



*The
Dolores River,
Colorado*

. . . . A POTENTIAL ADDITION TO
THE NATIONAL WILD AND
SCENIC RIVERS SYSTEM

Final Environmental Statement

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FINAL ENVIRONMENTAL
STATEMENT

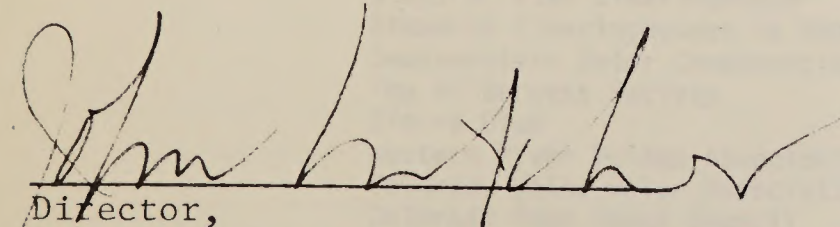
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Proposed
Dolores National
Wild and Scenic River

Prepared by

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SUMMARY

() Draft (X) Final Environmental Statement
Department of the Interior, Bureau of Outdoor Recreation
Department of Agriculture, Forest Service

1. Type of action: () Administrative (X) Legislative

2. Brief description of action:

The Dolores Wild and Scenic River Study was conducted pursuant to the Wild and Scenic Rivers Act, Public Law 90-542 as amended, and recommends legislative action to include a 105-mile segment of the Dolores River and 56,400 acres of adjacent land located in the State of Colorado in the National Wild and Scenic Rivers System classified as 33 miles wild, 41 miles scenic, and 31 miles recreational under the administration of the Bureau of Land Management, USDI, and the Forest Service, USDA.

3. Summary of environmental impact and adverse environmental effects:

Inclusion of 105 miles of the Dolores River and 56,400 acres comprising its immediate environment in the National System will have an overall effect of preserving the existing historic, scenic, recreational, and water quality values of the river. Adjacent land uses would remain relatively unchanged. Easements on 5,600 acres will prevent incompatible developments on private land. Water resource developments (other than the Dolores, San Miguel, and Paradox Valley Projects) within the proposal area will be prohibited. Minor soil, vegetation, and wildlife disturbance will occur at development sites

4. Alternatives considered:

In addition to the proposed action, other alternatives considered were (1) No Action, (2) Inclusion of the West Dolores, (3) Classification Options, and (4) University of Colorado Wilderness Study Group Proposal.

5. Comments were requested from the following:

Advisory Council on Historic Preservation
Water Resources Council
Department of Agriculture
Department of Defense
Department of Commerce
Environmental Protection Agency
Federal Power Commission
Federal Energy Administration
Department of Health, Education, and Welfare
Department of Housing and Urban Development
Department of Transportation
Department of the Interior
 Fish and Wildlife Service
 National Park Service
 Bureau of Land Management
 Bureau of Indian Affairs
 Geological Survey
 Bureau of Reclamation
 Bureau of Mines
U.S. Energy Research and Development Administration
State of Colorado Clearinghouse
State of Utah Clearinghouse
Areawide Clearinghouses in Montrose and Rifle, Colorado and Price, Utah
Southwestern Water Conservation District
The Wilderness Society
Sierra Club
Western River Guides Association
Colorado White Water Association
Colorado Open Space Council
Federal Timber Purchasers Association
Colorado Trout Unlimited
University of Colorado Wilderness Study Group
American Canoe Association
American Rivers Conservation Council
Upper Colorado River Commission
Colorado State Historical Society

6. Date statement made available to CEQ and the public:

Draft - December 16, 1975
Final -

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I. DESCRIPTION OF THE PROPOSAL

THE PROPOSAL

The Departments of the Interior and Agriculture jointly propose that 105 miles of the Dolores River from 1.3 miles below the proposed McPhee Dam site to 1 mile above the Highway 90 bridge near Bedrock, together with 56,400 acres of land comprising the visual corridor be designated by the Congress as a component of the National Wild and Scenic Rivers System. Of the total, 33 miles are recommended for designation as "Wild River," 41 miles as "Scenic River," and 31 miles as "Recreational River," to be managed in accord with the criteria for each classification established in section 2(b) of the Wild and Scenic Rivers Act of 1968 (82 Stat. 907).

Administration and management will be the responsibility of the Bureau of Land Management, USDI, and the Forest Service, USDA. These agencies, hereafter referred to as BLM and Forest Service, will prepare a detailed management and development plan for the river corridor, including details of any land management jurisdictional agreements and/or land transfers between the two agencies that may be required to effectively manage the river. The Departments also propose that the management plan determine logical boundaries for the area to be withdrawn from mining in the "wild" segment. These would generally be along the tops of the canyon rims. This plan is to be filed with the Congress within approximately 1 year of inclusion in the system.

To accommodate the expected increase in use, new campgrounds, picnic grounds, boat launching and parking areas, and hiking trails are proposed for development by the managing agencies. These planned developments are discussed beginning on page I-12.

PURPOSE OF THE PROPOSAL

Objectives under which the Dolores River will be managed as a component of the National Wild and Scenic Rivers System are:

1. To preserve the river and its immediate environment including any outstanding natural qualities it possesses in its existing setting which, although in places shows substantial evidence of man's activity, still is aesthetically pleasing.
2. To preserve or restore the free flowing condition of the waters.
3. To prevent degradation of the water quality.
4. To provide high quality recreational opportunities associated with a free flowing river for present and future generations.
5. To provide recreational use of fish and wildlife resources, including hunting and fishing, within the framework of appropriate Federal and State laws.
6. To provide for a level of utilization of land and water resources which will leave the existing environment unimpaired for the use and enjoyment of present and future generations.
7. To provide for and ensure a continuation of current land uses including agriculture, grazing, mining, and recreation.
8. To provide a variety of opportunities for interpretive, scientific, educational, and wildlife oriented uses.
9. To assure preservation of historic and archeological values.
10. To provide for and emphasize public safety in all activities and recreation uses of the river and adjacent areas.

BACKGROUND

The National Wild and Scenic Rivers Act of 1968 created a system of wild, scenic, and recreational rivers, designated the initial components of the system and set forth procedures by which additional rivers could be added. Section 5(a) of the Act listed rivers to be studied for potential addition to the system. The Act was amended by P.L. 93-621 in January 1975, and the Dolores River in Colorado was included for study with a completion deadline for the report of January 3, 1976. The following portions of the river (figure I-1) were designated for study:

Segment #1 - Main stem from headwaters to Rico.

Segment #2 - West Dolores, headwaters to confluence with main stem.

Segment #3 - Main stem from west boundary, Sec. 2., T. 38N, R. 16W., NMPM, below proposed McPhee Dam to 1 mile above Highway 90 bridge near Bedrock.

Segment #4 - Main stem from confluence of San Miguel River to Utah State line.

In his remarks introducing the bill for the study of the Dolores River on August 1, 1973, former U.S. Senator Peter H. Dominick stated, "It is my feeling that the Dolores Project, which will include the building of the McPhee Dam, can be reconciled with the inclusion of the Dolores River under the Wild and Scenic Rivers Act. I have included a provision in this bill to insure that the two endeavors are achieved in a manner compatible with each other." Therefore, because of the language of the 1968 Act which authorized the project, because of the continued Congressional funding required to advance the project to its present status, and because of the intent of the 1975 Amendment to the Wild and Scenic Rivers Act which authorized the study, the McPhee Dam was considered as "in place" and the two segments below its site were studied accordingly.

The Wild and Scenic Rivers Act and "Guidelines for Evaluating Wild, Scenic and Recreational River Areas Proposed for Inclusion in the National Wild and Scenic River System . . ." provide criteria by which potential rivers and their immediate environment can be evaluated to determine their eligibility for inclusion in the system. These criteria require that the rivers (1) possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values; (2) have sufficient length for a meaningful experience; (3) are in a free flowing natural condition; and (4) have water quality and volume which meet criteria for aesthetics, fish, aquatic life, wildlife, and recreation uses, and permit full enjoyment of water-related outdoor recreation activities.

Two of the four segments listed above were found not to qualify for inclusion in the system. Segment 1 from the headwaters to Rico was found to be too short and lacking in outstandingly remarkable qualities, while Segment 4 from the San Miguel River to the Utah border lacks outstandingly remarkable qualities. Both segments also have substantial alterations of the natural environment. However, the last 8.5 miles of the San Miguel River to Utah border segment possesses the necessary qualities but is too short to be included by itself. It has been recommended that this 8.5-mile segment be included in any future study of the Dolores River in Utah.

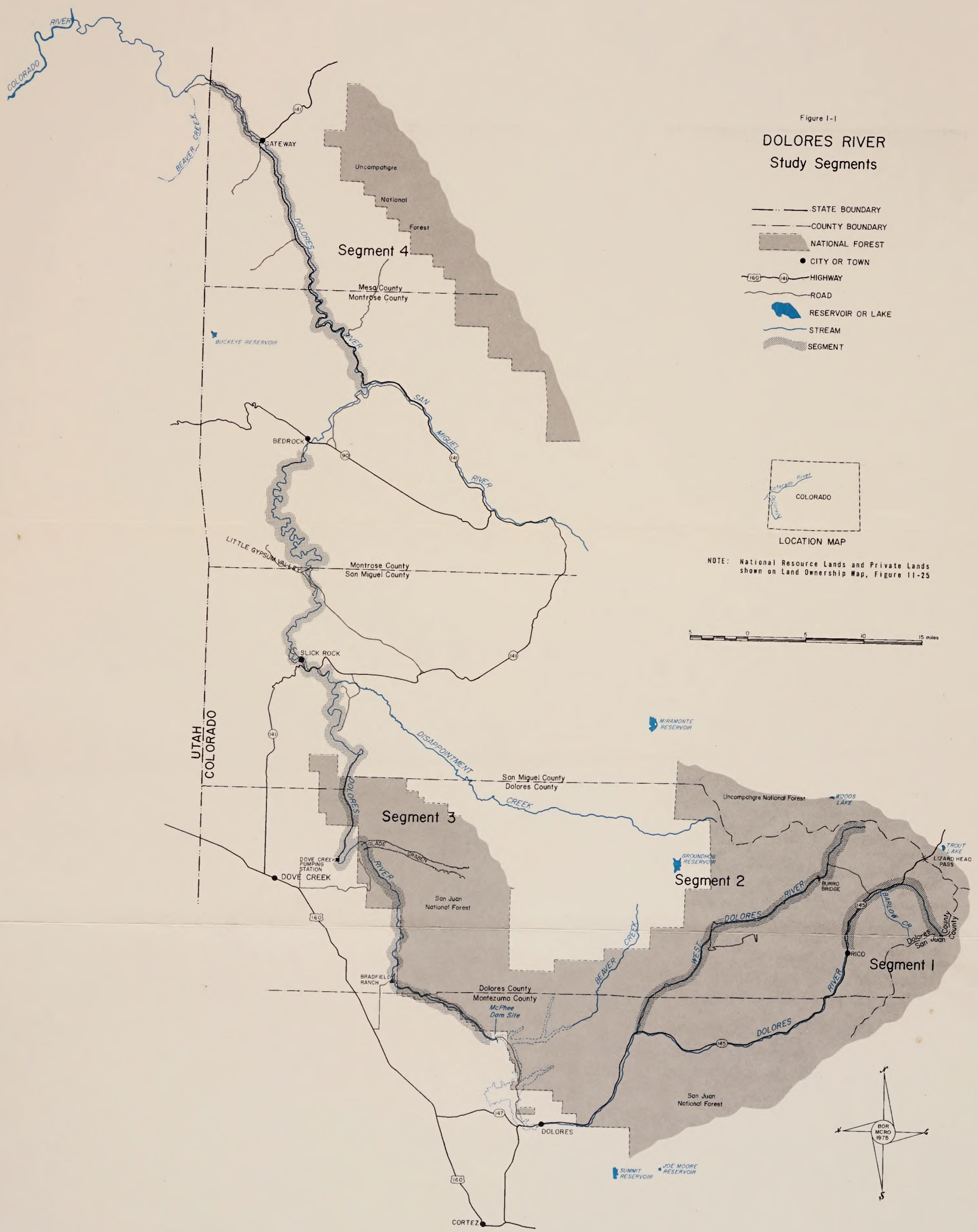
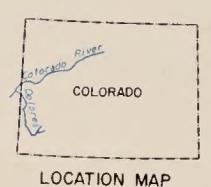
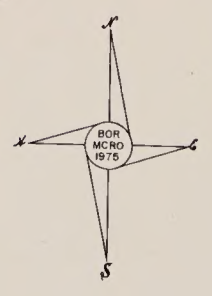


Figure I-1
DOLORES RIVER
 Study Segments

- STATE BOUNDARY
- COUNTY BOUNDARY
- ▨ NATIONAL FOREST
- CITY OR TOWN
- 160 141 HIGHWAY
- ROAD
- RESERVOIR OR LAKE
- STREAM
- ▨ SEGMENT



NOTE: National Resource Lands and Private Lands shown on Land Ownership Map, Figure II-25



CLASSIFICATION

The three classes of river areas described in Section 2(b) of the Wild and Scenic Rivers Act are as follows:

- (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.

Two study segments, 2 and 3, which were found to be eligible for inclusion in the system were evaluated against the above criteria for classification as wild, scenic, or recreational. The first segment, the 35-mile long West Dolores, met the criteria for recreational designation. However, it is believed that it is the 9-mile portion of the river above Dunton that possesses the outstandingly remarkable scenic and geologic values in this segment, and this area is being considered for addition to the National Wilderness Preservation System. Below Dunton, there is an extensive intermingling of private lands, along with numerous structures and several water diversions - conditions which would result in potentially costly and difficult administration. Therefore the West Dolores was not recommended for inclusion by the Federal study team agencies. The State of Colorado does recommend recreational river designation for the West Dolores.^{1/}

^{1/} Discussion of this alternative can be found in Chapter VIII.

An evaluation of Segment 3 (Bradfield Ranch to Bedrock) resulted in it being divided further into four segments with the following classifications.

	<u>Location</u>	<u>Miles</u>	<u>Classification</u>
1.	West boundary, Sec. 2, T. 38N, R. 16W, NMPM to bridge at Bradfield Ranch	11	Recreational
2.	Bradfield Ranch bridge to Disappointment Creek	41	Scenic
3.	Disappointment Creek to Little Gypsum Valley bridge (San Miguel-Montrose County line)	20	Recreational
4.	Little Gypsum Valley bridge to 1 mile above Highway 90 bridge near Bedrock	33	Wild

These segments as shown in figure I-2 will provide for the optimum protection of the environment consistent with the Act. Formal boundaries for the segments will average about 1/2 mile on each side of the river which includes associated public lands within the critical line of sight (these boundaries will average approximately 1/4 mile in the "wild" portion of Segment 3) as shown in figures I-2 and -3. Factors that will be considered in determining the specific location of lateral boundaries include:

1. Preserving in a natural state the area seen from the river.
2. Providing river users with a feeling of spaciousness consistent with the type and extent of recreational and other resource uses in each segment.
3. Protecting key fish and wildlife habitats.
4. Protecting and making available historical and archeological resources of the river area.
5. Protecting unique or key vegetative types.
6. Protecting unique or key scenic or geologic features.

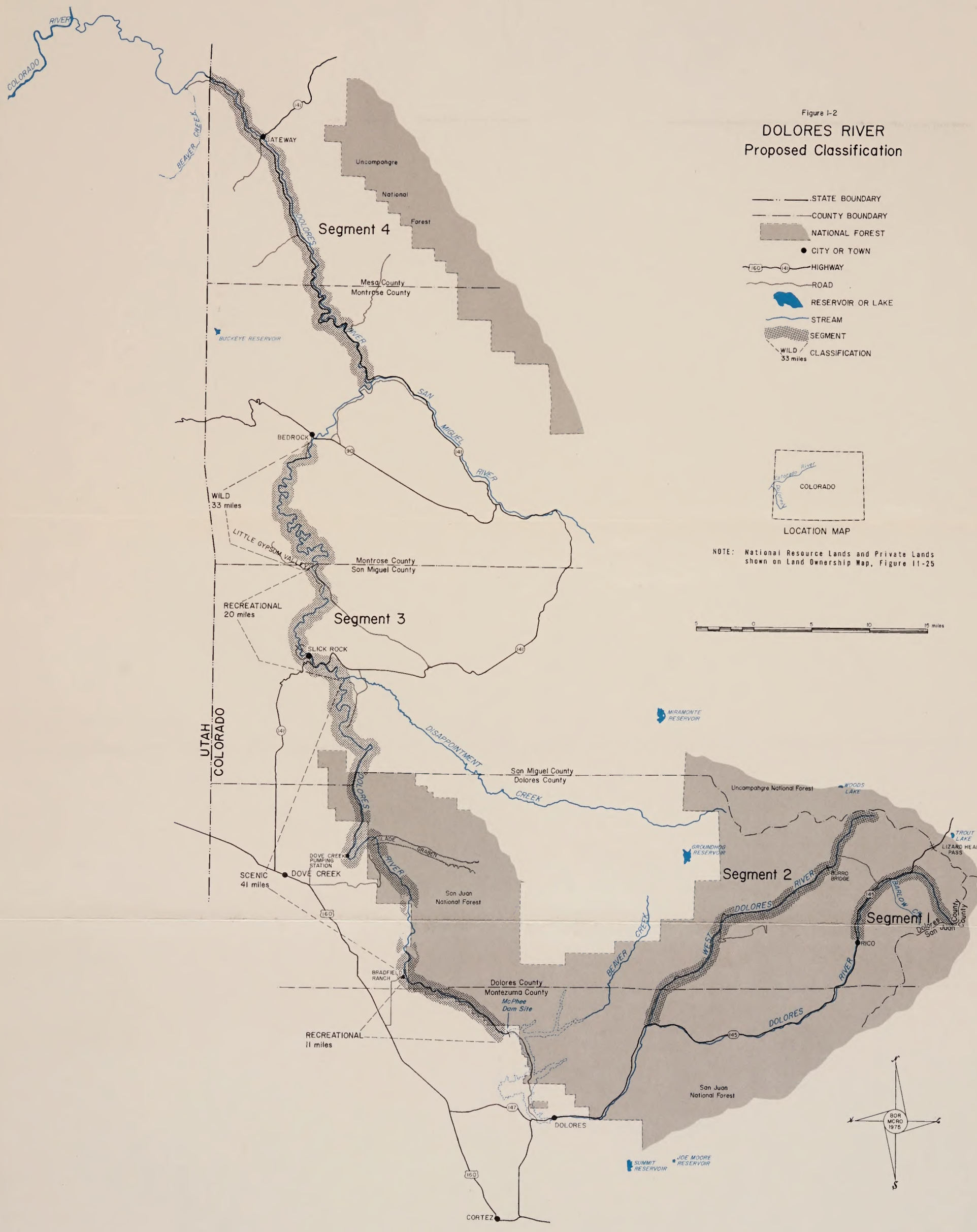
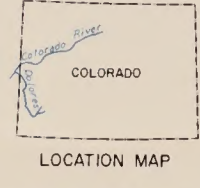
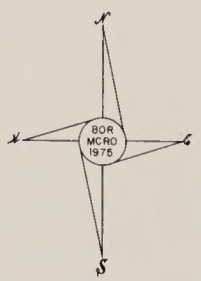


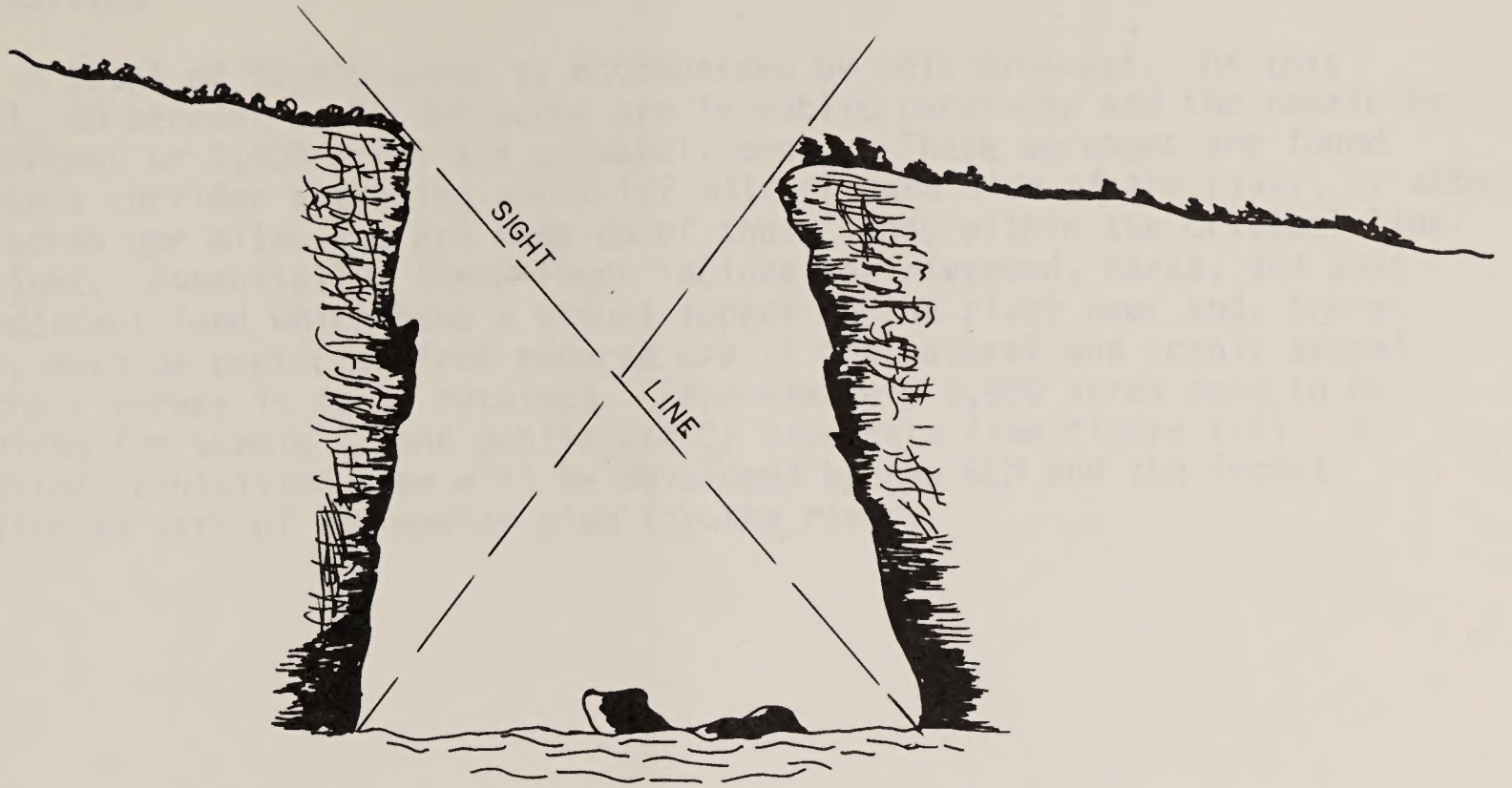
Figure 1-2
DOLORES RIVER
 Proposed Classification

- STATE BOUNDARY
- - - COUNTY BOUNDARY
- NATIONAL FOREST
- CITY OR TOWN
- 160 141 HIGHWAY
- ROAD
- RESERVOIR OR LAKE
- STREAM
- ▨ SEGMENT CLASSIFICATION
- WILD 33 miles



NOTE: National Resource Lands and Private Lands shown on Land Ownership Map, Figure 11-25





TYPICAL VALLEY CROSS SECTIONS

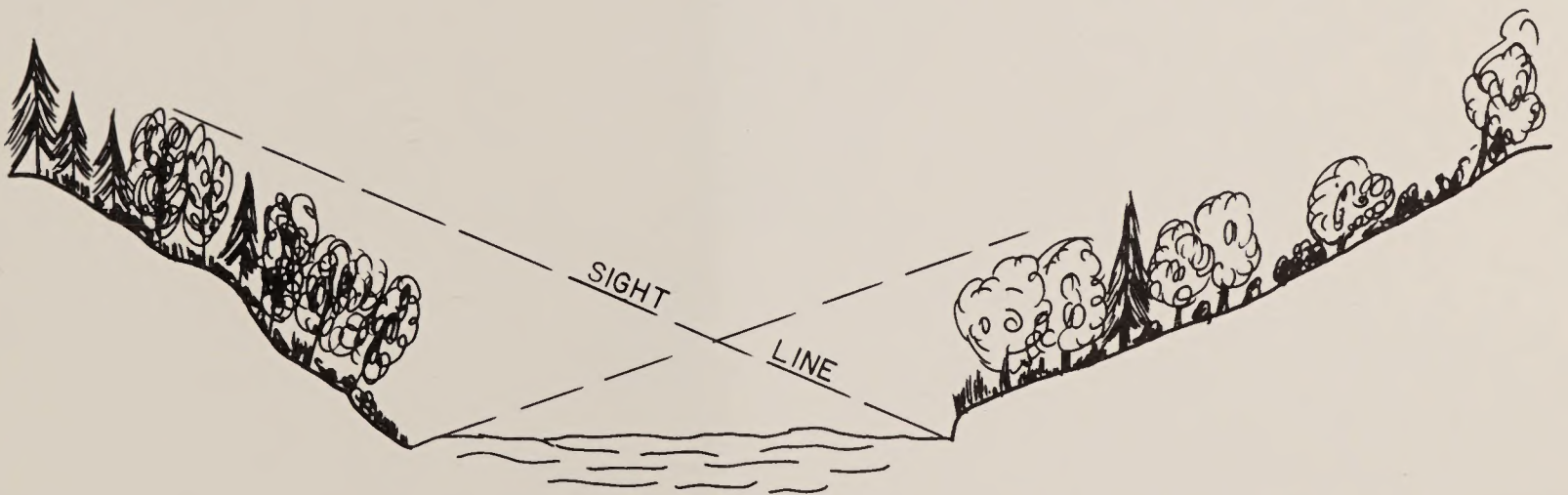


Figure 1-3

DOLORES RIVER, COLORADO
Critical Sight Lines

ACQUISITION

A total of 56,400 acres is encompassed by this proposal. Of this total, 90 percent or 50,800 acres are in public ownership and the remaining 10 percent or 5,600 acres are privately owned. These acreages are found within a corridor averaging about 1/2 mile on each side of the river, or about 540 acres per mile, and are made up of those lands within the critical line of sight. Essentially, these lands include the riverbed, banks, and zone of adjacent land which have a visual impact on the river user and, therefore, must be protected from adverse use if the natural and scenic appeal of the riverway is to be retained. Approximately 5,600 acres need to be acquired for scenic 1/ and public use 2/ easements (see figure I-4). A detailed acquisition plan will be developed by the BLM and the Forest Service as part of the master plan for the river.

- 1/ Scenic easements are used to prevent any degrading of the view from along the river by, for example, billboards, trash piles, excessive timbering, high density building construction, and commercial sand and gravel operations. These agreements generally bind present and future landowners to existing uses and prevent developments that detract from the scenic and natural character of the land. They do not 1) give the general public access, or 2) restrict or change any present land uses - unless the owner agrees to do so.
- 2/ Public use easements serve two basic purposes: 1) they secure access to key boat launch and take-out points along a river, and 2) they create a continuous corridor along the shore for boat landing, fishing, and hiking.

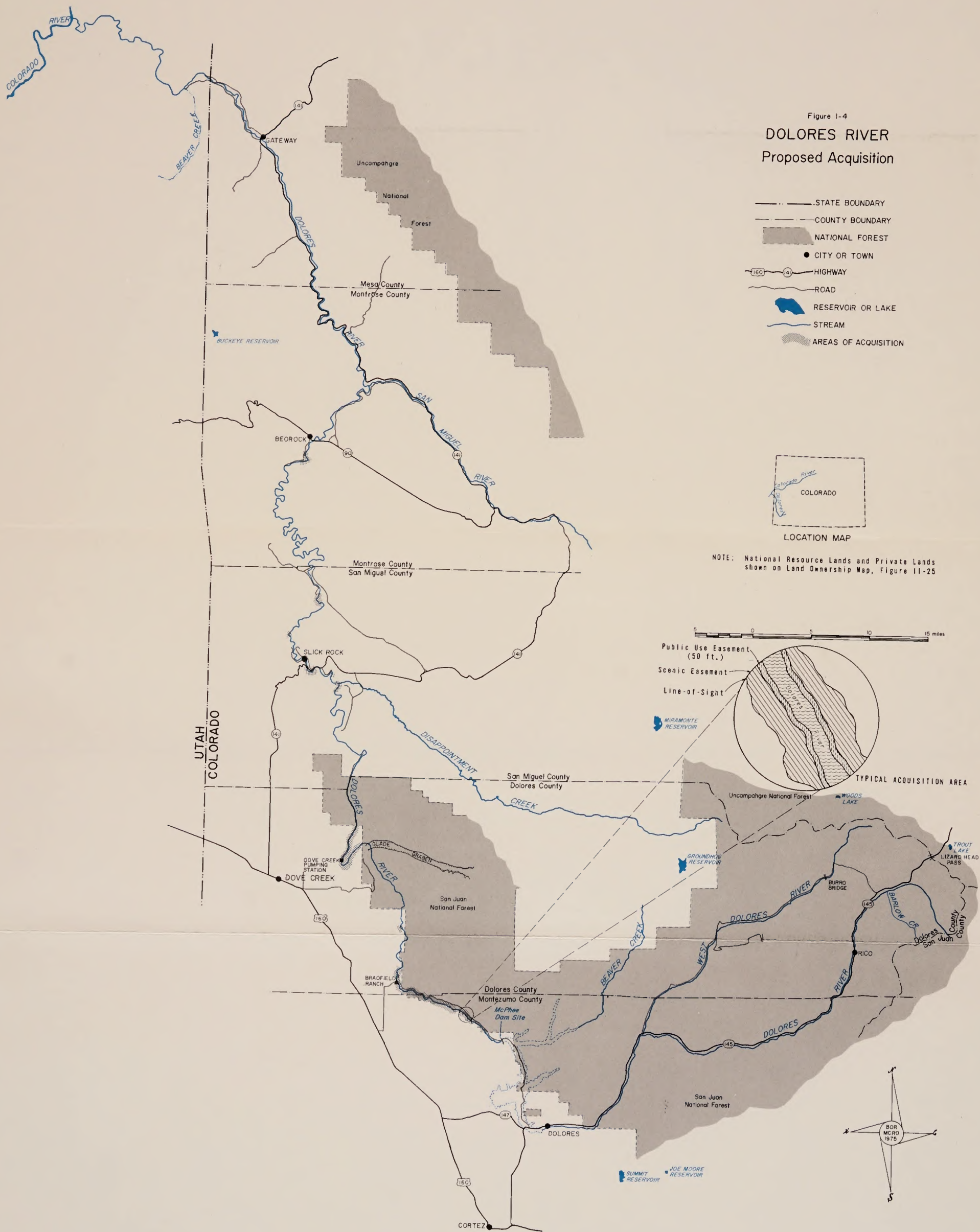
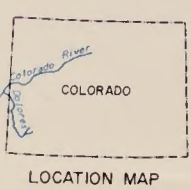
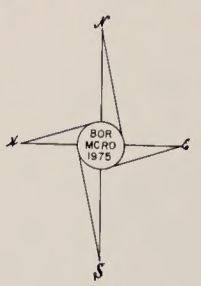
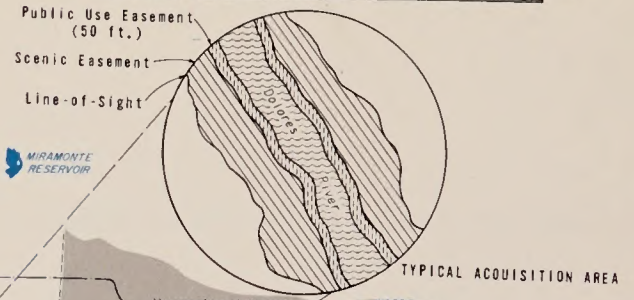


Figure I-4
DOLORES RIVER
 Proposed Acquisition

- STATE BOUNDARY
- COUNTY BOUNDARY
- NATIONAL FOREST
- CITY OR TOWN
- 160 141 HIGHWAY
- ROAD
- RESERVOIR OR LAKE
- STREAM
- AREAS OF ACQUISITION



NOTE: National Resource Lands and Private Lands shown on Land Ownership Map, Figure II-25



DEVELOPMENT

Five major and two minor public recreation sites will be developed to accommodate anticipated use of the river below McPhee Dam. As currently planned, the five major sites will be developed in conjunction with the Dolores River Project and McPhee Dam. The sites are (1) Bradfield Ranch, (2) Dove Creek Pumping Station, (3) Slick Rock, (4) Little Gypsum Valley, and (5) 1 mile upstream of Bedrock (see figure I-5). These sites will have minimum development consisting of sanitation facilities, river access and boat launch/recovery sites, tables, fireplaces, and parking areas. These developments are planned as a part of the Dolores Project; however, they would also serve to meet recreation development needs of the Wild and Scenic River proposal.

Upon designation of the river as proposed, three additional camping/picnicking facilities will be needed. One is at Little Gypsum Valley (A) where the site planned as part of the Dolores Project would be enlarged by about 3 acres to accommodate Wild and Scenic River recreation use of approximately 50 people. Two primitive sites (B and C) will be located in the proposed Wild River section. These areas will contain approximately 20 campsites, occupy about 5 acres, and accommodate 80 to 100 people each. They generally will be limited to boat recovery areas, fireplaces, and sanitation facilities. Approximately 36.5 miles of hiking trails are proposed for construction along the river and to adjacent points of interest. Trails will be well engineered with moderate grade and specifically designed to prevent erosion.

There is currently one picnic ground (6 units) in the river corridor. This existing area plus the additional facilities, as shown in the conceptual development plan (figure I-5), will provide the required recreation facilities for the river area upon its designation as a component of the national system.

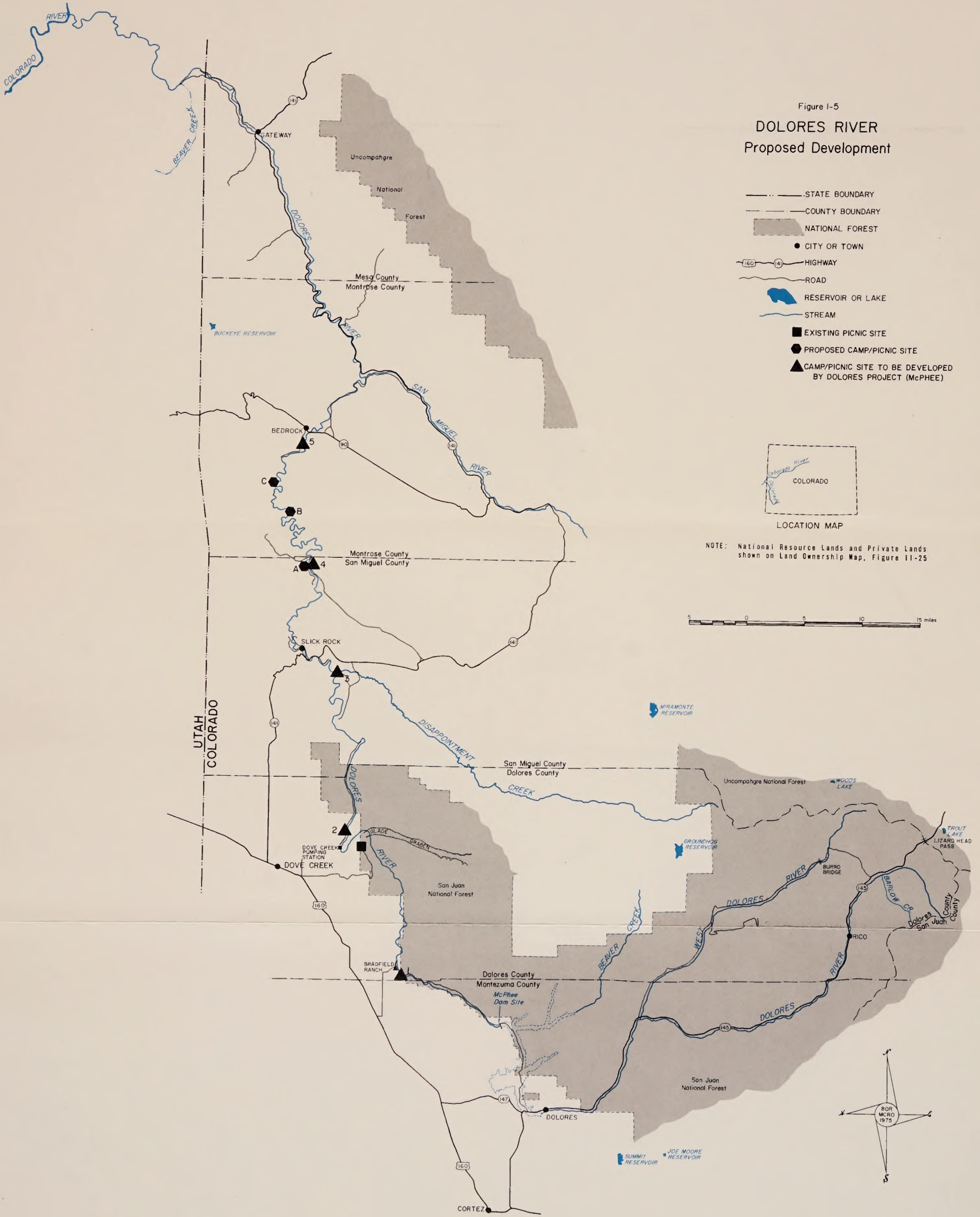
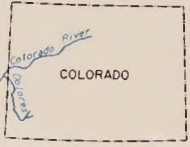


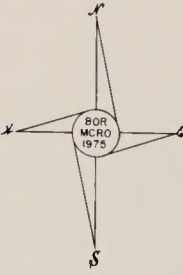
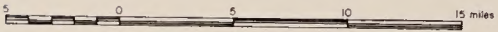
Figure I-5
DOLORES RIVER
 Proposed Development

- STATE BOUNDARY
- - - COUNTY BOUNDARY
- NATIONAL FOREST
- CITY OR TOWN
- Ⓜ HIGHWAY
- ROAD
- RESERVOIR OR LAKE
- STREAM
- EXISTING PICNIC SITE
- PROPOSED CAMP/PICNIC SITE
- ▲ CAMP/PICNIC SITE TO BE DEVELOPED BY DOLORES PROJECT (McPHEE)



LOCATION MAP

NOTE: National Resource Lands and Private Lands shown on Land Ownership Map, Figure II-25



ADMINISTRATION AND MANAGEMENT

Wild, scenic, and recreational river management will be directed to protecting, enhancing, and making available for present and future use and enjoyment, values which make the Dolores River area outstandingly remarkable.

The river will be administered by the Forest Service and the BLM. Any land exchanges between the two agencies required to effectively manage the river will be indicated in the detailed management and development plan.

The management plan will be prepared jointly by the BLM, the Forest Service, the State of Colorado, and local entities. This plan will involve opportunities for full cooperation and active participation of other Federal and State agencies, local interest groups, and existing and potential user groups.

The type and extent of land use controls in the proposal area necessary to preserve the existing integrity of the environment will be determined. These controls will be provided by easements to allow development and use of the land that is compatible with the existing water quality, recreational, scenic, historic, archeologic, or fish and wildlife values of the area. Such controls would include the prohibition of new commercial uses within the immediate environment of the Dolores River and acreage, frontage, and setback requirements for new developments on private lands. Consideration will also be given to developing design standards which assure that replacement structures, recreation facilities, or other necessary modifications of the existing environment are harmonious with the natural setting.

The proposal will provide, within the capacity of the area, a choice for a wide range of public recreation opportunities in a setting ranging from areas without substantial evidence of man's activities to those where there may be substantial past and present activity. To the extent possible, the number of people visiting the area will be controlled, and use will be distributed by means of access control and use regulations to maintain existing environmental conditions.

Additional recreation facilities would be provided as shown in figure I-5. Extreme care will be taken in the location of facilities with primary emphasis upon retention of the existing environmental setting of the specific river area. Separate environmental assessments will precede construction of such facilities.

To reduce the possibility of water and land pollution resulting from human waste disposal, vault toilets will be installed at all developed areas, and portable chemical toilets will be required in the inaccessible areas. In addition, a "bring out what you take in" program will be implemented to reduce litter and pollution problems. Designation of areas where open fires will be permitted, or possibly limiting the use of open fires, will be required to reduce the possibility of wildfires.

Subject to existing valid rights, minerals in Federal lands designated as wild river areas (33 miles) will be withdrawn from all forms of appropriation under the mining laws and from operation of the mineral leasing laws. It is proposed that the boundaries of the withdrawn area be determined during the management planning period following designation; generally, the boundaries will follow the canyon rims and include an area either side of the river that is estimated to average approximately one-quarter mile in width.

Scenic and recreational river areas (72 miles) will continue to be open to mineral location and entry under the 1872 Mining Laws. The Forest Service will utilize the mining claim regulations for surface protection adopted by the Secretary of Agriculture in 1974. The USDA regulations will provide safeguards against pollution and unnecessary impairment of the scenery and may require that notice of intent and operating plans be filed with the Forest Service for mining claim location and assessment work. The regulations will determine the need for retention of topsoil, restoration of topography, replanting, or reseeding with native vegetation, removal of sediment from waste waters, and advance notice of intention to start prospecting or mining activities where substantial alteration of the existing environment might occur. Also, prospecting and mining activities often require heavy equipment such as bulldozers, stationary engines, water pumps, and generators and, therefore, these regulations will consider noise pollution. These mining regulations will also apply to existing valid rights within Wild River areas. The BLM, in consultation with other Federal and State agencies and user groups, will prepare similar mining regulations for its river areas classified as scenic and recreational.

Use of off-road vehicles, aircraft, and snow machines will be strictly regulated within the river area. These regulations will be developed by the BLM and/or the Forest Service in cooperation with Federal, State, and local agencies and user groups. These regulations will assure that access is provided in a manner which causes the least possible impact on users, promotes safety, protects soil, vegetation and scenery, prevents harassment of wildlife, and prevents conflicts with other uses.

Harvesting of timber will be regulated to retain the visual and environmental integrity for which the river was added to the National System. Harvest of timber which would be detrimental to water quality, scenery, soil stability, wildlife, or other natural or historic values will not be permitted.

Adjacent Federal lands will be managed to protect the natural values of the Dolores River. This will require the active cooperation of other Federal and State agencies in developing and enforcing land use practices that protect the area from surface dumping of garbage, sewage pollutants, and other contaminants.

The Bureau of Land Management and the Forest Service will develop appropriate management programs and enforcement procedures to assure protection of any faunal and floral species and their habitats in the proposal area which are officially listed by the Department of the Interior as Endangered or Threatened or which may be candidates for such status. These include the two species of birds now officially listed as Endangered, the American peregrine falcon and the Southern bald eagle. These programs and actions will require compliance with the procedures outlined in the Endangered Species Act (Section 7).

Fishing, hunting, trapping, and rockhounding will continue within the Dolores River proposal area under applicable Federal and State regulations. Except as noted below, national designation of the Dolores will not affect jurisdiction or responsibility of the State of Colorado over fish and wildlife resources for sport or subsistence purposes. The Secretary of the Interior and the Secretary of Agriculture, however, may designate zones or periods when hunting would not be permitted because of public safety, administration, or public use and enjoyment. Such action would be undertaken only after consultation with the Colorado Division of Wildlife. Except for temporary periods and very special situations, no such actions are expected to be necessary in the Dolores River area.

An inventory of the historic and cultural values for the river corridor from McPhee to the Utah State line is complete and a report will be made available to ensure proper consideration of these values in the preparation of the Dolores River Management Plan (see Memorandum of Agreement with the Advisory Council on Historic Preservation, Appendix B).

By virtue of their National Register listing, cultural resources will be accorded the procedural protection of Section 106 of the National Historic Preservation Act of 1966 (80 Stat. 915). Cultural resources worthy of preservation but not yet listed in the National Register are accorded the procedural protection of Section 2(b) of Executive Order 11593 (May 13, 1971). Any Federal action affecting the integrity of the proposal's cultural resources will be developed in consultation with the Colorado State Historic Preservation Officer and the Advisory Council on Historic Preservation with a view to assuring that, to the extent possible, adverse effects will not result without mutually agreed avenues of mitigation.

Subject to existing valid rights, disposal of lands under the public land laws will be prohibited. Lands transferred under the mining laws will be in accord with the provisions of Section 9 of the Wild and Scenic Rivers Act in that only a right or title to the mineral deposit will be patented. This will also include use of the surface as required to conduct mining or prospecting.

INTERRELATIONSHIP WITH OTHER PROJECTS AND JURISDICTIONS

Statewide Comprehensive Outdoor Recreation Plan

The proposal to preserve segments of the Dolores River is consistent with the goals of the preliminary *Colorado Statewide Comprehensive Outdoor Recreation Plan* (1976). In 1969, the Colorado Department of Natural Resources established an ad hoc committee to consider criteria for a State Wild and Scenic River System. As a result, criteria were established for identifying rivers as "wild," "scenic," and "recreational," closely paralleling Federal definitions of wild and scenic rivers. However, legislative action will be required before a State Wild and Scenic River System is established in Colorado.

Nationwide Outdoor Recreation Plan

The proposed action is in agreement with *Outdoor Recreation - A Legacy for America* which recommends the inclusion of additional rivers into the National Wild and Scenic Rivers System.

Four Corners Regional Planning Commission

Among the goals and objectives set forth by the Four Corners Regional Planning Commission in the *Colorado Preliminary State Development Plan* of May 1969, is the recommendation for strong legislation and/or firm implementation of legislation to protect Colorado's water resources from misuse and contamination. This protection will be provided by the proposal.

Colorado Land Use Commission

In its report, *A Land Use Program for Colorado*, April 1974, the Colorado Land Use Commission provided an outline for environmental programs within the state. The Commission suggested the creation of linear parks along rivers and streams or other environmental corridors to preserve both shorelines and other environmental qualities. With respect to environmental concerns, the needs of the Mountain Region, in which the Dolores River is located, are recognized by the Commission as the most critical and should be given special attention.

Montelores Interim Comprehensive Plan

A report prepared by the Montelores Planning Group for Montezuma and Dolores Counties, 1974, identifies these counties as a significant outdoor recreation area and as a potential major recreation area. However, the plan places considerable emphasis on development and utilization of available natural resources as the key to agricultural production.

Forest Service Master Plan

Multiple Use Management Guides exist for all National Forest lands within the study area. These guides divide the land into "management

zones," selected on the basis of broad similarities in management situations, complexities, opportunities, and objectives. The Dolores River corridor is currently managed as a "water influence zone." This proposal is in agreement with current Forest Service management objectives for the river corridor.

Mount Wilson Wilderness

A proposal has been prepared by the Forest Service recommending a portion of the West Dolores watershed upstream from Burro Bridge be included in the Wilderness System. Since the regulations of the Wilderness Act are more restrictive than those of the Wild and Scenic Rivers Act, the more restrictive regulations would apply. Designation of the West Dolores as a component of the Wild and Scenic Rivers system would be compatible with the purpose and intent of the Wilderness Act.

Bureau of Land Management Framework Plan

The Dolores Management Framework Plan, which sets forth the policies and procedures for managing the National Resource land in the Dolores River vicinity, recommends that a Master Recreation Plan be developed for the Dolores River Canyon area after it has been evaluated for possible inclusion in the National Wild and Scenic River System. Recommendations contained in this framework plan are in conformance with the objectives of this proposal.

USDA Type IV Study, Dolores River Basin, Colorado and Utah

While this study does not specifically recognize the potential for national designation of the Dolores River, it does point out the need for water and related land resource development, including recreation. Among new programs envisioned in the study are those involving preservation of the natural environment.

Other Wild and Scenic Rivers

There are no rivers in Colorado included in the National Wild and Scenic River System. However, within the State, there are several other streams identified for study in Section 5(a) of the Wild and Scenic Rivers Act (P.L. 90-542). Among these are portions of the Big Thompson, Cache La Poudre, Colorado, Elk, Green, Conejos, Gunnison, Los Pinos, Piedra, and Yampa Rivers (see figure I-6). Studies of these rivers are in their initial stages.

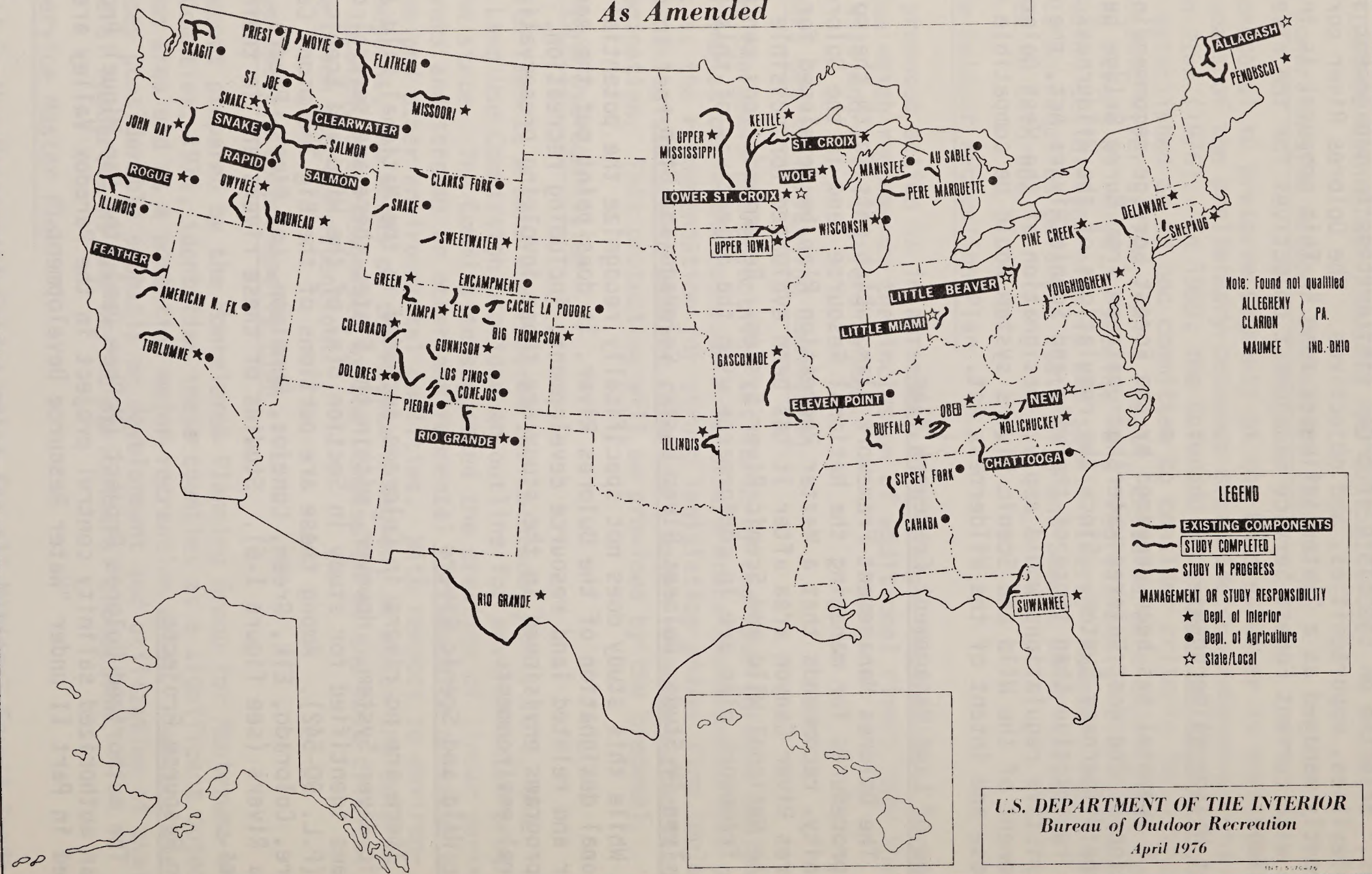
Water Resource Projects

The authorized Dolores Project (McPhee Dam), the San Miguel Project, and an authorized salinity control project in the Paradox Valley are discussed in Part II under "Water Resource Development."

