in this paper can be applied.

ISSUE

The key issue, assuming that the proposed activity is identified as a water resources project, is whether the project presents a direct and adverse affect on the values for which the river was designated or is being studied (or if a proposed activity is above or below the area, does it unreasonably diminish the scenic, recreational, or fish and wildlife values)?

Lack of a standardized procedure to analyze effects has contributed to the difficulty of making an adequate analysis of water resource projects as required by Section 7, manual direction (FSM 2354), and the Forest Service Handbook (FSH 1909.12, Chapter 8). The balance of this paper describes a standardized analysis procedure that incorporates the following principles:

- a. Effects will be judged in the context of the legislation designating the affected wild and scenic river and the management objectives for the river as defined in the comprehensive river management plan. (In the case of study rivers, effects are judged in the context of relevant Forest Plan standards and guidelines and the potential affect of the activity on the river's eligibility.)
- b. Water resource projects are permissible if the net effect protects or enhances values for which the river was designated or is being studied. Water resource projects are not permitted if they have a direct and adverse effect on such river values. (In the case of study rivers management activities may be carried out provided they would not result in a reduced classification recommendation, and are consistent with other relevant Forest Plan standards and guidelines.)
- c. Permissible water resources projects will, to the extent practicable, maintain or enhance the free flowing characteristics of the river.
- d. Water resources projects may be permitted even though they may have an effect on free flowing characteristics if:
 - (1) the specific purpose of the project is to protect or enhance the values for which the river was designated, restore the natural characteristics of the river, and/or improve the water quality of the river;
 - (2) associated impacts on free flowing characteristics of the river are minimized to the extent practicable; and,
 - (3) the proponent and manager of the project is a federal, state, or local governmental entity.

PROCEDURE

Background: In developing this procedure we recognize that:

- It is necessary to provide a temporal and spatial context for evaluating river related proposals. The wild and scenic river management planning process should result in a clear statement of long term management goals and objectives for free-flow, water quality, riparian areas and floodplains, and the outstandingly remarkable and other significant resource values designated by statute.
- Section 7 and promulgating rules (36 CFR 297) require an analysis of effects associated with a proposed water resources project. The analysis of activities deemed acceptable must clearly demonstrate consistency with management goals and objectives.
- Management of river ecosystems should be designed to achieve management goals and objectives through natural processes and use of techniques that mimic those processes. To insure that long term goals and objectives are met, careful analysis and evaluation of these processes, time scales, and public perceptions is necessary.
- State fish and wildlife agencies share responsibility with the Forest Service for fish and wildlife resources on wild and scenic river's. Identification and evaluation of water resource projects should be coordinated with the States, recognizing and supporting attainment of state fish and wildlife management objectives to the extent they are consistent with the outstanding values for which the river was designated or is being studied.

Step-by-Step Procedure: The following procedure is designed to evaluate proposed activities within a wild and scenic river ecosystem. This procedure is not simply one of disclosure. Rather, it is a framework to identify changes in free-flow conditions and evaluate the effects associated with project proposals.

1) Establish Need and Evaluate Consistency with Management Goals and Objectives. The first step is to define the need for the proposed activity and make a *preliminary* determination whether the proposed activity is consistent with the management goals and objectives for the river. Management goals provide the standard for evaluation of effects 1/. If the activity does not evidence a compelling need or is inconsistent with the management goals and objectives or other applicable laws (e.g. Wilderness Act, Endangered Species Act, etc.), the project may not be considered further.

1/ If management goals and objectives have not been formalized through a river planning process, utilize Forest Plan standards and guidelines and any applicable state fish and wildlife, water quality, or other state agency management plans or policies consistent with identified values, to develop objectives for each of the outstanding river values.

For projects that appear needed to help attain the management goals and objectives, proceed with the following steps. The scope of analysis should be commensurate with the magnitude and complexity of the project proposal. The procedure should be accomplished via an interdisciplinary team with adequate skills for the analysis. Note that each step requires some professional judgement.

2) Define the Proposed Activity. Provide an objective description of the proposed activity. The level of detail should be proportional to the scope of the proposed project and should indicate whether the project is isolated or part of a more complex or comprehensive proposal.