Figure 1-6

NATIONAL WILD AND SCENIC RIVERS SYSTEM

As Authorized by P.L. 90-542
As Amended



II. DESCRIPTION OF THE ENVIRONMENT

Information utilized in compiling this section was derived from several sources such as the *1972 Dolores River Basin Study*, *1974 Colorado Statewide Comprehensive Outdoor Recreation Plan*, *1971 Upper Colorado Region Comprehensive Framework Study*, and input received from numerous Federal and State agencies and private organizations. Thus, variations in the data base, such as information by county, basin, region, etc., necessitated that this section be organized into three broad categories. These categories include the regional setting, general description, and river corridor.

The regional setting (figure II-1) covers that area within a 150-mile radius of the point where the boundaries of Colorado, Utah, Arizona, and New Mexico converge. The general description covers that area within the hydrologic boundaries of the Dolores River Basin. The river corridor focuses on that area which is generally within one-half mile on either side of the Dolores River.

REGIONAL SETTING

Location

The Dolores River Basin, which includes the San Miguel and Dolores main stem sub-basins, is located in the eastern quadrant of a region referred to as the Four Corners area, as shown in figure II-1. The basin drains parts of Mesa, Montrose, San Miguel, Montezuma, and Dolores Counties, Colorado; and Grand and San Juan Counties, Utah (figure II-2). The watershed encompasses 4,645 square miles (2,972,800 acres) of which 4,093 square miles (2,619,500 acres) are in Colorado and 552 square miles (353,400 acres) are in Utah. The basin is approximately 100 miles long from north to south and varies from 30 to 70 miles in width.

The study concentrates on the Colorado portion of the basin and includes the communities of Cortez, Cahone, and Dove Creek, located just outside the basin. To the north and east of the river lie the San Juan Mountains and the Uncompahgre Plateau, while to the south is the valley of the San Juan River. Like the Dolores, the San Juan drains eastern parts of the Colorado Plateau before joining the Colorado River.

A principal tributary of the Dolores is the San Miguel, which intersects the main stem below Paradox Valley. Between the headwaters of the Dolores and San Miguel Rivers lie the San Miguel Mountains of the San Juan Range. Farther south are two smaller ranges, the Rico and the La Plata Mountains (see figure II-4).

Figure II-1
DOLORES RIVER
 Regional Map



THE RIVER
Map



Transportation

The Dolores River Basin is relatively well removed from the main flow of national highway, rail, and air service. There is no rail service in the basin, and commercial airline service is limited to Cortez, Durango, Moab, and Grand Junction, all of which are outside the basin. Flights to and from these communities connect with major cities such as Denver, Salt Lake City, and Albuquerque. Continental Trailways Bus Line also serves cities immediately outside the basin, including the Towns of Cortez and Montrose.

Because of physical barriers such as the Dolores River Canyon, San Juan Mountains, and Uncompahgre Plateau, highway access into and through the basin is very limited. Colorado Highway 145 crosses the San Miguel Mountains and follows the Dolores River from near its source to the community of Dolores. North of Trout Lake, State Highway 145 follows the San Miguel River to Naturita, where it joins Colorado Highway 141. State Highway 141, between Dove Creek and Naturita, crosses the river at Slick Rock.



Highway 141 parallels the Dolores River south of Gateway.

From Naturita, there is access to Grand Junction via Colorado 141 which parallels the Dolores River to Gateway before following the Unaweep Canyon to Grand Junction. In addition to these hard-surfaced roads, there are about 250 miles of gravel roads and several hundred miles of unimproved dirt roads in the basin.

Climate

Climate of the Dolores River Basin is typical of Colorado's western slope basins, with wide extremes resulting from variations in topography.

Conditions range from alpine above timberline to high altitude desert near the confluence of the Dolores and Colorado Rivers.

Precipitation patterns of the basin, as shown in figure II-2, vary greatly. Rainfall in the Colorado portion of the drainage varies from about 10 inches along the Utah border to over 50 inches in the mountains along the southeastern margin of the basin. Snowfall also differs greatly, ranging from 22 inches in Paradox Valley to 250 inches at Trout Lake.

About a third of the annual precipitation occurs in the basin between December and April. While thunderstorms provide most of the warm weather moisture, this can be misleading since infrequent downpours often result in desert type conditions. However, heavy snowpack at higher elevations supplements summer rainfall in providing water for irrigation.

Great extremes in temperature exist throughout the basin. Daytime highs in the 90 and low 100 degree range are common in Paradox Valley and other areas of the lower Dolores drainage, whereas winter temperatures at Rico have been recorded at -30 degrees F. Occasionally, readings of -28 degrees F. have occurred as far downstream as Gateway. In comparison, the mean annual temperature is 39 degrees F. at Rico and 54 degrees F. at Gateway.

Because of climatic variations, there is a dramatic difference in growing seasons between the upper and lower reaches of the Dolores River Valley. Rico has a 90-day growing season while Gateway has a 194-day season. Similarly, the annual evaporation rate varies widely, ranging from 50 inches in the desert valleys to 26 inches at higher elevations.

Population

Generally, the population of the Dolores River Basin has exhibited an erratic growth pattern. From 1920 to 1970, the population increased approximately 16 percent, from 8,024 to 9,328 people. Significant gains were evident in the 1930-40 decade and in the 1950-60 decade, while noticeable declines occurred during the 1920s, 1940s, and 1960s. Despite only limited growth in the basin during the 1920-1970 period, Colorado's population increased 137 percent while that of the nation grew 91 percent.

Just outside the basin, Cortez increased 2-1/2 times in population between 1950 and 1960 (see table II-1). By the late 1960s, the population of Cortez and Montezuma County decreased, mostly due to a decline in the mineral exploration and extraction industry. However, the city and county populations have increased gradually since. Estimates supplied by the San Juan Basin Regional Planning Commission indicate that the combined populations of Montezuma and Dolores Counties, where most of the local river area residents are found, are expected to increase from about 14,500 in 1970 to 18,000 in 1980, and 35,000 by the year 2000. Similar projections for the limited basin and just-out-of-basin populations located in the several other counties are not available. Information is cited on communities

just outside the Dolores Basin due to the town's proximity to the river and their partial dependence on irrigation, water supply, minerals, and recreational attraction (and expenditures) supplied by the river and river corridor.

The population of basin towns also declined in the census years 1930, 1950, and 1970, as shown in table II-1.

TABLE II-1
Population of Towns, Dolores River Basin
and San Juan River Basin, Adjacent to Dolores Basin

Dolores Basin Towns	Year					
	1920	1930	1940	1950	1960	1970
Dolores ^{1/}	465	557	804	729	805	820
Naturita	-	-	-	-	979	820
Norwood	365	229	412	294	443	408
Nucla	217	221	361	457	906	949
Rico ^{1/}	326	447	388	212	353	275
Telluride	1,618	512	1,337	1,101	677	553
Uravan	-	-	-	-	1,005	1,000 ^{2/}
Total	2,991	1,966	3,302	2,793	5,168	4,825
San Juan Basin Towns Adjacent to Dolores Basin						
Cortez	NA	NA	1,778	2,680	6,764	6,032
Dove Creek	NA	NA	418	702	986	619
Mancos	NA	NA	748	785	832	709
Total	NA	NA	2,944	4,167	8,582	7,360

^{1/} Towns along the Dolores River

^{2/} Estimate

Source: U.S. Bureau of the Census

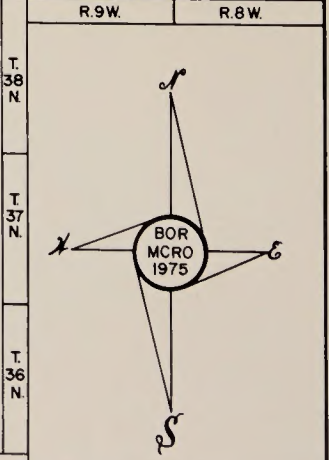
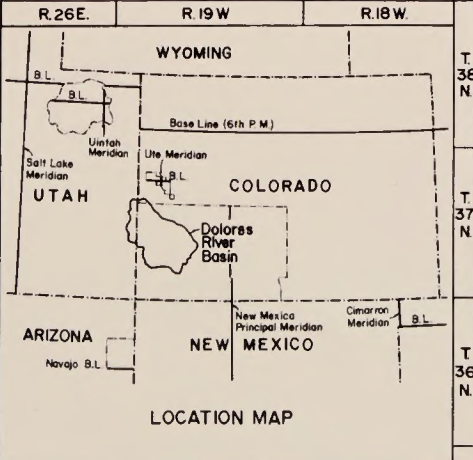
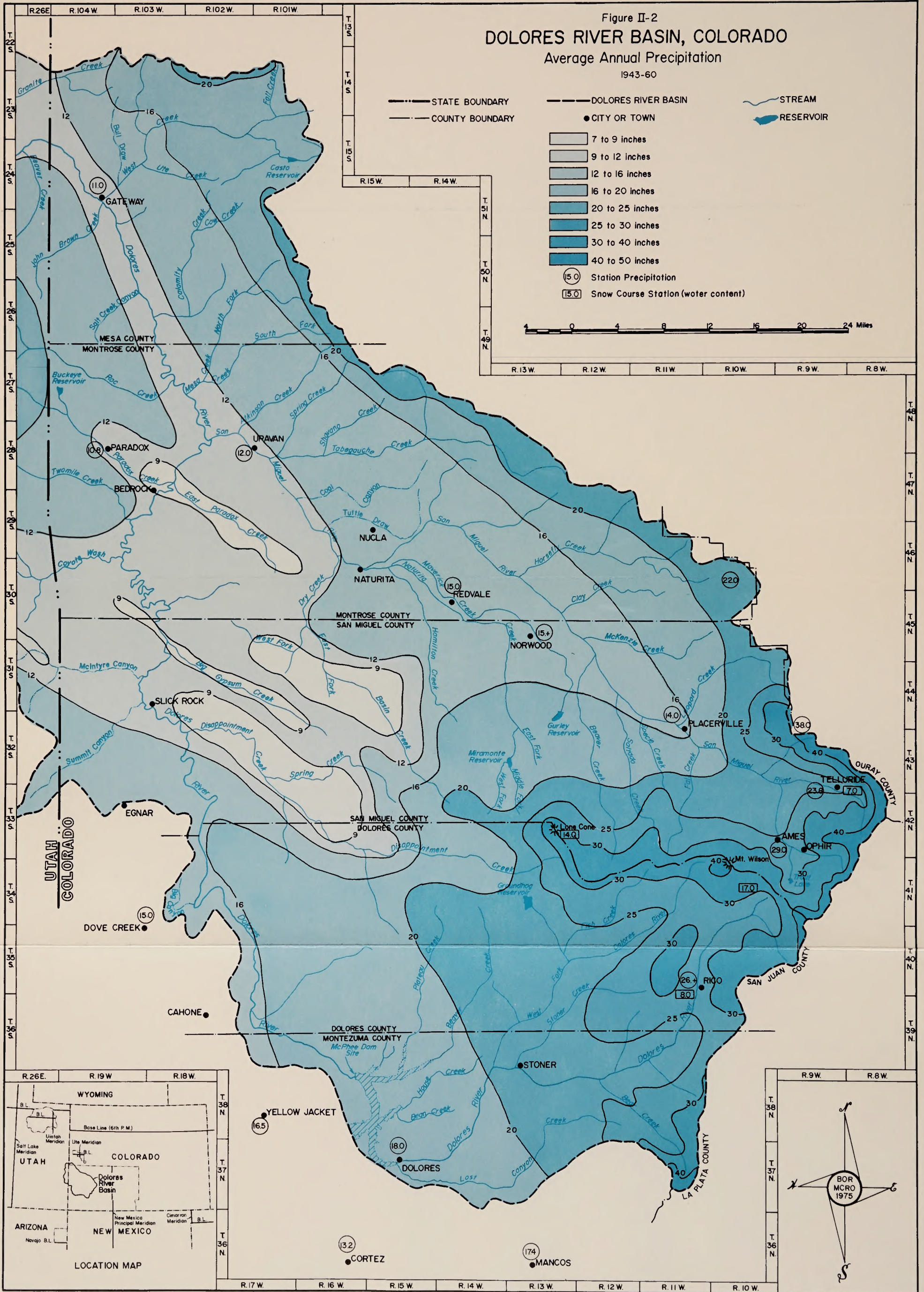
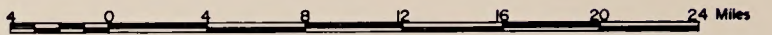
Population characteristics of the basin differ in many respects from those of the State and the Nation. For example, the density of the basin is only 2.3 persons per square mile, compared to the State with 21 and the Nation with 57 persons per square mile. Montrose County with 5 persons per square mile is the most densely populated of the basin counties while Dolores County with 0.4 persons per square mile is the least densely populated.

Approximately 83 percent of the basin's residents are classified as rural nonfarm. This classification includes residents of the basin towns because none of the towns exceeds 2,500 population. The remaining population is classified as rural farm.

Figure II-2 DOLORES RIVER BASIN, COLORADO

Average Annual Precipitation
1943-60

- STATE BOUNDARY
 - COUNTY BOUNDARY
 - DOLORES RIVER BASIN
 - CITY OR TOWN
 - STREAM
 - RESERVOIR
- | |
|-----------------|
| 7 to 9 inches |
| 9 to 12 inches |
| 12 to 16 inches |
| 16 to 20 inches |
| 20 to 25 inches |
| 25 to 30 inches |
| 30 to 40 inches |
| 40 to 50 inches |
- (15.0) Station Precipitation
 - (15.0) Snow Course Station (water content)





The Town of Dolores is the largest community along the river.

Nearly 30 percent of the basin's residents are 18 years or under, 60 percent are between 18 and 65, and the remaining 10 percent are 65 years and over. The average age of basin residents is 28.1 years, as compared to the national average of 29.4 years.

Economy

The economy of the basin is mainly resource oriented. Primary industries such as mining, agriculture and forestry collectively employ 54 percent of the local work force. Two counties, Dolores and San Miguel, have a majority of people working in the mining industry while Montezuma and Montrose Counties have greater numbers employed in agriculture. In addition, many of the basin's secondary and tertiary service-type industries are significantly (though often only seasonally) tied to its natural endowments and the recreationists these attract.

Approximately 20 percent of the work force is engaged in mining, another 18 percent in agriculture, and 3 percent in wood industries. Manufacturing accounts for only 2 percent of the work force, which is concerned with the production of primary metals, food, and related products and chemicals. Retail trade involves about 20 percent of the total work force and has shown constant growth in the last decade.

That proportion of the basin labor force employed in manufacturing is much smaller than for the United States as a whole. The number of

women employees also is less than the national average by about 10 percent, which is frequently the case in regions with high agricultural and mining employment.

Per capita income for the basin in 1970 was estimated at \$2,351, as compared to \$3,106 for Colorado and \$3,119 for the Nation. 1/ Median family income was \$7,341.

Agriculture Irrigated agriculture and dry farming constitute the most substantial economic sector of the region. Approximately 20 percent of the work force is directly employed in agricultural activities. Although the total acreage cultivated has changed relatively little during the last 20 years, the number of farms has decreased while the average size of the farms has increased.

The Dove Creek area contains about 110,000 acres which are dry-farmed for pinto beans and wheat. Very small amounts of hay and grains other than wheat are also produced. About 37,500 acres of land in the Montezuma Valley to the west are presently developed for irrigated agriculture, with water obtained from the Dolores River. Crops raised as livestock feed for beef cattle include alfalfa, wheat, and other small grains as well as corn for silage. Commercial fruits and vegetables are of minor importance.

Government Government agencies, including the public school system, are the second largest employers in the area, averaging over 1,000 employees in recent years. Additional employment occurs during the summer as a result of tourism. The largest seasonal employment is at Mesa Verde National Park, with smaller increases at Forest Service, Bureau of Land Management, and county and local government areas.

Retail Trade The third largest economic sector is retail trade, which employs about 20 percent of the total work force. Growth has been relatively constant during the last 10 years, although trade has tended toward increasing centralization in the City of Cortez. In terms of dollar value, the largest sales occur in the automotive and food sectors, followed by general merchandise and public utilities.

Tourism and Recreation Tourism has a major influence on the economy, particularly during the summer months. Large numbers of visitors are attracted to the region by Mesa Verde National Park, the Durango-Silverton Narrow Gauge Railroad and other historic and scenic areas, including the San Juan Mountains. In addition to public facilities on Federal lands, numerous private enterprises offer pack trips, float trips, jeep tours, and other outdoor activities.

Mining Mineral industries, although declining in recent years, contribute substantially to the economy of the region. Developments in oil and gas expanded rapidly in the 1950s before entering a period of decline in the

1/ City and County Data Book, U.S. Bureau of the Census, 1970.



Groundhog Reservoir located in the headwaters of the West Dolores River accommodates considerable recreation use.

1960s. Gas was located throughout the San Juan River Basin and oil was developed in southeastern Utah just west of the study area. At present, there are several small oil and gas fields in western Dolores County and western-southwestern Montezuma County, outside the Dolores Basin.

In the past, the mining of carnotite deposits, first radium and then vanadium, has greatly contributed to the economy. With the establishment of a price schedule for uranium in 1948 by the Atomic Energy Commission, mining of these deposits for uranium commenced with vanadium recovered as a co-product. Production reached a peak in 1960 but declined slowly and maintained a fairly constant level of production until recent years, even after the end of the government purchase program in 1970. Recent increases in the prices paid for uranium, brought on by the need to fuel nuclear power plants, has rejuvenated the industry.

The mining of gold, silver, lead, and zinc was once a flourishing industry. Although this activity is greatly curtailed, the production of gold and silver has been increasing slightly in recent years. There also have been increases in the production of copper, sand, and gravel. Helium is found in northwestern New Mexico, and one of the few carbon dioxide wells in the United States is located 15 miles west of Cortez. Further carbon dioxide discoveries are likely.

Coalbeds underlie much of the basin with possible good deposits near Cortez. According to the U.S. Bureau of Mines, however, there is a general lack of strippable resource, and that which is strippable is localized and

not expansive. In addition, the coal is generally high in impurities-- in particular sulfur, generally lacks coking qualities, and is situated in a poor market area. Future development potential of this resource is uncertain.

Manufacturing The manufacture of various wood products is a major industry. The San Juan National Forest which forms a large part of the study area, contains stands of Engelmann spruce, with smaller amounts of fir, ponderosa pine, and aspen. Lumber mills are located at Dolores, Mancos, Durango, and Pagosa Springs, all within 100 miles of the study area. Associated enterprises in Cortez produce posts, poles, lumber, and other products. The largest number of persons in the timber industry are employed by the Montezuma Plywood Company.

Several small food processing plants, including a flour mill, a meat packing plant, and a dairy operated by the Navajo Indians, are located near the study area. In addition, there is production of sheet metal, fertilizer, and ready-mixed concrete.

The Dolores River, Colorado - Proposed
National Wild & Scenic River - Final
Environmental Statement

~~US Dept. of Interior & ^{USFS} USDA~~
BOR and USFS

November 4, 1976

-
- to
- ✓ Colorado River Basin
 - ~~Colorado R.~~
 - ✓ Dolores R.
 - ✓ Colorado, State of
 - ✓ Utah, " "
 - ✓ BOR
 - ✓ USFS
 - ✓ Environmental Statement

Done 6/22.

THE RIVER SYSTEM AND ITS SETTING

Riverscape

Throughout its length, the Dolores River passes through diverse environments including alpine conditions at its source above Rico. Between the Towns of Dolores and Slick Rock, about 70 miles, the river changes to a desert ecosystem with attendant variations in climate, vegetation, soils, geology, fish, and wildlife. Near the Colorado border, high desert conditions prevail. A description of features encountered in the river segments under study follows.

Main Stem to Rico The river begins as streamlets in Tin Can Basin about 15 river miles above Rico at an elevation of 11,339 feet, as shown on figure II-3A. Within 2 miles, several streams join the 10 to 15 foot wide main channel. A primitive road crosses the basin and parallels the river on the east side for about 2 miles. The Dolores meanders through numerous open meadows surrounded by dense coniferous timber, and is paralleled by a Forest Service trail.

About 6 miles from its source, the river valley broadens. A trail, an abandoned railroad grade, mining activity, and paved State Highway 145 parallel the river for the next 9 miles to Rico. This segment varies from 10 to 20 feet wide and meanders through a narrow treeless valley.

There are no impoundments, but the free-flowing condition is impaired by highway fill slopes that alter the course of the river. Below Snow Spur Creek the river is a meandering stream with low banks and occasional riffles. Above Snow Spur Creek it has a steeper gradient, little bottom



"Blading" of the stream bottom and banks on private land near Stoner has altered the river environment.

land, and high steep banks. During the peak runoff period of May and June, the river flows about 500 cfs and during the summer low flow period of July through September, it flows about 110 cfs. The river is about 55 feet wide at the highway bridge on the north edge of Rico during the high flow period and about 30 feet wide during low flow.

West Dolores As shown on figure II-3A, the West Dolores River begins as melting snow on the precipitous, barren sidewalls of Navajo Basin. The river is enframed by multicolored sidewalls of the basin on the north, south, and east sides. Because of its massiveness, the landscape dominates the river. The river flows through Navajo Lake and approximately 1 mile downstream it leaves Navajo Basin. Forest Service trails and some exploratory mining are the only visual evidence of man's intrusion.

Coniferous covered terrain becomes steep on the east side of the creek but remains rolling on the west side with large open parks. Here, the river is 5 to 10 feet wide and has banks 10 to 30 feet high with no flood plain. Except for a Forest Service trail and an old cabin, there is no evidence of man's intrusion on the landscape. About 5.6 miles of this reach of stream is in an area that may be designated as wilderness. At present, about 3.5 miles of stream is in the Wilson Mountains Primitive Area.

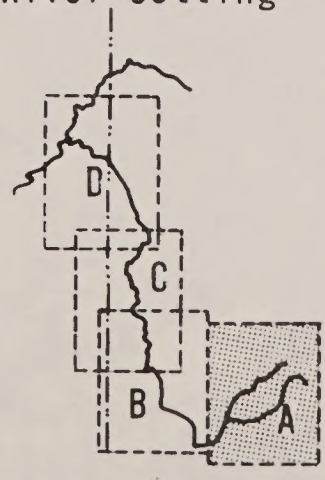
From Burro Bridge to its mouth, the river is paralleled by a road. The settlement of Dunton is the first evidence of private lands. From this point, the river flows equally across public and private lands, through a U-shaped valley about 1 mile wide. At Dunton the meadowed and winding river is approximately 10 to 20 feet wide. The river curves more gently and broadens as it descends through its valley and has a width of about 60 feet at its mouth. Below Dunton, roads, bridges, fences, occasional crop-lands, and about 60 private dwellings near the river are evidence of man's presence on the landscape.

During the high runoff periods the river is about 70 feet wide near its mouth and about 30 feet wide at Burro Bridge. During the peak runoff period of May and June, the river flows at a rate of about 1,000 cfs. During the summer low flow period of July through September it flows at about 140 cfs.

McPhee Dam to Bedrock Several distinct sections of river exist in this 105-mile segment which begins 1 mile below the proposed MCPhee Dam. Between the MCPhee Dam site and Bradfield Ranch, shown on figure II-3B, the 40 to 50 foot wide Dolores River flows through a moderately narrow mountain valley. Steep slopes with coniferous forest and shrub cover rise 600 to 1,000 feet to ridgelines that define the visual boundaries of a corridor 1 to 1-1/2 miles wide. The narrow valley bottom lands provide a pastoral landscape.

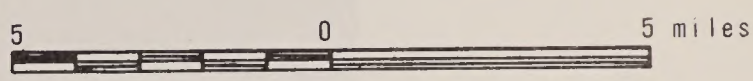
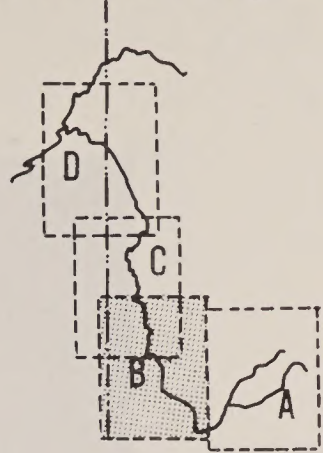
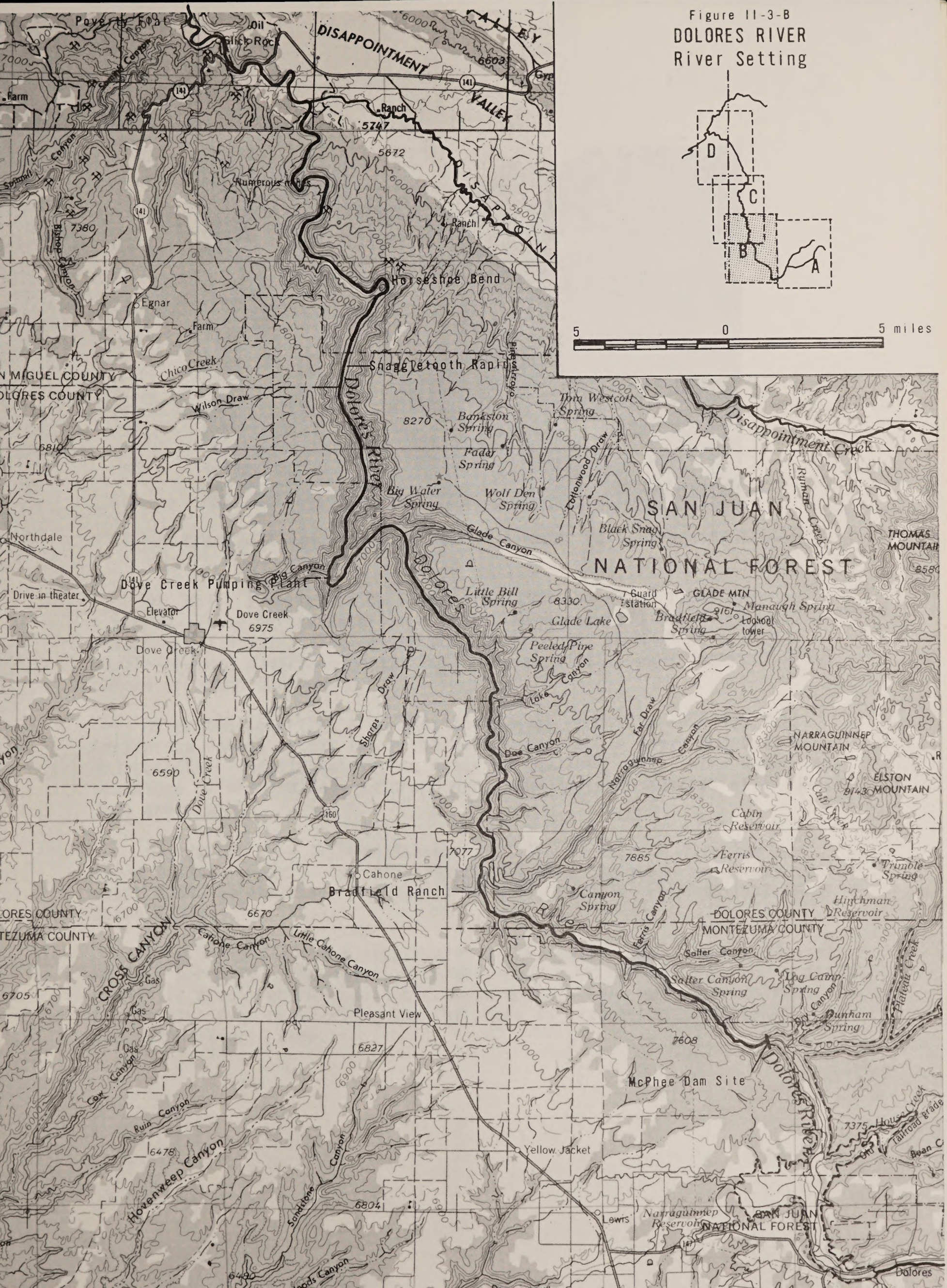


Figure 11-3-A
DOLORES RIVER
 River Setting



5 0 5 miles

Figure 11-3-B
DOLORES RIVER
River Setting





Bradfield Ranch site serves as a major raft launching area.

For about 10 miles below Bradfield Ranch the river flows through a narrow valley before entering a canyon with mountain brush and conifers covering the slopes. The canyon deepens to 1,200 feet while a large, double-towered powerline on the left bank skyline appears intermittently before crossing the canyon.

After the powerline crossing, the canyon rims rise to 2,000 feet. Coniferous forest covers the right bank canyon walls while mountain brush and pockets of coniferous forest occur on the left bank. Many sheer red sandstone cliffs and rock outcroppings, together with several cliff dwellings are visible.

Continuing down Dolores Canyon, the 11-mile segment from the Dove Creek pumping plant to Horseshoe Bend, contains the most rapids and white water found on the river. Included in this reach is 1/4-mile-long Snaggletooth Rapid.

Flow in this segment accelerates as the water drops between 25 and 40 feet per mile. The canyon with many rock outcroppings and red sandstone cliffs is deeply entrenched and covered on both bank walls by conifers. A primitive road paralleling the left bank is visible intermittently along the river's edge.



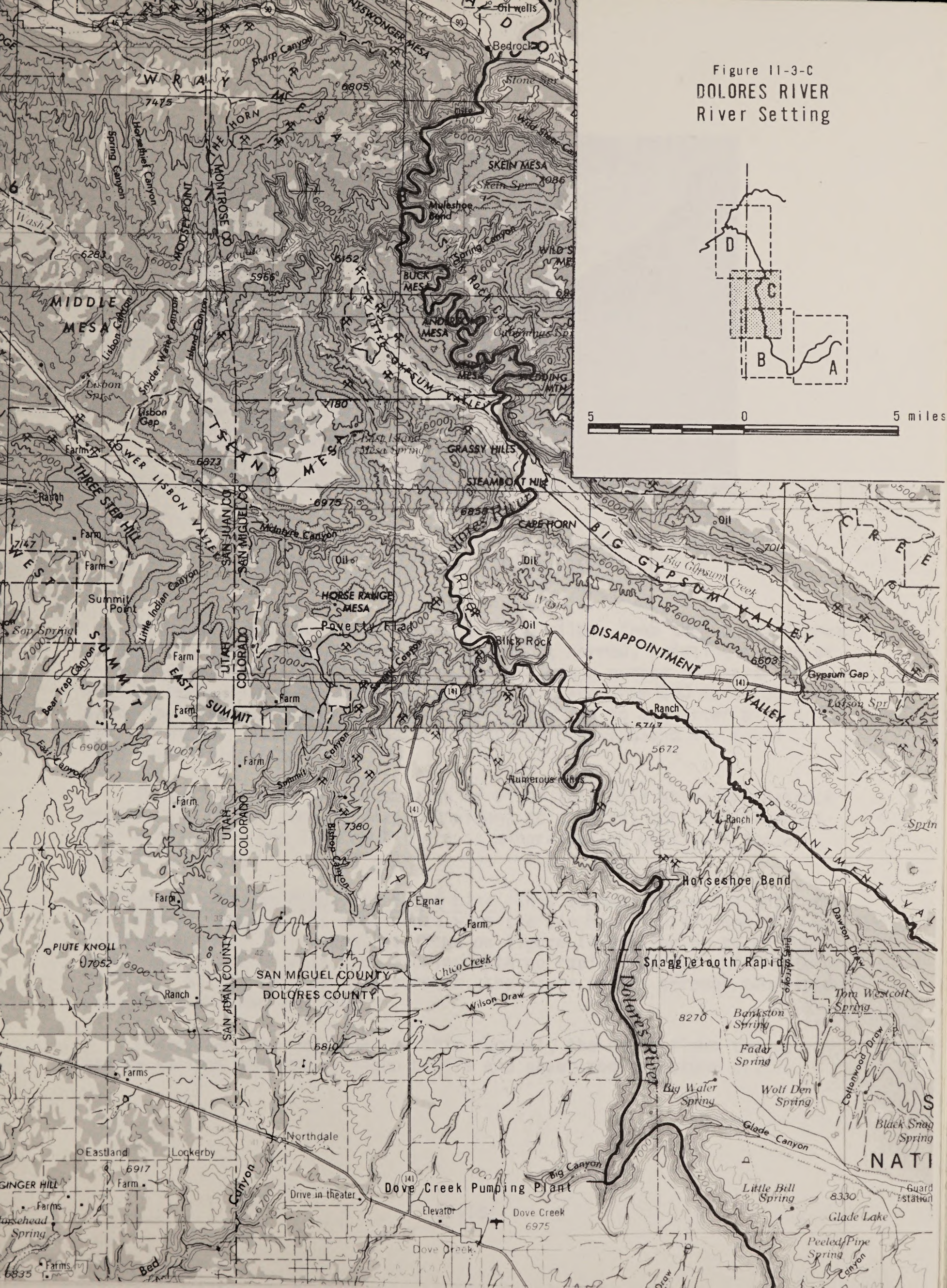
Snaggletooth Rapid is portaged more frequently than it is rafted.

Beyond Horseshoe Bend, the primitive road ends but mining activity on the canyon rims becomes visible. An old, abandoned cabin and a seldom used roadbed exist on the right bank. Through the remaining portion of the canyon which ends 8 miles above Slick Rock Bridge, as shown on figure II-3C, there are many rapids and white water stretches. The vegetative pattern here changes from montane forest of ponderosa pine-Douglas-fir to pinyon-juniper woodland, with more exposed rock faces and barren talus slopes.

Only a few short stretches of white water riffles occur in a 12-mile segment from 8 miles upstream of the Slick Rock Bridge to 2 miles below Poverty Flat. Disappointment Creek, a right bank tributary, enters the river in this segment and contributes a heavy silt load. The river flows through a narrow valley with considerable uranium and prospecting activity evident on hillsides and escarpments. Three bridges cross the river, including Colorado Highway 141.

Many red sandstone cliffs and ledges are exposed in a 6-mile segment 2 miles downstream from Poverty Flat to Gypsum Valley. Here the Dolores flows through a pinyon-juniper covered mile wide canyon referred to as "Little Glen Canyon", with rims up to 1,200 feet above the river. Gypsum Valley, for a distance of about 6 miles, provides a pastoral landscape. Its major axis extends in a northwest-southeast direction and is bounded by steep escarpments.

Figure 11-3-C
DOLORES RIVER
River Setting





The snow-covered La Sal Mountains some 25 miles distant are visible from the river below Slick Rock.

Slick Rock Canyon, for a distance of 30 miles, from the county highway bridge in Gypsum Valley downstream, is a deep, narrow, twisting canyon of sheer sandstone cliffs. In this reach there are a number of short rapids with several white water riffles. Canyon rims are from 600 to 1,200 feet above the river and the visual corridor is limited to a quarter mile or less in width. Scattered areas of pinyon-juniper woodland are found throughout this segment.

In the remaining 3-mile stretch of river to 1 mile above the Bedrock Bridge, the canyon remains deep but widens to a visual corridor of about half a mile. On the left bank there is a paralleling dirt road and an old oil well rig.

Confluence with San Miguel to State Line This segment extends a total of 46.5 miles. Between its confluence with the San Miguel River and the Colorado Highway 141 bridge, as shown on figure II-3D, the 50 to 60 foot wide river is relatively slow flowing with no rapids and few white water riffles. Within this 38-mile stretch, the river passes through two narrow, deep red sandstone canyons.

Throughout the remainder of this segment, the river flows through narrow valleys bounded by steep bluffs and sheer red sandstone cliffs.

Figure 11-3-D
DOLORES RIVER
River Setting



5 0 5 miles





The San Miguel River is a principal tributary of the Dolores River.

Escarpments range in elevation from 400 feet above the river in the upstream reach to over 1,200 feet in the downstream reach. Among the intrusions in this segment are evidence of uranium and gold placer mining, Colorado Highway 141 which parallels much of the river, ranching activity, and thinning or removal of riparian vegetation. Scenic features include the ruins of an historic hanging wooden flume in the upstream reach and the Juanita Arch, a natural bridge located about 1-1/2 miles from the river.

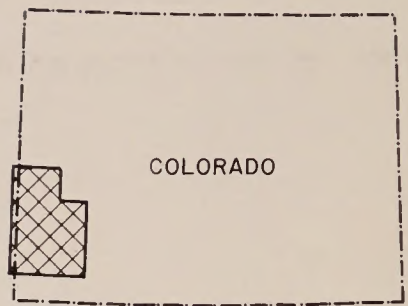
From the Colorado Highway 141 bridge in the vicinity of Gateway to the Utah State line, there are a number of rapids and a number of white water riffles. Except for a low water diversion/ford, the river is free of impoundments. It flows through an arid valley with sagebrush vegetation and salt desert shrubs. The 2-mile wide visual corridor is bounded by steep bluffs, covered with pinyon-juniper woodland, that are topped by sheer red rock cliffs rising from 1,200 to 1,600 feet. Prominent among these cliffs is the Palisade escarpment. Dense willow thickets and groves of cottonwood tend to obscure the dirt roads and some of the agricultural lands along the river.

Physiography and Geology

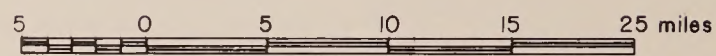
General The Dolores River Basin is located primarily in the Canyonlands Section of the Colorado Plateau Physiographic Province in southwestern Colorado and southeastern Utah. Rivers of this region have cut the country into a series of mesas separated by deep, narrow canyons (see figure II-4). The lower part of the basin occupies the southern portion of a northwest trending structurally low area. This area is roughly parallel to and on the southwest flank of the Uncompahgre Uplift.



Figure II-4
DOLORES RIVER
Topography



LOCATION MAP



Source: U. S. Geological Survey, Colorado Relief Map, 1:500,000





Numerous geologic strata are exposed in the deeply entrenched Dolores River Canyon between Slick Rock and Bedrock.

Rocks ranging in age from Precambrian through Quaternary are exposed in the basin, as shown on the generalized bedrock geology map, figure II-5. They consist of crystalline rocks of Precambrian age, volcanic rocks of Tertiary age, and a thick sequence of sedimentary rocks of Paleozoic and Mesozoic age. Areal distribution of these rocks is mainly controlled by the extensive uplifts represented by the Uncompahgre Plateau and Rico Mountains and the more localized uplifts of the salt anticline area. The older rocks are generally exposed in these areas, while the younger rocks are generally exposed in the intervening synclinal areas.

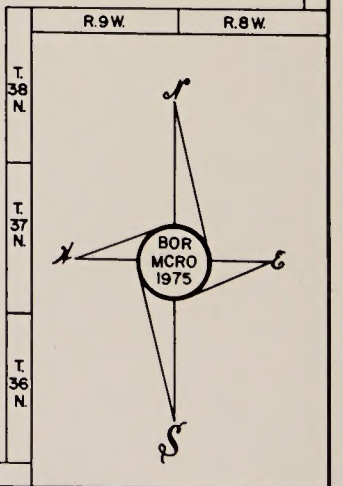
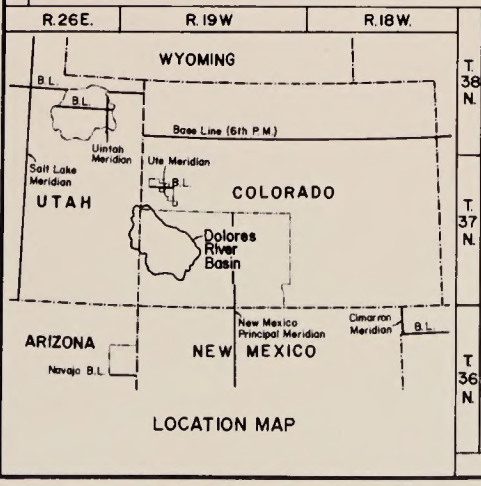
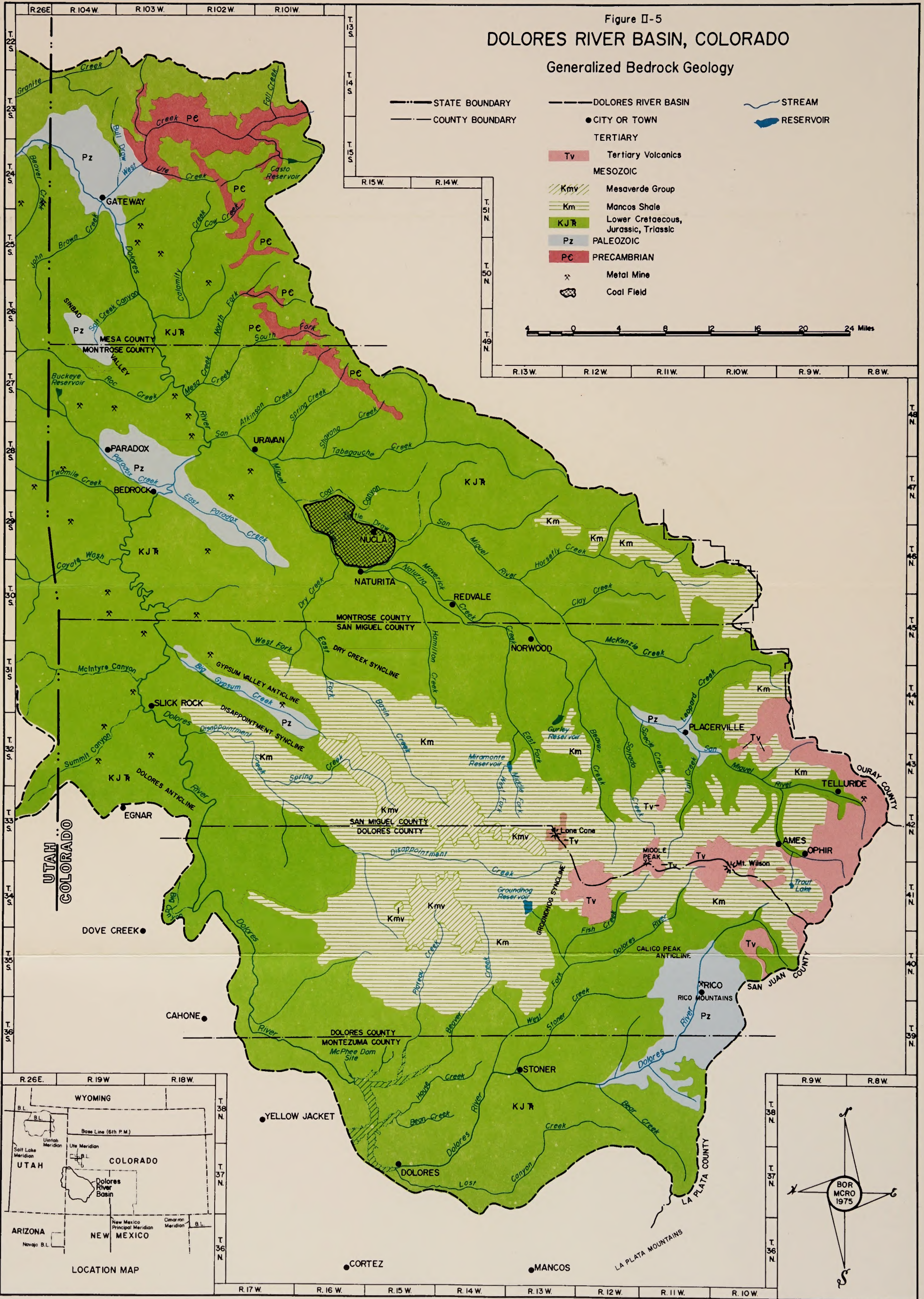
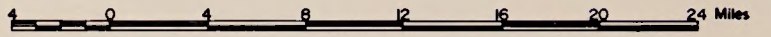
The oldest rocks are the Precambrian crystalline rocks exposed in the canyons along the west side of the Uncompahgre Plateau. These consist mainly of a gray medium-grained gneissic granite which is intruded by a pink coarse-grained granite. Smaller areas of schist and gneiss occur.

Paleozoic rocks of Pennsylvanian and Permian age crop out mainly in the anticlines of Sinbad, Paradox, and Gypsum Valleys, in the Rico Mountains, and along the northwest edge of the Uncompahgre Plateau uplift. These rocks include gray shale and limestone with salt and gypsum beds overlain by red arkosic sandstones and conglomerates with beds of red mudstone. Formations represented are the Hermosa, Rico, and Cutler.

Figure II-5
DOLORES RIVER BASIN, COLORADO

Generalized Bedrock Geology

- STATE BOUNDARY
- COUNTY BOUNDARY
- CITY OR TOWN
- STREAM
- RESERVOIR
- TERTIARY
 - Tv Tertiary Volcanics
- MESOZOIC
 - Kmv Mesaverde Group
 - Km Mancos Shale
 - KJr Lower Cretaceous, Jurassic, Triassic
- PALEOZOIC
 - Pz
- PRECAMBRIAN
 - PC
- ✕ Metal Mine
- ☐ Coal Field



Mesozoic rocks crop out in all parts of the basin and consist of several thousand feet of alternating beds of sandstones, siltstones, and shales with the sandstones predominating. This sequence of rocks includes the Moenkopi and Chinle Formations, Wingate Sandstone, Kayenta Formation, and Dolores Formation of Triassic age; the Navajo Sandstone of Triassic and Jurassic age; the Entrada Sandstone, Summerville, Wanakah, and Morrison Formations of Jurassic age; the Burro Canyon Formation and Dakota Sandstone of Early Cretaceous age; and the Mancos Shale and Mesa Verde Group of Late Cretaceous age.

Volcanic rocks of Middle and Late Tertiary age occur in the San Juan Mountains area of the basin. They consist mainly of tuffaceous sandstone and tuff breccia of the San Juan Formation and the Silverton Volcanic Group. In most places they are underlain by the Telluride Conglomerate of Early Tertiary age. Igneous intrusive rocks of Tertiary age consisting of dikes, sills, stocks, and laccolithic bodies occur in the La Plata as well as the San Juan Mountains.

Quaternary deposits ranging in age from Pleistocene to Recent are widespread in the basin. Glacial moraines representing several intervals of glaciation are present along most of the major valleys in the San Juan, and La Plata Mountains. Landslide deposits, rock glaciers, and talus deposits are also common in these areas. Several levels of mesa and terrace surfaces underlain by sandy and gravelly alluvial deposits occur along the larger stream valleys. Deposits of windblown silt and sand occur on the more extensive mesa surfaces and in the larger valleys. Recent alluvium occurs in the flood plains of most smaller tributaries as well as along the larger streams.

River Corridor The West Dolores River heads southwest from its source near Mount Wilson at an elevation of over 12,000 feet. For about 8 miles the stream flows through mountainous country and then for the next 22 miles flows in a canyon less than 1 mile wide and from 1,200 to 1,500 feet deep. The West Dolores then joins the main stem about 15 miles upstream from the Town of Dolores.

Mesas found in the West Dolores area are mostly capped by rocks of the Dakota and Burro Canyon Formations, but back from the rims many mesas have outliers of Mancos Shale. In the canyons of the West Dolores and its tributaries, the Morrison Formation, Junction Creek Sandstone, Wanakah Formation, Entrada Sandstone, the Dolores, and Cutler Formations are exposed. A large Tertiary intrusive body underlies Black Mesa and the southern slopes of Groundhog Mountain. Smaller intrusives are present at Middle Peak and Mt. Wilson. The sedimentary rocks are cut by dikes and small sills of trachybasaltic lamprophyre. The Calico Peak anticline trends west-northwest and the parallel Groundhog syncline lies several miles to the north. Structures in the extreme southwest consist of a plunging syncline. A large number of north-northwest trending faults and a few northeast trending faults cut the sedimentary rocks.

The main Dolores River heads in the San Juan Mountains and flows northwest for about 5 miles and then southwestward to near the Town of Dolores. There it turns and flows in a canyon with a general northwestward course for approximately 200 miles through the canyonlands country into the Colorado River.

The river is underlain by sedimentary rocks ranging in age from Pennsylvanian to Cretaceous except for a few Tertiary strata and intrusive bodies in the headwaters area and a small area of Mississippian and Precambrian rocks at Rico.

Downstream from the proposed McPhee Dam site, the river follows a general north-northwest course in a deep narrow canyon. The entire section of sedimentary rocks from the Cutler Formation up through the Dakota Sandstone is exposed in the corridor.



Bands of Entrada Sandstone are prominent along the Dolores River below Bradfield Ranch.

The principal structure along the southern half of the corridor is the Dolores anticline, which trends northwest for more than 40 miles. From the damsite to Glade Canyon, the river flows in a canyon from $3/4$ to $1-1/2$ miles wide that has been superimposed part way down the southwest flank of the Dolores anticline. Depth of this canyon varies from 500 to 1,900 feet.

Glade Canyon is in a narrow west-northwest trending graben about 15 miles long but only about half a mile wide. The Dolores crosses the Glade Graben near its west end, turns to a more northerly course, and cuts diagonally across the Dolores anticline, crossing the axis in a canyon nearly 2,300 feet deep.

From this point, the river crosses a number of large northwest-trending structural valleys that are aligned along the Disappointment syncline, the Gypsum Valley anticline, and the Dry Creek Basin syncline. The corridor ends at the south rim of the Paradox Valley which lies along the Paradox Valley anticline.

The stratigraphic section exposed in the headwaters area includes the Uncompahgre Quartzite up through the Mancos Shale. The principal tectonic feature in the headwaters basin is the Rico dome, in which the sedimentary rocks are bowed up moderately from their gentle southwesterly regional dip. In the center of the dome are a monzonite stock and an upfaulted core of Precambrian rocks. Numerous sills and dikes cut the sedimentary rocks.

Strata exposed in the river corridor where the river crosses the Dolores County-San Miguel County line are shown in a stratigraphic cross section in figure II-6. They are included in the following list of geologic strata found in the Dolores River Basin.

Upper Cretaceous

Mesa Verde Group - yellowish-gray, thick-bedded sandstone beds separated by light-gray shale, gray and brown claystone, coal. Beds are both marine and nonmarine in origin and are about 1,200 feet thick. Contains coal beds in places.

Mancos Shale - dark gray to black, soft, fissile marine shale with thin sandstone beds. The upper beds intertongue with and grade vertically into the lower part of the Mesa Verde Group. Thickness is about 4,000 feet.

Upper and Lower Cretaceous

Dakota Sandstone - yellowish-brown to gray quartzitic fluvial sandstone and conglomeratic sandstone in thick beds with thin lenticular beds of gray claystone, impure coal, and carbonaceous shale. Thickness of the formation varies from 50 to 225 feet.

Lower Cretaceous

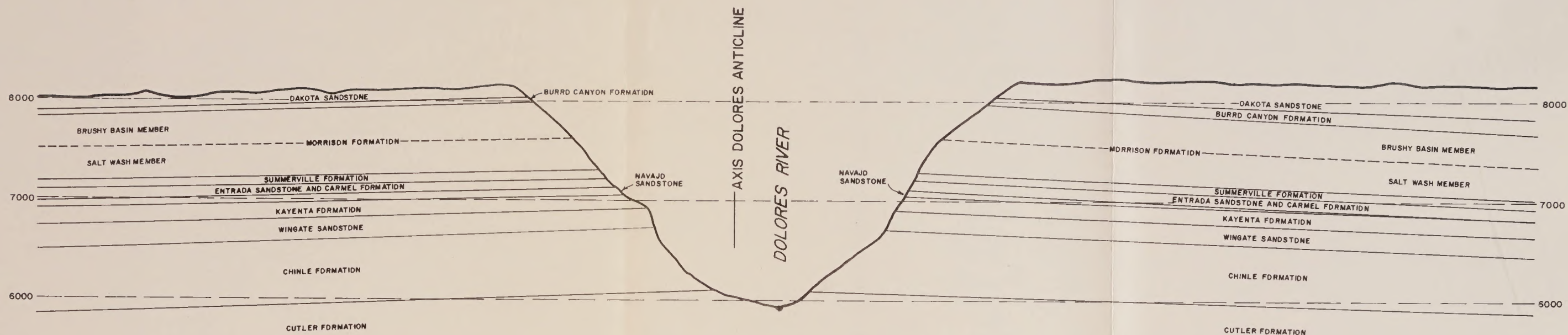
Burro Canyon Formation - lenticular light-brown fluvial quartzose sandstone and conglomerate with brown to green siltstone, shale, and mudstone. About 150 feet thick but varies from a few feet to more than 200 feet.

Upper Jurassic

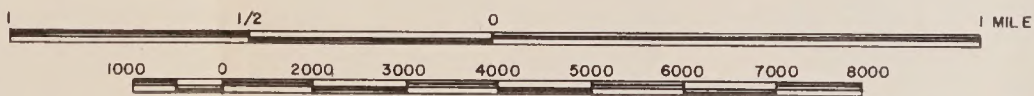
Morrison Formation - fluvial and lacustrine sandstone and mudstone alluvial deposits about 600 feet thick, although total thickness ranges from 450 to 950 feet. Sandstones in the lower part of the formation contain major deposits of uranium and vanadium in the Uravan area.

Figure 11-6
GEOLOGIC SECTION

perpendicular to the Dolores River where it crosses the
 Dolores County-San Miguel County line



HORIZONTAL SCALE 1:24,000



VERTICAL SCALE EXAGGERATED TWO TIMES

ANDREW F. BATEMAN, JR.

Junction Creek Sandstone - pink or reddish-orange fine-to-coarse-grained, poorly sorted, crossbedded eolian sandstone about 275 feet thick. It merges northward and westward with the upper part of the Summerville Formation.

Wanakah Formation - greenish-gray to reddish-brown limy siltstone, thinly-bedded fine-grained quartz sandstone, and a dark gray bituminous limestone 25 to 100 feet thick. It is the lateral equivalent of the Summerville Formation to the north and west.

Entrada Sandstone - Generally white to orange buff or red. Often pale to greenish-gray massive sandstone with large low-grade vanadium-uranium deposits in the Placerville and Graysill Mountain areas. It ranges from 70 to 440 feet in thickness and averages about 150 feet.

Triassic

Navajo Sandstone - white, gray, or yellowish-gray, fine-grained, well-sorted, highly crossbedded eolian sandstone. More than 400 feet thick to the west but thins to an irregular wedge edge near the Dolores River.

Kayenta Formation - gray, purplish-gray, red, and maroon irregularly bedded fluvial sandstone and siltstone with some mudstone, conglomerate, and limestone. Thickness varies from 0 to 240 feet. These beds are found only in the lower Dolores River Canyon.

Wingate Sandstone - reddish-brown to buff, fine-grained, massive thick-bedded, prominently crossbedded eolian sandstone. It is present in the Dolores River Canyon but is thin and wedges out eastward. To the west it attains a thickness of 350 feet.

Chinle Formation - red, reddish-brown, and orange-red siltstone with lenses of red sandstone and shale, limestone pebble, and shale pellet conglomerate. It is terrestrial in origin. Thickness increases from a few feet southward to 600 feet. Sandstones in the base of this formation contain uranium in some localities.

Dolores Formation - bright red to reddish-orange fluvial siltstone, sandstone and shale with a few thin layers of limestone shingle conglomerate about 400 feet thick. It is the approximate lateral equivalent to parts of the Wingate Sandstone and Chinle Formation.

Moenkopi Formation - chocolate-brown, ripple-bedded shale, brick-red sandy mudstone, brown sandstone and arkosic conglomerate with local gypsum beds. Thickness ranges from 0 to more than 1,000 feet.

Permian

Cutler Formation - a continental sequence of grayish to purplish-red fluvial micaceous sandstone, siltstone, and arkosic conglomerate. Total thickness ranges from 0 to 3,000 feet.

Permian or Pennsylvanian

Rico Formation - light gray, fossiliferous, cherty marine limestone, reddish-brown fine-to-medium-grained fluvial sandstone, and reddish-brown, gray-green or purple micaceous and gypsiferous siltstone about 300 feet thick.

Pennsylvanian

Hermosa Formation - gray and light brown, thick-bedded, fossiliferous, cherty marine limestone and dolomite, gray fine-grained micaceous crossbedded sandstone and siltstone, dark-gray shale, and gypsum. It is about 1,800 feet thick at Rico and contains thick beds of salt in the subsurface.

Mineral Resources

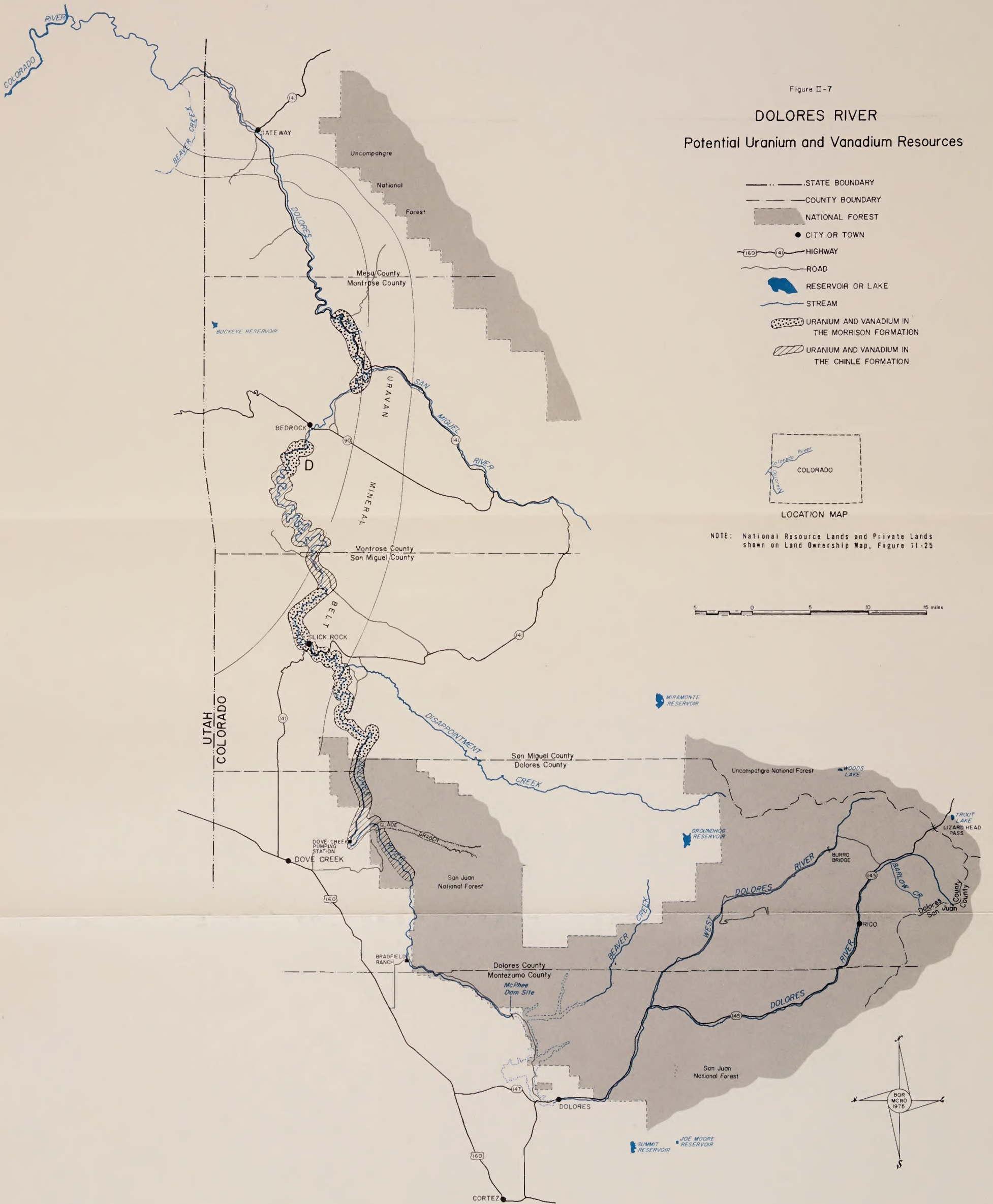
Mining contributes significantly to the economy of the basin and occurs in varying degrees throughout the length of the Dolores River study corridor. Within the corridor, there are ten active surface and subsurface mines; most are uranium mines. Pollution from mine drainage, accidental spills of toxic mining wastes, and soil erosion are discussed in the section on water quality.

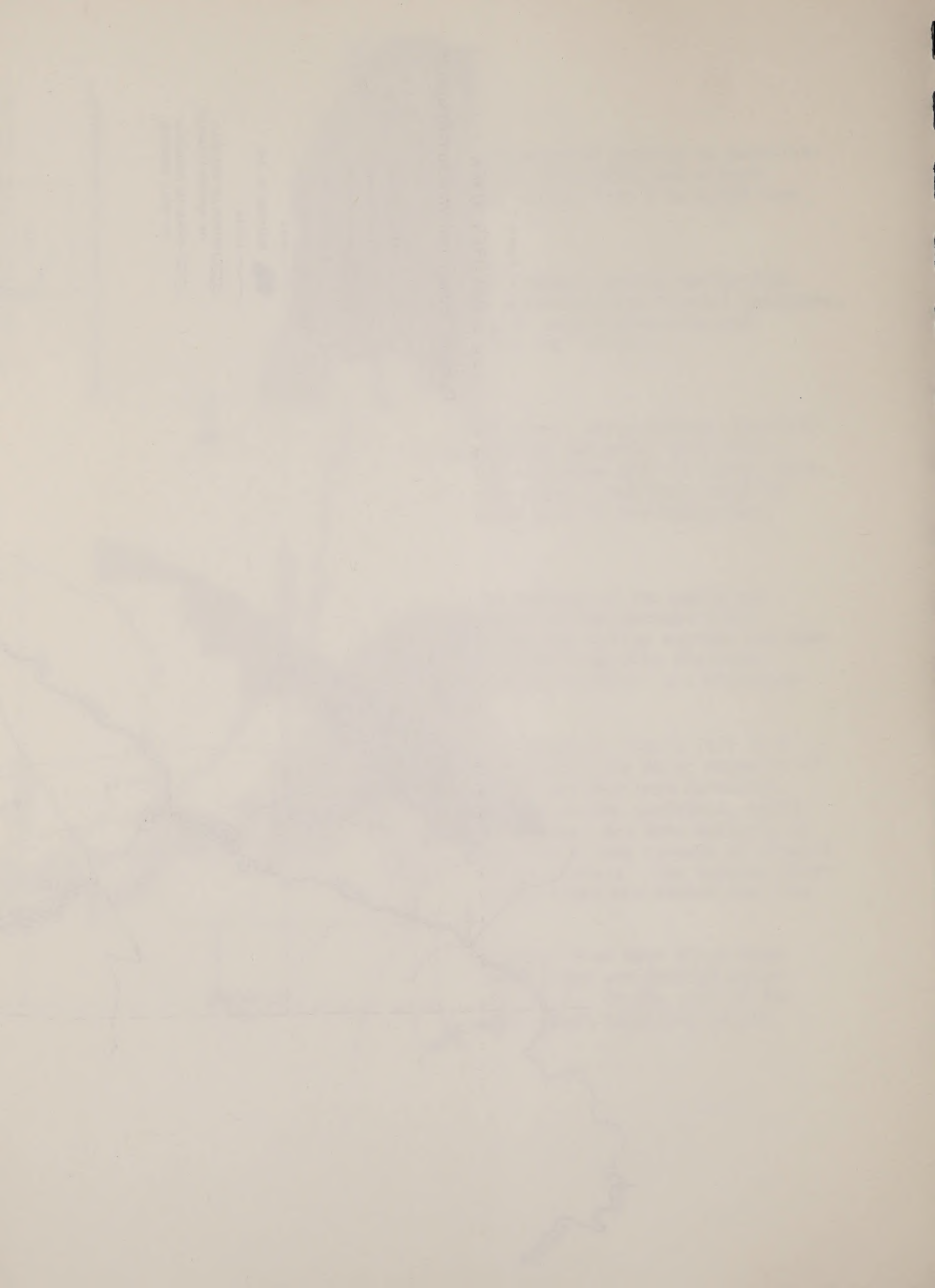
Uranium and Vanadium The Uravan Mineral Belt shown on figure II-7 is a crescent-shaped area in southwestern Colorado containing major deposits of uranium and vanadium in the Salt Wash Member of the Morrison Formation. The belt extends from the vicinity of Slick Rock on the southwest, northeasterly to Uravan, thence northwesterly to Gateway, and then westerly to just over the Utah State line. This area has had a long history of mineral production that extends back to the turn of the century. The Dolores River flows across the belt and several of the mining areas are within the line of sight from the river.

Ore deposits in the belt (figure II-7) occur from near Slick Rock northward to Gateway. Just south of the belt, there are several occurrences of ore in the Morrison Formation in T. 41 N. In the area of the Dolores anticline there are occurrences in the basal sandstone of the Chinle Formation. (See figure II-6.)

Figure II-7

DOLORES RIVER Potential Uranium and Vanadium Resources





In the headwaters of the Dolores River, vanadium deposits containing low grade uranium occur in the Entrada Sandstone. The Graysill mines at the head of the North Fork of Hermosa Creek in T. 40 N., R. 9 W., have produced nearly 40,000 tons of vanadium ore from which a small amount of uranium was recovered. Potential ore-bearing strata extending to the northwest into the headwaters and mines along Barlow Creek have produced a few thousand tons of vanadium ore from which a small amount of uranium was recovered. There was drilling in the area in the middle 1960's. Large deposits of vanadium ore containing low-grade vanadium, also in the Entrada Sandstone, occur in the Placerville area on the San Miguel River. Should the price of uranium rise significantly, these mines would be reopened for their uranium content. According to the Montezuma County Planning Office, uranium and vanadium showings have been found in the Wilson Mountains Primitive Area.

As reported by the Energy Research and Development Administration (ERDA), production from the Uravan Mineral Belt during the period 1948 to 1975 has been 62,110,900 pounds of U_3O_8 (uranium oxide) and 319,436,100 pounds of V_2O_5 (vanadium oxide). Not included in this total is 24,842,100 pounds of V_2O_5 produced prior to 1945, which was reported by Union Mines Corporation.

ERDA has determined that mines within the river corridor have produced 3,141,200 pounds of U_3O_8 and 19,111,300 pounds of V_2O_5 during the period 1948-1975. Included in these totals is the production for calendar year 1974 of 42,300 pounds of U_3O_8 and 276,700 pounds of V_2O_5 .

Figure II-8 shows uranium production of the Uravan Mineral Belt in relation to that of all other uranium producing areas in the United States for the period 1953 to 1974.

Ore reserves reported by ERDA for the Uravan Mineral Belt were 19,404,500 pounds of U_3O_8 and 127,084,600 pounds of V_2O_5 on January 1, 1975. Of these totals, mines within the corridor contain reserves of 257,000 pounds of U_3O_8 and 1,530,400 pounds of V_2O_5 .

The potential resources of uranium and vanadium have been estimated by ERDA for the corridor as shown in table II-2. That portion of the river proposed for wild and scenic river designation contains about .03 percent and .26 percent of the United States' total known \$15/lb. reserves and probable and possible potential resources of U_3O_8 , respectively.

Although production has been declining in recent years, the recent increase from \$8 to \$13 per pound in the uranium ore prices has rejuvenated the industry, and production in 1975 should exceed that of 1974. Many mines, now inactive, will be reopened and exploration drilling will locate new deposits as well as extensions of old ones.

Figure 11-8
 URANIUM PRODUCTION BY AREA
 1953 to 1974

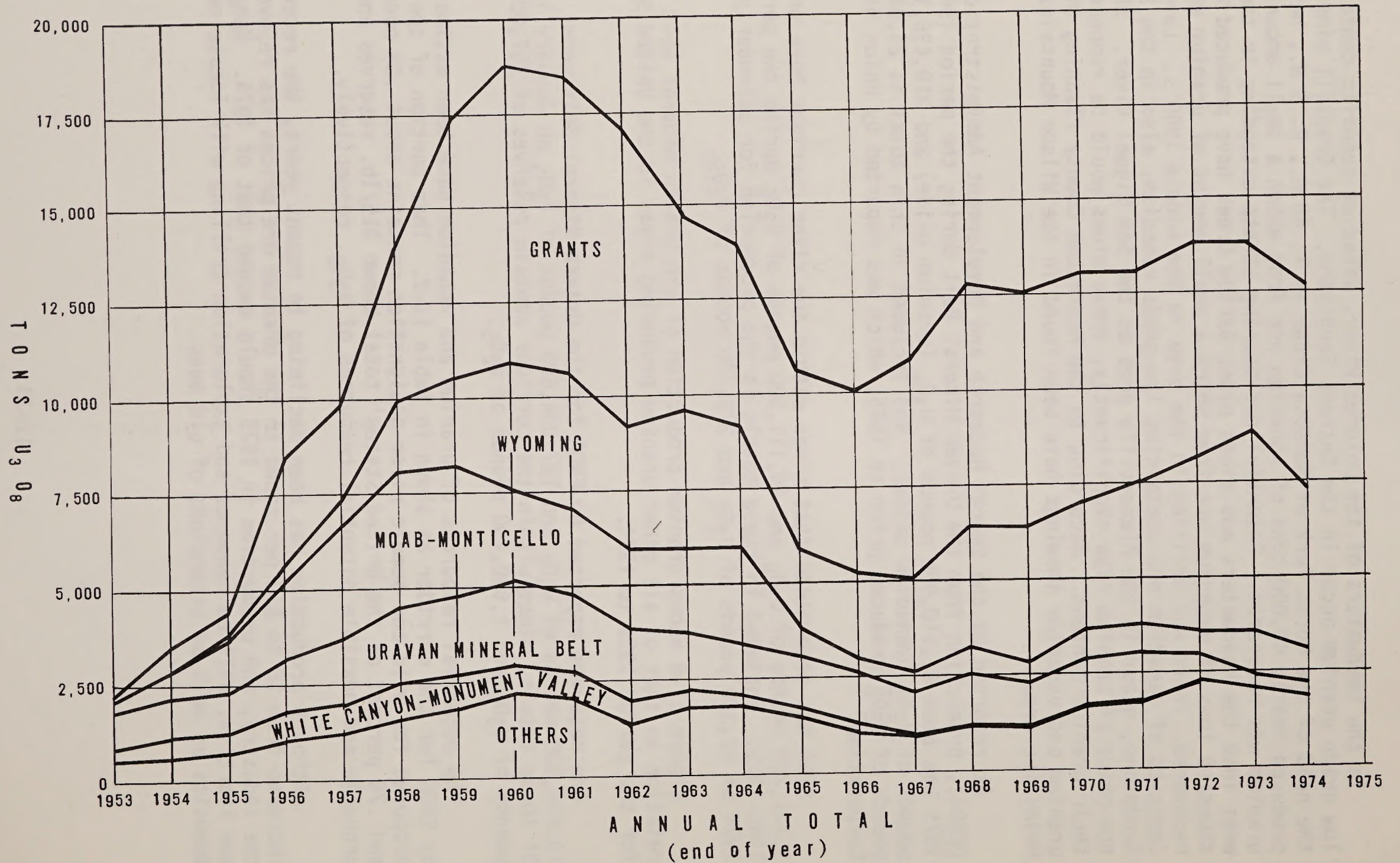


TABLE II-2

Potential Uranium and Vanadium Resources, Dolores River Corridor

Segment	Formation	Uranium (U_3O_8)		Vanadium (V_2O_5)	
		Pounds			
Center of T. 41 N. to Disappointment Creek	Chinle and Morrison	1,000,000 to	2,000,000	4,000,000 to	8,500,000
Disappointment Creek to Bridge in Little Gypsum Valley	Morrison and Chinle	1,500,000 to	3,000,000	9,000,000 to	14,000,000
Bridge in Little Gypsum Valley to about 1 mile above Highway 90	Chinle	1,200,000 to	3,000,000	3,000,000 to	6,500,000
Confluence with San Miguel to Colorado-Utah State line	Morrison	<u>1,000,000 to</u>	<u>2,000,000</u>	<u>6,500,000 to</u>	<u>11,500,000</u>
TOTALS		4,700,000 to	10,000,000	22,500,000 to	40,500,000

Under present economic conditions, the probability of significant mining activity occurring in the river corridor varies considerably. As shown in the following tabulation, the river segment from Disappointment Creek to Little Gypsum Valley is most likely to experience such activity.

<u>River Segment</u>	<u>Percent Probability of Significant Mining Occurring</u>
McPhee Dam to Bradfield Ranch	0-25
Bradfield Ranch to Disappointment Creek	50-100
Disappointment Creek to Little Gypsum Valley	95-100
Little Gypsum Valley to Bedrock	30-70

It is expected that there will be no major changes in technology during the next 5 years that will lower production costs. However, there is a strong possibility that technological advances in the mining of uranium and vanadium will occur over a longer period. Even with such advances, higher values for these raw minerals will continue to overshadow reduced costs from increased productivity.

Other Minerals In the Mt. Wilson area, which is on the boundary between the headwaters basin and the West Dolores River basin, gold, silver, lead, copper, and zinc have been mined from veins in and near a mass of Tertiary intrusive rock. A USGS mineral-resource appraisal of the Wilson Mountains Primitive Area indicated an area of disseminated copper mineralization in Navajo Basin that has subsequently been drilled. The results of this exploration program, which was terminated by Texas Gulf, Inc. in 1975, are not known at present.

At Rico, more than \$44,000,000 of ore containing silver, lead, zinc, gold, and copper has been mined from a mineralized solution breccia in sedimentary gypsum beds, replacement bodies in Paleozoic carbonate rocks, and from fissure veins. Pyrite mined at Rico and nearby areas is used to produce sulfuric acid. Current mineral activity in the Rico area involves not only mining but also exploration for new deposits and leaching of old mine dumps for their silver content.

Copper and silver have been mined from fractured sandstone deposits in Sinbad Valley (Colorado Copper Company), in Paradox Valley (Sunrise Mine and Fairview claim), and along La Sal Creek (Cashin and Cliff Dweller mines). Most of the production ended before 1920, but some ore was shipped from Sinbad Valley in the early 1940s. The small amount of copper-silver ore mined in these areas averaged 20-50 percent copper and 4-10 oz/ton silver. No estimates of reserves are available at this time.

Some mining of sand and gravel occurs at two pit areas located along the Dolores River near the Town of Stoner. One of these areas is privately owned, while the other is operated by the Mountain Gravel Construction Company. The amount of sand and gravel extracted from these sites is unknown.

Silver and other precious metals, as well as arsenic and antimony, are present in silver ores in the zone of secondary sulfide enrichment in the Dunton District. Calico Peak, on the divide between the headwaters basin and the West Dolores River basin west of Rico, is currently being investigated by private industry as a potential source of alunite (aluminum ore), with possible byproducts of potassium and molybdenum.

Although the Hermosa Formation underlies the entire drainage basin at depth, salt of the Paradox Member does not. Layers of salt are interbedded with anhydrite, limestone, dolomite, and shale. Salt has been partly squeezed from the Disappointment Valley and Dry Creek Basin synclines into the adjacent salt anticlines of Gypsum and Paradox valleys. Oil and gas exploration holes drilled into these synclines penetrated no salt. Near Egnar, a well drilled in the Dolores anticline penetrated approximately 4,400 feet of salt-bearing rocks. The top of the salt in this well is nearly 5,500 feet below the ground surface. Southward from Egnar the beds are nearly horizontal, and the salt thins gradually. Northward, the beds have been folded into a series of parallel anticlines and synclines due to plastic flowage of Paradox Member salt beds. In the Paradox Valley, one well penetrated nearly 14,000 feet of salt. The total amount of salt in the Paradox Valley is very large but information is not available on which to base an estimate of the total.

Potash deposits are present in the Paradox Member throughout much of the area. Wells drilled on the Dolores anticline have penetrated at least six different deposits. Most of the deposits occur at depths greater than 5,000 feet below the surface and could be exploited only by solution mining.

Gypsum occurs as a cap rock at the top of the salt and crops out in Big Gypsum Valley. The resources of gypsum in this area are probably large.

Many of the old mines in the region yielded manganese and barite, although these minerals were not actually recovered. However, under more favorable economic conditions, manganese and barite might possibly be recovered.

Fossil Fuels Most of the lands drained by the Dolores River and its tributaries in the study corridor are valuable prospectively for coal. However, almost none of the lands in the canyon itself has potential for coal production. According to the Bureau of Mines, coal is not present in the canyons as the canyons are below the coal resource level, and mining from or below the canyon rims is not practical. About two-thirds of the lands in the drainage basin are considered valuable for oil and gas. At present there are two small productive oil and gas fields and one exhausted gas field within the basin and the larger Southeast Lisbon field on its western margin as shown in figure II-9.

Exploration for coal, and to a lesser extent oil and gas, is taking place in areas adjacent to river study segments 3 and 4 (below Dolores).

Production data obtained from the Utah State Oil and Gas Conservation Commission for the Big Indian field and from the Colorado State Oil and Gas Conservation Commission for three other fields follow:

Field	Producing Formation	Production			
		1974		Cumulative*	
		bbl oil	mcf gas	bbl oil	mcf gas
Andy's Mesa	Hermosa	347	827,808	10,593	11,081,651
Big Indian #4	Hermosa	0	56,710	0	1,095,667
Montrose Dome	Hermosa	0	(exhausted)	0	58,092
Southeast Lisbon	Ouray Limestone Leadville Limestone	12,171	983,695	65,343	4,544,676

*Cumulative to December 31, 1974.

Geothermal Resources Several hot springs have been examined at Rico, Dunton, and along Geyser Creek southwest of Dunton. However, their potential for geothermal uses is unknown at the present time.

Mining Claims On the Dolores River above Rico and on the West Dolores, there are 26 and 19 patented mining claims, respectively. Complete information on the numerous unpatented claims in these areas is not available; however, the Forest Service has estimated the total at 1,000. The unpatented claims on Public Domain and National Forest lands between McPhee Dam site and the Colorado-Utah border are listed in table A-1 of the Appendix. To a large degree, these claims are those that fall within the sections through which the Dolores River passes. In many cases, incomplete legal descriptions make claim placement difficult. Therefore, the actual number of claims that are found in the corridor below McPhee (approximately 4,100) is estimated to represent about 75 percent of the total number described in this document.

Nearly all claims in the Dolores County segment below Bradfield Ranch were staked for uranium and vanadium between 1954 and 1958. There was renewed interest in 1968, and sporadic staking has continued to the present. Recently, Phillips Oil staked over 800 claims just outside the corridor in Dolores County.

Approximately 820 mining claims are located in the corridor in Montrose County. More than half are placer claims located below the confluence of the San Miguel and Dolores Rivers in T. 48 N., R. 18 W. These claims were originally staked in the 1880s, and the area was mined intermittently to the present. Much of the placer ground is now in private ownership. A major portion of the Montrose County claims have vague legal descriptions, and 200 or more of them may not be in the river corridor.

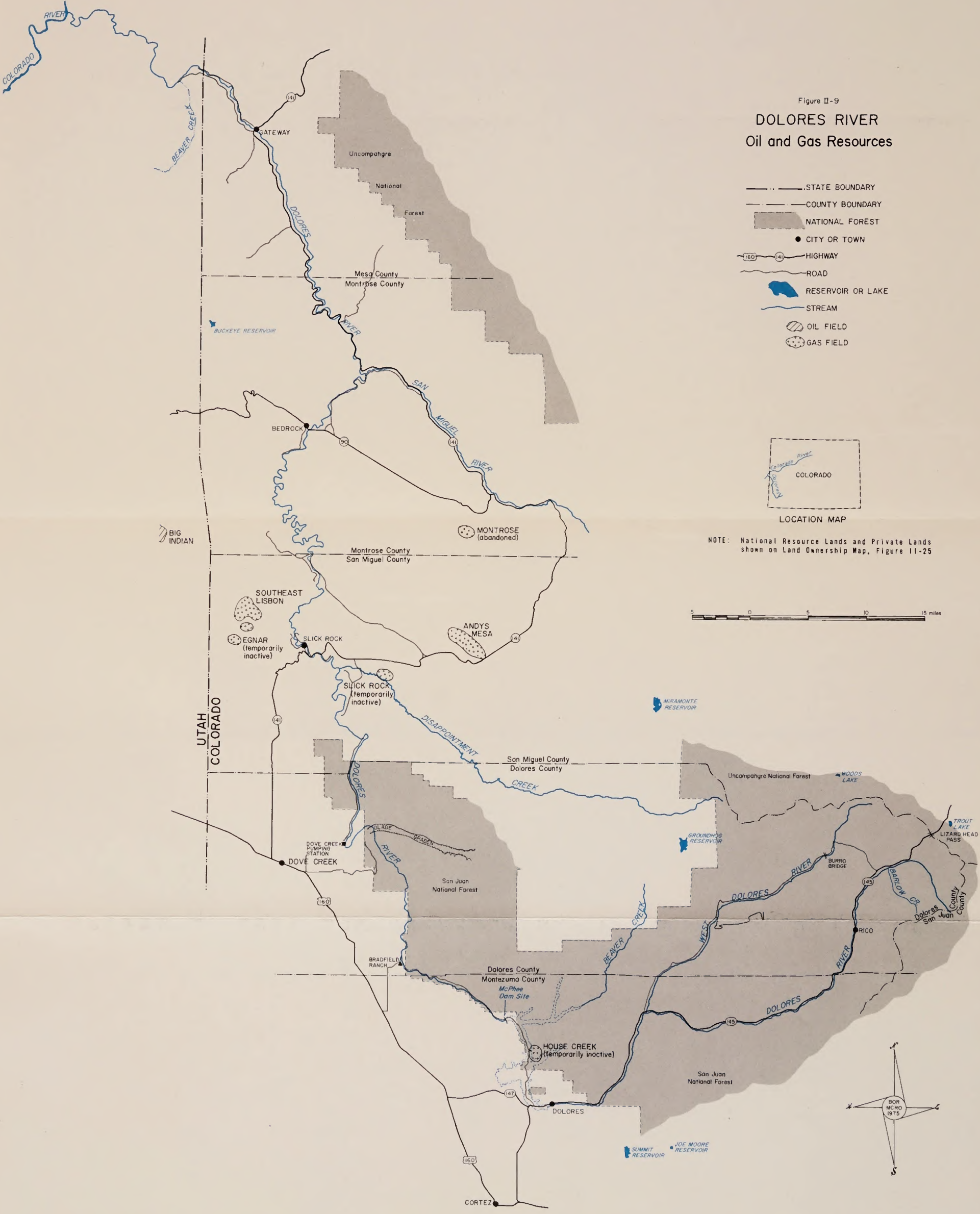
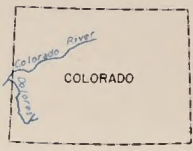
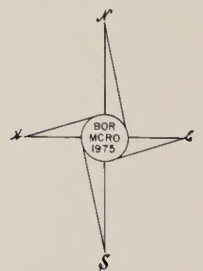
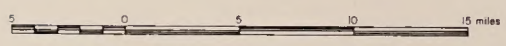


Figure II-9
DOLORES RIVER
Oil and Gas Resources

- STATE BOUNDARY
- COUNTY BOUNDARY
- NATIONAL FOREST
- CITY OR TOWN
- 160 41 HIGHWAY
- ROAD
- RESERVOIR OR LAKE
- STREAM
- OIL FIELD
- GAS FIELD



NOTE: National Resource Lands and Private Lands shown on Land Ownership Map, Figure 11-25



A majority of the nearly 2,000 claims identified in San Miguel County are for uranium and vanadium lodes. A number of claims were filed in the Slick Rock area during the early 1900s but most of the claims were filed after the "boom" of 1950. Recently, the greatest activity occurred in September 1974 around Anaconda's locations in T. 42 N., R. 18 W. These claims are in the Chinle Formation, whereas most previous claims have been staked in the Morrison Formation.

In Mesa County, mining claims are situated on and adjacent to the river along most of the length of the corridor between the county line and the Colorado-Utah State line, below Gateway. As many as 440 claims may be involved, including nearly 240 claims with incomplete or no legal description.

Placer mines have operated in the past at several locations on the river, including one at Rico in Dolores County and another in Montezuma County just below the Montezuma-Dolores County line. Both operated as late as 1973 and may still be in operation. Although both operations are in an area considered ineligible for inclusion in the National Wild and Scenic River system, they show that placer deposits occur in the river gravels and indicate that other valuable placers may occur in reaches of the river proposed for inclusion. Still other placer operations were active during the 1930s, with at least one as late as 1960.

Soils

The general discussion on soils that follows is based on a very broad survey of the basin. While the discussion of soils within the corridor is based on the same broad type survey information, the interpretation is keyed to specific areas.

General Throughout the Dolores River Basin there are portions of eight major soil units. These range from dark-colored soils and rock outcrops of the alpine region on the headwaters area to reddish-brown soils of the dry valleys which cross the main channel. Most commonly occurring soils of the river and its flood plain are those characterized by rock outcrops and very shallow soils of the canyons. The accompanying figure II-10 and table II-3 further define the location, composition, and characteristics of these soil units.

One of the least extensive soil units in the basin consists of light-colored soils of the deserts (soil unit #1). These soils are confined to Disappointment Valley, only a small portion of which occurs in the vicinity of the Dolores River near its confluence with Disappointment Creek. Water intake of this soil unit is slow, runoff is rapid, erosion is moderate to severe, and sediment yield is in the range of 1.0-3.0 acre-feet per square mile per year.

Three major groups of soils are contained in this unit. Shallow soils derived from Mancos Shale comprise about 50 percent of the unit. They have light-colored, calcareous surface layers, are low in organic matter, have fine and moderately fine textures, and occur on rolling hills. Another 35 percent of the unit consists of deep and moderately deep fine-textured alluvial soils along Disappointment Creek. They usually have light-colored surface layers, are moderately saline-alkali, and have a slow permeability rate. The remaining 15 percent of the unit consists of reddish-brown, moderately deep soils on small terraces. Surface layers are light-colored with moderate permeability.

Reddish-brown soils (soil unit #2) appear where Paradox and Gypsum Valleys intersect the Dolores River. This unit is not extensive but contains soils suitable for irrigation. It is composed of about 75 percent reddish-brown, calcareous soils with light-colored surface layers that are low in organic matter. Surface layers and subsoils are moderately coarse to moderately fine-textured, with depths to underlying parent material ranging from 30 to more than 60 inches. Water-holding capacities are moderate to high and runoff is medium.

About 20 percent of this soil unit has grayish-brown, moderately fine, and fine textured soils derived from Mancos Shale. Organic matter content is low and salinity is moderate, with calcareous soils throughout the profile. Runoff is rapid and the water erosion hazard is high. The remaining 5 percent consists of shallow soils with gypsum shale or sandstone at depths of 20 inches or less.

Rock outcrop and very shallow soils (soil unit #3) are found along the river canyon and its tributaries. Runoff is very rapid because of the steep slopes and shallow soils with low water-holding capacities. Sediment yield is from less than 0.2 to 1.0 acre-feet per square mile annually. The landscape is characterized by deep sandstone canyons with steep slopes and long very narrow valleys, and flood plains. Small, gently sloping mesas are above the canyons whereas steeply sloping alluvial fans border some of the canyon walls. Numerous intermittent drainageways dissect the steep slopes.

About 45 percent of the unit is rock outcrop, mainly sandstone, with some small outcrops of shale. Another 49 percent of the unit has shallow soils that are less than 20 inches thick and overlay sandstone and some shale. These soils are stony and usually have loamy, light-colored surface layers. The remaining 6 percent of the unit is made up of soils with dark-colored surface layers and mixed alluvial soils.

Moderately dark-colored deep soils (soil unit #4) occupy only a very small area on mesas and in valleys between the Town of Dolores and the vicinity of House Creek. The landscape is characterized by large, nearly level to gently sloping, upland valleys and gently sloping mesas. Individual mesas are separated by numerous drainageways that are entrenched to depths of 100 to 500 feet and have steep sandstone walls.

Figure II-10
DOLORES RIVER BASIN, COLORADO
 General Soils

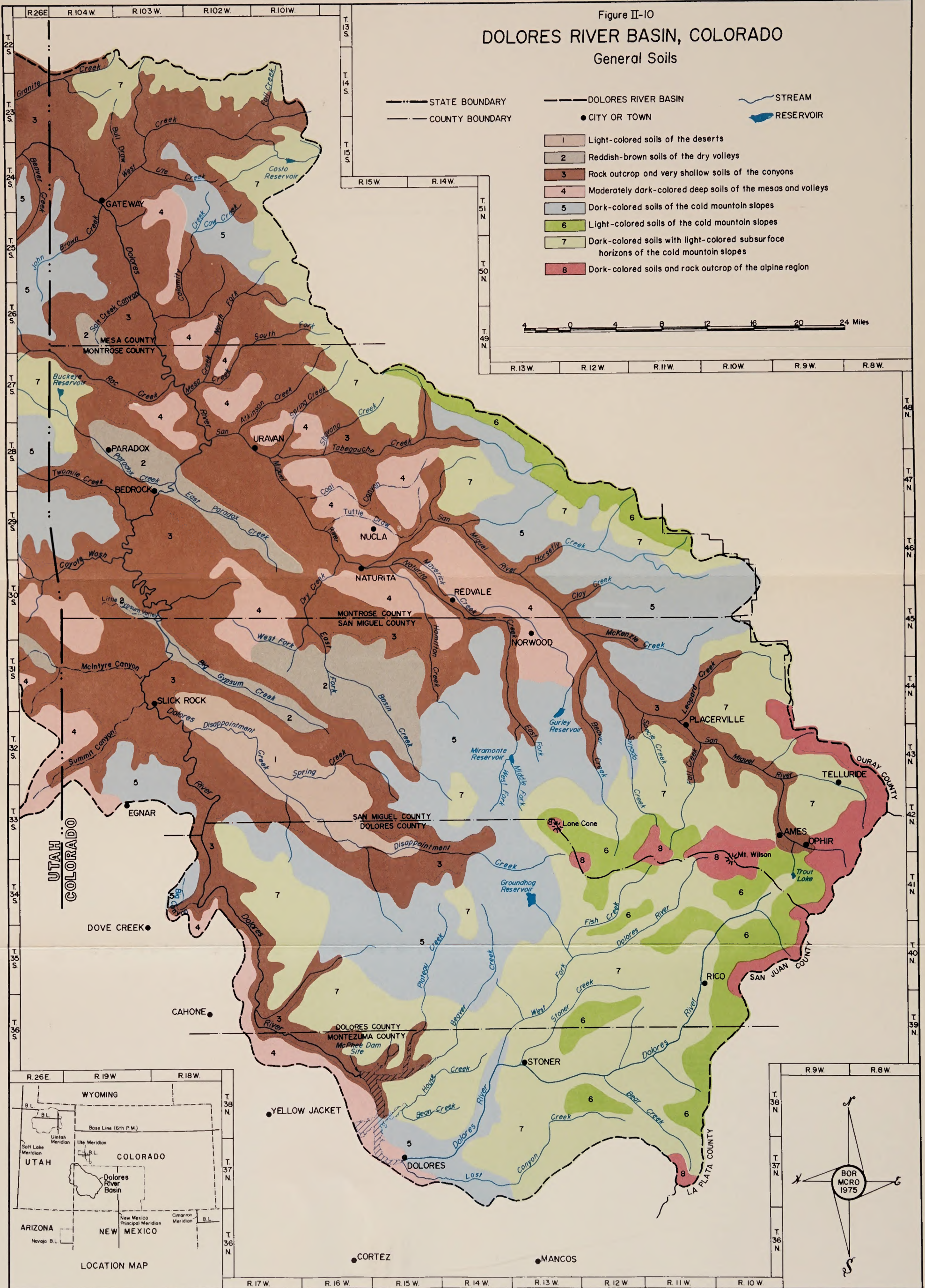


TABLE II-3 COMPOSITION AND CHARACTERISTICS OF SOIL, Dolores River Basin, Colorado

Map symbol	Percent	Composition Great Group, Subgroup or Land Type	Percent of basin	Dominant elevation (feet)	Mean annual precipitation (inches)	Mean annual temperature (F°)	Frost free period (days)	Dominant parent materials	Dominant slope (percent)	Estimated sediment yield (Ac. ft./sq. mi./yr.)	Erosion problems	Major land uses	Irrigated cropland (acres)	Dry cropland (acres)
1	38 25 25 5 5 2	Torriorthents (shallow) Camborthids Torrifluvents Badlands Haplargids Natrargids	2.0	5,000-6,000	7-12	45-50	115-145	Shale and alluvium	1-25	1.0-3.0	Moderate to severe sheet and gully erosion	Winter range	700	None
2	35 30 20 10 5	Torriorthents Torrifluvents Camborthids Haplargids Natrargids	4.5	5,000-7,000	7-12	45-50	115-145	Sandstone and shale alluvium	2-15	0.5-3.0	Moderate to severe sheet and gully erosion	Winter range, irrigated cropland	4,700	100
3	45 25 20 4 4 2	Rock and shale outcrops Haplustolls (shallow over sandstone and shale) Torriorthents (shallow over sandstone and shale) Lithic Argiustolls Boralfs and Cryoborolls Torrifluvents	32.5	4,200-9,000	7-18	42-52	100-160	Sandstone with some shale and alluvium	25-100	<0.2-1.0	Moderate sheet erosion, many gullies, damage severe locally	Range, wildlife	3,800	None
4	45 40 10 5	Argiustolls and Haplustolls Haplargids and Camborthids Torriorthents (shallow over sandstone and shale) Torrifluvents and Natrargids	10.0	5,700-7,200	12-15	45-49	110-125	Eolian, residual and alluvium from sandstone and shale	3-20	0.2-1.0	Moderate sheet and gully erosion	Range, dryland and irrigated cropland, wildlife	25,300	12,300
5	50 15 15 10 5 5	Argiborolls, Haploborolls Boralfic Cryoborolls Haplustolls (shallow over sandstone and shale) Argiustolls, Haplustolls Haplustolls, Haplaquolls Rock and shale outcrop	22.0	6,800-9,500	15-20	40-45	75-115	Sandstone shale and outwash	3-35	0.2-1.0	Moderate sheet erosion, gullies locally	Range, wildlife, irrigated cropland	6,900	4,000
6	58 15 15 5 5 2	Cryoboralfs Boralfic Cryoborolls Lithic Cryoborolls Argiborolls Rock outcrop Cryaquolls	4.5	8,500-11,500	20-40	25-42	Usually frost every month	Mixed sandstone shale volcanics rocks	10-60	<0.2	Geological, slight gully erosion	Timber, range, wildlife, watershed	None	None
7	54 15 15 10 3 3	Boralfic Cryoborolls and Cryoborolls Cryoboralfs Lithic Cryoborolls Argiborolls Haplaquolls and Cryaquolls Rock outcrop	22.5	7,400-11,000	20-40	25-40	Usually frost every month	Mixed shale sandstone outwash, and alluvium	15-65	<0.2	Geological, slight sheet and gully erosion	Range, timber, recreation, watershed	6,800	None
8	50 25 20 5	Rock outcrop and talus Lithic Cryorthents Cryorthods and Cryumbrepts Cryaquods and Cryaquepts	2.0	10,500-14,250	25-45	25-30	Usually frost every month	Granite, sedimentary talus	10-80	<0.2	Geological	Wildlife, range, watershed	None	None

Source: Developed by USDA Field Party

Most of the soils in this unit are formed in reddish-brown eolian materials, while others are residual or alluvial from sandstone and shale. About 45 percent of the unit is well-drained, deep and moderately deep, with dark-colored surface layers. These soils are noncalcareous to depths of 10 to 24 inches but have slight to moderate zones of lime accumulation. They are moderately coarse to moderately fine textured with subsoils that are usually finer textured than the surface layers. Another 40 percent of the unit is similar to the above except the surface layers are moderately dark-colored and have a lower organic matter content. Depth to calcareous material is 6 to 12 inches and subsoil textures range from moderately coarse to fine. Lime-cemented cobble and gravel are common below the subsoil. About 10 percent of the unit is less than 20 inches deep over sandstone and shale. The remaining 5 percent consists of alluvial soils in the drainageways.

Dark-colored soils (soil unit #5) occur only in a limited area on the southeast side of the river in the vicinity of House Creek and from the Town of Dolores upstream to near the Montezuma-Dolores County line. The landscape associated with this soil unit is gently sloping to steep lower mountain slopes with intervening canyons, mesas, and outwash fans.

About 60 percent of this unit has dark-colored surface layers to a depth of 8 to 24 inches that contain much organic matter. Surface layers and subsoils are usually medium to fine textured, underlain by parent material, mainly shale and sandstone, at a depth of 20 to 60 inches. The soils are noncalcareous to depths of 10 to 30 inches. About 20 percent of the unit is less than 20 inches deep over shale and sandstone, with the surface layer ranging in thickness from 4 to 10 inches and varying in texture. Another 15 percent consists of neutral to slightly acid soils that have dark-colored surface layers with a gray subsurface ranging from 2 to 12 inches in thickness. The remaining 5 percent of the unit consists of mixed alluvial soils, some of which are poorly drained.

Light-colored soils (soil unit #6) are situated in two small areas along the river above the Town of Rico. The landscape within this soil unit is of strongly sloping to steep mountainous terrain dissected by numerous perennial mountain streams.

Most of this unit has acid forest soils with a surface litter of needles and twigs. About 58 percent of the soils have a dark-colored surface layer less than 4 inches thick. Below this is a light-colored, gray, subsurface layer ranging from 6 to 30 inches thick that is moderately coarse to coarse textured, with underlying subsoil of a blocky structure. Textures range from moderately fine to coarse and some are gravelly or stony. Depth to underlying parent material is usually more than 30 inches. Another 20 percent of the unit is similar to the previous description except that the surface layers are dark-colored to depths of 8 to 20 inches, with a gray subsurface layer that is 4 to 20 inches thick. About 20 percent of the unit has soils with bedrock at depths of 20 inches or less. The surface layer is dark-colored, about 7 inches thick, and usually lacks a subsurface layer. The remaining 2 percent is composed of poorly drained alluvial soils along the drainageways.

Dark-colored soils with light-colored subsurface horizons (soil unit #7) are confined to the upper reaches of the basin above the confluence of the West Dolores and Dolores Rivers. All of this unit is in the San Juan National Forest at elevations over 7,500 feet. Precipitation in this area is plentiful and the water yield is high. However, the short growing season limits crop production to hay and pasture. The landscape consists of rolling to steep mountainous terrain with intervening canyons, valleys, and outwash fans. Many springs and perennial streams are found in association with this unit.

About 64 percent of the soils in this unit have dark-colored surface layers which are high in organic matter and from 7 to 20 inches thick. Underlying this is a light-colored, gray, subsurface layer that is 4 to 16 inches thick. Textures are moderately fine to moderately coarse. Below the gray subsurface layer is a blocky subsoil that is more clayey than the overlying layers. These horizons are neutral to slightly acid, with gravel and stones often present. The underlying parent material is sometimes calcareous and is usually at depths of 30 inches or more. About 18 percent of this unit has soils that are less than 20 inches deep over parent materials. Another 15 percent of the soils have dark-colored surface layers less than 6 inches thick overlying a gray subsurface layer and blocky subsoils that are slightly acid to acid. Poorly drained alluvial soils comprise the remaining 3 percent of the unit.

Dark-colored soils and rock outcroppings (soil unit #8) occur at the headwaters of the West Fork of the Dolores. Sediment yield is less than 0.2 acre-feet per square mile per year. The landscape is characterized by rugged mountain peaks with intervening ridges and valleys, all above timberline. Slopes are steep in a windswept area of alpine meadows and rock.