- a. project proponent(s)
- b. purpose (clearly describe the need for the project)
- c. location
- d. duration of proposed activities
- e. magnitude/extent of proposed activities
- f. relationship to past and future management

3) Describe How the Proposed Activity Will Directly Alter Within-Channel Conditions. Address the magnitude and spatial extent of the effects the proposed activity will have on in-channel attributes. Special attention should be given to changes in features which would affect the outstandingly remarkable and other significant resource values.

- a. What is the position of the proposed activity relative to the stream bed and banks?
- b. Does the proposed activity result in changes in:
 1. active channel location?
 2. channel geometry (i.e. cross-sectional shape or width/depth characteristics)?
 3. channel slope (rate or nature of vertical drop)?
 4. channel form (e.g. straight, meandering, or braided)?
 5. relevant water quality parameters (e.g. turbidity, temperature, nutrient availability)?

4) Describe How the Proposed Activity Will Directly Alter Riparian and/or Floodplain Conditions. Address the magnitude and spatial extent of the effects the proposed activity will have on riparian/floodplain attributes. Special attention should be given to changes in features that would affect the outstandingly remarkable and other significant resource values.

- a. What is the position of the proposed activity relative to the riparian area and floodplain?

- b. Does the proposed activity result in changes in:
 - 1. vegetation composition, age structure, quantity, vigor, etc.?
 - 2. relevant soil properties such as compaction, percent bare ground, etc.?
 - 3. relevant floodplain properties such as width, roughness, bank stability or susceptibility to erosion, etc.?

5) Describe How the Proposed Activity Will Directly Alter Upland Conditions. Address the magnitude and spatial extent of the effects the proposed activity will have on associated upland attributes. Special attention should be given to changes in features that would affect the outstandingly remarkable and other significant resource values.

- a. What is the position of the proposed activity relative to the uplands?
- b. Does the proposed activity result in changes in:
 - 1. vegetation composition, age structure, quantity, vigor, etc.?
 - 2. relevant soil properties such as compaction, percent bare ground, etc.?
 - 3. relevant hydrologic properties such as drainage patterns, the character of surface and subsurface flows, etc.?
- c. Will changes in upland conditions influence archeological, cultural, or other identified significant resource values.

6) Evaluate and Describe How Changes in On-Site Conditions Can/Will Alter Existing Hydrologic or Biologic Processes. Evaluate potential changes in river and biological processes by quantifying, qualifying and modeling as appropriate.

- a. Does the proposed activity affect:
 - 1. ability of the channel to change course, re-occupy former segments, or inundate its floodplain?
 - 2. streambank erosion potential, sediment routing and deposition, or debris loading?
 - 3. the amount or timing of flow in the channel?
 - 4. existing flow patterns?
 - 5. surface and subsurface flows?
 - 6. flood storage (detention storage)?
 - 7. aggradation/degradation of the channel?
- b. Does the proposed activity affect biological processes such as:
 - 1. reproduction, vigor, growth and/or succession of streamside vegetation?

2. nutrient cycling?
3. fish spawning and/or rearing success?
4. riparian dependent avian species needs?
5. amphibian/mollusk needs?

7) Estimate the Magnitude and Spatial Extent of Potential Off-Site Changes. Address potential off-site, or indirect effects of the proposed activity, acknowledging any uncertainties (i.e., a risk analysis).

- a. Consider and document:
 1. changes that influence other parts of the river system.
 2. the range of circumstances under which off-site changes might occur (e.g., as may be related to flow frequency).
 3. the probability or likelihood that predicted changes will be realized.
- b. Specify processes involved, such as water, sediment, movement of nutrients, etc.

8) Define the Time Scale Over Which Steps 3 - 7 are Likely to Occur.

- a. Review steps 3 - 7 looking independently at the element of time.
- b. Consider whether conditions, processes and effects are temporary or persistent. That is, attempt to define and document the time scale over which effects will occur.

9) Compare Project Analyses to Management Goals and Objectives. Based on the analysis of steps 3-8, identify project effects on achievement, or timing of achievement, of management goals and objectives relative to free-flow, water quality, riparian area and floodplain conditions, and the outstandingly remarkable and other significant resource values.

10) Section 7 Determination. Based on the analysis of steps 3-9 document:

- a. effects of the proposed activity on conditions of free-flow, including identification of the measures taken to minimize those effects.
- b. any direct and adverse effects on the outstandingly remarkable and other significant resource values for which the river was designated or is being studied.
- c. any unreasonable diminishing of scenic, recreational, or fish and wildlife values associated with projects above or below the area.

The determination should permit those water resource projects that are consistent with the legislation designating the affected wild and scenic river and the management objectives for the river as defined in the comprehensive river management plan, or in the case of study rivers, the proposed activities would not result in a reduced classification recommendation and is consistent with Forest Plan standards and guidelines. Permissible water resources projects will, to the extent practicable, maintain or en-

hance the free flowing characteristics of the river. Water resource projects that have a direct and adverse effect on designated river values or management objectives are not to be permitted.

It is important to note that water resources projects may be permitted even though they may have an effect on free flowing characteristics if:

- a. the specific purpose of the project is to protect or enhance the values for which the river was designated, restore the natural characteristics of the river, and/or improve the water quality of the river;
- b. the associated impacts on free flowing characteristics of the river are minimized to the extent practicable; and,
- c. the proponent and manager of the project is a federal, state, or local governmental entity.

Include the Section 7 determination as part of the broader NEPA analysis of the proposed activity. See the following section for additional information on the relationship of Section 7 determinations and the NEPA process.

INCORPORATION OF SECTION 7 DETERMINATIONS IN THE NEPA PROCESS

The Code of Federal Regulations states:

"The determination of the effects of a proposed water resources project shall be made in compliance with NEPA."

The following discussion offers more specific information regarding incorporation of the Section 7 procedure into the NEPA process. It also includes information relating to the decision document and the responsible official.

A proposed water resources project may be an independent project such as watershed or fish habitat restoration or construction of a boat ramp or fishing pier, or part of a larger program that serves a variety of purposes. In either situation, the Section 7 procedure is to be completed as a separate analysis by an interdisciplinary team. For designated rivers (Section 3a) and congressionally identified study rivers (Section 5a), the Section 7 procedure would be explicitly documented in, or appended to the NEPA document with appropriate reference in the NEPA analysis. Similarly, for rivers identified for study via the land management planning process (Section 5d), an analysis as to the potential effect of a proposed project on free-flow and the outstandingly remarkable values should be incorporated, appended, or available in the analysis file.

The decision document will describe the Section 7 determination for the preferred alternative for a designated or congressionally identified study river. This determination should state whether the proposed project will affect free-flow characteristics, whether it will or will not have a "direct and adverse effect on the values for which the river was designated" (or might be added to the System), or whether proposed projects above or below the area will "unreasonably diminish" those resource values. The Section 7 evaluation may result in identification of water-resources projects which protect, restore or enhance the values for which the river was designated or identified for study. In approval of such projects, the decision notice should clearly indicate that determination.

For study rivers identified via the land management planning process (i.e. Section 5d rivers), utilize the Section 7 procedure with the decision document referencing that an analysis was conducted to evaluate the potential effect of the proposed project on free-flow and the outstandingly remarkable values. Note, that Section 7 is not required for 5d rivers, but agency policy (FSH 1909.12 8.12) provides direction to protect the free-flowing condition and outstandingly remarkable values.

The responsible official differs with the status of the river and whether or not another federal agency is involved. For proposed water resources projects on a 3a or 5a river, in which there is another federal agency "assisting by loan, grant, license or otherwise..." the Regional Forester is the responsible official (reference FSM 2354.04e). If there is no other federal agency "assistance" for a project on a 3a or 5a river, the appropriate line officer signs the decision document. Decision documents for water resources projects on a 5d river are signed by the appropriate line officer.