This unit has three soil components, all of which have dark-colored acidic surface layers. About 50 percent of the unit consists of rock outcrop and talus slopes. About 25 percent contains shallow, well-drained soils that are high in organic matter. Surface layers and subsoils are rocky or stony with moderately sandy textures. Another 20 percent consists of moderately deep, loamy textured, well-drained turf soils containing stone and gravel. The remaining 5 percent of the unit consists of poorly drained peat and bog soils in low depressions and drainages.

River Corridor The following description of the soil resources and their behavior under management is based on limited on-site information. Most of the land is publicly owned and has not been surveyed by the Soil Conservation Service. Based on a Geologic Map of Colorado, a description of the "Geology and Mineral Resources of the Dolores River Basin, Colorado", "General Soil Maps" prepared by the SCS, and the study report on "Water and Related Land Resources--Dolores River Basin--Colorado and Utah", a very tentative picture of the soil resources and their expected behavior under use is presented in table II-4.

TABLE II-4. SOILS AND LANDFORMS, DOLORES RIVER CORRIDOR

SECTION OF RIVER	LANDFORM					SOILS			
	Landtype	Parent Material	Slope	Limitation		Texture		Limitation	
				Stability	Other	Surface	Subsoil	Compaction	Erosion
West Fork of Dolores above Rico	Floodplain	Alluvium	< 6%	High	Periodic Flooding	Medium	Medium to Moderately Coarse	Moderate	Moderate to Low
	Alluvial Fan	Mixed Alluvium	10-25%	Moderate	Periodic Overflow	Medium to Moderately Coarse	Medium to Moderately Coarse	Moderate to Low	Moderate
	Colluvial (Toe) Slope	Colluvium	10-35%	Moderate to Low		Medium	Medium to Moderately Fine	Moderate	Moderate
	Sideslope	Mixed p.m. from Shale, Siltstone & Sandstone	30-50%	Moderate to Low	Medium	Medium to Moderately Fine	Mod. to Mod.High	Moderately High	
Dolores River: McPhee Dam site (proposed) to Disappointment Creek	Floodplain	Alluvium	< 6%	High	Periodic Flooding	Medium to Moderately Coarse	Medium to Moderately Coarse	Moderate to Low	Moderate to Low
	Alluvial Fan and Colluvial Slope	Mixed	10-35%	Moderate to Low	Periodic Overflow	Medium to Moderately Coarse	Medium to Moderately Coarse	Moderate to Low	Moderate to Low
	Sideslope	Mixed p.m. from Shale, Siltstone & Sandstone	40-65% (Rock outcrops)	Moderate to Low	Rock Slides	Extremely Variable because of Mixed Parent Materials and Steep Slope			
Disappointment Creek to County Line	Floodplain	Alluvium	< 6%	High	Periodic Flooding	Medium	Medium to Moderately Coarse	Moderate	Moderate to Low
	Alluvial Fan	Mixed Alluvium	10-25%	Moderate	Periodic Overflow	Med. to Moderately Coarse	Medium to Moderately Coarse	Moderate	Moderate
	SIDESLOPES: Benches	Siltstone, Shale, and Colluvium	5-25%	Moderate to low		Medium	Medium to Moderately Fine	Moderate	Moderate to Moderately High
	Steep Breaks	Sandstone, Siltstone, and Shale	30-60%	Moderate to low	Medium	Medium	Moderate	Moderately High to High	
County Line to Bedrock	Alluvial Deposits	Mixed Alluvium	0-25%	Moderate to High	Periodic Overflow & Flooding	Extremely Variable	Extremely Variable	Low	Moderate
	Sideslopes (Canyon Walls)	Mixed Sedimentary Bedrock	40-100% (Rock Outcrops)	Moderate to Low	Rock Slides	Extremely Variable	Extremely Variable	Moderate	High

II-44

West Dolores River The landscape adjacent to the West Dolores, which is much the same as the main stem above Rico, includes a 200-foot wide (average width) nearly level flood plain and sloping colluvial and alluvial landforms along the base of steep valley sideslopes (see figure II-11 cross section A which represents 80 percent of the West Dolores River). The sideslopes have an average grade of 40 percent with intermingled sandstone rock outcrops and sloping benches. Steeper slopes occur along the valley sideslope adjacent to the intermittent streams which dissect the sideslopes.

The underlying bedrock formations of this drainage are primarily interbedded sandstones, siltstones, and shales with some limestone and dolomite. Soils that are derived from these parent rocks have medium textured surface horizons and moderately fine textured subsoils on the southerly-facing landscapes. On the northerly-facing landscapes the soils are medium textured throughout.

Soils in this area are moderately stable when disturbed by deep cuts such as occur in road building, except on the upper slopes where areas of low stability may be encountered. There is a moderate limitation when these soils are used for hiking trails and campsites due to compaction and sheet erosion. Compaction and subsequent erosion following destruction of the vegetative cover is likely in high use areas.

Main Stem, McPhee Dam site to Disappointment Creek Immediately adjacent to the Dolores River in this section is a narrow (100 to 200 feet) strip of strongly sloping toeslope and nearly level flood plain. The canyon sideslopes are extremely steep (55 percent grade average) with many bedrock outcrops. Outside the canyon the landscape is a sloping plateau (see figure II-11 cross section B which represents 40 percent of the Dolores River from Bradfield Ranch to Slick Rock).

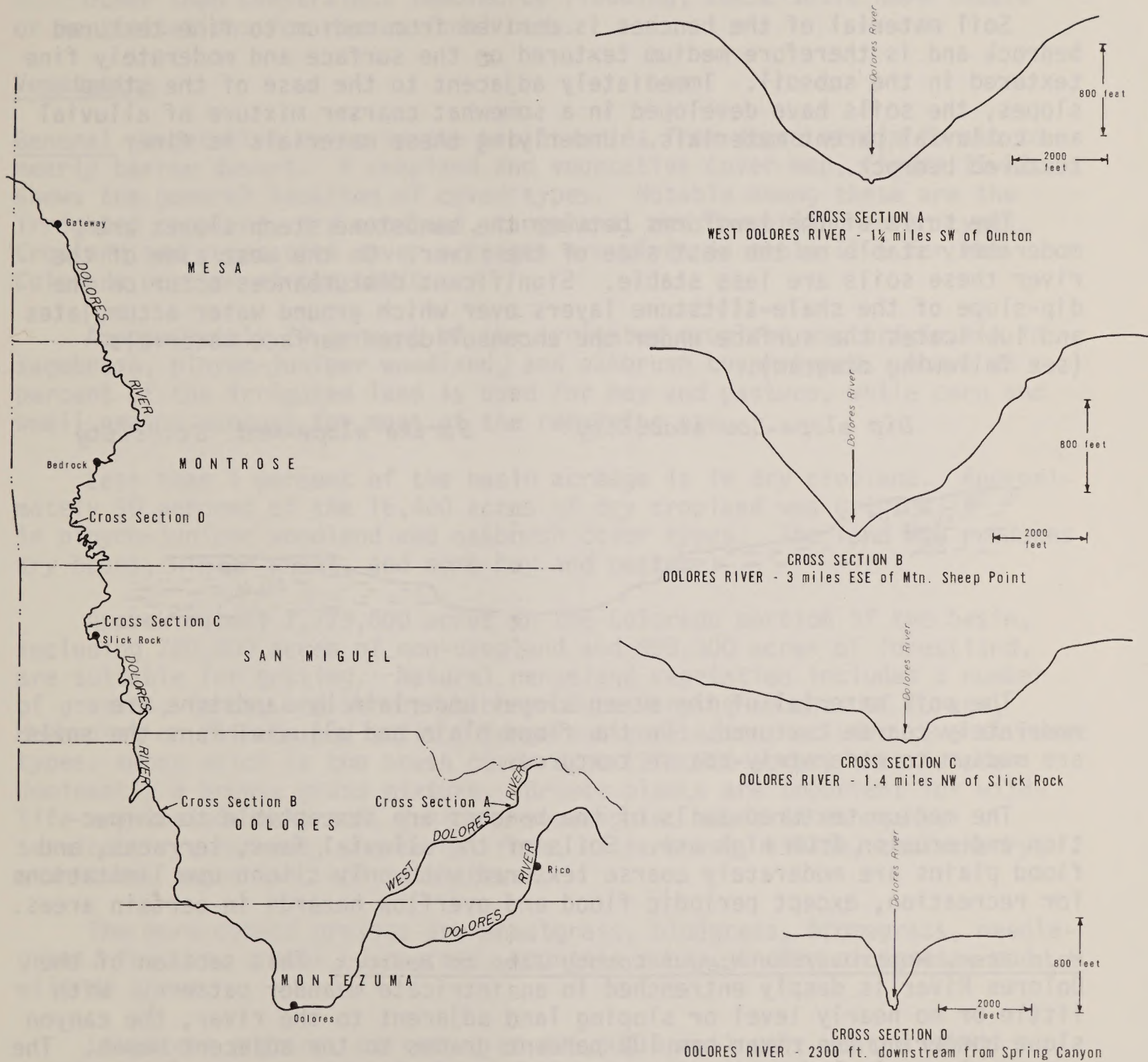
The bedrock formations exposed in this section of the river are interbedded sandstones, siltstone, and shale with some limestone and dolomite. Soils on the toeslope and between outcrops are primarily medium to moderately coarse textured throughout. There are soils with a moderately fine textured subsoil on the toeslopes. The soils of the alluvial fans and flood plains are moderately coarse throughout.

The soils of the toeslopes and alluvial fans are moderately stable when disturbed by deep cuts. Except in those areas directly influenced by shale bedrock, these soils have few limitations for recreational activities (i.e., trails, campsites, etc.). The alluvial fans are subject to periodic disturbance by stream overflow.

Main Stem, Disappointment Creek to Montrose/San Miguel County line The landscape adjacent to the Dolores River in this section is a repeating pattern of nearly level to gently sloping landforms separated by very steep slopes (see figure II-11 cross section C which represents 100 percent of the Dolores River from Slick Rock to Little Gypsum Valley Bridge).

Figure 11-11

DOLORES RIVER VALLEY CROSS SECTIONS



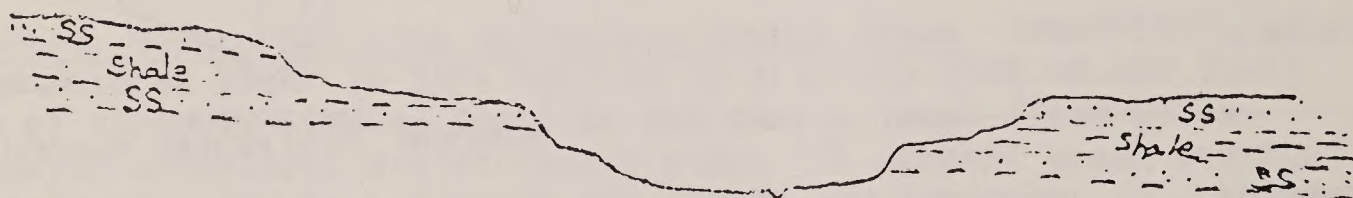
The bedrock formations in this area are nearly flat (northerly dip) interbedded, massive sandstone layers separated by thick layers of shale, siltstone, and mudstone. The nearly level to sloping landforms are formed in the shales, siltstones, and mudstone and the steeper slopes are formed by sandstone bedrock layers.

Soil material of the benches is derived from medium to fine textured bedrock and is therefore medium textured on the surface and moderately fine textured in the subsoil. Immediately adjacent to the base of the steep slopes, the soils have developed in a somewhat coarser mixture of alluvial and colluvial parent materials. Underlying these materials is finer textured bedrock.

The soils of the landforms between the sandstone steep slopes are moderately stable on the east side of the river. On the west side of the river these soils are less stable. Significant disturbances occur on the dip-slope of the shale-siltstone layers over which ground water accumulates and lubricates the surface under the unconsolidated surface materials (see following diagram).

Dip slope-Low stability

Strike slope-Mod. Stability



The soil material of the steep slopes underlain by sandstone are moderately coarse textured. On the flood plain and alluvial fans the soils are medium to moderately-coarse textured.

The medium textured soils of the benches are susceptible to compaction and erosion from high use. Soils of the alluvial fans, terraces, and flood plains are moderately coarse textured with only slight use limitations for recreation, except periodic flood and overflow hazards in certain areas.

Main Stem, Montrose/San Miguel County line to Bedrock This section of the Dolores River is deeply entrenched in an intricate meander pattern. With little or no nearly level or sloping land adjacent to the river, the canyon slope bordering the river has 100 percent grades to the adjacent mesas. The canyon slopes include extensive areas of vertical rock outcrops (see figure II-11 cross section D which represents 100 percent of the Dolores River from Little Gypsum Valley Bridge to Bedrock). Near the Montrose/San Miguel County line, the Dolores River crosses the Gypsum Valley drained by Big and Little Gypsum Creeks.

The soils of the narrow sandbars, alluvial fans, and colluvial deposits are coarse textured with little or no profile development. The section at the confluence of Big and Little Gypsum Creeks is bordered by extensive flood plains with medium textured soils.

Other than constraints imposed by flooding, these soils have little or no limitations for recreational uses.

Vegetation

General Vegetative cover in the basin varies from dense virgin forest to nearly barren desert. A cropland and vegetative cover map, figure II-12, shows the general location of cover types. Notable among these are the irrigated cropland, dry cropland, rangeland, and forestland cover types. Cropland and vegetative cover acreages are given in table II-5 for the Colorado portion of the basin.

Approximately 74 percent of the irrigated cropland was originally in sagebrush, pinyon-juniper woodland, and oakbrush cover types. About 85 percent of the irrigated land is used for hay and pasture, while corn and small grains account for most of the remaining use.

Less than 1 percent of the basin acreage is in dry cropland. Approximately 90 percent of the 16,400 acres of dry cropland was originally in pinyon-juniper woodland and oakbrush cover types. The land now produces dry beans, winter wheat, and some hay and pasture.

Approximately 1,779,600 acres in the Colorado portion of the basin, including 780,300 acres of non-cropland and 999,300 acres of forestland, are suitable for grazing. Natural rangeland vegetation includes a number of grasses, forbs, and shrubs which produce varying amounts of forage, depending on climate and soils. Rangeland vegetation includes several cover types, among which is the brush cover type (278,900 acres) that is predominantly a browse grass mixture. Browse plants are important for wildlife and include oakbrush, juniper, squawapple, mountain mahogany, serviceberry, currant, snowberry, rose, bitterbrush, willow, chokecherry, skunkbush, sagebrush, and rabbitbrush.

The more common grasses are wheatgrass, bluegrass, bromegrass, needlegrass, fescues, grammas, Junegrass, mountain muhly, Indian ricegrass, and wildrye grass.

Livestock grazing, estimated at 405,000 animal unit months (AUM) within the basin, is supported mainly by the grassland cover type (167,700 acres) and similar range site vegetation interspersed with other cover types. The most common grasses associated with this cover type are wheatgrass, bluestem, fescues, squirreltail, needlegrass, Indian ricegrass, bromegrass, with blue grama and galleta becoming abundant at the lower elevations. In the alpine and montane forest zones the more common plants include sedges, rush, trisetum, vetch, kobresia, bluegrass, tufted hairgrass, timothy, bentgrass, bromegrass, willows, bluebells, clovers, fescues, wheatgrass, and oatgrass.

The aspen cover type (167,800 acres) includes grasslands which represent about 14 percent of the total. Much of this cover type has dense to moderately dense stands of aspen with a lush understory of forage plants which contribute to summer grazing by both livestock and wildlife.

Ponderosa pine, spruce, and fir predominate the coniferous timber cover type (707,600 acres) which includes an estimated 12 percent grassland and 3 percent aspen. This type generally consists of subalpine and montane forest areas. Where tree stands are dense, particularly in the spruce and fir areas, there is very little undergrowth. Ponderosa pine forms open stands in which there are a variety of understory plants. These include mountain muhly, Junegrass, needlegrass, brome grass, sedge, rush, fescue, wheatgrass, oatgrass, sagebrush, serviceberry, mountain mahogany, and bitterbrush.

Critical winter range for wildlife is provided by the sagebrush cover type (200,500 acres). Sagebrush generally is found where precipitation is below the required level of 16 to 20 inches for good nonirrigated farming in the basin. This cover type contains numerous scatterings of grassland and dry pasture which contribute to the livestock carrying capacity. Some of the brush and grass vegetation listed in the grass and other brush cover types are found in the understory or as inclusions in this cover type.



Pinyon and juniper cover a large part of the basin.

Figure II-12
DOLORES RIVER BASIN, COLORADO
 Cropland and Vegetative Cover

- STATE BOUNDARY
- COUNTY BOUNDARY
- DOLORES RIVER BASIN
- CITY OR TOWN
- STREAM
- RESERVOIR
- IRRIGATED CROPLAND
- NON-IRRIGATED CROPLAND
- GRASSLAND
- SAGEBRUSH
- PINYON-JUNIPER WOODLAND AND OAKBRUSH
- OTHER BRUSH
- CONIFEROUS TIMBER
- ASPEN

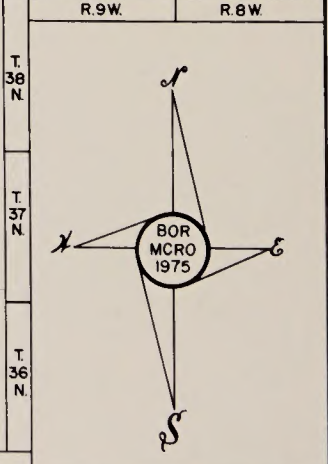
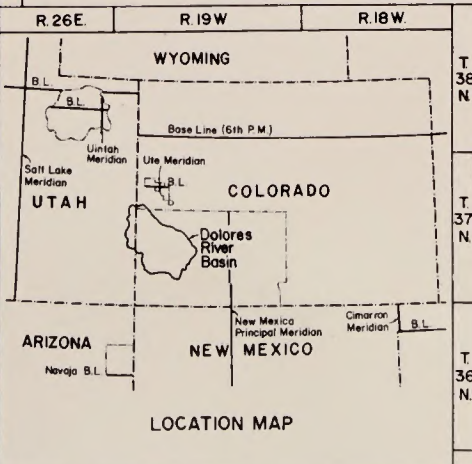
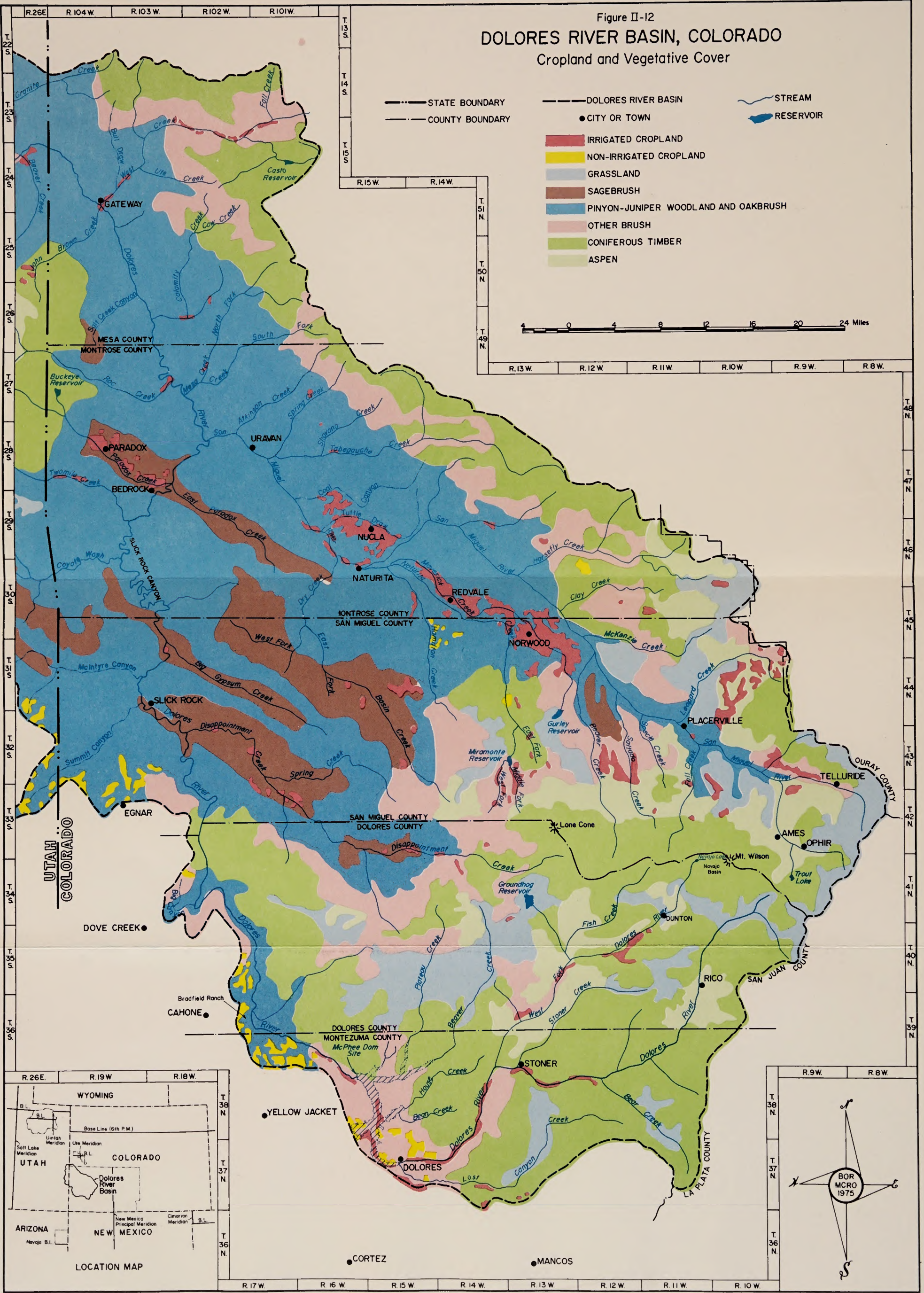
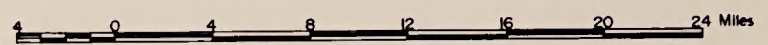


TABLE II-5 CROPLAND AND VEGETATIVE COVER, DOLORES RIVER BASIN (COLORADO)

Counties	Cropland		Pinyon-juniper-woodland, and oakbrush	Vegetative Cover Type 1/					Total
	Irrigated	Non-Irrigated		Other brush	Sage-brush	Grass-land	Other coniferous timber	Aspen	
- Acres -									
Dolores	3,100	2,200	61,500	70,900	7,000	72,700	239,900	57,000	514,300
Mesa	2,100	0	196,900	45,600	1,200	0	90,400	0	336,200
Montezuma	5,000	4,800	7,300	42,600	0	13,900	185,100	2,700	261,400
Montrose	15,000	2,200	430,800	61,400	62,800	10,600	104,700	19,300	706,800
Ouray	0	0	0	0	0	200	600	600	1,400
San Miguel	20,000	2,800	343,300	58,400	129,500	70,300	86,900	88,200	799,400
Total	45,200	12,000	1,039,800	278,900	200,500	167,700	707,600	167,800	2,619,500

1/ Commercial forest land is located within the "Other coniferous timber" and "Aspen" cover types and totals 722,500 acres.

Largest of the cover type delineations is the pinyon-juniper woodland and oakbrush cover type (1,039,800 acres) which is quite varied in its grazing capacity. Some is too steep to graze or has rock outcrops and rocky surfaces with little vegetative understory. Sagebrush and dry pasture inclusions contribute considerably to the total grazing capacity. At elevations below 6,000 feet, this cover type forms an important part of the winter range for wildlife. Grasses include grammas, little bluestem, brome grass, fescues, Junegrass, mountain muhly, galleta, wheatgrass, and Indian rice-grass. Woodlands include pinyon-juniper grazable woodland (477,700 acres), and pinyon-juniper nongrazable woodland (355,500 acres).

Forested or wooded land constitutes approximately 1.6 million acres. Commercial forests ^{1/} occupy 722,500 acres or about 45 percent of the area in this cover type. About 33 percent of the commercial timber is ponderosa pine and occurs at the lower altitudinal range of the commercial timber species. Another 27 percent supports spruce-fir at elevations above 9,000 feet. Between these two altitudinal zones there occur various combinations of mixed forest types, classified either as Douglas-fir-white fir or aspen. Of the total commercial forest area, 88 percent is in the national forests. Commercial forestland cover types include the spruce-fir, ponderosa pine, Douglas-fir-white fir, and aspen, as listed in table II-6.

The spruce-fir type occurs at elevations from 9,000 feet to 11,500 feet and is dominated by Engelmann spruce, which comprises from 75 to 95 percent of mature stands. Corkbark fir is its most commonly associated species at higher elevations, while Douglas-fir and aspen occur at lower altitudinal limits. Almost half the spruce-fir type (97,000 acres) is overmature, considering that the age of sawtimber stands varies from 90 to 300 years, with 170 years being the average. The net sawtimber volume in these stands averages about 17.5 thousand board feet (Mbf) per acre over large national forest areas, with individual stands varying from 13 Mbf to as much as 35 Mbf per acre. Nonstocked land contains mostly old burns where natural regeneration has not taken place.

The ponderosa pine cover type occurs at elevations from 6,500 to 8,500 feet across the basin and occurs in pure stands within its lower and middle altitudinal range. On north-facing slopes, Douglas-fir is a common associate, occasionally replacing the pine altogether. Toward the upper limit of the pine belt other species such as white fir, aspen and Douglas-fir become more prevalent.

^{1/} The Forest Service defines commercial forest land as that which produces or is capable of producing an economically usable harvest of wood, usually at least 20 cubic feet (240 board feet) per acre annually, and is not withdrawn or reserved for cutting.

TABLE II-6 COMMERCIAL FOREST LAND, DOLORES RIVER BASIN (COLORADO)

Forestland Cover Type by Ownership	Commercial Forest Land				
	Saw timber	Pole timber	Seedlings and Saplings	Non- stocked	Total
<u>Douglas-fir-white fir</u>					
	Acres				
National forest	18,600	3,400	--	--	22,000
BLM	1,800	--	--	--	1,800
State and private	<u>3,400</u>	<u>3,000</u>	<u>--</u>	<u>--</u>	<u>6,400</u>
Total	23,800	6,400	--	--	30,200
<u>Ponderosa pine</u>					
National forest	190,800	15,300	800	20,300	227,200
BLM	1,600	--	--	2,200	3,800
State and private	<u>4,600</u>	<u>5,150</u>	<u>--</u>	<u>--</u>	<u>9,750</u>
Total	197,000	20,450	800	22,500	240,750
<u>Spruce-fir</u>					
National forest	154,900	25,000	1,400	5,100	186,400
BLM	--	--	--	--	--
State and private	<u>5,500</u>	<u>2,450</u>	<u>--</u>	<u>--</u>	<u>7,950</u>
Total	160,400	27,450	1,400	5,100	194,350
<u>Aspen</u>					
National forest	180,600	9,000	10,073	1,327	201,000
BLM	--	700	--	--	700
State and private	<u>14,140</u>	<u>41,360</u>	<u>--</u>	<u>--</u>	<u>55,500</u>
Total	194,740	51,060	10,073	1,327	257,200
<u>Total forested land</u>					
National forest	544,900	52,700	12,273	26,727	636,600
BLM	3,400	700	--	2,200	6,300
State and private	<u>27,640</u>	<u>51,960</u>	<u>--</u>	<u>--</u>	<u>79,600</u>
Total	575,940	105,360	12,273	28,927	722,500

Source: Developed by Field Party.

Total commercial area of the ponderosa pine cover type is about 240,000 acres, 82 percent of which is classed as sawtimber. Most of the area has been cut over at least once during the last 70 years. Stands consist generally of a myriad of small, even-aged groups of trees. Stand density varies from a few scattered trees to full stocked stands of 10 to 20 Mbf per acre. Occasionally small areas support volumes of 50 Mbf per acre.

Between 8,500 to 9,500 feet elevation, ponderosa pine gives way to the Douglas-fir-white fir cover type which occupies about 30,000 acres, practically all of which is sawtimber. Numerous other species occur in this type, including ponderosa pine at lower elevation and Engelmann spruce and corkbark fir at higher altitudes. Aspen occurs in the Douglas-fir-white fir stands. Occasionally Douglas-fir occurs in pure stands, especially in steep northerly exposures, but there is usually a mixture of several species. The sites occupied by this type are potentially the most productive as evidenced by the large size of the Douglas-fir, spruce and aspen found here. Soils are relatively deep and fertile, and the terrain is generally characterized by numerous benches alternating with short, steep slopes in a stair-step fashion.



Douglas-fir and ponderosa pine border the Dolores River below Bradfield Ranch.

The aspen cover type occurs at elevations from 8,500 to 10,000 feet, occupying essentially the same altitudinal zone as the Douglas-fir-white fir type and infringing upon the lower limits of the spruce zone. Total area of commercial timber within this type is 257,200 acres, 75 percent of which is sawtimber and 25 percent poletimber--seedling-sapling stands and nonstocked areas.

The aspen type became established as a result of repeated burns which eventually eliminated the conifers. Aspen attains its best development at elevations above 9,000 feet and often occurs in mixtures with spruce and firs above 9,000 feet. Aspen stands which are even-aged in character are rather extensive throughout the basin and commonly occupy mesa lands immediately below the spruce zone.

Overmature sawtimber stands of aspen often carry a rather well-stocked understory of pole-size timber. This is an unusual characteristic of aspen peculiar to the basin. The average age of sawtimber stands is approximately 120 years, while the pole stands vary from 40 to 80 years.

About half the aspen area is on sites capable of growing small sawtimber. Growth on these sites will average better than 100 board-feet per acre per year, yielding better than 10 Mbf per acre at maturity. The remaining half of the area is on sites from which only a pole or pulpwood yield could be expected. The current average annual net growth is approximately 6 cubic-feet per acre.

Among other vegetative cover types is blue spruce which does not form a pure stand in the forest but mixes with spruce-fir, aspen, and ponderosa pine stands between 7,500 and 9,000 feet. It prefers a moist site and is most generally found along stream bottoms.

The widespread pinyon-juniper vegetative cover type is found principally on west and southwest slopes between 6,000 and 8,000 feet elevation. Chief value of this type is for posts, fuel, Christmas trees, and watershed protection.

The average annual amount of timber cut for the period 1964-1968 was 9.28 million cubic feet from the national forests. This amounted to 88 percent of the total in the basin. The remaining 12 percent (1.26 million cubic feet) was cut from BLM, State, and private lands. Although timber is harvested in the basin, timber cutting in the river corridor is prohibited by the Forest Service.

At present, knowledge of the occurrence in the study area of plant species which are Candidates for the Department of the Interior Threatened or Endangered Lists or Candidates for the Colorado State Rare and Endangered List is somewhat limited. However, information on a number of plant species which may be Candidates and which may be found in the basin and study area is presented in Appendix C.

River Corridor Two features combine to produce distinctive local plant communities along the Dolores River. First, on the stream terraces, water from the river and related aquifers permits a greater (and slightly different) variety of growth than that found where rainfall and groundwater are the only sources. Secondly, the abundance of north and south facing slopes creates situations where there are visible vegetative differences from one side of the river to the other. Typical vegetative cross sections are shown in figure II-13. Acreages in each cover type within the study corridor are listed in table II-7.

Figure 11-13

TYPICAL VEGETATIVE CROSS SECTIONS

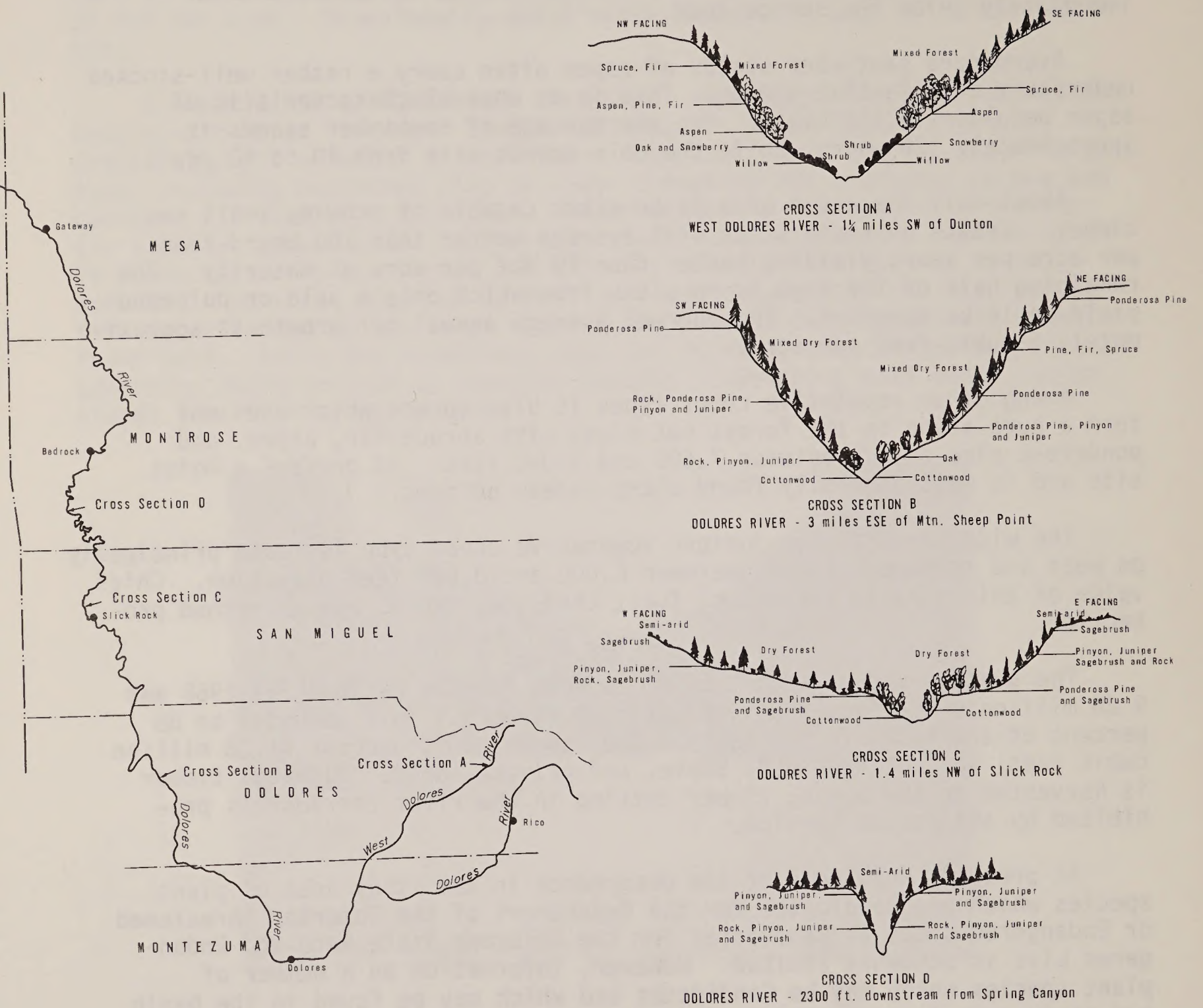


TABLE II-7 COVER TYPES, DOLORES RIVER CORRIDOR

Cover type	Study Segments			Total
	West Dolores	Dolores above Rico	McPhee to Utah Line <u>1/</u>	
	- Acres -			
Irrigated Cropland, pasture, hayland	1,000	-	4,700	5,700
Nonirrigated Cropland	-	-	100	100
Rangeland or Nonirrigated pasture	4,500	3,200	13,100	20,800
Forest land <u>2/</u>	5,600	3,200	19,800	28,600
Total	11,100	6,400	37,700	55,200

1/ Excludes Bedrock to San Miguel River portion which was not included as a study segment.

2/ Commercial forest land is not specified because the study corridor is within a Forest Service water influence zone.

Vegetation along the main stem from its headwaters to Rico is typically alpine and subalpine. In the headwaters area, Engelmann spruce and subalpine fir occur along the river to timber line. Scrub willow is also common, especially along the river and in wetter areas. Below the headwaters, growth is about half forest and half open parks; aspen becomes more common. Above Rico, the Dolores flows through a narrow streambed surrounded mostly by meadow with occasional clumps of conifers.

The 35-mile West Dolores exhibits the greatest vegetative diversity of the four study segments as shown in figure II-13, cross section A. Vegetation found in this cross section is representative of 80 percent or 29 miles of the river. Its headwaters high in Navajo Basin appear at 13,000 feet where there is little growth except lichen. As the river descends toward Navajo Lake, diminutive grasses, sedges, and flora become more common in the sandy soils between boulders. From these elevations down to Dunton, growth along the West Dolores is generally similar to that of the main stem above Rico, but below Dunton (elevation about 8,900 feet) typical montane species (spruce, pine, aspen) begin to dominate. Douglas-fir, ponderosa pine, white fir, and cottonwoods all appear at the mouth of the West Dolores (elevation 7,380 feet).

Foothills type vegetation prevails near the McPhee Dam site (elevation 6,700 feet). The Dolores Canyon below Bradfield Ranch as represented by cross section B in figure II-13 (typical of 60 percent, or 35 miles of the river) is one of the least disturbed areas studied. Here vegetation comes close to reflecting that of primitive conditions. In a few areas, livestock use has modified the natural ecosystems. In the upper portion of the canyon, imposing stands of ponderosa pine, many of them over 120 feet tall, dominate the stream terrace, with an understory of oakbrush, shrubs, and grasses. Lower in Dolores Canyon, the ponderosa thin out, giving way to cottonwoods and an occasional box elder. Back from the stream terrace, pinyon-juniper woodland is the most common vegetative type.

From Disappointment Creek to Bedrock (elevation 4,980 feet), stream-side tangles of tamarisk appear, growing progressively more dense as elevations drop. Cross section C in figure II-13 represents about 90 percent or 18 miles of the river segment from Disappointment Creek to Little Gypsum Valley. Cottonwoods remain the dominant tree in this reach, especially notable in large groves in Gypsum Valley. Between Little Gypsum Valley and Bedrock, about 90 percent or 30 miles are typified by vegetation shown in cross section D, figure II-13. In Slick Rock Canyon, pinyon and juniper, the only trees of any significance, grow wherever there is enough soil for seeds to take root, sometimes in improbable niches and on ledges far up the faces of cliffs. Understory is a varying combination of grasses, sage, some browse shrubs, cactus, yucca, etc.

From the confluence of the San Miguel to the State line, there is an increase in irrigated cropland above Gateway, and in salt desert shrub cover below this point. Large cottonwood groves dominate the shoreline near Gateway.

Collectively, the river segments within the study corridor are currently estimated to support about 20,000 animal unit months (AUM) of grazing. Since the forest lands in the study area are within a Forest Service water management influence zone, timber harvesting is restricted along the river corridor to only special situations involving public safety, insect infestations, or fire hazard.

Water Resources

Surface Water Natural flow of the Dolores River is erratic but has an overall pattern of relatively high spring discharges during snowmelt, moderate summer discharges, and low fall and winter discharges. Erratic daily flows result from weather variations which accelerate or retard snowmelt. Localized summer thunderstorms occur throughout the basin and occasionally cause flash floods that have high peak discharges but produce small total volumes of water.

The location of stream gaging stations and major water quality stations within the basin is given in figure II-14. At the Dolores gaging station which is located above any significant water diversions, discharge ranged from an instantaneous high of about 10,000 cubic feet per second (cfs) on October 11, 1911, to a minimum of 8.0 cfs on August 16, 1896, as shown in table II-8.

Monthly runoff patterns at the gaging stations below Rico, at Dolores, and near Cisco are shown in figure II-15. At Dolores about 33 percent of the runoff occurred in May, the month of largest runoff, and about 72 percent occurred during the 3-month period April through June. During May the mean discharges were 470 cfs below Rico, 1,470 cfs at Dolores, and 2,860 cfs near Cisco. The mean discharges at these same locations during January were only 20, 50, and 170 cfs, respectively.

A flow duration curve for monthly discharge at the Dolores gaging station appears in figure II-16 which shows the percent of time that any particular discharge was equaled or exceeded during the water years indicated. The median discharge, or that which was equaled or exceeded 50 percent of the days, was 117 cfs, which compares to the average discharge of 430 cfs. The average discharge was equaled or exceeded only 24 percent of the time. Half the average runoff in the past occurred at rates equal to or exceeding 1,450 cfs 9 percent of the time. Other discharges that are significant to boaters and rafters are 1,000 cfs, which was equaled or exceeded about 14 percent of the time; 1,500 cfs, about 9 percent of the time; and 2,000 cfs, about 5 percent of the time.

Figure II-17 shows mathematically fitted (Pearson Type III distribution) probability curves for 1-day, 7-day, 15-day, and 30-day highest mean discharges at the Dolores gaging station. Based on these curves, there is a 50 percent probability that the highest mean 7-day discharge will be 2,360 cfs. The probability that a 7-day highest mean flow of 1,000 cfs will occur is about 96 percent, that a 7-day highest mean flow of 1,500 cfs will occur is about 83 percent, and that a 7-day highest mean flow of 2,000 cfs will occur is about 62 percent.



(5,000 cfs)



(50 cfs)

Variations in stream flow near Dove Creek are critical for rafting.

Figure 11-14

DOLORES RIVER Water Data Stations

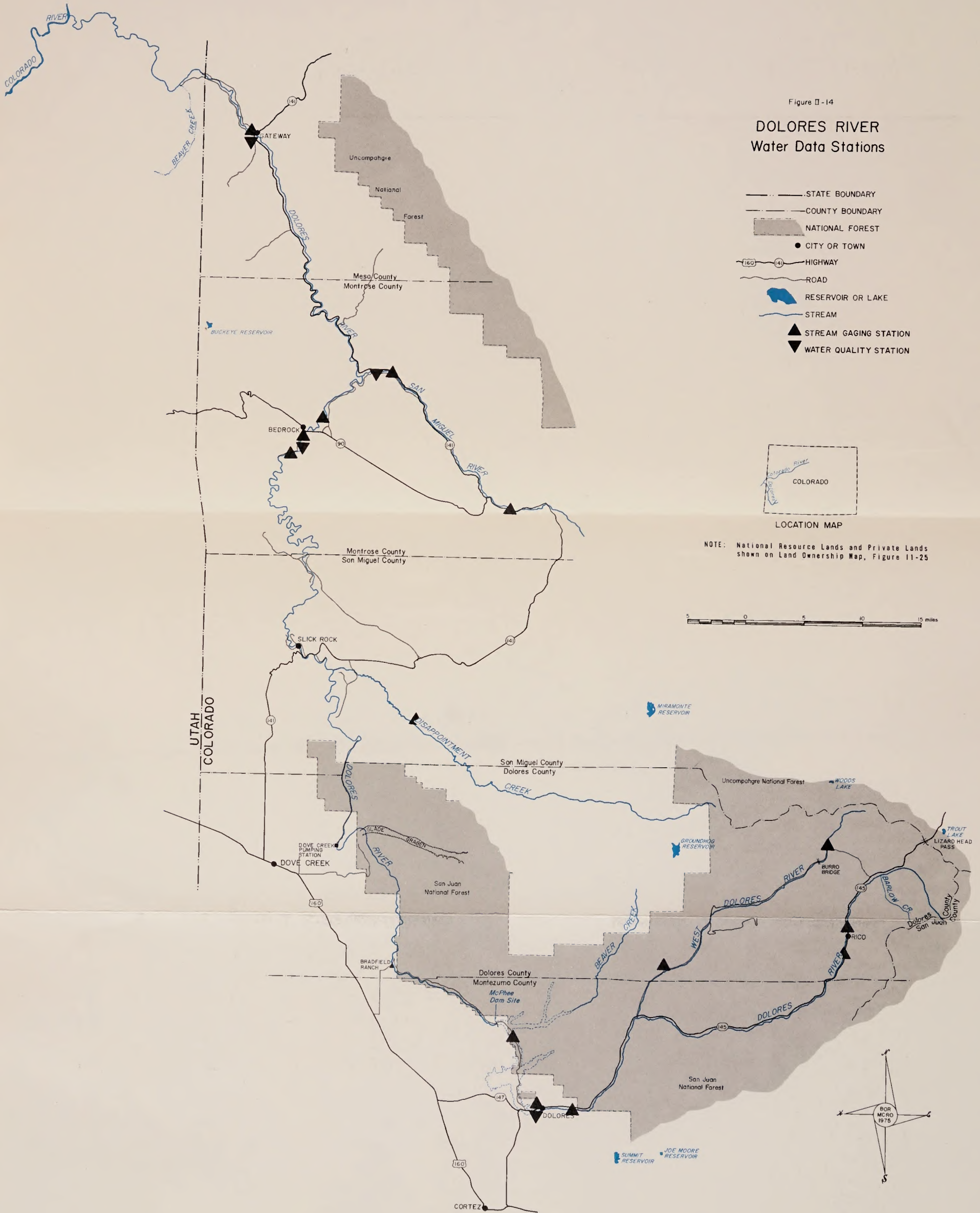


TABLE II-8 Average and Extreme Discharges of the Dolores River

Station name	USGS station number	Period of record	Discharges					
			Cubic feet per second			Annual, acre-feet		
			Instantaneous Maximum	Average Annual	Minimum daily	Instantaneous Maximum	Average Annual	Minimum daily
Dolores River below Rico	1650	10/1951-present	2,120	132	7.0	166,300	95,630	48,000
Dolores River at Dolores	1665	6/1895-10/1903 8/1910-11/1912 10/1921-present	10,000	430	8.0	572,100	311,500	101,900
Lost Canyon Creek at Dolores	1670	4/1922-9/1927	--	26	--	--	18,600	--
Dolores River near McPhee	1675	10/1938-9/1952	--	403	--	--	291,800	--
Disappointment Creek near Dove Creek	1681	8/1957-present	--	17	--	--	12,100	--
Two Mile Creek near LaSal, Utah	1690	8/1944-9/1951 10/1917-9/1922	--	2	--	--	1,600	--
Dolores River at Bedrock	1695	8/1971-present	--	539	--	--	390,500	--
West Paradox Creek near Bedrock	1710	8/1944-9/1952	--	4	--	--	3,200	--
Dolores River near Bedrock								
San Miguel River at Uravan	1770	8/1954-9/1962	--	347	--	--	251,200	--
Roc Creek near Uranium	1790	8/1944-9/1952	--	10	--	--	7,600	--
Dolores River at Gateway	1795	10/1936-12/1954	--	938	--	--	679,100	--
Dolores River near Cisco, Utah	1800	10/1950-present	17,400	710	3.4	1,086,000	514,400	164,100

Note: table based on data through water year 1973

FIGURE 11-15
MEAN MONTHLY DISCHARGES OF THE
DOLORES RIVER
WATER YEARS 1952-73

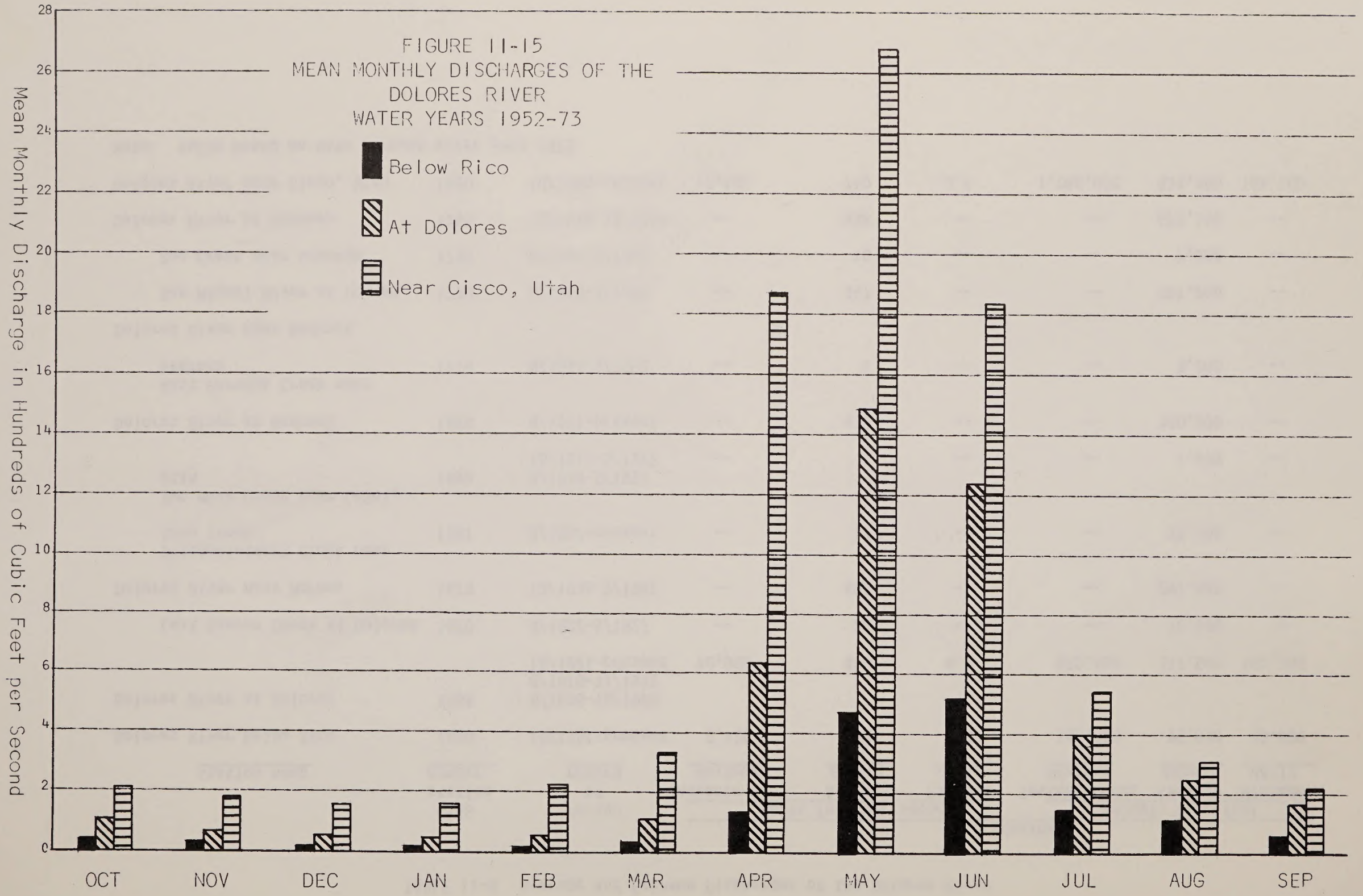


Figure II-16
FLOW DURATION CURVE
Dolores River at Dolores
Water Years 1896-1903, 1912, 1922-73