REGIONAL OVERSIGHT

The Regional Offices are to provide for review of the Section 7 analysis completed for proposed water resources projects. This review process should be coordinated by the Recreation staff group and involve other appropriate staff areas such as fisheries, watershed, engineering, etc. The intent of this oversight is to ensure a consistent approach to the evaluation of proposed water resources projects in wild and scenic rivers. The review is not intended to make the final decision.

SUMMARY

These procedures were developed to analyze projects that have the potential to affect the free-flowing condition and/or outstandingly remarkable values of designated and study wild and scenic river's and determine which projects are consistent with the Act by protecting, restoring, and enhancing those river values. The scope of the analysis will vary with the magnitude and complexity of the proposed activity. The procedure requires interdisciplinary analysis and application of professional judgement within the requirements of the Act.

Examples of projects that would likely be subject to Section 7 analysis include, but are not limited to:

- 1. Log removal for recreation user safety;**
- 2. Fisheries habitat and watershed restoration and enhancement projects;**
- 3. Bridge and other roadway construction/reconstruction projects;**
- 4. Bank stabilization projects;**
- 5. Recreation facilities such as boat ramps and fishing piers;**
- 6. Activities that require 404 permits from the Corps of Engineers.**

**ABSTRACT OF RELEVANT LEGISLATION, REGULATIONS,
MANUAL AND HANDBOOK DIRECTION, LEGAL OPINION
AND CONGRESSIONAL DIRECTION RELATED TO
WATER RESOURCES PROJECTS**

WILD AND SCENIC RIVERS ACT

P.L. 90-542, Section 1(b):

"It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations. The Congress declares that the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes."

P.L. 90-542, Section 7(a):

Section 7 provides specific protection of designated and congressionally identified study rivers by prohibiting the licensing "...of any dam, water conduit, reservoir, powerhouse, transmission line, or other project works under the Federal Power Act." Additionally this section states:

"...no department or agency of the United States shall assist by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration."

The section also addresses federal agency limitations on licensing or assisting in developments below or above designated or proposed W&SR's that "invade the area or unreasonably diminish the scenic, recreational, and fish and wildlife values present in the area..."

P.L. 90-542, Section 10(a):

Section 10(a) states Congressional intent for management to protect and enhance those values for which a river was designated (or is being studied). The section calls

for development of management plans with specific objectives that are based on the special values of the particular river. Specifically:

"Each component of the national Wild and Scenic Rivers System shall be administered in such manner as to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public uses and enjoyment of these values. In such administration primary emphasis shall be given to protecting its esthetic, scenic, historic, archeologic, and scientific features. Management plans for any such component may establish varying degrees of intensity for its protection and development, based on special attributes of the area."

P.L. 90-542, Section 12(a):

Section 12 sets forth broad authority for management policies on federal lands "which include, border upon, or are adjacent to, any river included in the National Wild and Scenic Rivers System or under consideration for such inclusion, in accordance with section 2(a)(ii), 3(a), or 5(a)..." directing them to "take such action respecting management policies, regulations, contracts, plans...as may be necessary to protect such rivers in accordance with the purposes of this Act."

P.L. 90-542, Section 16(b):

"Free-flowing, as applied to any river or section of a river, means existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway. The existence, however, of low dams, diversion works, and other minor structures at the time any river is proposed for inclusion shall not automatically bar its consideration for such inclusion: *Provided*, That this shall not be construed to authorize, intend, or encourage future construction of such structures within components of the national Wild and Scenic Rivers System."

CODE OF FEDERAL REGULATIONS

36 CFR 297 - Regulations for Implementing Section 7 of the Wild and Scenic Rivers Act:

"Water resources projects" have been defined in 36 CFR 297 as:

"...any dam, water conduit, reservoir, powerhouse, transmission line, or other project works under the Federal Power Act, or other construction of developments which would affect the free-flowing characteristics of a Wild and Scenic River or study river."

"These regulations require that a determination of the direct and adverse effects of a proposed project be completed through the NEPA process."

INTERAGENCY GUIDELINES FOR ELIGIBILITY, CLASSIFICATION AND MANAGEMENT OF RIVER AREAS - September 7, 1982

Section III - Management:

"Other Resource Management Practices. Resource management practices will be limited to those which are necessary for protection, conservation, rehabilitation or enhancement of the river area resources. Such features as trail bridges, fences, water bars and drainage ditches, flow measurement devices and other minor structures or management practices are permitted when compatible with the classification of the river area and provided that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment."