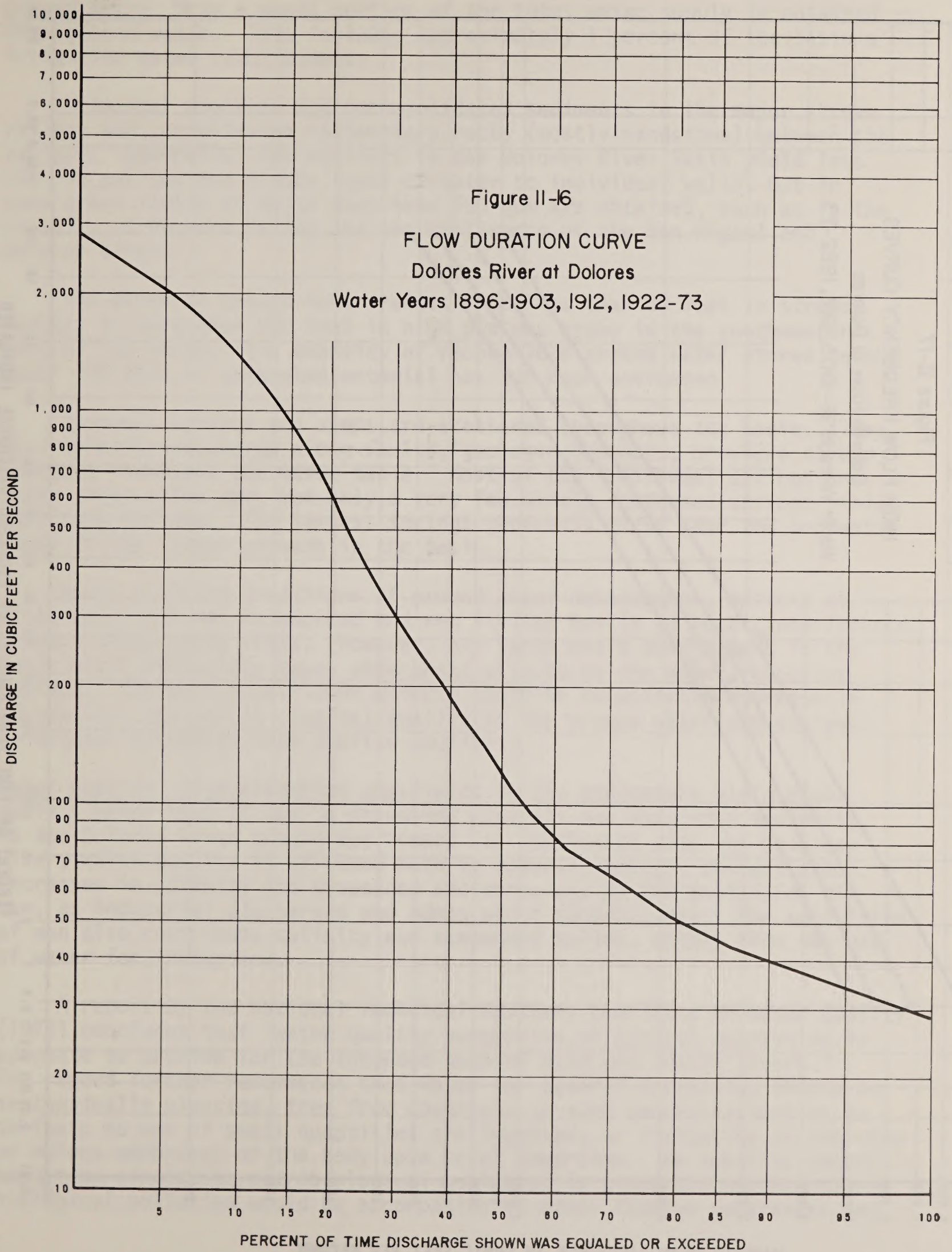
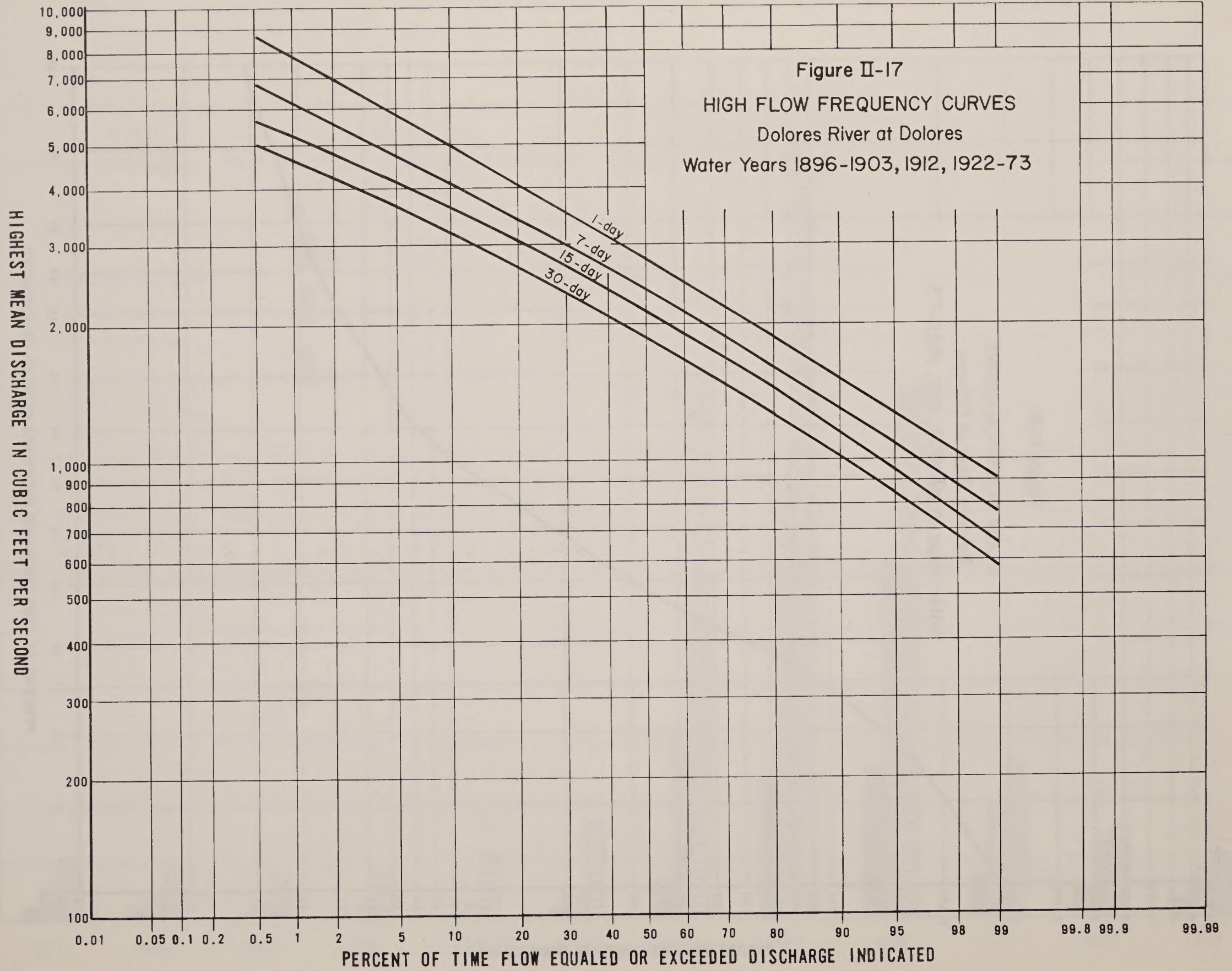


Figure II-17
HIGH FLOW FREQUENCY CURVES
Dolores River at Dolores
Water Years 1896-1903, 1912, 1922-73



Ground Water Only a small portion of the total water supply is obtained from ground water. This includes approximately 1 percent of the basin's irrigation water requirements.

Principal aquifers are unconsolidated sediments in the major stream valleys and consolidated sedimentary rocks (mostly sandstone) between the valleys. Generally, the aquifers in the Dolores River Basin yield less than 50 gallons per minute (gpm) of water to individual wells, but in some areas yields of 50 to more than 500 gpm are obtained, such as in the vicinity of Paradox Valley and the confluence of the San Miguel and Dolores Rivers.

The depth to ground water ranges from less than 50 feet in stream valleys to more than 500 feet in high plateau areas in the southwestern part of the basin. The quantity of recoverable ground water stored in the upper 100 feet of saturated material has not been estimated.

Numerous springs and seeps are scattered throughout the basin. They most commonly discharge along faults, geologic contacts, or where stream channels intersect the water table. Most of the individual springs and seeps yield a few gpm, but only a very few widely scattered springs yield more than 450 gpm. The largest springs generally occur near the headwater areas of the larger streams in the basin.

Under existing conditions of ground water development, effects of withdrawals are not widespread and are limited mostly to local interference between discharging wells. However, any large scale development in the basin might ultimately cause widespread effects on the water resources regimen. The most significant effects could be an ultimate decrease in streamflow, changes in chemical quality of the ground water and decrease in natural discharge from shallow aquifers.

Water Quality High-elevation snowfields in the headwaters yield high-quality water that is low in dissolved minerals and suspended sediment. As the Dolores River progresses toward its confluence with the Colorado River, water quality is affected both by natural sources, primarily as increases in salinity and suspended sediment, and by the activities of man, as industrial discharges and human waste contaminants. The activities of man also contribute salinity and suspended solids, mainly from the use of water for irrigation.

A report by the National Technical Advisory Committee on Water Quality (1972) concludes that "water quality supportive of general recreation is adequate to provide for the intended uses of wild and scenic rivers." The report further recommends that water for general recreation should be aesthetically pleasing, free from chemicals in such concentrations as to be toxic to man if small quantities are ingested, or irritating to the skin or mucous membranes of the body upon brief immersion. No specific recommendation concerning microbiological qualities is given since gross microbiological pollution would be accompanied by other foreign substances and

cause the water to be aesthetically unacceptable. The high natural turbidity of the river below Disappointment Creek makes its waters unacceptable for the specialized requirements for primary contact recreation.

Water quality standards adopted by the State of Colorado in January 1974, as summarized in table II-9, classify waters either as A or B. State waters designated class A₁ or A₂ are suitable for all purposes for which water is customarily used, including primary contact recreation, such as swimming and water skiing. Class B₁ or B₂ waters are suitable for all purposes for which water is customarily used, except primary contact recreation, such as swimming and water skiing.

The chief distinctions between "A" and "B" waters are allowable bacteriological concentrations and slightly broader pH limits for "B" waters. Although the Dolores is classified under "B" standards, bacteriological concentrations are considerably below the "A" requirements. Maximum pH values occasionally exceed the "A" standard, but pH at the Town of Dolores averages 8.3. Also, pH values vary through a narrow range and decrease in the downstream direction. Concentrations of radioactive materials and other toxic materials are less than the maximum allowed by U.S. Public Health Service drinking water standards.



Snow-capped peaks in the Rico and San Miguel Mountains contribute high quality water to the Dolores River.

Manganese occasionally exceeds drinking water standards of 50 micrograms per liter at the Bedrock and Gateway stations; however, this standard is based on aesthetics rather than toxicity. Effluent limitations that have been placed on present discharges to the river will ensure that the impact of man's activities will be minimized.

TABLE II-9 Colorado Water Quality Standards Summary

STANDARD	G L A S S			
	A ₁	A ₂	B ₁	B ₂
Settleable Solids	Free From	Free From	Free From	Free From
Floating Solids	Free From	Free From	Free From	Free From
Taste, Odor, Color	Free From	Free From	Free From	Free From
Toxic Materials	Free From	Free From	Free From	Free From
Oil and Grease	Cause a film or other discoloration	Cause a film or other discoloration	Cause a film or other discoloration	Cause a film or other discoloration
Radioactive Material	Drinking Water Standards	Drinking Water Standards	Drinking Water Standards	Drinking Water Standards
Fecal Coliform Bacteria	Geometric Mean of <200/100ml from five samples in 30-day per.	Geometric Mean of <200/100ml from five samples in 30-day per.	Geometric Mean of <1,000/100ml from five samples in 30-day per.	Geometric Mean of <1,000/100ml from five samples in 30-day per.
Turbidity	No increase of more than 10 J.T.U.	No increase of more than 10 J.T.U.	No increase of more than 10 J.T.U.	No increase of more than 10 J.T.U.
Dissolved Oxygen	6 mg/l minimum	5 mg/l minimum	6 mg/l minimum	5 mg/l minimum
pH	6.5 - 8.5	6.5 - 8.5	6.0 - 9.0	6.0 - 9.0
Temperature	Maximum 68°F. Maximum Change 2°F.	Maximum 90°F. Maximum Change: Streams - 5°F. Lakes - 3°F.	Maximum 68°F. Maximum Change 2°F.	Maximum 90°F. Maximum Change: Streams - 5°F. Lakes - 3°F.
Fecal Streptococcus	Monthly average of <20/100ml from five samples in 30-day period	Monthly average of <20/100ml from five samples in 30-day period	---	---

Waters of the river above the Town of Dolores are classified as B₁, while those from Dolores to the State line are classified as B₂. Waters classified as either B₁ or B₂ are not suitable for body contact recreation. However, these classifications are based on natural phenomena and do not exclude use of the Dolores River for general recreation activities associated with wild or scenic river designation.

Because communities located along the river are small and widely separated, present levels of domestic waste are easily assimilated. Even though the Town of Dolores, with a population of 820, does not always provide sewage treatment of its waste waters sufficient to meet secondary effluent stands, it affects only the segment of the river from Dolores to the proposed McPhee Dam site (11 miles) which is excluded from the study area.

Approximately 24,000 camping days occur along the Dolores and West Dolores Rivers in both improved and unimproved campgrounds. Although no data are available, waste from the present level of activities does not appear to significantly affect water quality.

River reaches under study have not been affected to date by accidental discharges of mining wastes. However, mining operations degrade the water quality of two other segments of the Dolores which are not being studied (Rico to McPhee Dam site and Paradox Valley). Toxic metal pollution from mine drainage at Rico has affected the stream biota in a 9-mile segment of the river periodically in the past. An accidental spill of sulfuric acid that occurred at Rico in 1960 affected 30 miles of the river before the acid was completely neutralized. Sodium cyanide accidentally discharged into the river in August 1974 resulted in a substantial fish loss. Except for occasional spills like the ones described, water quality in the main stem below Rico is good. Even with these spills, the effects have not been evident 38 miles downstream at the Town of Dolores which is still well above the study segment that begins just below the McPhee Dam site. The State Health Department has classified the mine at Rico as "non-discharging."

Samples taken at Bedrock, Colorado (Paradox Valley), show iron and molybdenum as the only heavy metals at levels greater than recommended for drinking water, but within limits suitable for livestock use. The only other detectable toxic substance found was selenium; however, it was within recommended limits for domestic use.

A similar situation to that mentioned below Rico exists on the Dolores below its confluence with the San Miguel where concentrations of ammonia have exceeded maximum desirable toxicity levels for fish. Effluent from the Union Carbide mill at Uravan on the San Miguel River polluted the San Miguel and Dolores Rivers during the late '50s and early '60s. This effluent contained toxic wastes, had variations in pH, and carried radioactive materials. Prior to 1956, the Dolores below the San Miguel confluence was a good catfish stream and a source of broodstock. Wastes discharged resulted in severe fish population declines by 1966. Today, water quality below the San Miguel is marginal for fish but this condition is improving and their numbers are increasing as the result of a new agreement with the Union Carbide Company.

Investigations in 1966 showed radioactivity (Radium-226) increased in the river from 0.23 picocuries/liter (pc/l) above the Uravan mill to 2.33 pc/l below the mill (3.0 pc/l is the maximum concentration for drinking water). A picocurie (pc) is defined as 10^{-12} curies. Radioactive pollution has been reduced to 0.74 pc/l in recent years (1970-1974), because of cleanup efforts by Union Carbide and strict limitations on effluent discharge. Similar controls over pH and toxic metal discharges have also been achieved. Present day pH ranges between 7.4 and 9.1, and toxic metal concentrations below the mill do not exceed biological criteria or drinking water standards except for manganese, as previously mentioned.

The most severe water quality problem of the Dolores and San Miguel Rivers is exfiltration of ammonia from the Union Carbide ponds adjacent to the San Miguel River at Uravan. The concentration of ammonia presently considered toxic to fish is 0.025 milligrams per liter (mg/l) un-ionized ammonia; however, its toxicity is dependent on many factors, including dissolved oxygen, temperature, pH, and the presence of other substances that react with ammonia.

The discharge permit recently issued to Union Carbide by the Colorado Water Quality Control Commission stipulates that the maximum un-ionized ammonia concentration shall not exceed 1/10 of the mean 96-hour lethal concentration to 50 percent of the exposed samples (L. C. 50) for channel catfish. These allowable concentrations will be determined in studies presently underway by the Colorado Division of Wildlife and Union Carbide which will be completed by April 30, 1976. Preliminary results of these studies suggest that catfish and suckers can survive much higher concentrations of un-ionized ammonia than 0.25 mg/l and that populations of these species are returning to the river.

Other water quality problems of the Dolores are salinity, or total dissolved solids, and suspended sediment discharge, which result primarily from natural sources. Salinity is an institutional issue affecting new water resource developments in the Colorado River Basin. Numeric criteria have been adopted under P.L. 93-320, The Colorado River Basin Salinity Control Act, that limits salinity levels to those existent in 1972. Since virtually all consumptive water use results in increased salinity levels by both direct salt loading and by reducing amounts of water available for dilution, plans are being formulated to reduce salt inflow from both natural and man-caused sources so future water resource development can take place.

The U. S. Environmental Protection Agency estimates that 72 percent of dissolved constituents of the Dolores originate from springs and seeps. Less than 20 percent is estimated to result from the activities of man, including agricultural and industrial activities in the basin. Runoff from non-point sources, such as intermittent flows from arid shale lands, contributes an estimated 8 percent.

The weighted concentration of dissolved solids at Dolores averages 137 mg/l, which is equivalent to a salt discharge of 250 tons per day. At Bedrock, the dissolved constituents have reached a moderately high

concentration of 319 mg/l, or 456 tons per day. Between Bedrock and the confluence with the San Miguel River (about 12 miles), the water quality is severely degraded because of the intrusion of brine from the Paradox Valley salt anticline. Approximately 548 tons per day of dissolved solids are added to the river in this valley and amount to 50 percent of the Dolores River salt contribution to the Colorado River. The San Miguel contributes an additional 44 tons of salt per day to the Dolores.

Sediment discharged by the Dolores comes mainly from marine shales in the more arid parts of the basin. High-water yield and high-sediment yield are often derived from different parts of a drainage basin. The higher elevations in the basin, above the Town of Dolores, yield an average of 641 acre-feet of water per square mile of drainage area annually, while the sediment load of the river at Dolores is 214 tons per square mile. The drainage area between the Town of Dolores and the confluence with the Colorado River yields only 80 acre-feet of runoff water per square mile annually and 590 tons of sediment per square mile per year, as depicted in figure II-18.

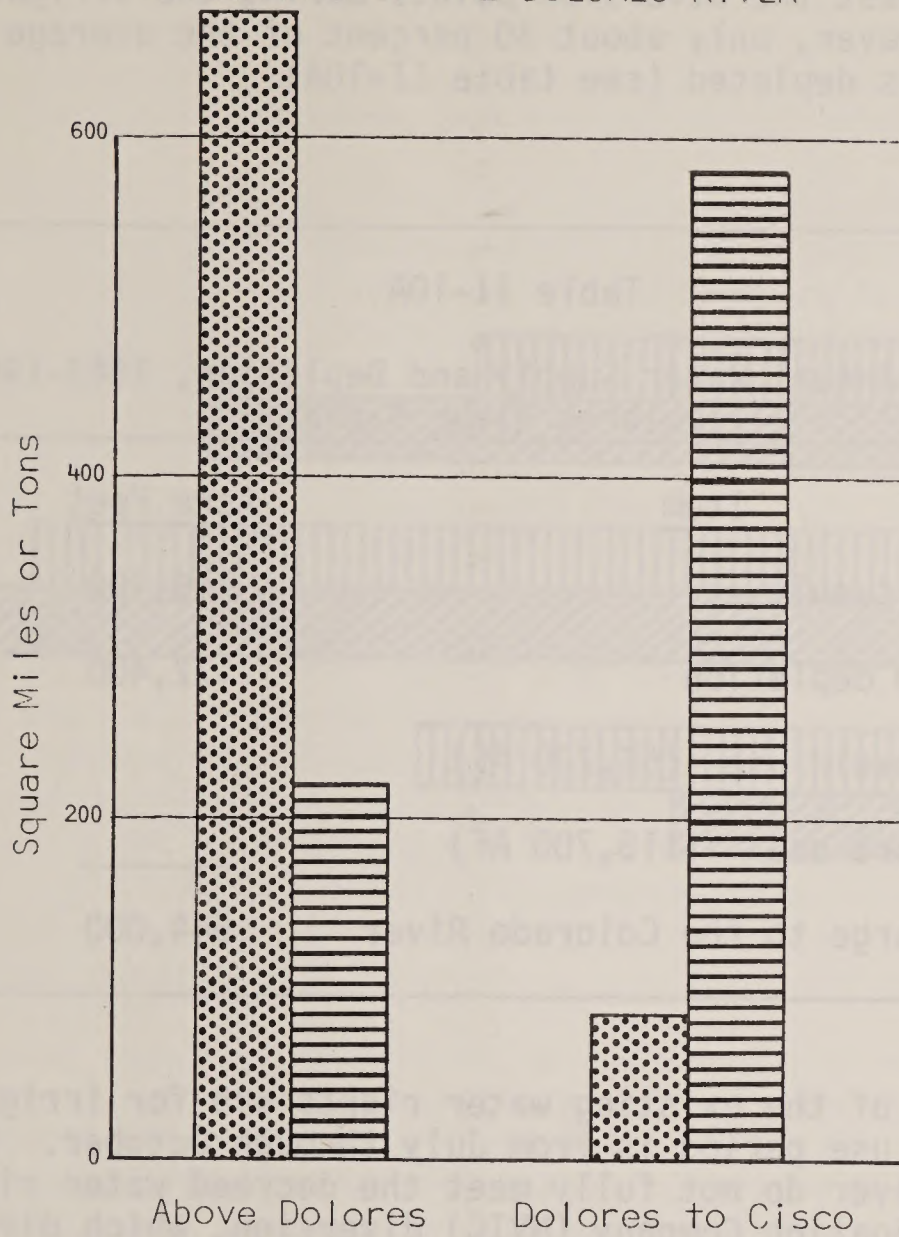
The erosion potential of lands between the Town of Dolores and the confluence of the Dolores River with the Colorado River is moderately high to high. Most of the sediment yield to the river can be attributed to normal geologic erosion; however, agricultural use, cropping and livestock grazing accelerate the rate of erosion.


Although waters of the Dolores and San Miguel Rivers have been abused by mining activities in the past, restoration of water quality is being accomplished through efforts of government agencies and private interests. Water quality is beginning to improve, and some evidence is available that fish and other aquatic life may be returning.


Water Rights Because most of Colorado is arid and generally does not have sufficient water to satisfy all the demands for its use, this and other western states have developed a rather elaborate system of water law called the doctrine of prior appropriation. Under this system, water rights are acquired by making appropriations to actually apply water to beneficial uses, and priorities are awarded according to appropriation dates. Water rights with earlier appropriation dates have prior rights and are "senior" to water rights with later appropriation dates. When the water supply is limited, senior water rights are satisfied first on a priority basis. Beneficial uses include domestic, agricultural, industrial, impoundment of water for recreational purposes, and, as provided in a recently enacted statute (37-92-102 and 103, CRS 1973), preservation of the natural environment to a reasonable degree.

Water rights located in the Dolores River corridor are contained in the Appendix as shown in figure A-1 and listed in table A-2. These data, obtained from the State Engineer, indicate that 82 water rights allow diversions from the corridor, and 34 of these allow diversions in segments designated for wild and scenic river study.

FIGURE 11-18
 COMPARISON OF ANNUAL RUN-OFF AND SEDIMENT
 DISCHARGE OF THE DOLORES RIVER



 Runoff in acre-feet per square mile

 Sediment discharge in tons per square mile

With 4,138 cfs of total annual appropriations for decreed water rights, the Dolores River is over-appropriated. This amount is several times the average annual flow past the diversion points during the irrigation season. At the same time, however, only about 30 percent of the average annual volume of the river is depleted (see table II-10A).

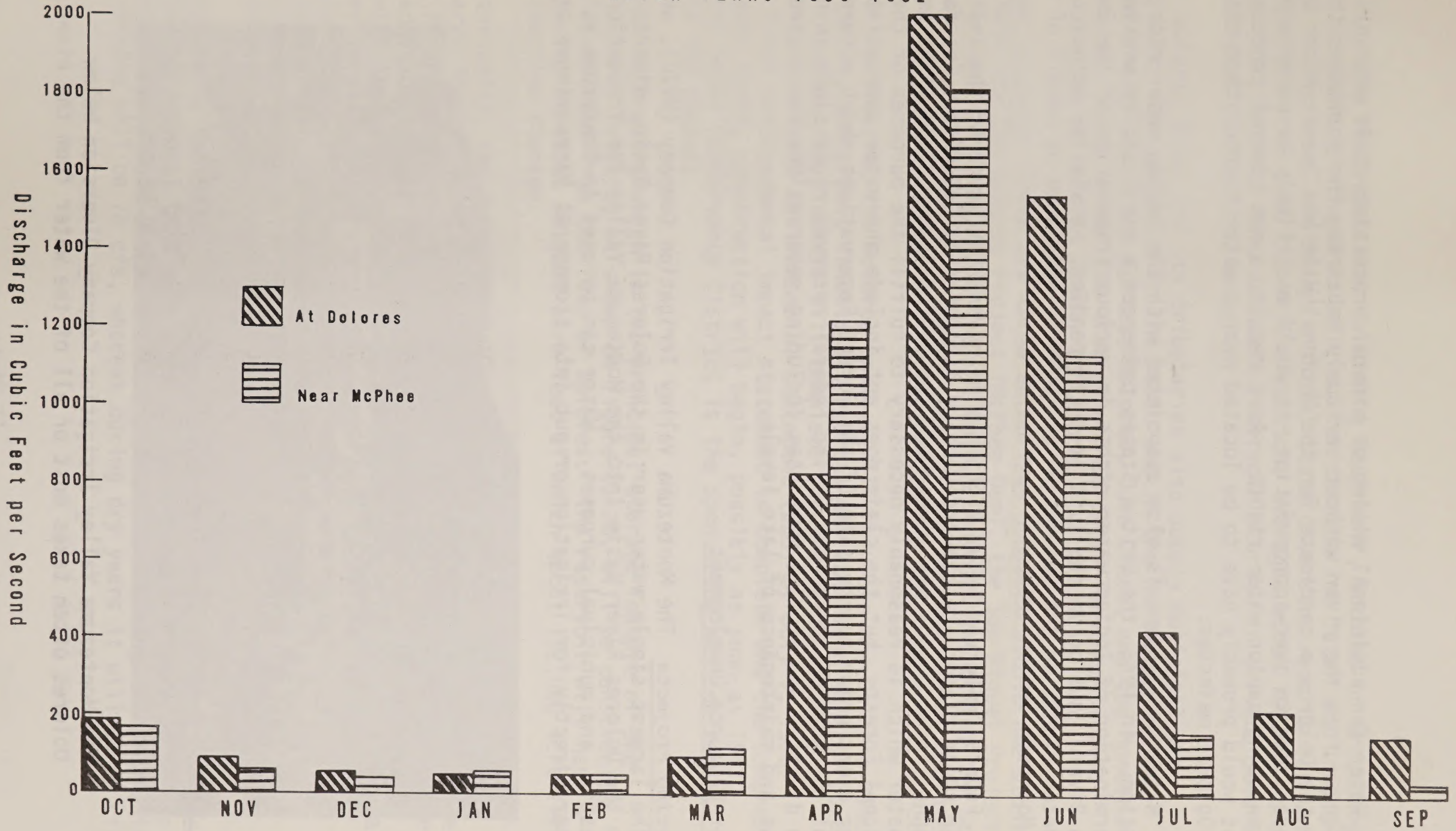
Table II-10A
Average Annual Water Supply and Depletion, 1943-1960
Dolores River Basin

<u>Item</u>	<u>Acre Feet</u>
Water supply	716,400
Stream depletion	172,400
In-basin use (56,700 AF)	
Export use (115,700 AF)	_____
Discharge to the Colorado River	544,000

Over 90 percent of the existing water rights are for irrigation of crops. The critical use period is from July through October. During this time, flows in the river do not fully meet the decreed water rights. The Montezuma Valley Irrigation Company (MVIC) diversion, which diverts water for irrigation and other purposes from a point just below the Town of Dolores, most seriously impacts the river. Although the MVIC diversion has never used the company's total decreed rights of 1,400 cfs, flows below the diversion are reduced to almost nothing during drier years. Effects of this diversion are shown in figure II-19 which compares average monthly discharges between the Dolores and McPhee gaging stations.

As shown in figure II-15, normal high flows occur in April, May and June, when a large quantity of unappropriated water is carried. McPhee Dam and Reservoir will store and regulate excess spring flows, primarily between early March and late June. Existing water rights both upstream and downstream of the reservoir would not be affected except for MVIC whose late-season shortages would be alleviated by the project. In other words, the Dolores Project would permit additional diversion to satisfy water right demands, but the river's waters would remain over-appropriated. The average annual 25,400 acre-feet of water allocated by the project for maintenance of a minimum flow in the river below the dam would not be available for diversion and use.

Figure 11-19
AVERAGE MONTHLY DISCHARGE
DOLORES RIVER
WATER YEARS 1939-1952



Water for additional mining or mineral processing could probably be withdrawn from the river without seriously impairing the qualities that make the Dolores a candidate for the National Wild and Scenic River System. However, due to over-appropriation, it would most likely be necessary to use existing senior water rights. As a result, a new mineral processing plant would probably have to be located near a water source other than the Dolores mainstem.

Water development is also associated with the Indian water rights question. In 1972, the United States commenced a civil action seeking a determination of Indian water rights in various tributaries of the San Juan River. Action on the suit is still pending. A similar adjudication of water rights in the Dolores River could be initiated on behalf of the Ute Mountain Indian tribe.

Federal reserved water right claims beyond the scope of the Indian water right claims are currently being litigated in Colorado. Insofar as National Forest lands are concerned, the United States claims that amount of water which is reasonably necessary to fulfill the purposes of the National Forests, but the claim does not include any water appropriated by water users prior to the date of the Forest Reservations which occurred about the turn of the century. The Federal reserved right claim involves both diverted and storage type uses including reservations for instream flows and maintenance of lake levels.

Water Resource Development

Existing Projects The Montezuma Valley Irrigation Company (MVIC), which is the largest single water user in the Dolores River Basin, diverts water from the Dolores River Basin into the Montezuma Valley for irrigation, domestic, and municipal purposes. Water can be used in Montezuma Valley either directly for irrigation or put into storage at Narraguinnep or Totten



The Montezuma Valley Irrigation Company Diversion below Dolores often takes most or all of the water from the river.

Reservoirs. The MVIC also uses Groundhog Reservoir, located on Groundhog Creek, a tributary of the West Dolores, for storage and later use in the Montezuma Valley area. Although official State diversion records for water years 1952-1973 show that the MVIC diversions averaged about 105,000 acre-feet, the MVIC does not have adequate reservoir storage to prevent severe water shortages during late summer.

The Dolores River and its tributaries also supply municipal and domestic water for residents in the basin and in the Montezuma Valley. The largest water users are Cortez, Dolores, Dove Creek, and the Montezuma Water Company, which serves the area around Cortez. The company also serves a portion of Dolores County to Cahone.

Authorized Projects There are three authorized projects within the study area. These are the Dolores Project (McPhee Dam), the San Miguel Project, and the Paradox Valley Salinity Control Unit. Congress authorized the San Miguel and Dolores Projects in 1968 as part of the Colorado River Storage Project. The Paradox Valley Unit was authorized in 1974 under P.L. 93-320.

When constructed, the Dolores project will regulate the Dolores River for irrigation, municipal, industrial, recreation, and flood control purposes. Bureau of Reclamation planners will complete the project definite plan report (DPR) and draft environmental statement (DES) by July 1, 1976. When the final environmental impact statement is complete and the Congress appropriates funds, construction will begin, possibly as soon as 1977. The Dolores Water Conservancy District is the sponsoring and contractual agency for the project.

McPhee Reservoir, which is the principal storage feature of the proposed Dolores Project, as shown on figure II-20, will be constructed 11 miles downstream from the Town of Dolores. The reservoir will have a total capacity of about 381,000 acre-feet of which about 152,000 acre-feet will be inactive storage.

Historically, the Montezuma Valley Irrigating Company diverts about 105,000 acre-feet of water annually from the Dolores River Basin into the San Juan River Basin. The Dolores Project will convey about 101,200 acre-feet of additional water from the Dolores River into the San Juan Basin. Supplemental irrigation water will be delivered to the MVIC. Full irrigation water supplies will be provided to the Dove Creek and Ute Mountain Reservation areas. Municipal and industrial water will be furnished to Cortez, Dove Creek, the Montezuma Water Company, and the Ute Mountain Indian Tribe at Towaoc. Table II-10B shows anticipated allocations of Dolores Project water.

According to the Bureau of Reclamation, operational criteria have been built into the proposal that will allow a minimum water release of 50 cfs during normal hydrologic years for fishery purposes. During wet years, the minimum release will be 78 cfs, whereas during dry years it will be 20 cfs.



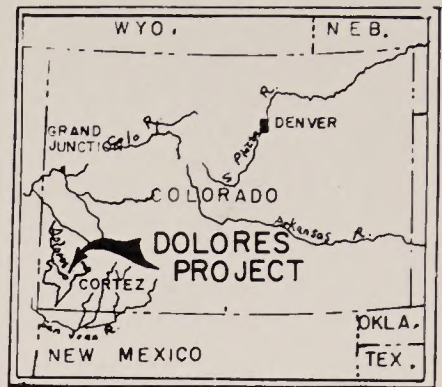
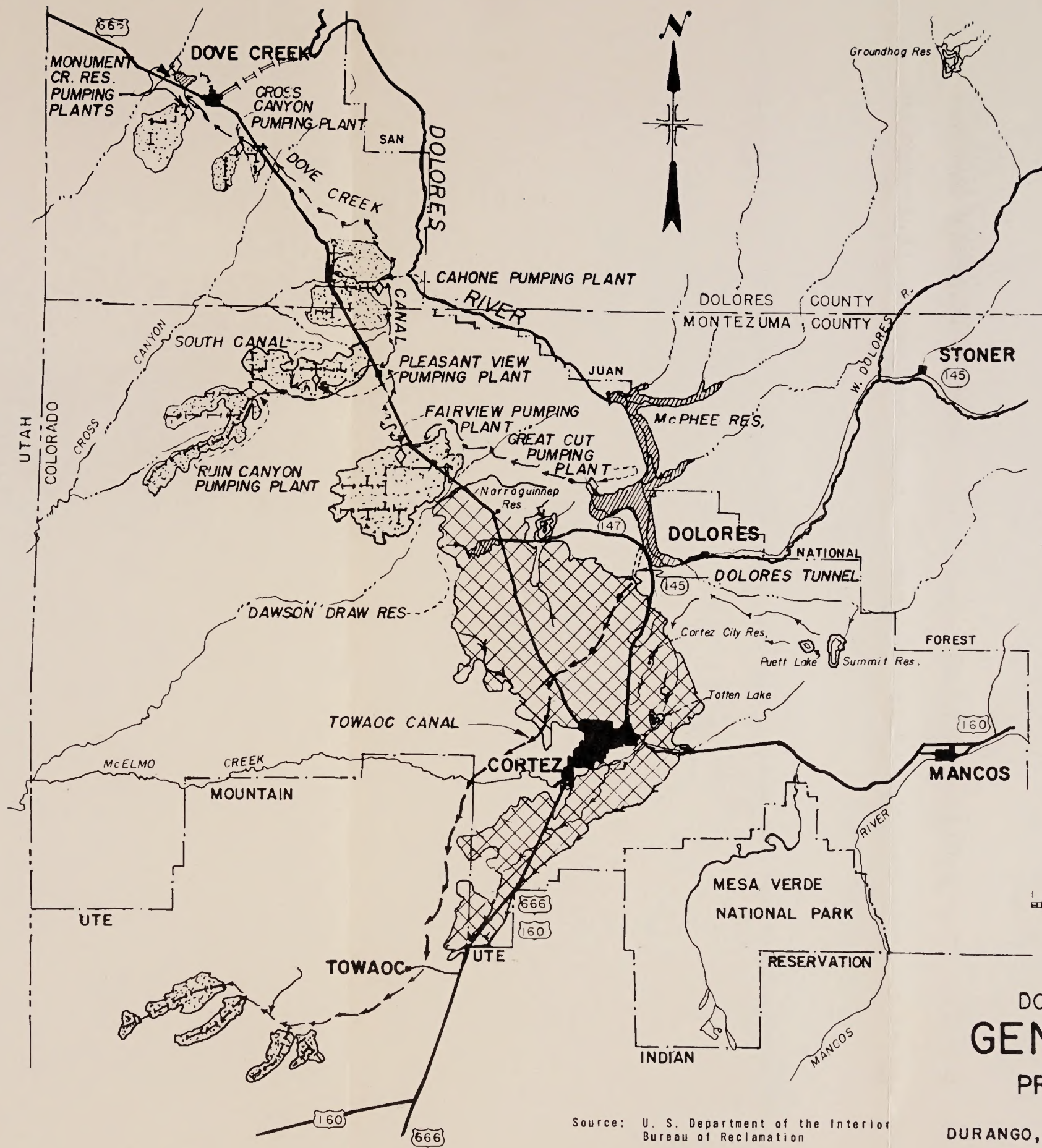
Water for the proposed Dolores (McPhee Dam) Project will be impounded within this segment of the Dolores River.

In a simulated operation, using the criteria during calendar years 1928-1973, the 78 cfs release was maintained during 15 years, the 50 cfs release during 21 years, and the 20 cfs release during 10 years.

The proposed Dolores Project will provide additional power boating and related recreational opportunities. In addition, releases for boating and rafting can be made in the spring in anticipation of later reservoir inflow from water stored as snow. Thus, this may allow boating days to be grouped together and accurately predicted, whereas now the boating opportunities are dependent on nature and are often unpredictable.








While still in the plan reformulation stage, the San Miguel Project will develop flows of the San Miguel River, the main tributary of the Dolores River, between Naturita and Placerville. Between 50,000-80,000 acre-feet of water from the San Miguel River will be utilized by the project annually for irrigation, municipal, and industrial purposes. The project will also provide flood control, recreation, and fish and wildlife enhancement. Generally, the San Miguel Project is outside the wild and scenic river study corridor and will not affect those river segments included in the study proposal.

Another authorized project is the Paradox Valley Salinity Control Unit. Title II of the Colorado River Basin Salinity Control Act (Public Law 93-320) of June 24, 1974, authorized the Secretary of the Interior to construct, operate, and maintain four salinity control units in the Colorado River Basin. One of these units is located in Paradox Valley.



LOCATION MAP

EXPLANATION

-  Supplemental Irrigation Service Lands
-  Full Irrigation Service Lands
-  Proposed Reservoir
-  Proposed Canal
-  Proposed Pumping Plant
-  Proposed Pipeline
-  Proposed Siphon

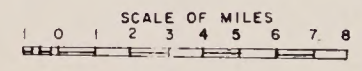


Figure 11-20
DOLORES PROJECT
GENERAL MAP
PROPOSED PLAN

Source: U. S. Department of the Interior
 Bureau of Reclamation

DURANGO, COLORADO MARCH 1973
 Revised March 11, 1975

Table II-10B

Dolores Project Water Allocations

<u>Location</u>	<u>LAND (ACRES)</u>		
	<u>Supplemental</u>	<u>Full</u>	<u>Total</u>
Montezuma Valley	26,300	-	26,300
Towaoc	-	7,500	7,500
Dove Creek	-	<u>27,860</u>	<u>27,860</u>
Total	26,300	35,360	61,660

<u>WATER (ACRE-FEET)</u>	
Irrigation	90,900
Cortez Municipal and Industrial	6,200
Dove Creek Municipal and Industrial	600
Dolores Water Conservancy District	900
Towaoc Municipal and Industrial	1,000
Future Fish and Wildlife Enhancement	800
Ute Mt. Ute Future Fish and Wildlife Enhancement	800
Fish, Wildlife and Aesthetic Releases (McPhee Dam)	<u>25,400*</u>
Total	126,600

* Remains in the Dolores River Basin

Source: Bureau of Reclamation, Durango Projects Office.

Salinity inflow to the Dolores River occurs through the Paradox Valley which involves that segment of river presently excluded from the study proposal. In this valley, the river picks up approximately 200,000 tons of salt annually from a natural source, as depicted in figure II-21, and then discharges into the Colorado River. This poses economic problems for water users downstream because of lower crop yields and increased water treatment costs.

One alternative under consideration for controlling salinity in the Colorado River is depicted in figure II-22. This alternative would lower the interface between the relatively fresh ground water and the underlying brine by drilling approximately 10 wells along the river to a depth of about 250 feet. Each well would be cased and designed to pump brine at a rate of 225 gallons per minute.

The brine would be piped from these wells to a central collection point where hydrogen sulfide gas would be converted to elemental sulfur and water in an oxidation process. This could require air stripping towers, pumps, chemical storage facilities, sand filters, and appurtenant facilities located near the river. The converted sulfur and brine would then be conveyed by a 20.3-mile long buried pipeline to the proposed Radium Evaporation Pond. Eight relift pumping plants and regulating tanks would be required to achieve the total lift of about 3,000 feet between the well field and the top of the divide between Paradox Valley and Dry Creek Basin. In addition, two surge tanks would be installed, one at the base of the divide and another at the top. Salinity control facilities in Paradox Valley would remove up to 180,000 tons of salt per year, thereby decreasing the salinity of the Dolores River.

Other Projects The only other project site in the Dolores River corridor is a site for possible development of a pumped storage hydroelectric power project, located near Mountain Sheep Point in Dolores Canyon (segment 3) near the Dove Creek Pumping Plant. According to the Federal Power Commission, the amount of generating capacity that could be developed is not known, and there are no known plans under consideration for development of this site.

Fish and Wildlife

From its headwaters in the San Juan National Forest to the desert country where it joins the Colorado River, the Dolores winds its way through diverse environments. While the mountains provide an abundance of food, water and cover, and support a wide variety of wildlife, the low arid country provides the least variety of habitat and wildlife. A variety of fish and wildlife is supported by the Dolores River along its entire length, although some segments support a considerably larger population and more variety than others.

Fish Although the Dolores River once supported an excellent trout fishery from its headwaters to Slick Rock, this fishery has been decimated.

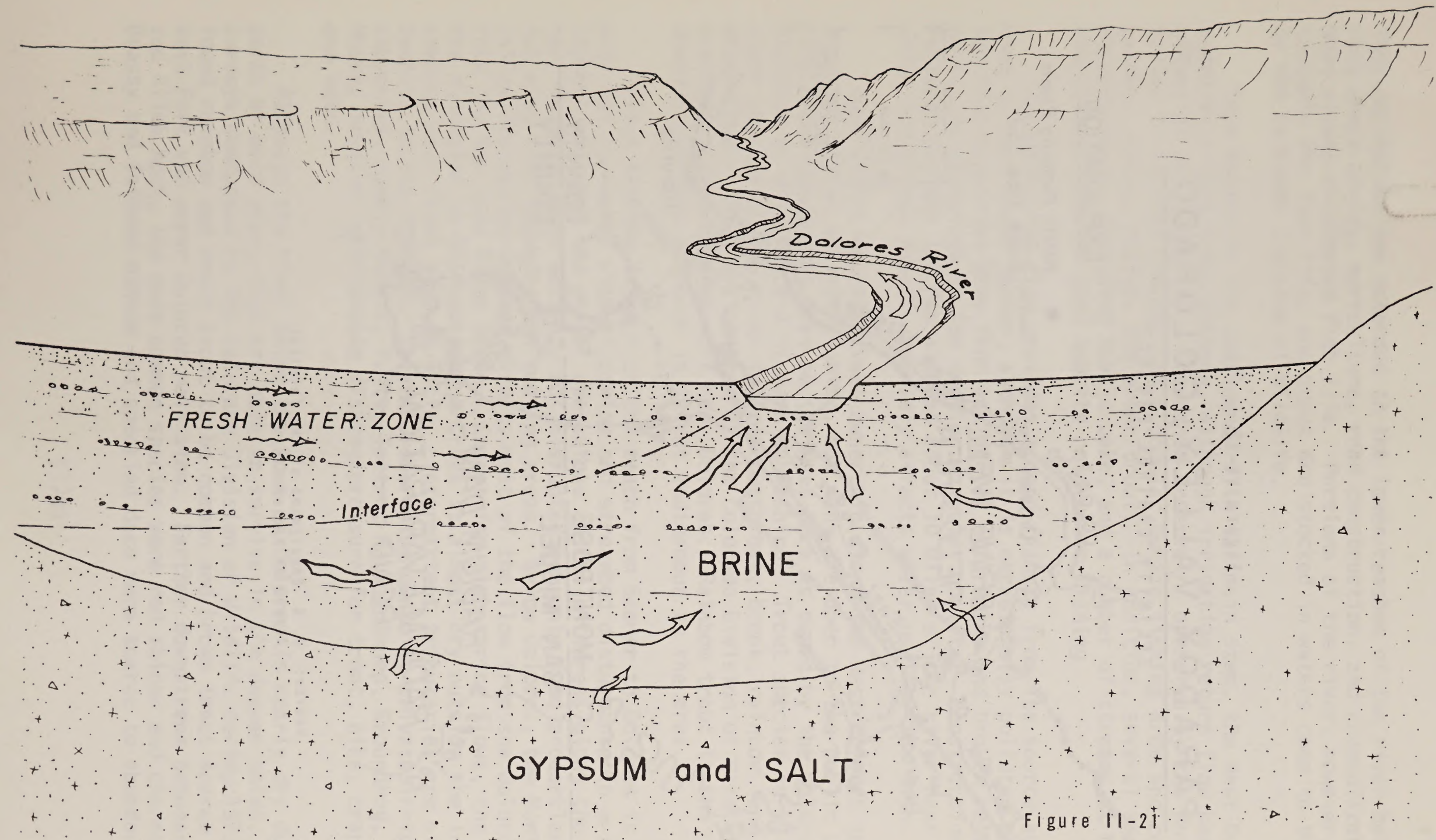


Figure 11-21

**SCHEMATIC SECTION ALONG PARADOX VALLEY
(LOOKING DOWNSTREAM)**

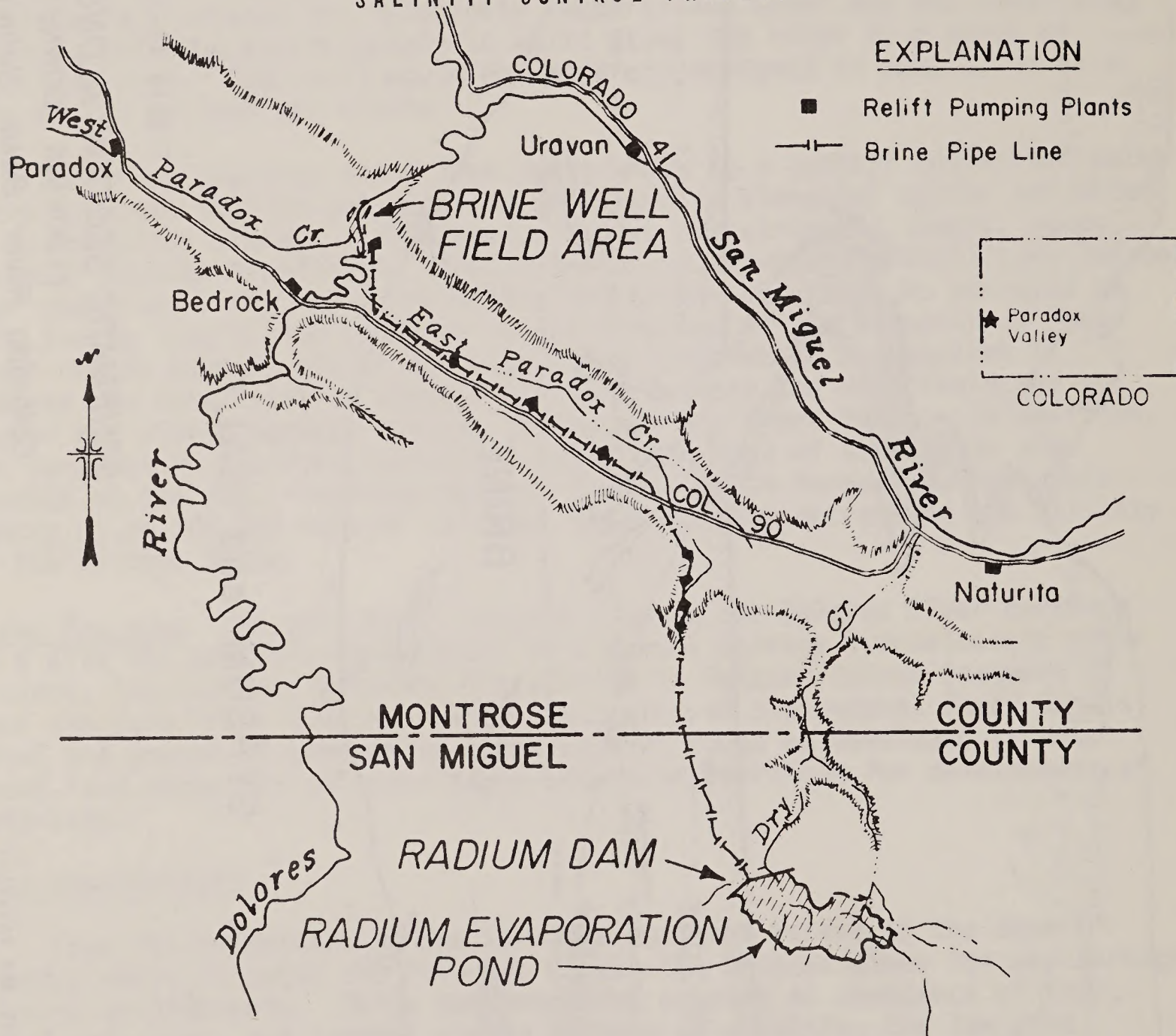
**Colorado River Basin Salinity Control Project
Paradox Valley Unit, Colorado**

Source: U. S. Department of the Interior
Bureau of Reclamation

Figure 11-22

PARADOX VALLEY, COLORADO

SALINITY CONTROL PROJECT



Source: U. S. Department of the Interior
Bureau of Reclamation

This decimation has extended to the lower reaches of the river below Bedrock where mining, agriculture, road construction, and channelization have almost eliminated fish life. Portions of the river, however, remain suitable for fish life, and trout are stocked in waters open to the public by the Colorado Division of Wildlife.