This section establishes a nondegradation and enhancement policy for all designated river areas. Each component of the W&SR's system is to be managed to protect and enhance the values for which the river was designated, while providing for public recreation and resource uses which do not adversely impact or degrade those values. This guideline specifically identifies three criteria for evaluation of proposed activities that are consistent with the analysis called for in Section 7 of the Act, namely: 1) compatibility with the values for which the river was designated; 2) no impact on natural appearance; and, 3) harmonize with the surrounding environment.

FOREST SERVICE MANUAL

FSM 2354.04e

"Regional Foresters shall: Determine the direct and adverse effects of water resource projects upon designated or study wild and scenic rivers, and determine, pursuant to section 7 of the Wild and Scenic Rivers Act, whether the Department of Agriculture will consent to a proposed action (36 CFR 297). This authority shall not be redelegated..."

FSM 2354.42b

"Manage wildlife and fish habitats in a manner consistent with the other recognized river attributes."

"Recommendations to State agencies concerning the management of fisheries must be consistent and in harmony with established river objectives."

"The construction of minor structures for such purposes as improvement of fish and game habitat are acceptable in wild river areas provided they do not affect the free-flowing characteristics of the river and harmonize with the surrounding environment."

The last portion of this manual direction suggests that any fish and wildlife habitat improvement project which would affect conditions of free-flow are not acceptable in wild rivers. However, the primary factor in determining the acceptability of proposed fish and wildlife habitat management projects within Wild and Scenic River corridors is whether or not they have a direct and adverse affect on the values for which the river was designated (or is being studied). Water resources projects which do not directly and adversely affect the values for which the river was designated, or is being studied, are acceptable. Those projects that are incompatible with the outstanding values of the river corridor are not acceptable.

FOREST SERVICE HANDBOOK

FSH 1909.12, Chapter 8.12

"1. To the extent the Forest Service is authorized under law to control stream impoundments and diversions, the free-flowing characteristics of the identified river cannot be modified."

"3. Management and development of the identified river and its corridor cannot be modified to the degree that eligibility or classification would be affected..."

FSH 1909.12, Chapter 8.2

"1. Standards for Wild Rivers...

d. Flood Control: No flood control dams, levees, or other works are allowed in the channel or river corridor. The natural appearance and essentially primitive character of the river areas must be maintained...

i. Structures: ...New structures would not be allowed except in rare instances to achieve management objectives (i.e. structures and activities associated with fisheries enhancement programs could be allowed.)"

"2. Standards for Scenic Rivers...

i. Structures: ...New structures that would have a direct and adverse effect on river values would not be allowed."

"3. Standards for Recreational Rivers...

i. Structures: ...New structures are allowed for both habitation and for intensive recreation use."

LEGAL OPINION

A May 1979 memorandum to the Chief from Clarence W. Brizee (Deputy Director, Forestry Natural Resources Division; USDA, OGC) provides the following interpretation, which is consistent with our current understanding:

"With regard to water resources projects, the Wild and Scenic Rivers Act is not a blanket ban or absolute prohibition... The only activity absolutely prohibited by Section 7 is the licensing of dams and other project works by the Federal Energy Regulatory Commission under the Federal Power Act within the boundaries of a designated or study river. Other federally assisted water resources projects may be permitted. Thus, rather than being characterized by absolute prohibitions, the Act embodies a flexible approach. Section 7 establishes a procedure for making a specific determination with respect to each proposed water resources project."

Mr. Brizee continues: "The evolution of Section 7 demonstrates that Congress did not intend that the Act automatically ban all developments and uses on or near a (study or designated) river. To the contrary, the legislation was specifically amended in order to provide a procedure via Section 7 for review of proposed water resources projects on a case-by-case basis."

Deputy Director Brizee further states, "even though water resources projects will be reviewed on a case-by-case basis, the Act is strict as to what is allowable. This Department and the Department of the Interior have defined "water resources project" in a broad context. That is, a water resources project is any type of construction which would result in any change in the free-flowing characteristics of a particular river... This concept of water resources projects has been applied to dredge and fill permits under Section 404 of the Clean Water Act, construction of levees, removal of navigational hazards, construction of nuclear power plants, and other such diverse projects."

This memorandum also offers an interpretation of the "direct and adverse effect standard":

"The Department of Agriculture interpreted the "direct and adverse effect" standard, and the "unreasonably diminish" standard in the context of a Section 7 determination for a nuclear power project on the banks of the Skagit W&SR. The discussion in that determination indicates that a flexible approach is possible.

With regard to projects inside the designated boundary, there is no definition provided by the Act or legislative history as to what constitutes such a "direct and adverse" effect. We do not construe this section as a ban on all projects which might be built on a river proposed or designated as a component of the System. Rather, the Act contemplates that each proposed project be considered on its own merits. In making this determination, we consider the values of the river as they now exist; a "direct and adverse" effect is one which will result in marked diminutions of the values enumerated in Section 1(b) of the Act. Also relevant to the consideration of the project's impacts is the degree to

which it blends in or is otherwise compatible with the natural qualities of the river, whether there may be a diminution in the air and water quality, and the effects on animals and vegetation. The duration of the impact is another important consideration; long lasting or permanent impacts must be viewed more strictly than temporary or short term impacts."

CONGRESSIONAL DIRECTION

The most recent Congressional direction on management of wild and scenic rivers is associated with the Michigan Scenic Rivers Act of 1991 (H.R. 476) dated November 23, 1991. The Senate Committee on Energy and Natural Resources report on the Michigan Scenic Rivers Act states:

"The Committee is aware of the concern expressed by some parties of the potential effect that designation of certain rivers as components of the Wild and Scenic Rivers System may have on ongoing stream restoration and improvement projects in the State of Michigan. The Committee notes the importance of these projects in restoring damaged riparian areas and improving water quality and aquatic habitat. In the Committee's view, such projects are not inconsistent with Wild and Scenic River designation, and in fact similar projects have been successfully completed on Wild and Scenic River segments throughout the nation. The Committee directs the Forest Service to develop a consistent and coordinated policy permitting the implementation of such projects within Wild and Scenic River segments in order to avoid unnecessary concern and confusion."

In similar fashion, the House Committee on Interior and Insular Affairs report on the Michigan Scenic Rivers Act states:

"The committee has provided flexibility with regards to sea lamprey control in order that appropriate management actions can be taken consistent with the requirements of law. In keeping with sound management practices for wild and scenic rivers, the Committee believes there is appropriate flexibility in law to provide for fish and wildlife habitat and water quality improvement in a manner that will protect the values for which a river segment was designated. Some of the finest fisheries in the country are found on rivers designated as part of the National Wild and Scenic Rivers System. The Committee recognizes the importance of the fisheries on the Michigan rivers designated by this Act and is supportive of efforts to correct significant water quality, aquatic habitat or other ecological degradation caused by past human activity. The Wild and Scenic Rivers Act permits structural and non-structural techniques of fish restoration to be used as long as such activities do not have an adverse impact on the values for which such rivers are designated. Such activities consistent with this standard are occurring on wild and scenic rivers across the country. As provided for by law, the Secretary will cooperate with the state on these matters."

Appendix F

APPENDIX F

Status and Classification Explanation

Status

Partial support and Not supporting are terms used in the 305b report to describe status of water quality as it meets standards and toxic pollutant levels.

Partial support-some interference with designated uses, but use is not precluded. An acute water quality standard is exceeded in two or more samples in past three years, but the mean measured value is less than the chronic standard. The designated uses of the waterbody are present, but it is uncertain that these are at attainable levels, or at least some impact on the uses has been noted. The use exists in the waterbody based on observation, but professional judgment, which may be based on limited data, indicates that the use is not fully supported.