From Dunton to its confluence with the main stem, the West Dolores supports a good trout fishery, although irrigation return flow has a minor effect on water quality. Groundhog Reservoir, operated by the Montezuma Valley Irrigation Company, is a popular public fishing area and contains rainbow, brook, native, and brown trout. In addition, several small Forest Service lakes, including Navajo Lake, and a number of streams at higher elevations, provide good quality cold water fishing.

The main stem also provides a good fishery from its source above Rico to just above Stoner, although it is occasionally polluted below the Rico Argentine Mine from accidental acid leaks and broken retaining ponds, as discussed in the section on water quality. Construction of Colorado Highway 145 has altered about 10 miles of the river near Rico while irrigation runoff adversely affects water quality for fish.

Some waters under private ownership along the West Dolores and main stem are posted against fishing, but many are open to the public upon request. Fish Creek Management Area on the West Fork is owned by the Colorado Division of Wildlife and is open to fishing. Trout species in this upper portion of the river include cutthroat, brook, rainbow, and a few brown trout. Fish are stocked by the Colorado Division of Wildlife which operates a fish rearing unit near Dolores. Rainbow trout is the principal species planted, although it is not indigenous to the area.

Trout fishing in most of the reach from Stoner to Dolores is relatively poor due to recent channelization and streambed disturbance in a 5-mile segment and sand and gravel operations at two pit areas along the river near Stoner. This activity has disrupted not only food production areas, but also fish spawning and resting areas. Below Dolores, the Montezuma Valley Irrigation Company diverts most of the flow from the Dolores River into the San Juan River Basin. Except for high spring flows, the river from the diversion to Disappointment Creek is almost dry outside the irrigation season, with flows of 1 to 5 cfs. Intermittent tributaries are of little benefit to the fishery. Several reservoirs owned by private irrigation companies, namely Summit, Puett, Totten, Narraguinnep, Groundhog, and Joe Moore, receive considerable fishing pressure for trout, pike, crappie, perch, and bass.

Although the river below the Town of Dolores is nearly dry during parts of each year, fish are able to survive in the deeper holes. Fish surveys conducted by the Colorado Division of Wildlife during 1973-1974 found rainbow and brook trout to be common and brown trout scarce along the West Fork and upper Dolores main stem. Farther downstream between Dolores and Slick Rock, the more common species were red shiner and channel catfish. Brassy and fathead minnow and speckled dace were scarce to abundant,

depending on the location. Black bullhead were scarce below the McPhee Dam site. Flannel mouth and mountain blue suckers, sculpins, and carp generally were abundant. Round-tail chub were scarce at higher elevations, but common to abundant at lower elevations. Crayfish were common while leopard frogs were scarce.

While the cold water fishery below Dolores has virtually been eliminated, biologists believe the potential remains to revive this resource. With the proposed McPhee Dam, normal flows will be a minimum of 50 cfs, compared to 78 during wet years and 20 during dry ones. Details on minimum flows needed to reestablish a trout fishery from the proposed dam to Slick Rock have been determined by the Bureau of Reclamation, U.S. Fish and Wildlife Service, and the Colorado Division of Wildlife.

While a good warm water fishery once existed between Slick Rock and Bedrock, a distance of about 55 miles, today only a few species remain. The fishery deteriorates between Bedrock and the confluence with the San Miguel River because of the high salt infiltration as the river crosses Paradox Valley. Prior to 1955, water from the San Miguel River helped to dilute the Dolores, resulting in a good fishery at Gateway. Additional water diversions upstream have concentrated the dissolved solids in the Dolores until today, the fishery is poor.

Until 1957, the Colorado Division of Wildlife took truckloads of catfish from the Gateway area for planting elsewhere in western parts of Colorado. Wastes from the mining and processing of uranium and vanadium at Uravan in the late 1950s and early 1960s virtually eliminated game fish from Uravan to the State line.

According to the Colorado Division of Wildlife, the fishery is still poor in this segment of the river but it is improving as a result of recent efforts to improve water quality.

Wildlife While wildlife species are found all along the Dolores, certain portions of the river are more attractive than others because the riparian vegetation offers greater amounts of food and cover. Much of the habitat is unaffected by human development and has few visitors, which further enhances its value for wildlife.

Mule deer number about 12,500 and are widely distributed throughout the basin. Their numbers are controlled by the limitations of winter range. Most are resident deer since the river bottom affords year-round habitat. Some, however, still migrate to and from surrounding high country during the spring and fall.

Deer winter range typically comprises the lower slopes of the mountains and adjoining valley fringes between the limits of deep snow at higher elevations and the edge of farmland in the valleys. Two types of vegetation characterize this winter habitat: a zone of pinyon-juniper at higher levels and a zone of northern desert shrub, predominantly sagebrush at lower

elevations. Also, there are extensive areas of mountain brush, primarily Gambel's oak, which is an important habitat species, within the belts of winter range.



Mule deer are the most commonly hunted big game animals in the basin.

Elk range, like that of the mule deer, is restricted by the limitations of available winter habitat. Winter distribution is in altitudinal zones, often at somewhat higher elevations than comparable mule deer range. Elk, which number about 2,200 in the basin, spend some winters as high as Dunton along the West Fork and from Stoner to Lost Canyon east of Dove Creek. The principal vegetative type within the winter area is the conifer-aspen forest, which occurs above the pinyon-juniper woodland in elevation. Even though elk normally winter at higher levels, severe storms will drive them down into the valleys where the availability of food becomes a problem. The Colorado Division of Wildlife has identified six elk crossings between Dolores and the Bradfield Ranch within the study corridor, which are heavily used during winter months. These crossings occur generally where tributary streams intersect the main stem. In the spring, deer and elk follow the snow line to high country. Important elk calving areas are located at higher elevations on the West Fork and several of its tributaries. The location of these areas varies each year, depending on snowfall and weather conditions. A herd of about 50 elk has recently moved into Disappointment Creek from the San Miguel drainage. Other elk are present west of Gateway on the Uncompahgre Plateau but seldom utilize the lower river bottom.



Although elk are found at various locations along the Dolores River, they seldom use the canyon bottoms at lower elevations.

Most of the Dolores River drainage is historical Rocky Mountain bighorn sheep range, but few if any, of these animals exist here today. Their favored habitat is the conifer-aspen forest. Although bighorn sheep now remain in the high country, they formerly were found in the lower Dolores River Canyon from Slick Rock downstream to Bedrock, Paradox, and the Gateway areas prior to the turn of the century. They also existed in the lower Mancos Canyon down to the San Juan as well as the lower McElmo area.

Black bear live year-round in the mountains as well as at lower elevations. Bear are not too common but do inhabit the river corridor and adjacent land. They are concentrated in two areas: one near Dolores and the other downstream from the Dove Creek pumping plant.

A few mountain lions roam the high mountain country, but are more common at lower elevations. During the winter they are forced to lower elevations to survive. Three lion concentrations have been identified by the Colorado Division of Wildlife: one near Dolores with a crossing at the Dolores Trout Rearing Unit, one west of Cahone and one about 7 miles upstream from Slick Rock near Horseshoe Bend. Numerous abandoned mines make good

lion dens although they are easily accessible to man. These lions usually follow the deer down from their summer range.

Antelope which are found in the Disappointment Creek drainage were transplanted by the Division of Wildlife in 1970. Since then, their numbers have remained fairly stable and no open season has been held. Antelope are primarily associated with the northern desert shrub vegetative type, though during the course of a year they make extensive use of other types. Deep winter snows may drive them into the valleys, while in less stormy winters they tend to remain on the rangelands.

The sage grouse, an important small game species, uses several vegetative types within the limits of their distribution. However, the northern desert shrub vegetative type, essentially sage-brush, is essential to their existence.

Small numbers of waterfowl are found because of a lack of wetlands. The available habitat consists of streams and stream bottomlands, canals, lakes, reservoirs, beaver ponds, stock watering ponds, and small sumps or seeps created by irrigation practices. Food supplies also are limited except for those produced on agricultural land. Because of these limitations, waterfowl tend to concentrate in areas of irrigation development. Vegetative types within key waterfowl habitat areas include pinyon-juniper woodlands, northern desert shrub, etc., but these are of little significance. Generally, they represent remnants of the original native vegetation interspersed with irrigated farmland and are the least valuable parts of the habitat complex.

The canyons of the Dolores River, Dolores Canyon in particular, are extremely valuable to raptors because they provide some of the longest continuous nesting habitats for these birds in Colorado. The sheer cliffs not only provide necessary nesting areas but act as a physical barrier to discourage access by people and retain the relative isolation preferred by raptors. Although eagles and hawks feed mostly on top, the riparian vegetation at the bottom of the canyons provides some food sources for these birds. The water course within these canyons attracts avian species which are a very important food source for falcons which hunt mostly in the canyons. A list of wildlife species showing habitat type appears in table II-11.

Threatened and Endangered Species There are no known Endangered or Threatened fish species in the Dolores River. Between 1968-1971, the Utah Cooperative Fishery Unit at Logan, Utah, conducted an investigation of the lower Dolores River and found none. The Colorado Division of Wildlife is continuing its investigation of the Dolores River below Bedrock.

Table II-11

Wildlife Species by Habitat Type, Dolores River Basin, Colorado

Common Name	River Bottom	Salt Flats	Crop Land	Pinyon-Juniper	Ponderosa, Spruce, and Fir Forests
Mule deer	C ^{1/}	C	C	C	C
Elk	C		C	C	C
Mountain lion	C			UC ^{2/}	C
Black bear	UC				C
Coyote	C	C	C	C	C
Bobcat	C			C	
Ringtail				UC	
Gunnison prairie dog	UC	C	C		
Beaver	C				
Marten					UC
Mink	UC				
Badger	C				
Muskrat	C		UC		
Yellow-bellied marmot					C
Cottontail rabbit	C	C	C		
Black-tailed jackrabbit		C	C		
Striped skunk	C	C		UC	
Raccoon	C				
Gray fox	C			C	
Porcupine	C	C			
Bushy-tailed woodcat	C			C	
Meadow vole	C				C
Pika					C (Talus slopes)
Deer mouse	C	C	C		
Pine squirrel					C
Rock squirrel	C		UC	C	
Colorado chipmunk	C			C	
Least chipmunk	C				
Golden-mantled ground squirrel	C		UC	C	
Abert's squirrel				UC	C
Short-tailed weasel	C				C
Pocket gopher	C				UC
Ring-necked pheasant	C		C		
Turkey	C			C	
Rock dove	C	C	C		
Band-tailed pigeon	C		C		
Mourning dove	C	C	C	C	C

^{1/} C = Common

^{2/} UC = Uncommon

Table II-11 (continued)

Wildlife Species by Habitat Type, Dolores River Basin, Colorado

Common Name	River Bottom	Salt Flats	Crop Land	Pinyon-Juniper	Ponderosa, Spruce, and Fir Forests
Common nighthawk	C			C	
Common flicker	C			C	
Downy woodpecker	UC				
Lewis woodpecker	C		C	C	
Cassin's kingbird	C				
Western kingbird	C				
Say's phoebe	C				
Western flycatcher	C				
Ash-throated flycatcher	C				
Western wood pewee	C				
Violet-green swallow	C		C		
Tree swallow	C				
Bank swallow	C			C	
Rough-winged swallow	C			C	
Barn swallow	C		C		
Cliff swallow	C			C	
Purple martin	UC				
White-throated swift	C		C	C	
Steller's jay	C	C	C	C	C
Black-billed magpie	C	C	C	C	C
Common crow	C	C	C	C	C
Common raven	C	C	C	C	C
Scrub jay	C			C	
Pinon jay	C	C		C	
House wren	C				
Robin	C	C	C	C	C
Mountain bluebird	C		C	UC	C
Starling	C	C	C	C	C
Solitary vireo	C			C	
Warbling vireo	UC			C	
Yellow warbler	UC		UC		
Yellow-throat	C			C	
Yellow-breasted chat	C		UC	UC	
Western meadowlark	C	C	C		
Yellow-headed blackbird	C	C	C		
Red-winged blackbird	C	C	C		
Brewer's blackbird	C		C		
Common grackle	C	C	C		
Brown-headed cowbird	C		C		
Western tanager	C			UC	
Black-headed grosbeak	C				

Table II-11 (continued)

Wildlife Species by Habitat Type, Dolores River Basin, Colorado

Common Name	River Bottom	Salt Flats	Crop Land	Pinyon-Juniper	Ponderosa, Spruce, and Fir Forests	Canyon
Evening grosbeak	C					
Blue grosbeak	UC					
Lark bunting	C					
Lazuli bunting	C					
Indigo bunting	R3/					
Pine siskin	C	C	C			
American goldfinch	C					
Rufous-sided towhee	C					
Green-tailed towhee	UC	C				
Bullock's oriole	C					
Grey-headed junco	C	C		C		
Oregon junco	C	C		C		
House sparrow	C	C	C	C		
Savannah sparrow	UC					
Vesper sparrow	UC					
Lark sparrow	C					
Chipping sparrow	C					
Song sparrow	C	C				
Brewer's sparrow	UC					
House finch	C					
Bewick's wren	C					
Lesser goldfinch	C					
Blue-grey gnatcatcher	UC					
Empidonax	R3/					
Horned lark		C	C			
Mockingbird	R					
Turkey vulture	C	C	C	C	C	C
Osprey	UC				UC	
Bald eagle	C	C	C	C		
Golden eagle	C	C	C	C	C	C
Red-tailed hawk	C	C	C	C	C	C
Ferruginous hawk		UC	UC	UC		
Rough-legged hawk	C	C	C	C	C	
Goshawk	UC	UC	UC	UC	UC	
Cooper's hawk	C	C	C	C	C	
Sharp-shinned hawk	C	C	C	C	C	C
Peregrine falcon	R					R
Merlin		UC	UC	UC		
American kestrel	C	C	C	C		C
Marsh hawk	C	C	C	C		
Great horned owl	C	C	C	C	C	
Prairie falcon	UC					UC

3/ Rare

Table II-11 (continued)

Wildlife Species by Habitat Type, Dolores River Basin, Colorado

Common Name	River Bottom	Salt Flats	Crop Land	Pinyon-Juniper	Ponderosa, Spruce, and Fir Forests	Impoundments
Common loon	X ^{4/}					UC
Horned grebe	X					C
Western grebe	X					C
Great blue heron	X					UC
Black crown night heron	X					UC
Canada goose	X	X	X			C
Snow goose	X	X	X			C
Mallard	X		X		X	C
Gadwall	X		X			C
Green-winged teal	X		X		X	C
Blue-winged teal	X		X		X	C
Cinnamon teal	X		X		X	C
American wigeon	X		X			C
Shoveler	X					C
Northern ring-necked duck	X					C
Red-headed duck	X	X				C
Canvasback duck	X					C
Ruddy duck	X	X				C
Bufflehead	X	X				C
Common merganser	X					C
Coot	X	X				C
Killdeer	X	X			X	C
Franklin's gull	X					C
Belted kingfisher	X					C

^{4/} May be found in this habitat type.

Two birds found in the basin, the American peregrine falcon (Falco peregrinus anatum) and the Southern bald eagle (Haliaeetus leucocephalus leucocephalus), are officially classified as Endangered by the Federal government. The golden eagle and ferruginous hawk, and a mammal--the marten--are sensitive species which are susceptible to habitat destruction and other activities by man.

The peregrine falcon has been extirpated as a breeding species in the eastern United States and is generally decreasing in the West. In the basin, the peregrine falcon is uncommon, but should be in less immediate danger than in many other parts of the country. Pesticides have been a major factor in its national decline, but contamination from persistent toxic chemicals remains at a relatively low level in the basin.

Recreation

General There are approximately 2,777,800 acres of land and water available for recreation in the basin. About 75 percent of this total is in Federal ownership. The Forest Service manages over 1 million acres of land (about 40 percent of the total), while more than 900,000 acres (about 35 percent of the total) are administered by the Bureau of Land Management. The Forest Service administers all the developed Federal recreation areas. Although the BLM has no developed recreation areas on National Resource lands, recreational activities such as hunting, fishing, boating, off-road vehicle use, camping, hiking, horseback riding, and snowmobiling are accommodated.

The State owns less than 1 percent of the land in the basin, with the remaining 24 percent in private ownership. Two developed State areas are available for recreation, one at Woods Lake and the other at Miramound Reservoir, both of which provide camping, picnicking, boating, and related activities. The undeveloped Fish Creek Management Area provides hunting, fishing, and overnight camping.

Several recreation areas in the basin are owned by local governments, including Norwood which has an undeveloped area and Telluride which has two developed areas containing about 20 camping and 17 picnic units and a baseball diamond. Nucla has one undeveloped park, while Dolores has two parks containing a total of about 10 picnic units. A municipal swimming pool is located at Uravan.

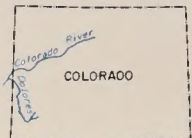
Most of the private outdoor recreation enterprises are strategically located adjacent to Federal land. The typical private recreation establishment is a small family-owned and operated vacation resort offering rental facilities, a store, stocked fishing ponds, and hunting opportunities.

A summary of recreation areas and type of facility by ownership appears in table II-12. The location of these areas is shown in figure II-23.

Figure II-23

DOLORES RIVER Recreation Areas

- STATE BOUNDARY
- COUNTY BOUNDARY
- NATIONAL FOREST
- CITY OR TOWN
- 160 41 HIGHWAY
- ROAD
- RESERVOIR OR LAKE
- STREAM
- ▲ CAMP AND PICNIC AREA
- WINTER SPORTS AREA
- RESORT OR DUDE AREA
- ... TRAIL



LOCATION MAP

NOTE: National Resource Lands and Private Lands shown on Land Ownership Map, Figure 11-25

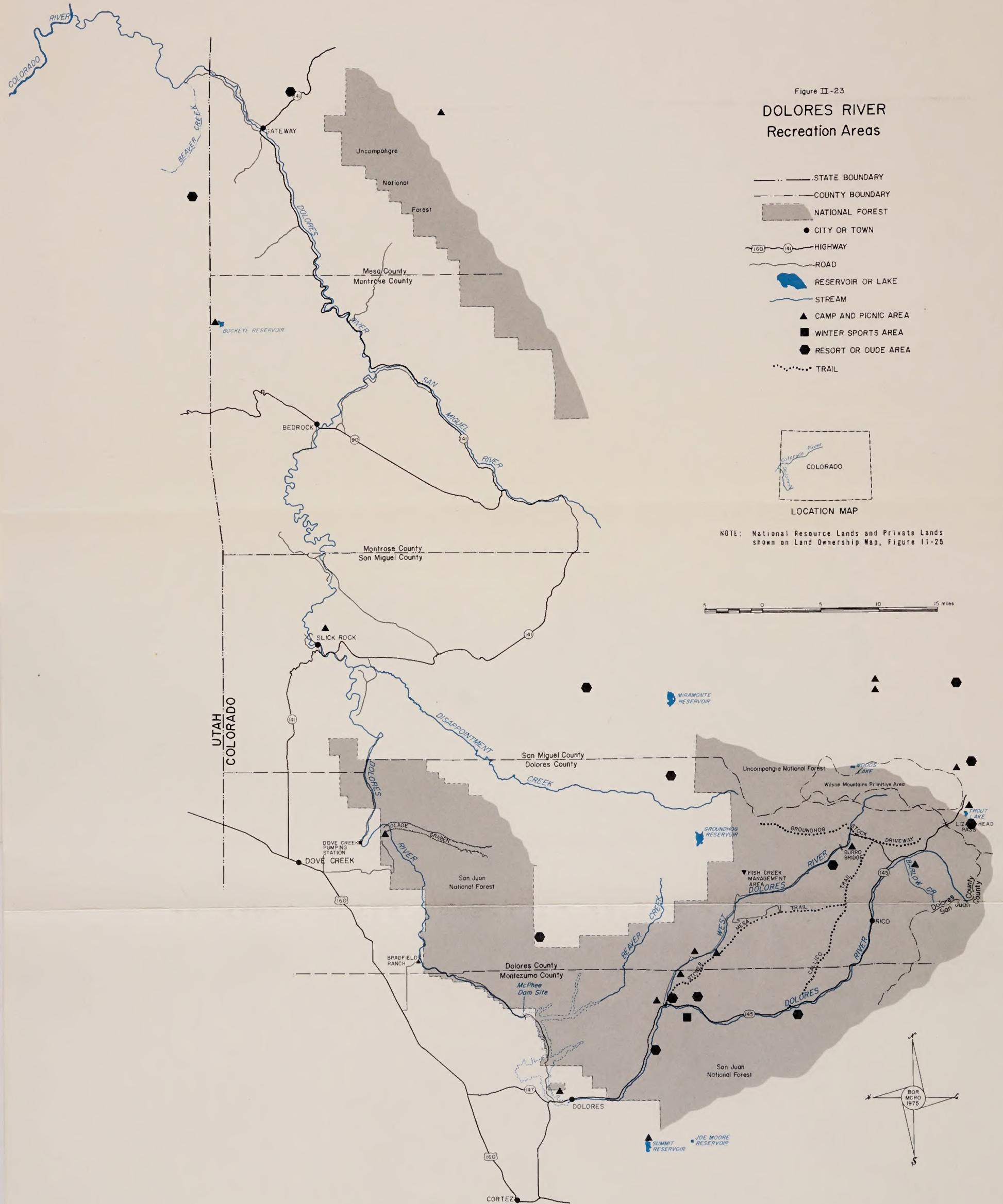


TABLE II-12

Recreation Areas in the Dolores River Basin

Ownership	Number of Areas	Camping Units	Picnic Units
Federal	14	170	19
State	3	7	9
Local	7	20	27
Private	30	47	4
TOTAL	54	244	59

All of these recreation resources support day, weekend, vacation, and tourist use. Recreation activities that are pursued include boating, camping, driving for pleasure, fishing, hiking and mountain climbing, horseback riding, hunting, nature walking, picnicking, ice skating, sledding or tobogganing, snowmobiling, and snow skiing.

Estimates of recreation participation in the basin are shown in table II-13. While boating participation represents all types of boating, it is estimated that rafting and kayaking account for about 10 percent of total boating activity. This is based on demand information for Recreation Planning Regions 4 and 5, shown in figure II-24, contained in the 1970 Colorado Comprehensive Outdoor Recreation Plan.

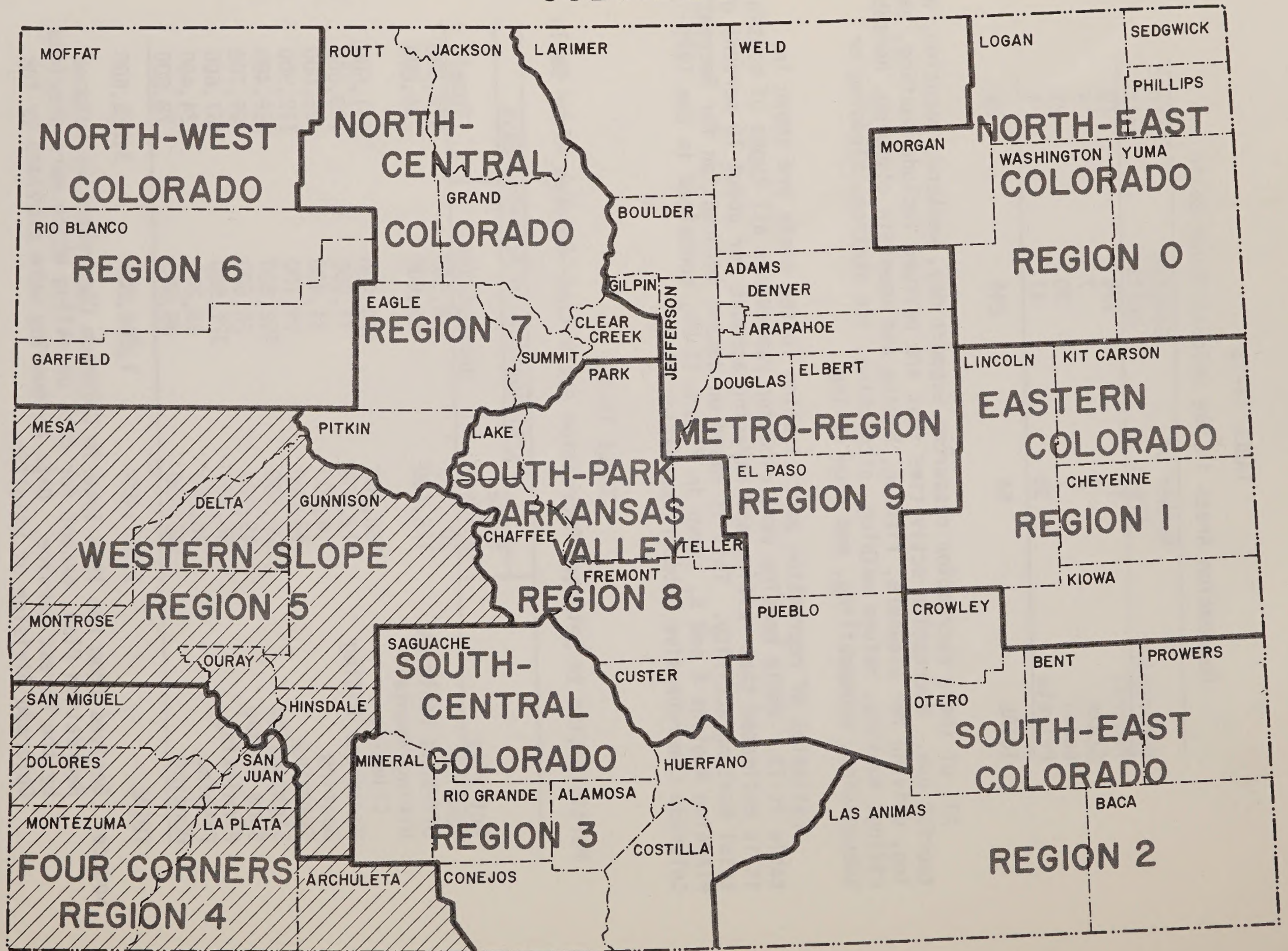
TABLE II-13

Participation in Selected Recreation Activities--Dolores River Basin

Activity	Participation in Activity-Days		
	State Resident	Nonresident	Total
Camping	201,400	320,600	522,000
Off-Road Vehicles	178,400	52,600	231,000
Hiking-Mountain Climbing	180,700	470,900	651,600
Horseback Riding	112,000	71,000	183,000
Boating	4,600	21,400	26,000
Swimming	93,800	19,100	112,900
Sightseeing	306,500	452,900	759,400
Snow Skiing	49,100	20,600	69,700
Picnicking	96,100	371,500	467,600
Fishing	96,200	28,200	124,400
Hunting	42,600	35,400	78,000
TOTAL	1,361,400	1,864,200	3,225,600

Source: Derived from the 1974 Interim Colorado Comprehensive Outdoor Recreation Plan, except for data on skiing which were provided by the Forest Service. Data on hunting were provided by the Colorado Division of Wildlife.

RECREATION PLANNING REGIONS OF COLORADO



Partially because the resident population of the basin is low (fewer than 10,000) about 60 percent of the total participation in recreational activities is attributable to nonresidents. Most boating, camping, hiking and mountain climbing, sightseeing, and picnicking is done by nonresidents of the State. In contrast, basin residents participate most in off-road vehicle use, horseback riding, and swimming.

Boating is done primarily in conjunction with fishing. Few of the lakes are large or warm enough for water skiing. Rafting and other stream boating occur mainly on the Dolores River from the vicinity of Dolores downstream.

Cold water fishing along streams and rivers or from the shores of high-altitude mountain lakes and reservoirs is rated as a high quality recreation experience. Groundhog, Gurley, Summit, Joe Moore, Buckeye, and Narraguinnep Reservoirs, and Trout Lake provide flat-water boating and fishing. Narraguinnep Reservoir also provides water skiing. In addition, trout fishermen have ample opportunity to fish along rivers and streams.

Numerous trails used by off-road vehicles are located on National Resource land and Forest Service areas within the basin. A four-wheel drive trail parallels the Dolores River from the Dove Creek pumping plant downstream for about 10 miles. However, vehicles are prohibited in the Wilson Mountains Primitive Area. On the main stem above Rico, use is restricted each year from August 1 - December 31 to foot and horse travel, snowmobiles, and motor vehicles on designated routes. The same closure restrictions apply to the West Dolores River, except in the Nipple Mountain area where use is limited to foot and horse travel only between October 1 - December 31.

Trails suitable for hiking and horseback riding are available, especially in the headwaters area between the Dolores and West Dolores Rivers. Calico and Stoner Mesa are two of the better known trails. In addition, the Groundhog Stock Driveway in the high mountain region above Dunton serves as a major east-west trail in the headwaters area.

Whereas most camping and picnicking use occurs at the developed sites, some of this activity takes place in association with river and trail use as dispersed type activity. This is especially so on National Resource lands (BLM) where there are no developed recreation facilities.

In 1973, big game hunters spent 96,798 days harvesting deer, elk, and black bear. No lions were harvested and there were no seasons on bighorn sheep or antelope. Small game and waterfowl hunters accounted for 12,169 hunting days in Dolores and Montezuma Counties. The harvest consisted mainly of ducks, cottontail rabbits, doves, and blue grouse.

Fishing use in 1973 amounted to 124,400 fisherman days in the basin. Of this total, approximately 55,000 days were spent on the Dolores River, primarily on the West Fork and headwaters of the main stem. Tributary streams accounted for about 12,700 fisherman days, while lakes, reservoirs, and beaver ponds received about 57,300 days of use.

Winter sports activity in the basin relates mainly to skiing and snowmobiling. High mountain passes, such as Lizard Head, support snowmobiling as late as May. Four months of good ski conditions are available at Dallas Divide, Stoner, and Telluride ski areas. During the 1974 ski season, total use at these areas approached 65,000 skier days, about 62,500 of which occurred at the Telluride ski area.

River Corridor There are six developed campgrounds and two picnic grounds in the upper river corridor within the San Juan National Forest, as shown in figure II-23. Together, these sites contain 92 camping units and 7 picnic units. All campsites are provided with water and have space for travel trailers. A list of these areas is displayed in table II-14.

According to tentative plans of the Bureau of Reclamation, recreational developments on or near the proposed McPhee Reservoir will include 1-1/2 miles of trails, 9 campgrounds (180 camping units), 4 picnic grounds (85 picnic units), 2 boat ramps, 2 boat launching beaches, 1 boat landing beach, 2 river overlook sites, and a swimming beach. The Bureau of Reclamation has estimated that development of these facilities will provide for 147,000 visitor days of use the first year the reservoir is filled.

In addition to these developed recreation areas, the West Dolores and the Dolores above Rico provide a good cold water fishery. The Dolores River between Rico and the proposed McPhee Dam site accommodates some kayaking, camping, and hunting. However, fishing is limited mainly to that segment from just above the Town of Dolores to the McPhee site due to occasional discharges of pollutants from the tailing pond at Rico.

TABLE II-14

Forest Service Recreation Areas, Dolores River Corridor

Area	Camping Units	Picnic Units
Cayton Campground	27	
Burro Bridge Campground	15	
Priest Gulch Campground	16	
West Dolores Campground	14	
Mavreeso Campground	14	
Forks Campground	6	
Emerson Picnic Ground		1
Dolores Canyon Overlook Picnic Ground		6
TOTALS	92	7

The river was first floated in 1948 from Bradfield Ranch to the confluence of the Colorado River. Since that time rafting and kayaking use has increased to an estimated 1,000 annual visitor days, occurring primarily on the Bradfield Ranch to Bedrock stretch of river. This activity is restricted to the high runoff period during spring and early summer.

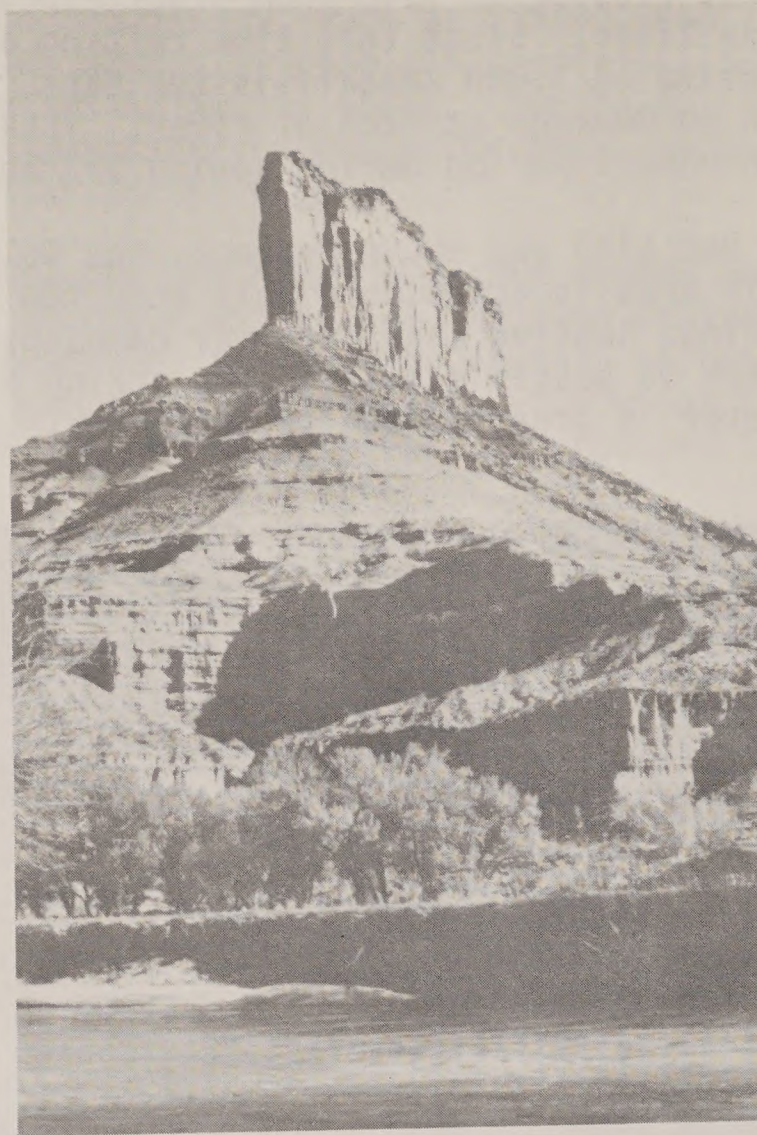
Below the McPhee Dam site and above Bedrock, the Dolores Valley narrows abruptly. This area is accessible only at a few points and accommodates rafting, kayaking, hunting, and informal camping. Rafting and kayaking of this stretch is possible only in the spring of those years in which the volume of water is great enough to accommodate these activities.



River rafting on the Dolores is a challenging experience.

Between Bedrock and just above the confluence of the Dolores and San Miguel Rivers, the river crosses Paradox Valley. This valley is wide and arid and does not accommodate much recreation in quantity or variety. Between the confluence and Gateway, the river is paralleled by State Highway 141. This very attractive stretch of the river flows through a deep but wider canyon than that found above Bedrock. Although the Bureau of Land Management has not developed recreation facilities in the corridor, they do manage the resource for dispersed recreation activities such as hunting, fishing, boating, hiking, and horseback riding.

Below the Town of Gateway and above the Utah border, the river is accessible by secondary and primitive roads and flows through an arid valley bounded by steep bluffs and red rock cliffs rising to about 1,600 feet. This area, which contains some agricultural land, primarily accommodates hunting and river rafting.



Palisade Bluff is a landmark feature along the river below Gateway.

Based on information provided by the Colorado Division of Wildlife, Bureau of Land Management, and Forest Service, it is estimated that current (1975) use in the Dolores River corridor amounts to about 255,000 visitor days annually.

As shown in table II-15, primary recreation use involves hunting, fishing, and camping. Black bear, lion, elk, and deer are hunted in the high mountain country, while mule deer, black bear, lion, and elk are hunted at lower elevations.

Camping is concentrated in the higher elevations and is generally associated with Forest Service facilities. Fishing is also associated with the upper reaches of the river where good cold water fisheries exist. Downstream, fishing is quite limited due to mining pollution. Although channel catfish and large mouth bass are known to exist in the downstream portion below McPhee, most of the fishing use that occurs is related to nongame species.

TABLE II-15
RECREATION USE BY RIVER SEGMENT - DOLORES RIVER CORRIDOR
Estimated Annual Visitation 1/

River Segment	Camp	Picnic	Hike	Boat	Hunt	Fish	Other <u>2/</u>	Total
	<u>Visitor Days</u>							
West Dolores	12,300	1,300	5,000	10	7,900	20,000	11,600	58,110
Headwaters-Rico	7,700	100	1,000	--	5,600	7,700	5,500	27,600
Rico-W. Dolores	3,300	200	600	20	8,400	13,000	6,400	31,920
W. Dolores-McPhee	600	500	300	50	11,700	5,000	4,500	22,650
McPhee-Bradfield <u>3/</u>	20	20	20	20	7,300	2,000	2,300	11,680
Bradfield- Disappointment <u>3/</u>	50	300	20	900	4,000	500	1,300	7,070
Disappointment-Little Gypsum Valley <u>3/</u>	100	100	50	650	26,300	3,000	7,500	37,700
Little Gypsum Valley-Bedrock <u>3/</u>	100	100	50	900	3,100	500	1,000	5,750
Bedrock-San Miguel	20	50	10	50	1,700	200	500	2,530
San Miguel-State Line	20	50	10	200	2,000	2,900	1,300	6,480
TOTALS	24,210	2,720	7,060	2,800	78,000	54,800	41,900	211,460

1/ All data rounded. Visitation, except hunting, fishing, and boating, based on estimates provided by the Dolores Ranger District of the San Juan National Forest, Colorado. Hunting and fishing data provided by the Colorado Division of Wildlife. Boating use based on information obtained from the Bureau of Land Management for the McPhee to Bedrock segments.

2/ Other use calculated according to 20 percent of total use, based on the distribution of activity use for the Dolores and Glade Ranger Districts, USFS/RIM data.

3/ Included within the proposal area.

Although hiking and mountain climbing are possible throughout most of the river corridor, greatest use occurs in the headwaters of the West Dolores and the main stem. This is because people prefer to hike in the forested mountain country rather than in lower desert areas. Such use generally is associated with the developed camp and picnic areas in the upper reaches of the river corridor.

Land Ownership and Use

General As shown in table II-16, approximately 25 percent of the basin land is private, 74 percent is Federal, and 1 percent is State-owned. Over 93 percent of the basin is used for some form of agricultural production, while the remaining portion includes towns, roads, streams, barren areas, and other areas of miscellaneous use. Agricultural land use includes grazing (or a combination of timber and grazing), irrigated cropland, dry cropland, and timber production.

Approximately 68 percent of the basin is used for grazing and most of this area, about 81 percent, is public land. The 57,200 acres in irrigated and dry cropland is relatively small when compared to other uses. Over 616,000 acres is nongrazable timber, with timber and grazing occurring on the remainder of the area.

As shown in figure II-25, National Forest land in the basin occurs within the Uncompahgre, Manti-La Sal, San Juan, and Grand Mesa National Forests. There are 27,300 acres of the Wilson Mountains Primitive Area within the San Juan and Uncompahgre National Forests. Also included is the 2,800-acre Narraguinnep Natural Area in the San Juan National Forest. Land administered by the Bureau of Land Management is located in the lower elevations of the basin, primarily around Gateway, Uravan, and Slick Rock.

Most of the State and local government land is school land leased to local farm and ranch operators. In addition, there is a small amount of municipal and county controlled land.

River Corridor Land ownership along the river corridor by segment is listed in table II-17. Over 90 percent of the 15 mile corridor above Rico is in the National Forest. This land is primarily used for recreation, grazing, and highway right-of-way. National Forest land within the corridor that is withdrawn for recreation amounts to 370 acres. An additional 1,900 acres has been withdrawn by the Federal Power Commission for a powerline which parallels the highway. Private land within this segment is concentrated in the lower reach of the river, around Rico, and consists of 26 patented mining claims involving about 200 acres. About 1 mile of this segment flows through private land.

Figure II-25
DOLORES RIVER BASIN, COLORADO
 Land Ownership

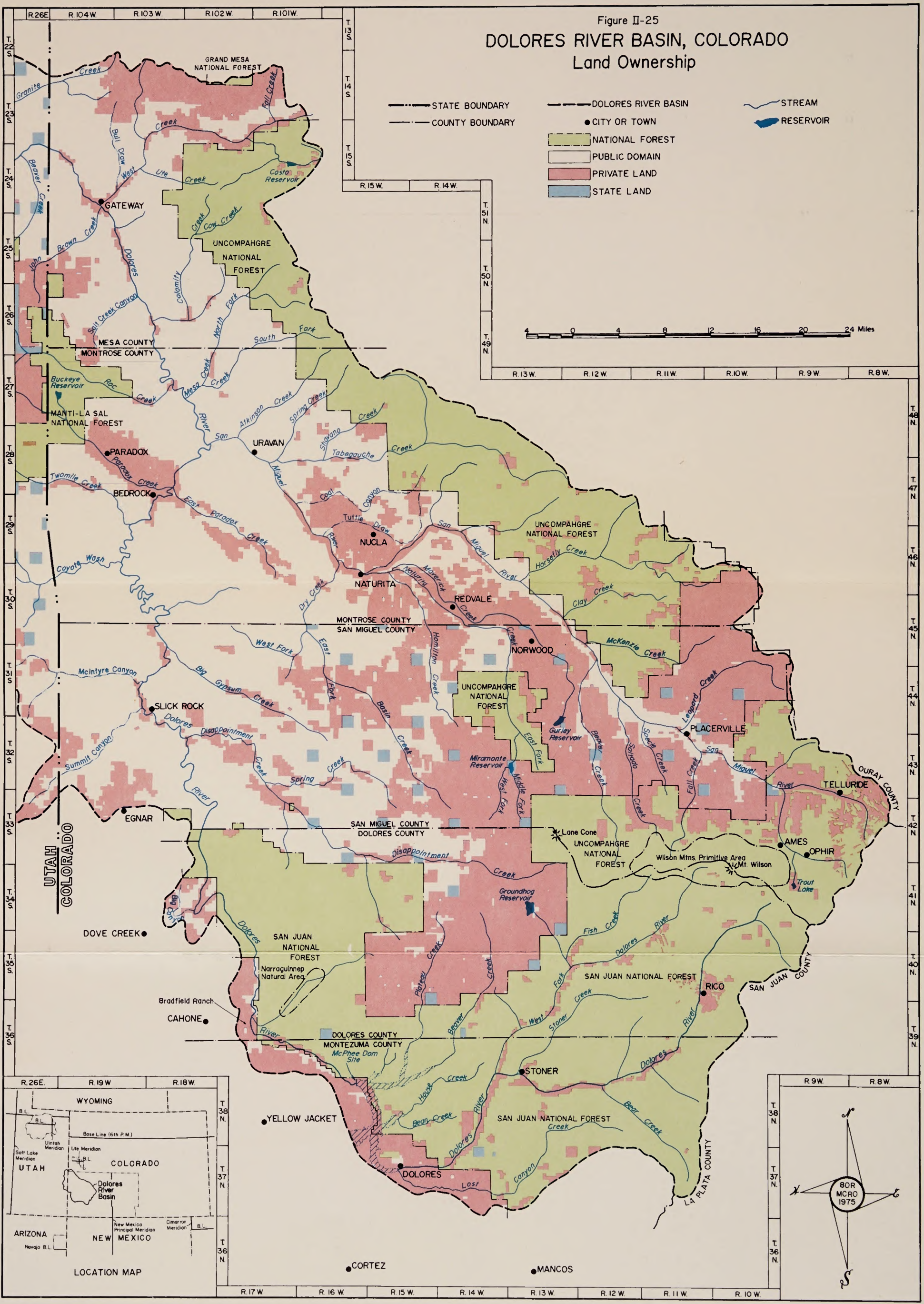


TABLE II-16

LAND OWNERSHIP AND USE--DOLORES RIVER BASIN, COLORADO

Ownership	Cropland		Noncropland grazing	Forestland and grazing	Forestland	Other <u>1/</u>	River Basin total	Percent of Basin total
	Irrigated	Dry						
	<u>A C R E S</u>							
Private land <u>2/</u>	45,200	12,000	184,100	147,600	212,600	62,800	664,300	25%
State land	0	0	9,100	4,900	6,000	3,000	23,000	1%
Federal land								
Bureau of Land Management	0	0	296,200	366,300	177,500	62,000	902,000	35%
Forest Service								
National Forest	0	0	285,500	473,900	213,500	27,200	1,000,100	38%
Wilson Mountains Primitive Area	0	0	5,400	5,800	5,300	10,800	27,300	1%
Nariguinnep Natural Area	0	0	0	800	2,000	0	2,800	.1%
TOTAL -	45,200	12,000	780,300	999,300	616,900	165,800	2,619,500	

1/ Includes streams, barren areas (rock and shale), towns, roads, and other miscellaneous uses.

2/ Privately owned land includes patented, railroad, mining, and small holding claims, corporations, cities, etc.

TABLE II-17

LAND OWNERSHIP -- DOLORES RIVER CORRIDOR

Study Segment	Ownership			
	Forest Service	BLM	Private	Total
				<u>Linear Miles</u>
Dolores River above Rico	14	--	1	15
West Dolores River	23	--	12	35
Dolores River from McPhee Dam Site to Bedrock	16	67	22	105
San Miguel River to Colorado-Utah State Line	--	22	16	38
CORRIDOR TOTALS	53	89	51	193

Along the 35-mile length of the West Dolores corridor, nearly two-thirds of the land is in the National Forest with the remainder in private ownership. Private land consisting of 13 separate holdings in 27 scattered parcels is located in this segment. Numerous patented mining claims under private ownership are found here and total about 140 acres. Outside the corridor, there are approximately 1,100 acres within the "visible area" of the river. The only Forest Service withdrawals within or adjacent to the corridor are nine recreation and two administrative sites totaling 832 acres.

The majority of the 105-mile long corridor below the proposed McPhee Dam site to 1 mile above the Bedrock Bridge is in public ownership. Public lands include 16 miles in National Forest land, and 67 miles in National Resource (BLM) lands. Most of the public lands along this segment have been extensively prospected for uranium. Private lands are scattered between the proposed McPhee Dam site and the Bradfield Ranch, 6 miles on either side of the Slick Rock Bridge through Little Gypsum Valley, and at the end of Slick Rock Canyon near Bedrock. There are several patented mining claims in the vicinity of Slick Rock and Gypsum Valley.

Between its confluence with the San Miguel River and the Utah State Line, the Dolores is bordered by equal amounts of National Resource and private lands. Most of the National Resource lands along a 22-mile segment from the confluence with the San Miguel River to Gateway are covered by Federal power site withdrawals. Private lands interspersed with public

land along the corridor are represented by 10 miles of stream bordering on ranch lands and 6 miles of intermixed patented mining claims and ranch lands.

Cultural Resources

History The first recorded visit of a white man into the Dolores River Basin was that of a Spanish explorer by the name of Don Juan Marra de Rivera. In 1765 the governor of the Spanish territory of New Mexico sent Rivera to explore the unknown lands to the north. After entering into present day Colorado near Pagosa Springs, the group made its way westward to the Dolores River which they followed to Paradox Valley. Turning eastward again, Rivera traveled to the vicinity of Delta before returning to New Mexico.

Eleven years later, in 1776, a second expedition from New Mexico headed by Fathers Dominguez and Escalante who were accompanied by 12 companions crossed the Dolores Basin along the approximate route taken by Rivera. Their mission was to find an inland route from Sante Fe to the Spanish missions in California.

Permanent settlement in the Dolores River Basin did not occur until after Colorado joined the Union in 1876. Settlements along the Dolores River in the Paradox Valley and in Montezuma County were primarily devoted to farming and ranching. Two other sites, Telluride and Placerville, were in the upper segments of the San Miguel River and oriented primarily toward gold mining.

Farmsteads were established along the river wherever there was adequate land to graze livestock. As herds grew, overgrazing became a problem that continues to present times. As early as 1884 the first irrigation ditch was constructed in Paradox Valley, so that agricultural activities could be maintained and expanded.

The principal mining area along the Dolores River itself has historically been near the small community of Rico. Silver was discovered there in 1879, and almost immediately people began migrating to the area. As years passed other mineral resources were developed in the vicinity of Rico. Major minerals were gold, coal, iron, lead, zinc, lime, salt, and fire clay. For the last 50 years lead and zinc extracted by the Rico-Argentine Mining Company have been the major ores exploited. Dunton, on the West Dolores, was another significant mining community. At one time, the camp had as many as 1,000 residents.

In 1881, outcrops of sandstone containing the mineral carnotite were discovered near the present site of Uravan. In 1898, several tons of carnotite ore were sent to France where radium was extracted. The growing demand for radium brought many prospectors to the upper reaches of the Dolores River and many deposits of carnotite were discovered from Slick Rock to Gateway. From 1911 to 1923 the deposits were worked for radium with some vanadium and a little uranium recovered as by-products. During

this period, these deposits became one of the principal world sources of radium. However, mining practically ceased in 1924 due to low market prices.

From 1936 through 1944 the carnotite deposits were mined for vanadium with a little uranium recovered as a by-product. Since 1948 the deposits have been mined for uranium, but large amounts of vanadium also have been recovered. The processing plant at Uravan was established in 1936 by the United States Vanadium Corporation and has operated almost continuously to the present time. The present operator, Union Carbide Corporation, is the successor to U.S. Vanadium.

There are several historic sites that lie either in the vicinity of the corridor or in adjacent areas, as shown in figure II-26. Two sites presently listed on the National Register of Historic Places are Rico City Hall at Rico, Colorado, in Dolores County and Escalante Ruin, situated about 2 miles west of Dolores, Montezuma County, near the Dolores River.

In addition, several sites may qualify for designation on the National Register of Historic Places and National Registry of Natural Landmarks. These include: (1) Narraguinnep Fort, approximately 18 miles northwest of Dolores in Dolores County which was established in 1885 for protection of stockmen; (2) Coke Ovens, 1 mile south of Rico in Dolores County, that were used to make coke for smelters in the Rico area; (3) Rico-Silverton Stage Route, Hermosa Park--Hotel Draw, La Plata County, which was a stage route between Durango, Silverton, and Rico; (4) Petroglyphs of unknown origin, 10 miles south of Gateway in Mesa County on Colorado Highway 141, located 1/4 mile northwest of the mouth of Blue Creek; (5) Site of Big Bend, 2-1/2 miles west of Dolores, Montezuma County, on the Dolores River Valley; (6) Dominguez - Escalante Trail that follows the Dolores River in the vicinity of the communities of Dolores, Cahone, and Slick Rock; (7) Hanging Flume, located along the wall of the river canyon for a short distance below Uravan, Montrose County; (8) A charcoal kiln, 8 to 9 miles below Uravan on the Dolores River, Montrose County; and (9) Paradox Valley, a unique geological feature across which the Dolores River flows at right angles. All but one of these (Paradox Valley) have been recommended for nomination to the National Register.

The above listed areas are the known sites in the Dolores River corridor. A complete historical survey of the corridor has not been made. However, through a Memorandum of Agreement among the Forest Service, the Bureau of Land Management, the Bureau of Outdoor Recreation, the Colorado State Historic Preservation Officer, and the Advisory Council on Historic Preservation, such a survey will be completed prior to implementation of the proposed plan.

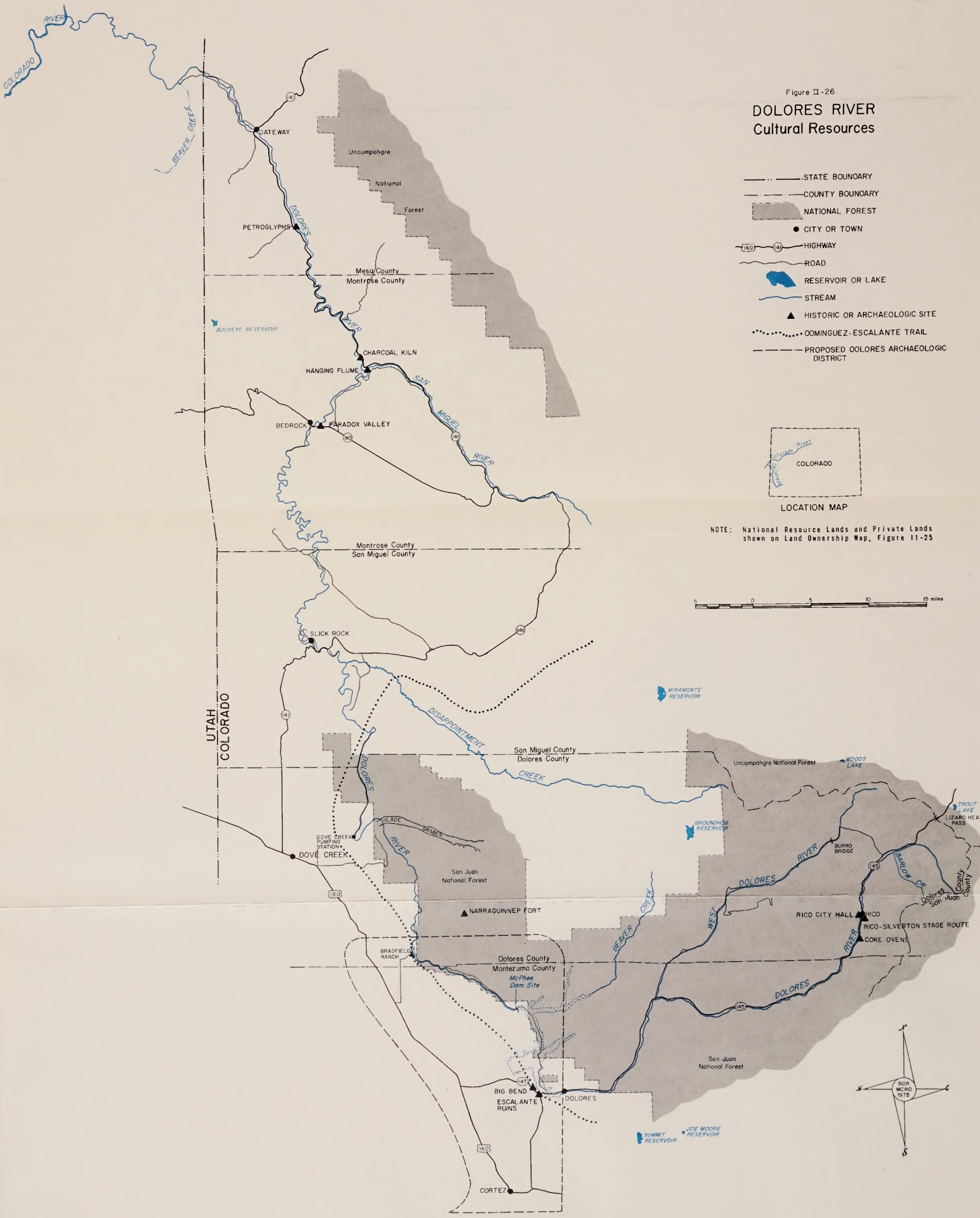
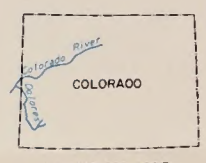


Figure II-26
DOLORES RIVER
Cultural Resources

- STATE BOUNDARY
- COUNTY BOUNDARY
- NATIONAL FOREST
- CITY OR TOWN
- 160 141 HIGHWAY
- ROAD
- RESERVOIR OR LAKE
- STREAM
- ▲ HISTORIC OR ARCHAEOLOGIC SITE
- OOMIGUEZ-ESCALANTE TRAIL
- PROPOSED DOLORES ARCHAEOLOGIC DISTRICT



NOTE: National Resource Lands and Private Lands shown on Land Ownership Map, Figure 11-25





The 6-mile-long hanging flume near the confluence of the San Miguel River once carried water for gold mining.

Archeology The Upper Colorado River Basin which includes the Dolores River contains archeological resources which span the past 11,000 years, and earlier evidences of man's presence may exist in the area. However, much of the Dolores River is unknown archeologically.

The earliest evidence of occupation in the Lithic Stage, which commenced about 9000 B.C., is represented by the finely chipped Clovis Fluted projectile points, followed by the well-known Folsom points, which in turn were followed by the delicately flaked leaf-shaped Eden and Angastura points. Nomadic big game hunting characterized the subsistence patterns of men during this period.

The next evidence of occupation represents the Archaic Stage, which dates from about 2000 B.C. and is characterized by artifacts that indicate man had adapted to a more sedentary hunting and plant gathering subsistence in a desert and semiarid environment. It was during the Archaic Stage that man began to specialize into regionally identifiable cultural groupings out of which the latter period and better known Anasazi and Fremont cultures emerged.

The Anasazi culture, which ranges from the 5th century to the 14th century A.D., was the precursor of the historic Pueblo cultures and is known for impressive achievements in architecture, ceramics, and horticulture.

Most of the existing knowledge of the post-Anasazi culture at Mesa Verde is based on excavations and investigations within Mesa Verde National Park about 25 miles to the southeast; however, it is known that the actual geographic center of the Mesa Verde culture lies north and west of the Mesa Verde proper, and includes the area of the proposed McPhee Reservoir.

Pottery was not introduced into the Mesa Verde region until about A.D. 500. Prior to this date tools and artifacts were made predominately of stone. There is evidence, based on typological studies from adjacent regions, that prehistoric man was hunting, and possibly living year-round, in the McPhee area by at least 2500 B.C. However, none of these early sites has been excavated.

The pre-ceramic occupation also includes the time period of about A.D. 1 to 500, which is termed Basketmaker II. Some sites of this culture have been reported near Durango, but none has been excavated in the McPhee area.

Between about A.D. 500 and 750, the Mesa Verde culture is termed Basketmaker III. People had constructed fired pottery, farmed, and lived in small villages composed of semi-subterranean pithouse structures, with nearby storage facilities. The actual extent of Basketmaker III sites is difficult to determine from present surface indications.

Following Basketmaker III, and often occupying the same site locations, Pueblo I villages (up to A.D. 950) are found. Habitations were built on the ground; however, some large semi-subterranean pithouses continued to be built. Redware pottery was introduced at this time.

Between about A.D. 900 or 950 and 1150 or 1200 the prehistoric occupation in the area is termed Pueblo II. Masonry surface villages were constructed, new styles of pottery were introduced, and supplementary features such as towers and agricultural check dams are associated with the sites.

The tribes of the Shoshones, Utes, and Paiutes were the next occupants of the area and are related to the earliest Desert Culture inhabitants of the Great Basin to the west. The Navajos, situated in the southern portion of the region, are latecomers to the region who arrived from the Northwest during the last 500 years of the Desert Culture period.

There have been no archeological surveys in the main stem Dolores above Rico or on the West Dolores. However, two major preliminary, archeological surveys have been conducted between the proposed McPhee Reservoir and the Bradfield Ranch and between Slick Rock and Bedrock. Forty-one sites were identified by H. W. Toll III and D. D. Dykeman between McPhee and the Bradfield Ranch in 1974. Coverage was continued on a non-intensive basis in the canyon 3.5 miles north of the Dove Creek Pumping Station, beginning at the Indefinite National Forest Boundary down the river where the road climbs above the river. The area south of the boundary to the pumping station was surveyed in 1970 by Breternitz. The sites surveyed appear to represent the Pueblo I (A.D. 750-950) of the Anasazi Culture.



Petroglyphs are found along the lower Dolores River Canyon between Slick Rock and Bedrock.

There are no signs of sites on the flat valley floor where agricultural activity has occurred. Discovered sites are on raised areas adjacent to the floor. Also, most sites are on the east and north side of the river, presumably to take advantage of longer hours of sunshine as well as the frequently wider area between the river and the canyon wall. Sites that have been known for many years have been vandalized. None of the sites has been individually recommended for National Register nomination. However, Dr. Breternitz recommended that the Dolores River project (McPhee Dam) cultural resources be nominated for the National Register as an Archeological District. The boundaries of the Dolores River Archeological District should be approximately: north--Cahone and the Bradfield Ranch; east--the eastern lake line boundary of the proposed McPhee Reservoir; south--Mesa Verde National Park and the Ute Mountain Reservation; and west--U.S. Highway 160. This action would follow the precedent set by the nomination of three nearby Archeological Districts: Mesa Verde National Park; the Sacred Mountain District; and the Ute Mountain Archeological District.

A survey between Slick Rock and Bedrock by Breternitz (1972) revealed 17 sites. Six of these were campsites and eight were chipping sites. Rock art panels were also identified along this stretch. In addition to the main canyon, side canyons such as Coyote, Bull, Springs, and McIntyre were investigated. Only in McIntyre was evidence of occupation discovered. Numerous indications of concentrated use were found but vandalism has caused significant damage. Access along a pipeline service road has contributed to this problem. The remainder of the canyon has been surveyed

for archeological sites, but the results are, as yet, unpublished. In addition, the surveys that produced the information for this section were preliminary and should not be considered complete.

PROBABLE FUTURE ENVIRONMENT WITHOUT THE PROPOSAL

Should the Dolores River and its immediate environment not be included in the National Wild and Scenic Rivers System, current trends in land ownership, use, and management will continue.

Land ownership will remain essentially the same within the study corridor. About 75 percent of the land is Federally owned; while the remaining 25 percent is in private ownership. Of the public lands, about two-thirds are National Resource lands and one-third are National Forest lands (see table II-16). Agriculture will continue to be the primary land use on public lands. Grazing, which contributes about \$120,000 annually to the economy, is the largest agricultural use, although some cropland is found along the river. Mining, particularly for uranium and vanadium, is expected to become increasingly important in the river corridor (see figure II-7 and table II-2). The value of mineral production is expected to be about \$4,700,000 annually by 1990 if current rates of production continue. Current trends in recreation use in the region will continue and are expected to reach 224,000 recreation days by 1990. Boating, camping, fishing, and hiking use will continue to increase by about 10 percent per year. Most of the private land on the upper reaches of the river involve mining claims, although there is a trend toward summer home development on this reach also. Below McPhee the Dolores has private lands devoted to agriculture and mining. These trends in private land development are expected to continue.

Two proposed water development projects along the river are the Dolores Project (McPhee Dam, figure II-20) and the desalinization project in Paradox Valley (figure II-22). The Dolores Project has been authorized by Congress and could be complete as soon as 1985. In addition to water storage, the McPhee Reservoir will also provide numerous outdoor recreation opportunities through the development of 1-1/2 miles of trail, 180 camping units, 2 boat ramps, 2 boat launching beaches, 1 boat landing beach, 2 river overlook sites, and a swimming beach.

The Paradox Valley Salinity Control Project has no proposed completion date. However, when the project is implemented it will provide improved water quality downstream in the Dolores and Colorado Rivers.

As discussed under "Authorized Projects" in the section on Water Resource Development, the San Miguel Project will utilize flows of the San Miguel River. However, it is located outside the study corridor and will not affect those river segments included in the study proposal.

The BLM and the Forest Service will continue to manage their respective lands for multiple use. In accordance with the Multiple Use and Sustained Yield Act, the Forest Service has classified portions of the river corridor as Travel Influence Zones and Water Influence Zones.

Management objectives for Water Influence Zones include:

1. Maintaining and improving the on-site and downstream usefulness of water in streams, lakes, and reservoirs.
2. Maintaining and improving soil stability of shore areas and water channels; protecting and developing riparian vegetation as may be necessary for soil stabilization and improvement of wildlife habitat and fisheries.
3. Providing optimum recreation opportunities and aesthetic values consistent with soil and water needs.
4. Protecting and improving fish and wildlife habitat.
5. Providing reasonable public access.

Management objectives for Travel Influence Zones include:

1. Resource management and use will be guided by the recreational and occupancy demands resulting from accessibility.
2. Aesthetic values will be maintained and enhanced.
3. Sites will be developed that are suitable and needed by recreationists, with due regard for aesthetic values.
4. Opportunities will be utilized on carefully selected sites for demonstration of coordinated multiple use management.

Where Water and Travel Influence Zones transect, the management directions for the more restrictive Water Influence Zone will be used.

Although potential recreation sites have been identified by the Forest Service, at present they have no plans to develop any of these sites. The Forest Service is currently encouraging dispersed use and it is expected that this will remove pressure to develop additional facilities.

Management of the river through National Resource lands would be carried out under the BLM's current authorities. Lack of an organic act would limit management actions to discretionary granting of leases, permits, rights-of-way, or easements. Their lack of law enforcement authority would prevent adequate protection of some resources.

National Resource lands administered by the BLM will continue to be managed for water, timber, grazing, prospecting and mining for uranium and vanadium, and recreation.

The BLM would recommend the withdrawal of public lands it administers and designation of the river and corridor as a Natural or Primitive Area if it is not designated as a Wild and Scenic River. In addition, the BLM has plans for new recreation developments along the river. These new facilities would include about 75 camping units, 25 picnic units, and about 60 miles of hiking trail (see figure I-5).

III. ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

ASSUMPTIONS

The following assumptions have been made in assessing the available data and determining the environmental effects for the Dolores Wild and Scenic River proposal:

1. The Dolores Project will result in construction of McPhee Dam approximately 11 miles downstream from the Town of Dolores (see figure II-20).

2. Mining will continue to be an important use of the resources along the Dolores River.

3. Recreational use of the Dolores River and its immediate environment will continue to increase with or without designation of the river as a component of the National Wild and Scenic River System.

4. Designation as a component of the National System will accelerate the rate of recreation use. This accelerated use will result in reaching the carrying capacity of the resource much sooner than without national designation. However, designation will provide additional means to accommodate, limit, or disperse use if necessary.

IMPACTS OF THE PROPOSED ACTION

Inclusion of 105 miles of the Dolores River and 56,400 acres comprising its immediate environment in the National Wild and Scenic Rivers System will ensure maintenance of its free flowing condition and the existing scenic, recreational, geologic, fish and wildlife, historic, cultural, and other natural values. The existing environment would be preserved, essentially unimpaired for the use and enjoyment of present and future generations.

Impact on Recreation

The Forest Service administers one picnic ground within the proposal area (see figure I-5). This is located at the Dolores River Canyon Overlook and contains six picnic units. The BLM, which administers about 62 percent of the lands along the corridor, has no developed facilities.

Within the segment proposed for designation (McPhee to Bedrock), hunting is the most popular recreation activity with about 36 percent of the total use as can be seen in the excerpt from table II-15A shown on the following page. Almost two-thirds of this use occurs on the 20-mile stretch between Disappointment Creek and Little Gypsum Valley. Of the total recreation use in the proposal area, about 60 percent occurs in this same segment. The 11-mile river stretch between the proposed MCPhee Dam site and Bradfield Ranch also receives moderate use with about 20 percent of the total visitation. The 94-mile reach of the Dolores between Bradfield Ranch and Bedrock is becoming increasingly popular for rafting and currently receives about 2,500 visitor days of use in this activity annually.

Overall recreation use in the river corridor is increasing at about 5 to 10 percent annually. Designation of 105 miles of the Dolores as a Wild and Scenic River is expected to cause an additional annual increase of about 3 percent. This will result in about 220,000 recreation days use by 1990. Much of this increase will be related to rafting and camping.

Three camp/picnic areas and 36.5 miles of trail will be developed and will provide a means of controlling and dispersing the recreational use along the river.

Recreation use will be limited to the extent necessary to preserve the values which have led to the proposed designation. The intensity of use will vary with the classification. The 33 miles of "wild" river will receive the least intense use with "recreational" segments receiving the most intense use. (Approximate daily carrying capacities have been determined by BLM and the Forest Service to be 5 visitor days/mile on "wild" segments, 20 visitor days/mile on "scenic" segments, and 30 visitor days/mile for "recreational" segments.)

Overall the proposal will have a significant impact on recreation in the river corridor in that it will provide additional facilities, thereby enhancing camping, picnicking, and rafting opportunities.

TABLE II-15A

Estimated Current Annual Number of Recreation Visits for Proposal Area Corridor

River Segment	Camp	Picnic	Hike	Boat	Hunt	Fish	Other	Total
McPhee-Bradfield 11 miles	20	20	20	20	7,300	2,000	2,300	11,680
Bradfield- Disappointment Cr. 41 miles	50	300	20	900	4,000	500	1,300	7,070
Disappointment Cr.- Little Gypsum Valley 20 miles	100	100	50	650	26,300	3,000	7,500	37,700
Little Gypsum Valley-Bedrock 33 miles	100	100	50	900	3,100	500	1,000	5,750
Total	270	520	140	2,470	40,700	6,000	12,100	62,200

In addition the scenic qualities, ranging from the steep, conifer-lined mountain slopes near Bradfield to the sheer sandstone cliffs in Slick Rock Canyon, will be protected from incompatible developments and preserved for future generations.

Impact on Water Resources

Although the headwaters of the Dolores River contain high quality water that is low in dissolved solids and suspended sediment, by the time these waters reach the proposal area they have become contaminated by natural and manmade sources. According to State standards the water within river segments proposed for designation is classified B₂ (see table II-9). A B₂ classification means that these waters are not suited for body contact recreation. However, on the Dolores this results from natural conditions and does not exclude use of the river for general recreation activities associated with wild and scenic river designation.

Salinity, or total dissolved solids, and suspended sediment discharge are the primary natural sources of pollution. At Dolores, just above the proposal area, the salt concentration averages 137 milligrams per liter increasing to 319 milligrams per liter at Bedrock, just below the proposal area. The high suspended sediment load of the river below Dolores makes it unacceptable for primary contact recreation. This is most severe for the 53 miles of the proposal below Disappointment Creek which is the main contributor to the sediment load.

Manmade pollution problems relate to human waste contaminants and industrial discharges. However, neither of these produce significant water quality problems. The communities of Dolores and Slick Rock occasionally discharge insufficiently treated waste into the river. These communities have populations of about 800 and 100 respectively and are widely separated; thus, these contaminants are easily assimilated by the river. Currently, industrial (principally mining) discharges produce no significant impacts on the water quality of this river stretch.

The Dolores Project will aid in providing a quality river setting. Minimum flow volumes of 20 cfs in dry years, 50 cfs in normal years, and 78 cfs in wet years will make it possible to establish a trout fishery in the river below the dam. In addition a new sewage treatment facility, to enable Dolores to meet water quality standards, will be provided when the dam is constructed.

The proposal will accelerate the annual rate of recreation use in the river area as discussed under impacts on recreation. Increased use will result in minor problems related to human waste disposal. These people will also cause increased soil compaction and loss of vegetation through trampling or fire in and around campgrounds, with the resultant erosion increasing the amount of suspended sediment in the river. Although this becomes increasingly important as one proceeds downstream where there is already a high erosional potential, it is not considered significant to water quality due to the high natural suspended load of the river.

Any Federally funded diversions within or upstream from the proposal area (other than the Dolores Project mentioned above) which would diminish existing scenic, recreational, fish, and wildlife values would be prohibited. Since the waters of the Dolores River are already over-appropriated there is little possibility that any future water rights would be granted. The proposal will not affect water rights on the Dolores River.

Overall, the most significant impact on the water quality of the Dolores River will be the benefits derived from more strict enforcement of water quality standards and development of waste disposal facilities for recreationists. National status for the river will provide added incentive to enforce water quality regulation on the communities and mining and industrial operations which make discharges into the river. Vault toilets at the three new campgrounds and portable chemical toilets that will be required for boaters would serve to maintain or improve water quality.

Impact on Land Use and Ownership

Approximately 79 percent of the land adjacent to the portion of the Dolores River proposed for designation is in public ownership (16 percent by Forest Service and 63 percent by BLM) as shown in table II-17. The BLM and the Forest Service manage their lands for recreation, wildlife, water grazing, mining, and timber production.

The remaining 21 percent of the lands are in private ownership. These lands are scattered between the proposed McPhee Dam site and Bradfield Ranch, 6 miles either side of the Slick Rock bridge through Little Gypsum Valley, and at the end of Slick Rock Canyon near Bedrock.

Scenic and public use easements will be needed on about 5,600 acres of private land to provide access and to protect wildlife, geologic, historic, archeologic, and scenic values of the corridor (see figure I-4). These easements are expected to cost approximately \$220,000. Since this is primarily agricultural land, the easements will not significantly alter present land use. However, they will preclude any future developments (homesites, resorts, junkyards, etc.) on these lands that would impair the river values. This is not expected to be significant. Entry, sale, or other disposition of public lands within the designated boundaries would not be permitted. However, with the planned land ownership adjustments between BLM and the Forest Service, such disposition would not be required or desired by either agency. The impacts on the two primary land uses within the corridor are discussed below.

Impact on Mining Uranium and vanadium deposits exist along all but the upper 15-20 miles of the proposal area. At \$15 per pound of U_3O_8 concentrate, known reserves within the line-of-sight land along the river are estimated to total over 257,000 pounds or about 0.03 percent of the U.S. total. ERDA has estimated probable and possible potential uranium and vanadium resources in the river corridor at between 3.7 and 8 million pounds of U_3O_8 and between 16 and 29 million pounds of V_2O_5 , or 0.32 percent of the probable potential \$30 per pound U_3O_8 reserves in the United States.

An additional 1 to 2 million pounds of U_3O_8 and 6.5 to 11.5 million pounds of V_2O_5 are estimated to be in Segment 4, below the San Miguel River confluence.

Potash and gypsum are found in the Paradox Member throughout the area and the Big Gypsum Valley, respectively. These are not commercially mined at present.

Although the basin is relatively unexplored for oil and gas, there are an estimated 75 million barrels of oil and 300 billion cubic feet of gas within its boundaries. Less than 10 percent of this would be found within the corridor (see figure II-9).

An estimated total of 4,100 mining claims have been filed upon within the corridor. In addition, there are several hundred other claims that may or may not be in the corridor. (See appendix A.) The largest concentrations are in the Slick Rock and Gypsum Valley areas. Also, Phillips Oil has staked over 800 claims in Dolores County just outside the river corridor.

Subject to existing valid claims, designation of the 33-mile "wild" segment will result in withdrawal of Federal lands within the seen-area corridor from all forms of appropriation under the mining laws and operation under the mineral leasing laws. The actual boundaries of the seen-area corridor will be determined during management planning, but the area involved is estimated to average one-quarter mile in width on each side of the river. This would include about 10,000 acres of land. Existing valid claims on the "wild" segment, as well as any claims or prospecting on the "scenic" and "recreational" segments, will be subject to regulations to preserve existing water quality and prevent undue impairment of the scenery. Unpatented claims in the "wild" segment would be eliminated, with lands involved reverting to the control of the Bureau of Land Management with no compensation provided to claim holders. Unpatented claims in other segments are subject as the need exists to examination by Federal land-managing agencies to determine if valuable minerals are present. If mineral value cannot be proven, the claims would be subject to reversion of complete control to the Federal government.

Considering the potential for U_3O_8 and V_2O_5 (1.2-3 million pounds U_3O_8 or about 28 percent of the total in the corridor and 3-6.5 million pounds V_2O_5 or about 15 percent of the total) estimated to be within the corridor along the "wild" segment, the impact on mining in this area could be significant, since designation would prohibit mineral extraction from within the seen-area corridor. The degree of actual impact, however, would be relative to the amount of uranium and vanadium proven within the corridor, the ability to mine within the narrow and mostly sheer-walled canyon, and the future demand for and prices of those resources.

Regulations designed to prevent impairment of the river values along the "scenic" and "recreational" segments will increase the costs of extracting the minerals by about \$100,000 annually. Through reclamation, screening, and other required measures, these regulations should provide for the extraction

of valuable minerals while at the same time protecting the scenic qualities of the river. However, the special regulations could to some degree act as a deterrent to mining in the "scenic" and "recreational" segments. Additional discussion on this and other aspects of mining as it relates to the local economy is found under "Impacts on the Economy."

The ten active mines within the corridor will be allowed to continue operation. Any special measures that will be needed to protect scenic and other natural values, such as screening, will be determined during management planning.

Impact on Agriculture Agricultural use in the corridor is mainly for grazing of cattle. Between McPhee Dam site and Bradfield Ranch there are about 500 acres devoted to cropland, most in hay and alfalfa.

In 1972 the USDA-Colorado Type 4 Study of the Dolores Basin identified several potential areas for small watershed projects (P.L. 566). These are on the headwaters and tributaries of the Dolores and San Miguel. There are no existing or potential P.L. 566 projects on or near the Dolores River Corridor proposed for inclusion in the Wild and Scenic Rivers System. The proposal will not affect installation of these measures on the upstream watersheds.

Agriculture and ranching are important economic activities in the Basin. The Soil Conservation Service investigations of the corridor disclosed that all lands suitable for crop production are currently being used for that purpose. There is no potential for increasing agricultural production on private lands in the corridor. The proposal will not affect nor restrict agricultural uses.

No commercial timber harvesting takes place within the river corridor. Since the river area is managed as a Water Influence Zone by the Forest Service some sanitary cutting, i.e., removal of dead, dying and diseased trees, does occur. Designation as a National Wild and Scenic River will not alter this situation, nor will the limited sanitary cutting impact the designated river or its users.

Impact on Soils and Vegetation

Soils in the corridor between McPhee and Bedrock vary considerably from the valley flood plains to the canyonlands. Between McPhee Dam site and Disappointment Creek (52 miles) the terrain is characterized by steep sideslopes with a level flood plain adjacent to the river (typified by cross-section B, figure II-11). Soils of the sideslopes are generally medium to moderately coarse while those of the flood plain are moderately coarse. Vegetation along this 55-mile river segment is composed of ponderosa pine with an oakbrush, shrub, and grass understory. The sideslopes are a pinyon-juniper type.

From Disappointment Creek to Little Gypsum Valley (20 miles) the landscape repeatedly varies from nearly level to gently sloping landforms to very steep sideslopes (cross-section C, figure II-11). The soils of steep slopes are moderately coarse while those of the flood plains and alluvial fans are medium to moderately coarse. Streamside vegetation is commonly tamarisk and cottonwood with pinyon-juniper or rock outcrops on the canyon sideslopes.

Downstream from Little Gypsum Valley to Bedrock (33 miles) the river passes through a narrow, almost vertical canyon. The soils of the sandbars and alluvial fans on the canyon bottom are coarse textured. Vegetation is limited to some pinyon-juniper on ledges with grasses, sage, and some shrubs along the canyon floor.

Generally the soils of the proposal segment are moderately susceptible to compaction and erosion except on the steep sideslopes and canyon walls where the erosion hazard is high.

The vegetation along the river within Forest Service boundaries (15 percent of the corridor) is protected through management as a Water Influence Zone. The only harvesting allowed is for sanitary cuts. Inclusion of the river in the National System will enhance this control. River designation will also aid in protecting any plant species found in the area which are or may in the future be listed as Endangered or Threatened.

Construction of three camp/picnic areas and 36.5 miles of trail (6 feet wide) will result in removal of vegetation on about 50 acres. Use of these sites will result in soil compaction, loss of vegetation, and increased erosion in and around campsites and along the trail. Overall these impacts on soils and vegetation will be minor except at the two campsites between Little Gypsum Valley and Bedrock (about 10 acres) shown in figure I-5, where the soils are most susceptible to compaction and erosion.

Further, with more people in the area there will be a greater likelihood of manmade forest or brush fires which will lead to additional erosional problems. This is likely to be most significant in the lower reaches (generally below Slick Rock) where the climate is extremely dry most of the year. More fires will occur at lower reaches, but they will cause less damage than in the more forested areas of the upper reaches above Bradfield Ranch.

Overall, adverse impacts on soils and vegetation are not expected to be significant, whereas they will receive the beneficial effect provided by protection from incompatible developments.

Impact on Fish and Wildlife

The Dolores River supports a variety of fish and wildlife. Although the river below Dolores is nearly dry during parts of the year, some fish are able to survive in the deeper holes. Flannel-mouth and blue mountain suckers, sculpins, round-tail chub, and carp are generally abundant. Also

found are red shiners and channel catfish. Minimum flows that will result from developments of the Dolores Project (20 cfs in dry years, 50 cfs in normal years, and 78 cfs in wet years) will make it possible to establish a trout fishery below the dam.

Deer are year-round residents of the proposed river segment and are fairly abundant along the entire length. Elk can be found in the area during the winter months. There are several elk crossings between McPhee Dam site and Bradfield Ranch which are heavily used during the winter and would be protected by national designation. A small herd of antelope is located in Disappointment Valley. Bear and mountain lion are known to inhabit the river area. Bear, although rare, are most common near the Dove Creek Pumping Plant. Mountain lion are found here also, as well as near Horseshoe Bend above Slick Rock.

Numerous small mammals including beaver, coyote, rabbit, skunk, raccoon, fox squirrel, and weasel are found in the corridor.

The sage grouse, an important small game species is found in the sagebrush country along the river. Few waterfowl are found due to the lack of wetlands. Other important birds include golden eagles and many species of hawk. The peregrine falcon and Southern bald eagle, both Endangered species, are known to inhabit the river canyons. River designation will aid in protecting these species' habitat, as well as any other animal species which may in the future be listed as Endangered or Threatened.

Hunting and fishing will continue under appropriate State and Federal regulations. Under the provisions of the Wild and Scenic Rivers Act, the Secretary of the Interior and/or the Secretary of Agriculture in cooperation with the State may regulate hunting for public safety, use, and enjoyment.

Development of the proposed three new camp/picnic sites and 36.5 miles of trail will result in the loss of habitat on about 50 acres. Due to the small size of these individual developments (approximately 5 acres) the loss would generally be to small mammals and birds and should not be significant. Increased use along the river corridor is likely to alter the life patterns of larger mammals and birds. Designation of the river will tend to protect the remaining habitat from future incompatible developments.

Generally, the proposed action will result in minor losses of wildlife habitat, however, the overall effect should be a beneficial impact through the preservation and improvement of wildlife habitat and water quality.

Impact on Cultural Resources

Several historic sites lie near the study corridor. Two sites, Rico City Hall at Rico and the Escalante Ruin are the only sites presently listed in the National Register of Historic Places. Other sites include: Fort Narraguinnep, 18 miles northwest of Dolores; Coke Ovens, 1 mile south of Rico; Rico-Silverton State Route, Hermosa Park-Hotel Draw; Petroglyphs, 10 miles south of Gateway;

Site of Big Bend, 2-1/2 miles west of Dolores; Dominguez-Escalante Trail, along Dolores River from Cahone to Slick Rock; Hanging Flume, below Uravan; a charcoal kiln, 8 miles west of Uravan; and Paradox Valley, a unique geologic feature through which the Dolores River flows (see figure II-26). Except for the Paradox Valley, these sites have all been recommended for nomination to the National Register.

Preliminary surveys have been conducted between the proposed McPhee Dam site and Bedrock and numerous archeologic sites have been identified. Vandalism has caused significant damage to many of these sites. Increased use in the area is likely to aggravate this problem. The same would hold true for the various historic sites which are not adequately protected and could constitute a significant impact. Features worthy of preservation will be identified and protected according to the provisions of the National Historic Preservation Act of 1966 (see Memorandum of Agreement with the Advisory Council on Historic Preservation, Appendix B).

Impact on Transportation

The river corridor is well removed from the main highway, rail and air systems. There are no railroads serving the basin and air and bus service is limited to Cortez, Durango, Grand Junction, Montrose, and Moab.

As can be seen from figure II-1, only two highways intersect the proposed river segment. Colorado Highway 141 crosses the river at Slick Rock and Highway 90 intersects near Bedrock. Numerous unimproved and four-wheel drive roads meander through the river corridor. Most of these are a result of mining or timber harvesting operations. The proposal will tend to increase use on the back roads which may require additional maintenance.

Although there is none planned at present, any future Federal aid highway developments must comply with Section 4(f) of the Department of Transportation Act of 1966. Future highway improvement proposals, therefore, might involve less convenient and more expensive routing. The present highway system is adequate to handle any increase in traffic volume resulting from the proposal. Overall impacts on transportation are not expected to be significant.

Impact on the Economy

Irrigated agriculture and dry farming constitute the most substantial economic sector of the basin. Agriculture employs approximately 20 percent of the total work force. About 37,500 acres of land are irrigated, and about 110,000 acres are developed for dry farming of beans and wheat.

Government agencies are the second largest employers, averaging about 1,000 employees. Third is the retail industry with about 20 percent of the work force. In terms of dollar value, the automobile and food sector are the leaders, followed by general merchandise and public utilities.

Tourism is also important during the summer months. In addition to public facilities on Federally managed lands, numerous private enterprises offer pack trips, float trips, jeep tours, and other outdoor activities.

The mineral industry contributes significantly to the economy. Production of uranium and vanadium is becoming the most important mining activity of the river corridor. Manufacturing is also an important industry in the region. Timber production is the leader in this field, followed by food processing. Economic activity within the actual river corridor is composed of agriculture and mining.

Designation of the river as a National Wild and Scenic River will increase the number of visitors in the region. This will have a significant beneficial impact on those sections of the economy catering to the recreationist since recreationists are expected to spend about \$122,000 more annually than if the river were not designated. Among those benefiting are the outfitters and sporting goods retailers. These impacts will be associated mainly with the communities in the general vicinity, particularly Cortez and Dolores. Within the actual river corridor, regulations on mining activities to protect environmental values, especially along the "wild" segment, will increase mining cost by about \$100,000 annually. Other costs associated with the proposal include \$65,000 for recreation developments, \$40,000 for annual operation and maintenance, and \$50,000 for annual administration.

Mining and mining exploratory work (for uranium and vanadium) will not be permitted within the 33-mile-long Slick Rock Canyon. However, mining will be permitted outside of a designated boundary to be established in the Management Plan that will follow approximately along the canyon rims. This will result in an inability to extract mineral deposits near the river within the canyon and laterally from the sides and walls of the canyon slopes. As described earlier, about 28 percent of the uranium reserves and 15 percent of the vanadium reserves in the river corridor, respectively, are found in the 33-mile-long proposed "wild" segment. These mineral resources will not be recoverable. However, this does not mean that 28 and 15 percent of the eventual value of the uranium and vanadium resources to the industry and local economy will be lost. Due to the often sheer canyon topography, narrow canyon width, and location of mineral reserves, much of the mineral resource might be unrecoverable without withdrawal of the area. Actual loss of mineral values could be substantially less than mentioned above. Also, the areas beyond the canyon rims where mining will be permitted are where most previous prospecting and mining have occurred.

Some loss of extractable minerals, principally uranium and vanadium, could occur between Bradfield Ranch and Slick Rock Canyon and along the West Dolores, should it be designated, due to special mining regulations that will be developed by the Bureau of Land Management and the Forest Service to protect scenic and other natural values in the river corridor. In other words, interests may choose not to prospect and mine certain areas, rather than meet the regulations that will be applied and the higher costs of mining that will be involved. However, only a small percentage of the extractable

mineral reserves are expected to be affected. Thus, economic losses to the mining industry and local economy, other than the estimated \$100,000 per year higher mining costs, are not expected to be severe in the "scenic" and "recreational" segments.

Overall, losses of extractable minerals and higher costs of mining within the river corridor are expected to be mostly offset by increased contributions to the local economy from recreationist expenditures and increased prominence of the area which should aid the ability to attract additional business and industry.

Other Impacts

Increased recreational use of the river and river corridor is expected to result in a light to moderate increase in the need for general policing and cleanup, search and rescue, and fire control activities, especially at river access points, recreation sites, and in remote areas. Most of the responsibility for these activities will rest with the Bureau of Land Management, Forest Service, and State. Increased administrative costs have been estimated and presented in the report as part of the proposal. A relatively small portion of the burden for the above activities, however, may be borne by county governments and local communities along the river.

Future powerlines, natural gas pipelines, gas production facilities, and other utility developments may not be allowed in the river corridor. This may require expensive rerouting or under-grounding, if the latter is determined feasible and complete restoration of the disturbed area is possible. This will be given further consideration during management planning.

IV. MITIGATING MEASURES INCLUDED IN THE PROPOSED ACTION

Within 1 year after designation of the Dolores River as a component of the National Wild and Scenic Rivers System, a master plan will be completed and will include measures designed to mitigate adverse impacts. This master plan will include the following mitigating measures.

The amount and type of outdoor recreation use throughout the river area will be restricted to the carrying capacity of the affected resources in order to prevent any impairment of those values which caused the river to be designated.

New facilities will be developed only after a careful assessment has been made to determine the location which has the least potential for compaction and erosion.

Vault toilets will be provided at developed areas and portable chemical toilets will be required for river floaters to reduce the potential for water and land pollution.

Protective measures will be implemented to reduce the threat of fire. This will involve limiting the use of open fires and designating specific areas where open fires will be permitted during periods of high fire risk.

The possibility of litter will be reduced by stressing a program of "Bring out what you take in." Should this prove ineffective, banning of cans, bottles, or other nonburnable containers will be required.

Aesthetic qualities will be protected by prohibiting, subject to valid existing rights, the removal of minerals within the boundaries of river areas designated as wild. In general, existing data on valid mining claims in areas designated as scenic or recreational are incomplete. However, should there be any valid mining claims within these areas, future operations on such claims will be regulated to preserve existing water quality and prevent undue impairment of the scenic qualities of the area.

Uniform regulations for the use of aircraft, snowmobiles, and all-terrain vehicles will be applied. This will include specific regulations to provide for public safety and for the prevention of noise and water pollution, damage to soil and vegetation, the harassment of wildlife, and conflicts of use with other people using the area.

Scenic qualities of the area will be protected by developing standards for the alteration of the existing environment within the proposal area. This will be accomplished through scenic easements which will require harmonious blending of structures in their natural setting, frontage setbacks, and permits from the managing agency to cut trees or clear the natural vegetation.

Protective steps would be taken involving the habitat of the American peregrine falcon, the Southern bald eagle, and other Threatened or Endangered species. These protective administrative actions would include, for example, the restriction of human encroachment on the habitat of such animals during critical periods of their life cycles, such as the nesting seasons of the Endangered birds.

Historical and archeological sites will be identified through survey in order to provide appropriate protection. This action will be initiated early in the detailed planning process. As master plan proposal progresses to a more specific state, the criteria of effect as stipulated in Section 106 of the National Historic Preservation Act will be applied and all activities that affect cultural resources will be coordinated with the Council on Historic Preservation and will follow the procedures outlined under Section 106 of the National Historic Preservation Act (see appendix B).

Key scenic and geologic sites will be identified so as to provide adequate protection.

V. UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS

Minor unavoidable adverse environmental impacts will occur as a result of the designation of segments of the Dolores River and its immediate environment as a component of the National Wild and Scenic Rivers System. These are:

1. Increased numbers of people visiting the proposal area annually will require imposition of regulations on use to protect the existing environment. These regulations on use and potential limitations or distribution of uses will cause a loss of personal freedom to go where, when, and how a person might otherwise desire.
2. Minor increases in litter, pollution of water and air, and noise pollution associated with increased visitation to the proposal area annually, especially at the developed sites, will not be fully mitigated. With adequate on-the-ground management (see Section I), these would not be significant impacts.
3. Substantial future diversions of water within the proposal area (excluding the authorized Dolores and Paradox Valley Projects) would be foregone as would any Federally funded diversion in the upstream areas of sufficient magnitude to unreasonably diminish existing scenic, recreational, fish, and wildlife values within the proposal area. Since the river is already over-appropriated, no further diversions are expected and this should not constitute a serious impact.
4. Entry, sale, or other disposition of public lands within the designated boundaries would be foregone. However, with the completion of planned land ownership or management adjustments between BLM and the Forest Service, such disposition would not be expected to be required or desired by either agency. Thus, the impacts of this constraint would be minor or nonexistent.
5. Contributions to national energy production through mineral exploration and development within the withdrawn area of the wild river segment would be foregone. Considering the potential for uranium and vanadium along this segment, this would not have a significant impact on national energy development programs.
6. Ground cover (primarily shrubs and grass) and wildlife habitat associated with small mammals will be adversely affected during construction of recreation facilities on a portion of 50 acres of designated sites. A minor adverse effect on the more fragile elements of the ecosystem (i.e., mosses, lichens, wild flowers) and possible soil compaction problems are anticipated during periods of heavy use in designated recreation areas shown in figure I-5. These impacts are not considered to be significant.

7. The increased threat of forest fire resulting from more people in the proposal area and associated firefighting activities will not be fully mitigated.
8. Future Federal-aid highway construction which would have an adverse impact upon the wild and scenic river would be subject to Section 4(f) of the Transportation Act and would be discouraged. Future highway improvement proposals, therefore, might involve less convenient and more expensive routing. At present no future improvements are predicted that would be affected by the proposal.

VI. RELATIONSHIP BETWEEN SHORT TERM USE OF THE ENVIRONMENT AND LONG TERM PRODUCTIVITY

Inclusion of 105 miles of the Dolores River and 56,400 acres comprising its immediate environment in the National Wild and Scenic Rivers System would ensure maintenance of its free flowing condition and the existing scenic, recreational, geologic, fish and wildlife, historic, cultural, and other natural values.

Production of uranium and vanadium resources within the "wild" segment will be foregone in favor of protecting the wild and scenic values of this river segment for future generations.

Existing short term uses of the environment would remain substantially unaltered under the proposed plan. Short term economic gain would be foregone from the exploitation of mineral resources without appropriate measures to protect the wild and scenic river values and any increased use of the area for timber production, agriculture, or grazing.

The existing environment would be essentially unimpaired for the use and enjoyment of present and future generations through specific rules and regulations governing all uses. No major physical change is planned. The designation of the river segments would enhance the long term productivity of the area for the above-mentioned values.

VII. IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES
WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION

No major physical changes to the existing environment are planned. Accordingly, no resources will be irreversibly or irretrievably committed. By designating part of the Dolores River as a component of the National Wild and Scenic Rivers System, all natural resources in the river corridor are committed to the management objectives of preserving the river in its free-flowing condition, maintaining water quality, and preserving historic and cultural values and the immediate river environment for the benefit and enjoyment of present and future generations.

Designation of the four segments of the Dolores River by Congress to the National System can be modified or reversed by the Congress should it be in the national interest at some future time.

VIII. ALTERNATIVES TO THE PROPOSED ACTION

In addition to the proposed action, the following alternatives were considered for the Dolores River.

1. No Action
2. Inclusion of the West Dolores
3. Classification Options
4. University of Colorado Wilderness Study Group Proposal

These alternatives are summarized in table VIII-3 on page VIII-21.

ALTERNATIVE 1 No Action

The 140 miles of Dolores River and 78,000 acres comprising the immediate environment of the two eligible segments would not be included in the National Wild and Scenic River System under this alternative. Land ownership would remain essentially the same with about 75 percent Federally owned (50 percent National Resource lands and 25 percent National Forest land) and 25 percent in private ownership (see table II-16).

Agriculture and mining, particularly for uranium and vanadium, would continue to be dominant land uses. Recreational use of the Dolores would continue to increase by about 10 percent annually. By 1990 approximately 224,000 recreation days will occur on public recreation facilities.

The Forest Service would continue to administer its lands as either Travel or Water Influence Zones under multiple use management, as described on page II-112. The Forest Service has no plans at present to develop any additional recreation facilities within the river corridor.

The BLM would continue to manage its lands along the river for recreation, water, wildlife, grazing, and mining. Control of land use would be through withdrawals and discretionary granting of leases, permits, rights-of-way, and easements. Lack of law enforcement authority by the BLM would limit the protection afforded the resource values.

The Dolores Project (McPhee Dam) could be completed by 1985. Recreation opportunities including 1-1/2 miles of trail, 180 camping units, 2 boat ramps, 2 boat launching beaches, 1 boat landing beach, 2 river overlook sites, and a swimming beach are planned for the reservoir area.

Impacts

Impact on Recreation Recreation use will continue to increase at a rate of about 5 to 10 percent annually. Designation of the river would increase this figure by about 3 percent per year. The type and mix of recreation use and the resulting impacts will be about the same as for the proposed action.

The scenic qualities of the river would continue to be protected under the management policies of the Forest Service and the BLM. The BLM currently has plans to develop 75 camping units, 25 picnic units, and about 60 miles of trail. The location of these facilities has not been determined but they would occupy approximately 100 acres. Protection of the scenic attributes of private lands (22 miles or 21 percent of the Bradfield Ranch to Bedrock segment) will be left to the discretion of the individual owners. Mining activity, estimated at 80 percent probability by the Colorado Geological Survey, and homesite development will continue to increase in the corridor. Continuation of this trend will have a significant impact on the scenic values of the river as it relates to recreation.

The construction of McPhee Dam and Reservoir will have a positive effect on the aesthetics of the river by providing an average minimum sustained flow of 50 cfs. This will improve the river for recreation, fish, and wildlife purposes.

Impact on Water Resources The current natural flow of the Dolores River is erratic with high spring flow during snowmelt and low fall and winter discharges. The construction of McPhee Reservoir will alter the flow of the river and provide a minimum sustained flow throughout the year as described above.

Since the river's waters are already over-appropriated (see Appendix, table A-2) there is no potential for additional water rights. Therefore, the no action alternative will not affect water rights.

The water quality of the river decreases from the headwaters as discussed on page II-66. Under the no action alternative, water quality is expected to decrease due to increased mining and additional homesite development.

Impact on Minerals Mining makes a significant contribution to the local economy throughout the length of the river. The probability of future mining activity along the entire corridor is estimated at 80 percent, especially within the Bradfield Ranch to Bedrock section. Continued mining activity will be a major element of the local economy. However, the continuation and probable increase in mining activity, especially for uranium and vanadium, is likely to have a significant adverse impact on soils, vegetation, wildlife, and aesthetics, as noted above for those resources.

Impact on Vegetation and Soils Impacts on vegetation and soils would be similar to those for the proposal from recreation development along the river. This activity would occur on about 100 acres and thereby disturb the soil and associated vegetation. The proposal would disturb an additional 50 acres for recreation development. Protection of Threatened, Endangered, or Rare plant species, which may be present in the study area, would be somewhat lessened.

Impact on Fish and Wildlife Continued development of public lands for mining and recreation and private lands for mining and homesites will further encroach upon wildlife habitat. Without controls on public lands this could be significant. Protection afforded Threatened, Endangered, and Rare animal species would decrease. Actions to improve fishing habitat and fishing would probably be scaled-back.

Impact on Cultural Resources Increasing recreational use and mineral prospecting in the area will increase the likelihood of vandalism and removal of artifacts at unprotected historical and archeological sites. It is anticipated that cultural features worthy of preservation on public lands will be identified and adequately protected according to the National Historic Preservation Act of 1966. The 8,000 acres of private land would not receive such protection.

Impact on Land Use and Ownership Development of homesites on private lands would result in increased erosion and water pollution from litter, sediment, and effluent from septic tanks. Vegetation and wildlife habitat would be destroyed and the scenic values of the river impaired by the construction of these homesites. Additional public and private lands devoted to mining will also result in soil and vegetation loss and have significant impacts on water quality and wildlife habitat.

Impact on Agriculture According to the Soil Conservation Service, USDA, there is no potential for additional agricultural production in or adjacent to the river corridor. Therefore, there will be no impact on agriculture.

Impact on Transportation Demand for access to and through the area for recreation and mineral prospecting will continue. Since there is no authority to control surface transportation for prospecting on National Resource lands except persuasion, this could have a significant impact, especially below Slick Rock where there is little access at present. Executive Order 11644, "Use of Off-Road Vehicles on the Public Lands" (Feb. 9, 1972), provides policy and procedure for regulating off-road vehicles only. The Forest Service would be able to control access for mining through the 1872 Mining Laws. Impact on major highways and commercial transportation facilities is not significant.

Impact on the Economy The primary impact on the economy of no action would be a continuation of current trends and the existing way of life. Agriculture and mining would remain the primary sectors of the economy. Agriculture would continue to contribute about \$120,000 annually to the economy. The value of mineral production is expected to be about \$4,700,000 annually by 1990 if current trends continue. Expenditures for recreation would increase to approximately \$1,100,000 by 1990.

ALTERNATIVE 2 Inclusion of the West Dolores

This alternative is the same as the proposed action with the addition of the West Dolores River, from its headwater to the confluence with the main stem, as a "recreational" segment (figure VIII-1).

This alternative would protect 105 miles of the main stem Dolores River plus 35 miles of the West Dolores. A total of 78,000 acres are included in this alternative. About 8,000 acres are private lands and would be protected by easements; the remaining are public lands. This alternative is expected to generate an additional 100,000 recreation days or a total of 323,000 recreation days by 1990. Two additional new picnic sites, 2 primitive campgrounds, 2 standard campgrounds, and 64 miles of hiking trail would be developed to accommodate this use. These facilities would occupy about 75 acres.

Impacts

The impacts of this alternative are generally the same as for the proposed action. However, the following additional impacts would result from inclusion of the 35-mile West Dolores.