Not Supporting-designated uses measurably impaired because of water pollution. Use may be present but at significantly reduced levels from full support in all or some portion of the waterbody. An acute water quality standard is exceeded in two or more samples in the previous three years and the mean measured value is above the chronic standard. There is some certainty that the waterbody can not be fully used as designated because the survival propagation, production, dispersion community structure, or species diversity of aquatic life is impaired. No evidence exists that the entire waterbody can be used as designated; or known or suspected water quality impacts prevent anything but minimal use of all or a major portion of the waterbody.

Slight is a reference to the status of the water quality as it refers to a narrative explanation of the impacts of the named nonpoint source pollutant. Sediment in this case is a nonpoint pol-

lutant which has no numerical standard to rate against, however, with application of Best Management Practices this pollutant could be remediated and impairment eliminated.

Classifications

Recreation

Class 1 - Primary Contact

These surface waters are suitable or intended to become suitable for recreational activities in or on the water when the ingestion of small quantities of water is likely to occur. Such waters include but are not limited to those used for swimming, rafting, kayaking and water-skiing.

Class 2 - Secondary Contact

These surface waters are suitable or intended to become suitable for recreational uses on or about the water which are not included in the primary contact subcategory, including but not limited to fishing and other streamside or lakeside recreation.

Agriculture

These surface waters are suitable or intended to become suitable for irrigation of crops usually grown in Colorado and which are not hazardous as drinking water for livestock.

Aquatic Life

These surface waters presently support aquatic life uses as described below, or such uses may reasonably be expected in the future due to the suitability of present conditions, or the waters are intended to become suitable for such uses as a goal:

Class 1 - Cold Water Aquatic Life

These are waters that (1) currently are capable of sustaining a wide variety of cold water biota, including sensitive species, or (2) could sustain such biota but for correctable water quality conditions. Waters shall be considered capable of sustaining such biota where physical habitat, water flows or levels, and water quality conditions result in no substantial impairment of the abundance and diversity of species.

Class 1 - Warm Water Aquatic Life

These are waters that (1) currently are capable of sustaining a wide variety of warm water biota, including sensitive species, or (2) could sustain such biota but for correctable water quality conditions. Waters shall be considered capable of sustaining such biota where physical habitat, water flows or levels, and water quality conditions result in no substantial impairment of the abundance and diversity of species.

Class 2 - Cold and Warm Water Aquatic Life

These are waters that are not capable of sustaining a wide variety of cold or warm water biota, including sensitive species, due to physical habitat, water flows or levels, or uncorrectable water quality conditions that result in substantial impairment of the abundance and diversity of species.

Domestic Water Supply

These surface waters are suitable or intended to become suitable for potable water supplies. After receiving standard treatment (defined as coagulation, flocculation, sedimentation, filtration, and disinfection with chlorine or its equivalent), these waters will meet Colorado drinking water regulations and any revisions, amendments, or supplements thereto.

Wetlands

The provisions of this section do not apply to constructed wetlands.

Compensatory wetlands shall have, as a minimum, the classifications of the segment in which they are located.

Created wetlands shall be considered to be initially unclassified, and shall be subject only to the narrative standards until the Colorado Water Quality Control Commission (Commission) adopts a "wetlands" classification.

Tributary wetlands shall be considered tributaries of the surface water segment to which they are most directly connected and shall be subject to interim classifications as follows: such wetlands shall be considered to have the same classifications, except for drinking water supply classifications, as the segment of which they are a part, unless the "wetlands" classification and appropriate site-specific standards have been adopted to protect the water quality dependent functions of the wetlands.

The Commission may adopt a "wetlands" classification based on the functions of the wetlands in question. Wetland functions that may warrant site-specific protection include ground water recharge or discharge, flood flow alteration, sediment stabilization, sediment or other pollutant retention, nutrient removal or transformation, biological diversity or uniqueness, wildlife diversity or abundance, aquatic life diversity or abundance, and recreation. Because some wetland functions may be mutually exclusive (e.g., wildlife abundance, recreation), the functions to be protected or restored will be determined on a wetland-by-wetland basis, considering natural wetland characteristics and overall benefits to the watershed. The initial adoption of a site-specific wetlands classification and related standards to replace the interim classifications and standards described above shall not be considered a downgrading.

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