Impact on Recreation Current recreation use on the West Dolores is approximately 58,000 recreation days (see figure II-15, p. II-100). Inclusion of this portion of the river will bring about an additional increase of over 100,000 recreation days by 1990 for a total of about 323,000 recreation days.

The construction of 2 additional camp/picnic areas for a total of 6 camp/picnic areas plus the development of 28 additional miles of trails for a total of 64 miles of trails will accommodate the expected increase in recreation use. These facilities will occupy an additional 25 acres for a total of 75 acres. Acquisition and development costs for these facilities will be about \$440,000. Annual operation and administration costs will be an additional \$65,000 for a total of \$155,000.

Inclusion of the West Dolores will result in statutory protection for the scenic values of an additional 35 miles of river for a total of 140 miles. This action will assure that the river and its associated scenic values will remain essentially in their present condition while providing additional recreation opportunities.

Impact on Water Resources Water in the West Dolores is of a much higher quality than in the lower sections. Waste from the current recreation activity along the river has not impaired the water quality. Inclusion of this portion of the river will help to maintain the high quality of the water.

The current 11 water rights (for irrigation, domestic, and fishery use) on the West Dolores will not be affected by inclusion of this segment of the river in the National Wild and Scenic River System. Since all of the water in the river has already been appropriated, this alternative will have no effect on future potential water rights.

Impact on Land Use and Ownership Approximately 12 miles or 35 percent of the 35-mile long West Dolores is in private ownership with the remainder in Federal ownership. Inclusion of the West Dolores will result in acquisition of an additional 1,400 acres of land for easements for a total of 8,000 acres. These easements will not alter the current land uses.

According to the Soil Conservation Service, USDA, there is no potential for additional agricultural production along the river. Therefore, this alternative will have no affect on agriculture.

The river area is currently managed by the Forest Service as a Water Influence Zone. Since timber harvesting is already precluded by current Forest Service regulations, inclusion of the West Dolores as a recreational river will have no impact on timber production.

Impact on Minerals Important minerals found in the area adjacent to the West Dolores include gold, silver, lead, copper, and zinc. Current activities involve not only mining but also exploration for new deposits and leaching of old mine dumps for silver. These operations are expected to continue and could impair the scenery and the water quality of the West Dolores. Inclusion of the West Dolores would provide additional means to control any adverse effects of mining such as water pollution, erosion, and soil and vegetation disturbances. Although regulations designed to protect the environment will add some cost to mining operation, the overall impact on mining is expected to be minimal.

Impact on Vegetation and Soils The vegetative cover along the West Dolores is a spruce-fir type with willows along the bottom lands. The river area is managed as a Water Influence Zone and designation as a component of the National Wild and Scenic River System will not alter these management objectives, but will strengthen the protection provided. A slightly greater degree of protection would also be afforded any Threatened, Endangered, or Rare plant species that may be present in the river corridor.

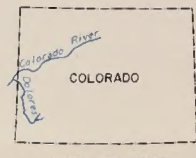
The soils of the West Dolores have moderate limitations for recreation use (see table II-4). Development of additional recreation facilities occupying 25 acres for a total of 75 acres will have a minimal effect on the soils and vegetation in the area.

Impact on Fish and Wildlife The West Dolores supports a good trout fishery and inclusion of the river in the National Wild and Scenic River System will help to ensure the preservation of current conditions. The development of additional recreation facilities and hiking trails on an additional 25 acres will displace small mammals and birds and destroy their habitat. This adverse impact is not expected to be significant.

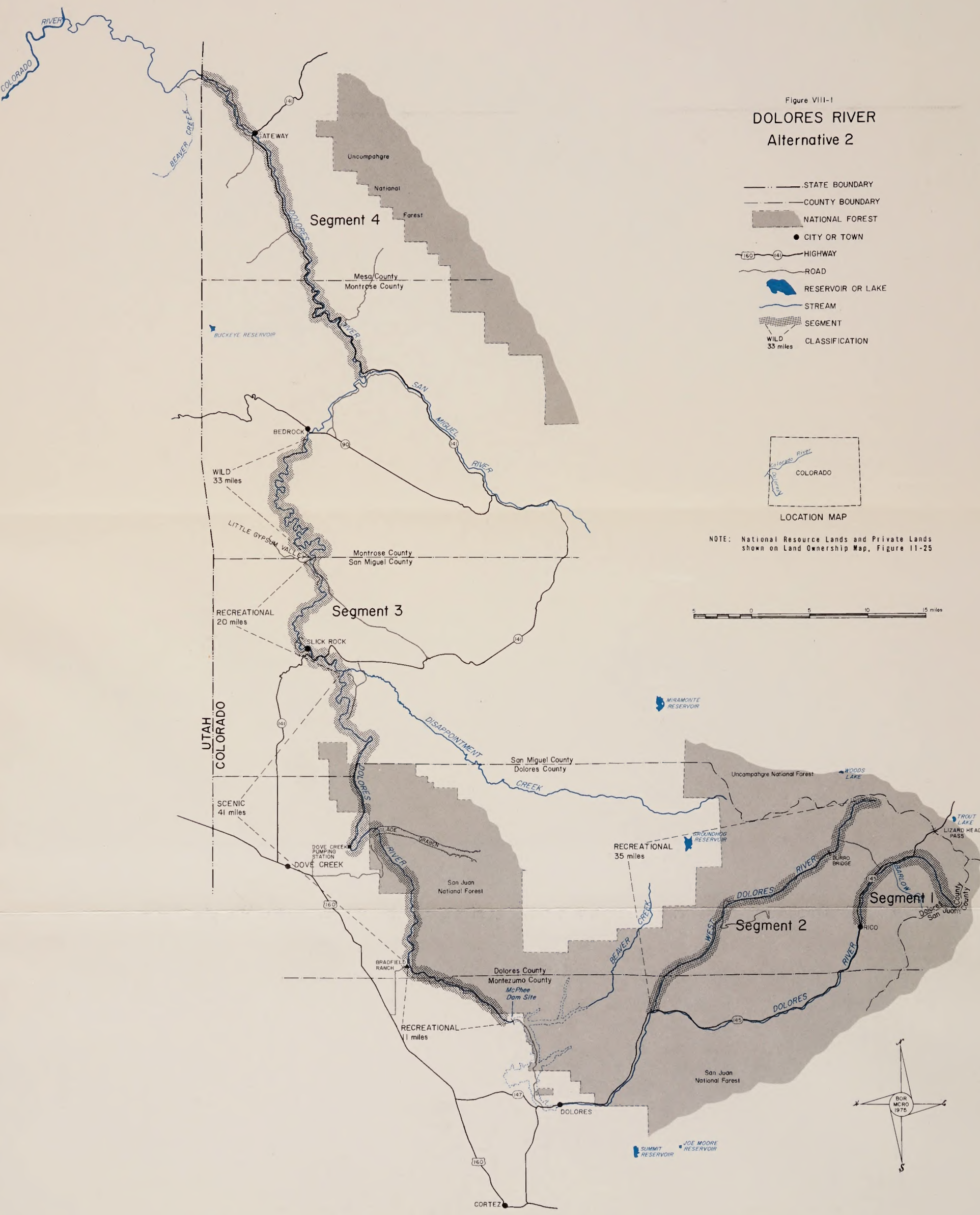
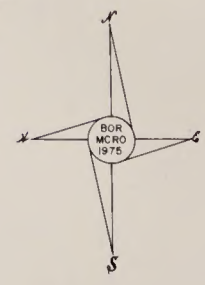
Designation of the West Dolores would benefit the protection of Threatened, Endangered, or Rare animal species in the river corridor.

Figure VIII-1
DOLORES RIVER
 Alternative 2

- STATE BOUNDARY
- COUNTY BOUNDARY
- NATIONAL FOREST
- CITY OR TOWN
- 160 141 HIGHWAY
- ROAD
- RESERVOIR OR LAKE
- STREAM
- ▨ SEGMENT
- WILD 33 miles CLASSIFICATION



NOTE: National Resource Lands and Private Lands shown on Land Ownership Map, Figure 11-25



Impact on Cultural Resources Increasing recreational use and mineral prospecting in the area will increase the likelihood of vandalism and removal of artifacts at unprotected historical and archeological sites. It is anticipated that cultural features worthy of preservation on public lands will be identified and adequately protected according to the National Historic Preservation Act of 1966.

Impact on the Economy Inclusion of the West Dolores will ensure a continuation of present land uses and will not preclude any current economic activity. In addition, approximately \$80,000 annually in additional expenditures will be made by recreationists visiting the area.

ALTERNATIVE 3 Classification Options

In order to provide for consideration of alternative means of resource allocation which would involve trade-offs between environmental enhancement and resource development, possible variations in the proposed river classifications were analyzed. Option 1 reflects a discretionary change in the classification of the Little Gypsum Valley to Bedrock section from "wild" to "scenic." Option 2 considers the discretionary change in classification of the Bradfield Ranch to Disappointment Creek from "scenic" to "recreational" and the Little Gypsum Valley to Bedrock section from "wild" to "recreational."

Option 1

This alternative is identical to the proposed action except that the 33-mile river segment from Little Gypsum Valley to 1 mile above Highway 90 would be classified "scenic" instead of "wild" (see figure VIII-2). This change in classification would have two significant results. First, it would allow mineral exploration and development within that segment rather than restricting such use as would be necessary if classified "wild." Second, there would be about 59,200 more visitor days of recreational use by 1990 than would occur under "wild" designation.

Impacts

The impacts of this alternative would be essentially the same as the proposal except for the 33-mile segment from Little Gypsum Valley to 1 mile above the Highway 90 bridge. Significant impacts would be related primarily to recreation and mining.

Impact on Recreation An increase of 59,200 visitor days within this canyon, which for most of its length is less than 1/2-mile wide, could have serious impacts. Although the alluvial deposits along the canyon bottom are only moderately susceptible to erosion, those of the steep side slopes have a high erosion potential.

Construction and use of an additional boat launching ramp, 32 miles of trail, 2 campgrounds, and 1 picnic ground (about 35 acres) along this river segment would significantly impact soils, vegetation, water quality, and wildlife. These facilities would cost approximately \$63,000 and have an annual operating and maintenance cost of \$28,500. Total costs for this alternative are presented in table VIII-3. Annual expenditures by recreationists associated with this alternative will reach about \$307,000 by 1990.

Impact on Mining Although there are no known reserves of uranium or vanadium, the geologic formations indicate that these reserves are likely to occur. The "scenic" classification would allow exploration for these resources. Impacts on mineral resources would vary from those of the proposal only in the lower segment. By classifying this segment "scenic" instead of "wild," it would be possible to continue exploration for uranium and vanadium or other minerals. According to the Colorado Geological Survey, there is a 60 percent probability that mining activity will occur.

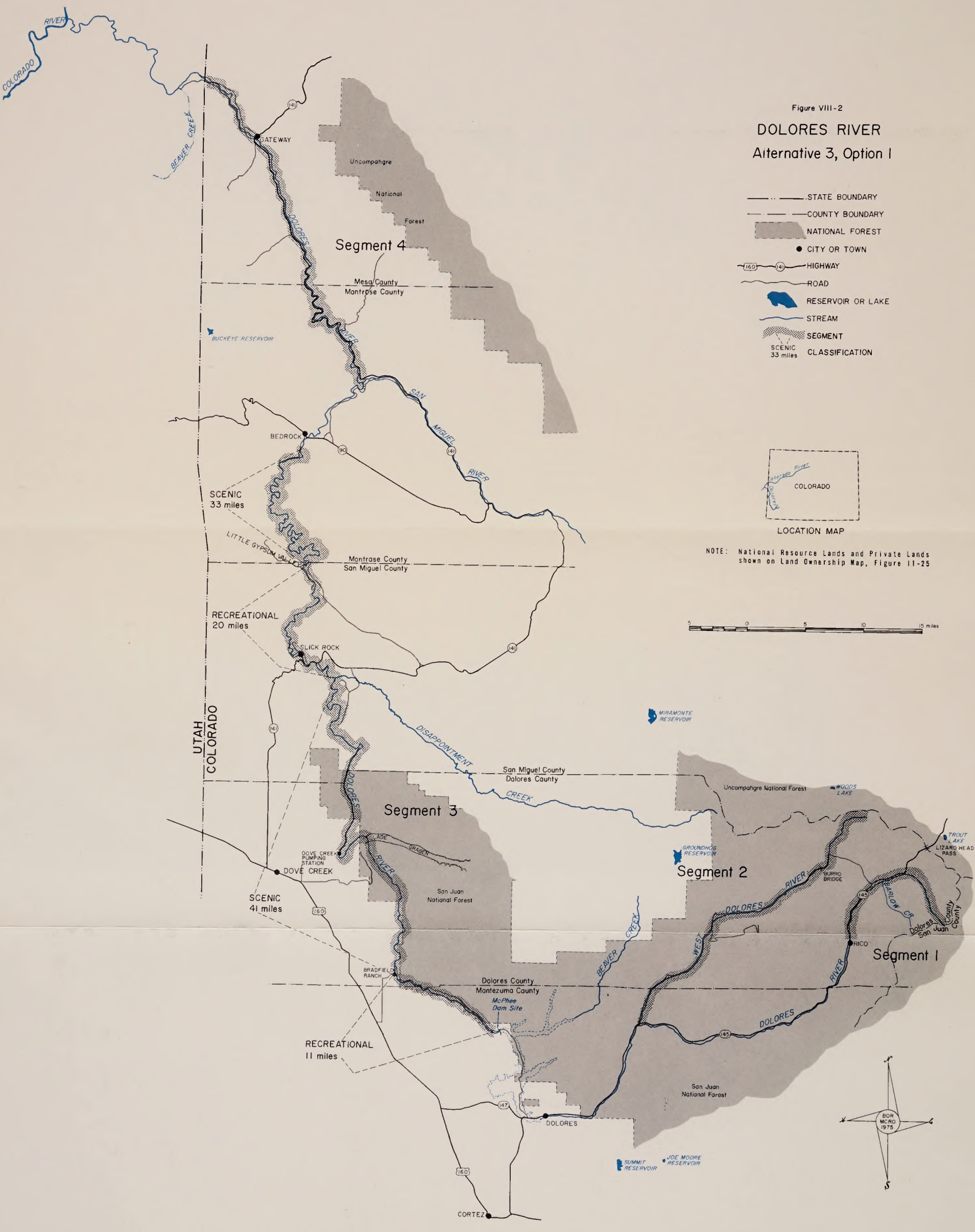
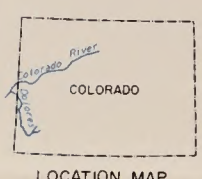
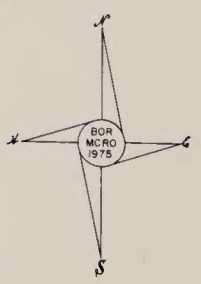
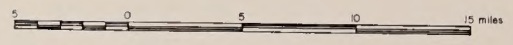


Figure VIII-2
DOLORES RIVER
 Alternative 3, Option 1

- STATE BOUNDARY
- COUNTY BOUNDARY
- NATIONAL FOREST
- CITY OR TOWN
- 160 141 HIGHWAY
- ROAD
- RESERVOIR OR LAKE
- STREAM
- ▨ SEGMENT
- ▨ SCENIC 33 miles CLASSIFICATION



NOTE: National Resource Lands and Private Lands shown on Land Ownership Map, Figure 11-25



However, these activities would be conducted under controls that would ensure retention of the scenic qualities of this area. Since methods of meeting long-term energy demands are not now predictable, the need for energy resources that may exist in this corridor is uncertain.

Mineral extraction would not add significant economic benefits to the region unless major deposits of national importance were discovered. Their economic value to the region would then depend on national priorities of need for their extraction to meet energy demands. It should be noted that river management objectives associated with national designation can be modified or reversed if at some future time it is determined that exploitation of the energy resources in the Dolores corridor is in the national interest.

Again, the narrow width of the canyon would intensify the impacts on the vegetation and soils. Mining operations would also be likely to add pollutants to the river and lower the water quality.

While this alternative would produce more recreation opportunities and make available potentially large amounts of valuable minerals, the resultant adverse impact on the natural environment is likely to be significant.

Option 2

This option includes the same segments as the proposal, but they would all be classified as "recreational." The river stretch from Bradfield Ranch to Disappointment Creek (41 miles) would change from "scenic" to "recreational" and the portion from Little Gypsum Valley to Bedrock (33 miles) would change from "wild" to "recreational" (see figure VIII-3).

Impacts

The impacts of this alternative would be generally the same as the proposal except for the two segments described above.

Impact on Recreation Recreation use in the two segments would increase by approximately 106,000 visitor days. This alternative would require the development of an additional 5 camp/picnic sites and 3 picnic sites for a total of 12 areas. In addition, approximately 59 miles of hiking trail are needed for a total of 88 miles. These additional facilities will occupy about 75 acres for a total of about 125 acres. Total development costs would be approximately \$245,000 as shown on table VIII-3. Expenditures by recreationists are expected to reach about \$357,000 by 1990 under this alternative.

As discussed in Option 1, intensive recreation use within the 33-mile Little Gypsum Valley to Bedrock section would produce significant adverse impacts on the area's soils, vegetation, and wildlife.

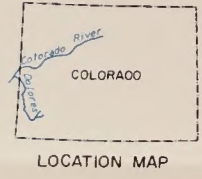
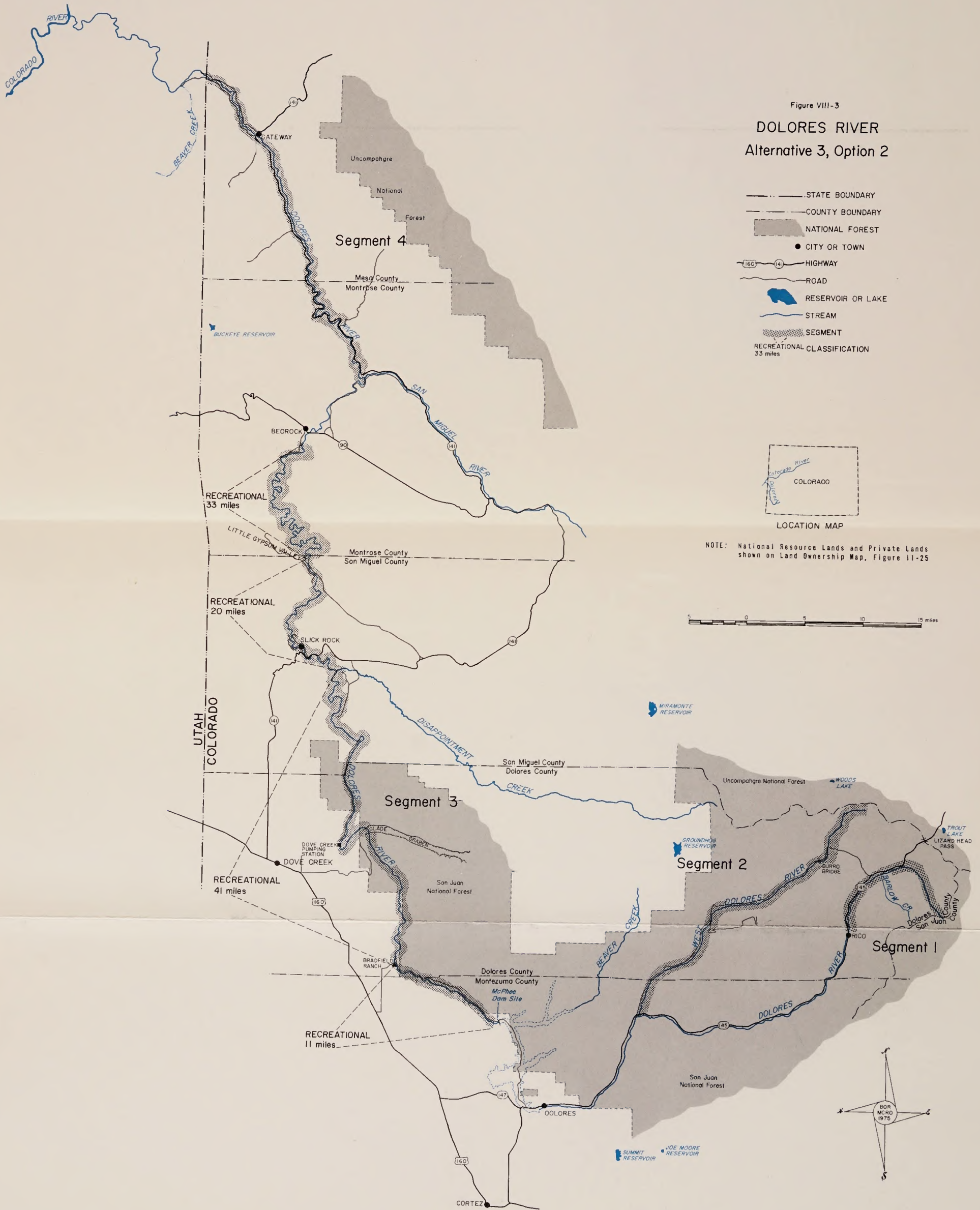
This would also occur on the Bradfield Ranch to Disappointment Creek segment which is more accessible and would receive greater use pressure by recreationists.

While this alternative would create the opportunity for extensive recreation use, the wild and scenic qualities of the river would likely be degraded through intensive use of the resource. In addition, increased recreation use would not allow for a primitive type of recreation experience that would be possible under a "scenic" or "wild" classification.

Impact on Mining By changing the classification of the "wild" and "scenic" segments to "recreational," it would be possible to continue the exploration and extraction of minerals with fewer constraints. Costs associated with rehabilitation of mined areas would be less than if the areas were in "wild" or "scenic" classification. As a result, there would be some loss of natural and scenic quality. The extent to which this would occur would be in direct relation to the extent that mining occurs, which would be a product of the richness of the uranium/vanadium deposits and the national need for these ores to meet energy demands. According to the Colorado Geological Survey the probability of future mineral extraction in the upper and lower segments is 90 percent and 60 percent, respectively.

Economic impacts would result from a "recreational" classification of the "wild" and "scenic" segment. These would result primarily from an increase in activities associated with mineral exploration and extraction and from the increased recreational uses that would be permitted. The economic values are directly related to the national need for uranium/vanadium deposits that may be located in these segments.

Figure VIII-3
DOLORES RIVER
 Alternative 3, Option 2



NOTE: National Resource Lands and Private Lands shown on Land Ownership Map, Figure II-25

ALTERNATIVE 4 Wilderness Study Group Proposal

This proposal was brought forth during the public involvement process (see page IX-4). It was prepared by the University of Colorado Wilderness Study Group (WSG) and is based on a 2-year study of the Dolores River environment and subsequent report (106 pp.). The WSG proposal was evaluated in its entirety as part of the study process. However, three portions of the WSG proposal were not considered by the study group as viable alternatives to the proposed action. The areas excluded from consideration were (1) the segment of the main stem from Rico to 1 mile below the proposed McPhee Dam, (2) the segment from 1 mile above Highway 90 to the confluence of the San Miguel River, and (3) the segment in Utah. The first two segments which encompass the McPhee Dam site and the Paradox Valley Project were specifically excluded from study by Congress (see page I-3). The remaining segment in Utah was not studied because of the severe time constraints (1 year) imposed by P.L. 93-621.

The rationale behind the proposal as stated in the WSG report is as follows: 1/

Through study legislation, P.L. 93-621, the authority was granted to study portions of the Dolores River for inclusion into the National Wild and Scenic River System. These important portions of the Dolores River were excluded from study: The Main Dolores from Rico to the proposed McPhee Dam site, the stretch of river across Paradox to the San Miguel confluence, and the portion of the Dolores from the Utah stateline to the confluence with the Colorado.

The University of Colorado Wilderness Study Group acknowledges the importance of studying the entire river environment, including the tributaries. A study excluding a portion of river tends to invalidate the overall picture and the conclusions that might be drawn from such a study. Such errors of omission may remove unique or vital ecosystems from protection and as a result allow possible degradation of the remaining portions of the river that may be or may not become part of the National Wild and Scenic River System.

Two of these three portions of river were omitted to permit possible construction of proposed river projects (a dam and desalinization project). Should these projects prove incompatible with sound resource allocation and are not constructed these portions would not receive protection.

1/ Recommendations for Classifications of the Dolores River, the University of Colorado Wilderness Study Group, June 1975.

For these reasons the Wilderness Study Group offers its recommendations for maximum protection of the entire Dolores River environment, and urges that proper classification be designated for those portions of the river previously excluded.

The WSG report recommends that the entire West Dolores and Dolores Rivers from their headwaters to the confluence of the Colorado River in Utah along with 91,300 acres (table VIII-1) be added to the National Wild and Scenic River System (see figure VIII-4). The WSG has found all portions of the Dolores eligible for inclusion and has recommended the classifications as shown in table VIII-2.

Impacts Specific impacts by river segment are as follows:

Headwaters West Dolores to confluence with main stem (segments 1 and 2)

In general, the impacts occurring in this segment would be identical to those presented in alternative #2. However, classification of the upper 5.6 miles as "wild" would reduce recreation use by about 80 percent. This would result in a much less significant impact on soils, vegetation, water quality, and wildlife. Restrictions on mining within 1/4 mile of the river would further protect these resources. Although specific information on mining is not available for this area, there are known to be reserves of gold, silver, lead, copper, and zinc in this region. "Wild" classification would prohibit mining within 1/4 mile of the upper 5.6 miles (about 1,800 acres) of the river.

Headwaters main stem to confluence with Beaver Creek (segment 3)

The upper portion of the segment (Headwaters to Rico) was found ineligible for designation by the study team and the remaining portion to Beaver Creek was excluded by law from consideration. Nevertheless, the most significant impact of including this segment would involve land acquisition. As can be seen in table VIII-1, almost 70 percent of the 24,600 acres within the corridor are in private ownership. Easements would be required on over 17,000 acres, at a cost of approximately \$668,000, to protect the corridor. Although designation would attract additional visitors to this stretch of river, the resulting impact on soils, vegetation, and wildlife would not be significant. Regulations on mining activity will provide safeguards against water pollution, producing a significantly beneficial impact on water quality.

Beaver Creek to Bradfield Ranch (segment 4) This segment is identical to the McPhee to Bradfield Ranch segment identified in the proposal except that it extends upstream from the McPhee Dam site approximately 1 mile to the mouth of Beaver Creek. The 1-mile upstream segment has been excluded from study by P.L. 93-621. Impacts resulting from "scenic" designation for the segment would differ from those of the "recreational" classification of the proposal. However, under scenic designation, about 30 percent less recreation use would occur annually thereby resulting in a decrease in potential adverse impacts on soil, vegetation, wildlife, and historic archeologic values on the 3,500 acres included within the corridor. Approximately 2,200 acres of private lands would be required through easement purchase, costing about \$138,000.

TABLE VIII-1

Acreage Required Within Corridor Boundary, By River Segment,
Wilderness Study Group Alternative

Segment	Miles	Acres Per Mile	W/in Corridor	Acreage	
				Public	Private
1. Headwaters of West Fork to 1.0 mile above Burro Bridge	5.6	320	1,800	1,800	--
2. W. Fork from 1.0 mile above Burro Bridge to Confluence w/Dolores	29.0	320	9,300	5,500	3,800
3. Main Dolores from Headwaters to Confluence with Beaver Creek	77.0	320	24,600	7,400	17,200
4. Main Dolores from Confluence with Beaver Creek to Cahone Bridge	13.0	270	3,500	1,300	2,200
5,6, &7. Cahone Bridge to Confluence with Disappointment Creek, except: (Reference point - Lat. 37°57'30", Long. 108°50')	28.0	295	8,300	7,800	500
a.) 5 miles upstream from ref. pt. to ref. pt.	5.0	480	2,400	2,300	100
b.) From ref. pt. to Disappointment Creek (visible rim to visible rim)	6.0	640	3,800	3,700	100
8. Disappointment Creek to 0.25 mile below Little Gypsum Valley Bridge	24.5	190	4,700	2,700	2,000
9. 0.25 mile below Little Gypsum Valley Bridge to 1.0 mile above Highway 90 Bridge at Bedrock (visible rim to visible rim)	33.5	290	9,700	9,300	400
10. 1.0 mile above Highway 90 Bridge at Bedrock to 0.5 mile below bridge at Gateway	41.5	320	13,300	9,800	3,500
11. 0.5 mile below bridge at Gateway to Confluence with Beaver Creek just after Colorado-Utah Line	8.5	320	2,700	1,300	1,400
12. Confluence w/Beaver Creek to Confluence of Dolores and Colorado Rivers (visible rim to visible rim Where applicable; otherwise 1/4 mile on each side of river)	22.5	320	7,200	5,800	1,400
TOTALS	294.1		91,300	58,700	32,600

TABLE VIII-2

Segment Number	Location	WSG CLASSIFICATIONS		Proposed Action	
		Alternative #4 Miles	Classification	Miles	Classification
1.	Headwaters of West Dolores to 1 mile above Burro Bridge	5.6	Wild	35	No classification
2.	West Dolores from 1 mile above Burro Bridge to confluence with Dolores	29.0	Recreational		
3.	Headwaters of Dolores to confluence with Beaver Creek	77.0	Recreational	15	Not eligible, remainder to 2 miles below Beaver Creek excluded from study by P.L. 93-621
4.	Beaver Creek to Bradfield Ranch	13.0	Scenic	11	Recreational
5.	Bradfield Ranch to 1/4 mile above Dove Creek pumping station	19.0	Wild		
6.	1/4 mile above Dove Creek pumping station to 1/4 mile below Dove Creek pumping station	0.5	Scenic	41	Scenic
7.	1/4 mile below Dove Creek pumping station to Disappointment Creek	20.0	Wild		
8.	Disappointment Creek to 1/4 mile below bridge in Little Gypsum Valley	24.5	Recreational	20	Recreational
9.	1/4 mile below bridge in Little Gypsum Valley to 1 mile above Highway 90 bridge	33.5	Wild	33	Wild
10.	1 mile above Highway 90 bridge to 1/2 mile below bridge at Gateway	41.5	Recreational		First 3.5 miles excluded from study by P.L. 93-621, remainder not eligible
11.	1/2 mile below bridge at Gateway to Beaver Creek in Utah	8.5	Scenic		8-mile segment to Utah border not eligible by itself
12.	Beaver Creek in Utah to confluence with Colorado River	22.5	Wild		Utah segment not studied because of severe time constraints (1 year) imposed by P.L. 93-621

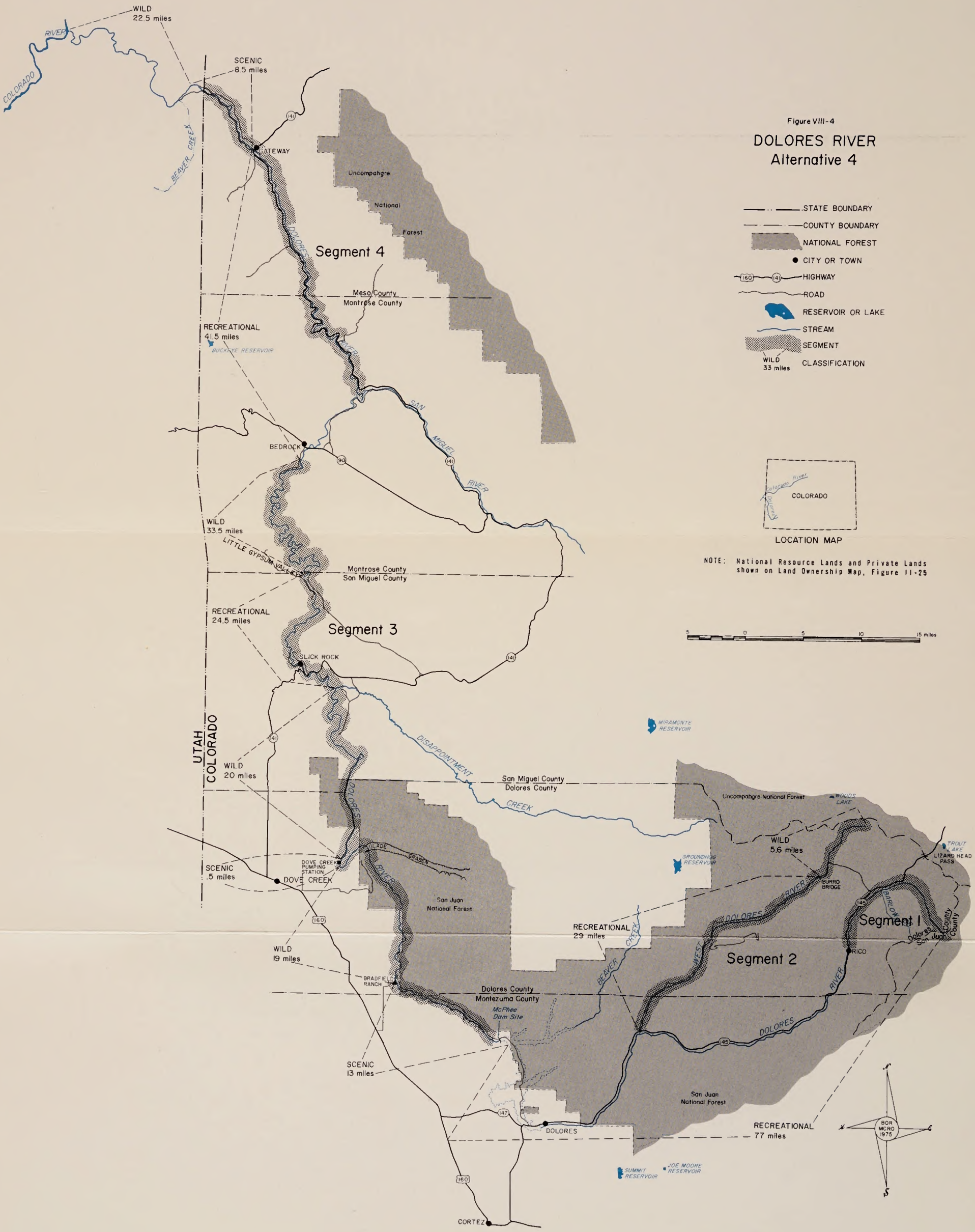
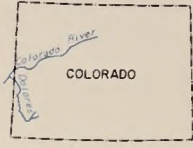
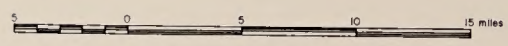


Figure VIII-4
DOLORES RIVER
 Alternative 4

- STATE BOUNDARY
- COUNTY BOUNDARY
- NATIONAL FOREST
- CITY OR TOWN
- 160 141 HIGHWAY
- ROAD
- RESERVOIR OR LAKE
- STREAM
- SEGMENT
- WILD 33 miles CLASSIFICATION



NOTE: National Resource Lands and Private Lands shown on Land Ownership Map, Figure 11-25



Bradfield Ranch to Disappointment Creek (segments 5, 6, and 7) Except for 1/4 mile above and below the Dove Creek Pumping Plant, this segment is classified as "wild". Since the proposed action classifies this segment as "scenic", this alternative would reduce the recreation use from that of the proposal by about 75 percent with resulting reductions in compaction and erosion impacts on soils, less disturbance of vegetation and wildlife habitat, and improved water quality. Restrictions on mining activity would also reduce these impacts, while at the same time produce adverse impacts on the mining industry, by prohibiting extractions of the uranium and vanadium (see table II-10) within 1/4 mile of the river (approximately 14,500 acres). There are about 700 acres of private land within this segment. Easements would cost approximately \$27,500.

Disappointment Creek to 1/4 mile below Little Gypsum Valley Bridge (segment 8) This segment is identical to the one in the proposed action and the impacts would be the same as those for the proposal.

One-fourth mile below Little Gypsum Valley Bridge to 1 mile above Highway 90 Bridge (segment 9) This segment is identical to the one in the proposed action and the impacts would be the same as those for the proposal.

One mile above Highway 90 Bridge to 1/2 mile below bridge at Gateway (segment 10) The first 6 miles of the river from the Highway 90 Bridge to the confluence of the San Miguel River were excluded from study by P.L. 93-621. The next 38 miles were found ineligible for inclusion due to a lack of outstanding remarkable natural values and substantial alterations in the natural environment. Therefore few data have been generated to assess the impacts of "recreational" designation for this segment. However, it is expected that designation of this 44-mile river segment (14,100 acres) would increase the number of visitors to this stretch of river with resultant impacts on soils, vegetation, and wildlife. About 25 percent of the corridor is in private ownership and fee or easement acquisition will be required on 3,500 acres and cost about \$138,000. Regulations on mining activity could aid in improving the water quality of this river segment.

One-half mile below Gateway Bridge to Beaver Creek in Utah (segment 11) This stretch of river was found to possess the necessary qualities for inclusion in the National Wild and Scenic Rivers System except for its short length (about 8 miles). Detailed data have not been gathered for this segment, but "scenic" designation will draw additional visitors to the area creating impacts on soils, vegetation, water quality, and wildlife. Just over 50 percent of the 2,700 acres within the corridor is privately owned and easement purchase of 1,400 acres, costing approximately \$55,000, will be required to protect the river values. No significant mineral reserves are known to exist in this segment.

Beaver Creek to confluence of Colorado River (segment 12) This 22.5-mile segment was not included for study by P.L. 93-621 and therefore no information is available by which to evaluate impacts of "wild" designation. It is expected that a significant impact would be the restriction on removal of any minerals which may exist within the 1/4 mile corridor (7,200 acres).

As a "wild" section, use will be light and therefore impacts on soils, vegetation, wildlife, and water quality will be minimal. Easement acquisition will be required on 1,400 acres of private land at a cost of about \$55,000. Since these are generally agricultural lands this should not have a significant impact.

Other recommendations Although specific recommendations for development and location of recreation facilities were not presented by the Wilderness Study Group, a number of administration/management recommendations were brought forth in their report. Among these were recommendations for Forest Service administration/management of the river above Bradfield Ranch, and BLM administration/management of the remainder. Specific recommendations relating to fishing, hunting, camping, wildlife management, mining, road construction, timber management, water quality, operation of the proposed McPhee Reservoir, and the disposal of the Dove Creek Pumping Station were also included.

Most of these are sound management principles and are generally applicable to the master planning and administration of the Dolores River. They will be utilized by land managing agencies in the preparation of management plans and the administration of the river.

TABLE VIII-3. SUMMARY OF ALTERNATIVES

	Alternative 1 No Action	Alternative 2	Alternative 3 Option 1	Alternative 3 Option 2	Alternative 4	Proposal
River Miles	195	140	105	105	294	105
Total Acres	N.A.	78,000	56,400	56,400	91,300	56,400
Acres/Mile	N.A.	320	537	537	310	537
Ownership (Acres)						
Federal	N.A.	70,000	50,800	50,800	58,700	50,800
State	N.A.	-0-	-0-	-0-	-0-	-0-
Private	N.A.	8,000	5,600	5,600	32,600	5,600
TOTAL		78,000	56,400	56,400	91,300	56,400
Land Acquisition						
Fee (Acres)	N.A.	-0-	-0-	-0-	-0-	-0-
Easement (Acres)	N.A.	8,000	5,600	5,600	32,600	5,600
Recreation Facilities ^{1/}						
Campgrounds	3 (75 units)	4 (42 units)	5 (61 units)	8 (121 units)	*	3 (28 units)
Picnic Grounds	2 (25 units)	2 (15 units)	2 (17 units)	4 (50 units)	*	1 (12 units)
Miles of Trail	60	64	68.5	95.3	*	36.5
Recreation Oppor- tunities (Recreation Days by 1990) ^{1/}	224,000	323,000	280,000	367,000	*	220,000
Expenditures by Recreationists ^{1/}	\$1,102,000	\$208,000	\$307,000	\$357,000	*	\$122,000
Acquisition Cost ^{1/}	N.A.	323,000	220,000	220,000	\$1,281,000	220,000
Development ^{1/}	N.A.	117,000	128,000	245,000	*	65,000
Annual Operation and Maintenance ^{1/}	N.A.	60,000	68,000	121,000	*	40,000
Administration (Annually) ^{1/}	N.A.	95,000	109,000	180,000	*	50,000

Alternative 1 - No Action (includes the West Dolores)

Alternative 2 - Inclusion of the West Dolores

Alternative 3

 Option 1 - Change "wild" segment to "scenic"

 Option 2 - Change "wild" and "scenic" segments to "recreational"

Alternative 4 - University of Colorado Wilderness Study Group Proposal

*Accurate figures are not available since the amount of development has not been determined. According to the mileage and acreages involved, a rough estimate would put the cost at approximately three times those for the proposal.

^{1/} Expenditures, developments, and costs above those which would occur without a plan.

IX. CONSULTATION AND COORDINATION

CONSULTATION AND COORDINATION IN THE DEVELOPMENT OF THE PROPOSAL AND THE ENVIRONMENTAL STATEMENT

The study of the Dolores River, Colorado, was a cooperative State-Federal effort. In February of 1975 an interagency study team was formed to conduct the study and prepare a report and environmental statement. The study team consisted of representatives of the Bureau of Outdoor Recreation, Bureau of Land Management, Forest Service, and the Colorado Department of Natural Resources.

A steering committee subsequently was formed to provide overall coordination and guidance, and to facilitate public involvement and inputs for the study. Steering committee members participated in field inspections of the river corridor and attended various meetings in conjunction with the study effort. Steering Committee members and others who provided some form of assistance are as follows:

State Agencies

- Colorado Division of Wildlife
- Colorado Division of Parks and Outdoor Recreation
- Colorado Geological Survey
- Colorado Division of Planning
- Colorado State Historical Society
- Colorado State Forest Service

Federal Agencies

- Economic Research Service
- Soil Conservation Service
- National Park Service
- Fish and Wildlife Service
- Bureau of Reclamation
- U.S. Geological Survey
- Bureau of Mines
- Energy Research and Development Administration
- Environmental Protection Agency
- Bureau of Indian Affairs

Organizations and Commissions

Southwestern Water Conservation District
The Wilderness Society
Western River Guides Association
Colorado White Water Association
Federal Timber Purchasers Association
Colorado Trout Unlimited
University of Colorado Wilderness Study Group
Colorado Cattlemen's Association
Four Corners Regional Commission

Individuals

Joseph Hartt
Dave Herrick
David Sumner
Earl Perry

COORDINATION IN THE REVIEW OF THE DRAFT ENVIRONMENTAL STATEMENT

Comments on the DES were requested from the following (asterisks indicate that comments have been received and are included with this document):

- *Advisory Council on Historic Preservation
- *Water Resources Council
- *Department of Agriculture
- *Department of the Army, Corps of Engineers
- *Department of Commerce
- *Energy Research and Development Administration
- *Environmental Protection Agency
- *Federal Power Commission
- *Federal Energy Administration
- *Department of Health, Education, and Welfare
- *Department of Housing and Urban Development
- *Department of Transportation
- Department of the Interior
 - *Bureau of Land Management
 - *Fish and Wildlife Service
 - *National Park Service
 - *Bureau of Indian Affairs
 - *Geological Survey
 - *Bureau of Reclamation
 - *Bureau of Mines
- *Colorado Division of Planning (State of Colorado Clearinghouse)
 - *Colorado Department of Highways
 - *Colorado Division of Water Resources
 - *Colorado Department of Health
 - *Colorado State Historical Society
 - *San Juan Basin Regional Planning, Commission, Durango, Colorado
- *Utah Office of the State Planning Coordinator (State of Utah Clearinghouse)
 - *Utah Department of Transportation
 - *Utah Division of Parks and Outdoor Recreation
- District 10 Reg. Planning Comm. (Area Clearinghouse)
Montrose, Colorado
- *Colorado West Area C.O.G. (Area Clearinghouse), Rifle, Colorado
- *Southeastern Utah Assoc. of Governments (Area Clearinghouse),
Price, Utah
- Southwestern Water Conservation District
- *The Wilderness Society
- Sierra Club
- Western River Guides Association
- Colorado White Water Association
- Colorado Open Space Council
- Federal Timber Purchasers Association
- Colorado Trout Unlimited
- *University of Colorado Wilderness Study Group
- American Canoe Association
- American Rivers Conservation Council
- *Upper Colorado River Commission

Comments were also received from the following:

Town of Dolores
Colorado Cattlemen's Association
Environmental Defense Fund
John O. Stevens, Real People Press, Moab, Utah
Hugh E. Martin
Cosima Kruger
Mr. and Mrs. Robert H. Honeycutt
Art Wainwright
Susan Morgan
Joseph Schott

Public input was obtained through a series of three public information meetings held in Denver, Grand Junction, and Cortez on March 14, 26, and 27, 1975, respectively. Another series of four public meetings was held in these same locations as well as at Norwood during the week of July 7, 1975. Public response was solicited at these meetings, and all comments received were considered in the preparation of the report and environmental statement.

As a result of the meetings, public response was vigorous and, for the most part, reaction was polarized by two dissimilar philosophies. On one hand, citizens living in the river area value and desire the Dolores Project and viewed wild and scenic river designation as a direct and serious threat to McPhee Dam, centerpiece of the Dolores Project. These individuals also expressed concern about the effects that designation may have on privately-owned lands and resource developments (especially agriculture and water use) and thought there was already enough Federal control of the river (see "No Action" Alternative, Section VIII). On the other hand, conservationists and white-water enthusiasts usually living in areas remote from the river supported maximum wild and scenic rivers designation; some even suggested that the study be done on the entire river, including those segments excluded in P.L. 93-621 (see Alternative 4, Section VIII).

Although there have been close coordination and consultation in the preparation of the study report and environmental statement, conclusions and recommendations represent those of the Forest Service and the Bureau of Outdoor Recreation.

SUMMARY OF CORRESPONDENCE RECEIVED FOLLOWING REVIEW OF THE DRAFT STATEMENT

Including individual responses forwarded together in groups by State Clearinghouses, 37 memoranda and letters were received on the draft environmental statement from 19 Federal departments and agencies, 1 river commission, 8 State agencies, 4 regional or local entities, 4 organizations, and 1 newspaper. These memoranda and letters are printed on the following pages.

Six letters were received from private citizens which referred to the EIS, but whose comments were directed solely to the merits of the Study Report and its recommendations rather than the adequacy of the environmental impact statement. Two of these letters favored the "No Action" alternative, one favored Alternative 2, and three favored Alternative 4. These comments are appreciated and were considered during preparation of the final Study Report; however, they have not been reproduced in the final EIS.

Correspondence which provided additional data or raised questions concerning the adequacy of the draft statement are followed by a response page or pages. Comments are numbered in consecutive order on each letter. The numbered responses on the pages which immediately follow each letter correspond to these numbers.

SUMMARY OF CHANGES FROM DRAFT STATEMENT

A number of editorial and factual changes have been made from the draft statement in response to numerous suggestions offered by Federal, State, and regional agencies, as well as groups and individuals.

In addition, information has been added on the population and growth of towns near the river but just outside the river basin and population growth projections for the most populous portion of the local area. The descriptive material on water rights has been clarified and rewritten to explain the relationship and effects of the Dolores Project. The "Impacts on Mining" and "Impacts on the Economy" subsections have been revised and expanded to more clearly and completely describe the probable effects of withdrawal of the Slick Rock Canyon segment, implementation of special mining regulations in other segments, and the offsetting effects of increased recreationist expenditures. Also, a subsection has been added on "Other Impacts."

Finally, information has been added, including a new Appendix section, on Threatened and Endangered wildlife and plant species, and on management planning needs for these species.

INDEX OF CORRESPONDENCE RECEIVED

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John O. Stevens, Real People Press, Moab, Utah	IX-139

Advisory Council
On Historic Preservation

1522 K Street N.W.
Washington, D.C. 20005

December 29, 1975

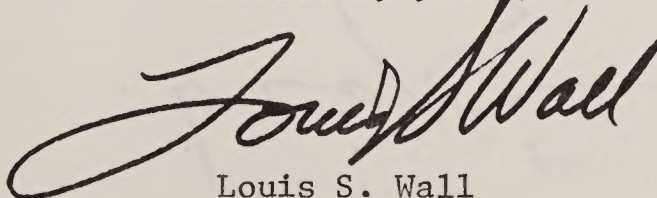
Mr. Derrell P. Thompson
Regional Director
Mid-Continent Region
Bureau of Outdoor Recreation
P. O. Box 25387
Denver Federal Center
Denver, Colorado 80225

Dear Mr. Thompson:

This is in response to your request of December 16, 1975, for comments on the environmental statement for the proposed Dolores Wild and Scenic River in Southwest Colorado.

The Advisory Council notes that this draft environmental statement includes the Memorandum of Agreement executed for this proposed undertaking by the Advisory Council, the Bureau of Land Management, the United States Forest Service, and the Colorado State Historic Preservation Officer. Your early involvement of the State Historic Preservation Officer and the Advisory Council in the planning process has resulted in an expeditious handling of this matter. Pursuant to its responsibilities under Section 102(2)(C) of the National Environmental Policy Act of 1969, the Advisory Council has determined that your draft environmental statement appears adequate regarding our area of expertise and we have no further comment to make. Should this proposal be authorized the Council looks forward to working with the agency (ies) designated to manage the area pursuant to the conditions of the Memorandum of Agreement and in accordance with the "Procedures for the Protection of Historic and Cultural Properties" (36 C.F.R. Part 800).

Sincerely yours,



Louis S. Wall
Assistant Director, Office
of Review and Compliance

No response necessary

The Council is an independent unit of the Executive Branch of the Federal Government charged by the Act of October 15, 1966 to advise the President and Congress in the field of Historic Preservation.



DEPARTMENT OF AGRICULTURE
OFFICE OF THE SECRETARY
WASHINGTON, D. C. 20250

April 11 1970

ROUTE 0
INITIAL
CMB
4/12

Mr. Derrell P. Thompson
Regional Director
Mid-Continent Region
Bureau of Outdoor Recreation, USDI
Denver Federal Center
Denver, CO 80225

Dear Mr. Thompson:

The draft environmental statement for the proposed Dolores Wild and Scenic River in Colorado has been reviewed, and the following comments are offered for your consideration.

1 The description of the plan and the resources is well done and comprehensive. However, we believe that the impact section, and the alternatives section, could be improved. Some quantification of adverse and beneficial environmental and economic impacts would be helpful. For example, the acquisition of easements on about 5,600 acres of private land would undoubtedly affect existing agriculture to some degree. Fencing required to protect developed recreation sites from livestock use, and other controls on the private lands, would have some effect on the farming operation of the private landowner. Except for these shortcomings, the draft Environmental Statement for the proposal appears adequate.

We appreciate the opportunity to review the statement.

Sincerely,

Robert S. Long
Assistant Secretary

Response to Comments Received from the
Department of Agriculture

1. All specific requirements for acquisition of easements, fencing to protect developed recreation sites--if needed, and other controls affecting private land use will be determined during preparation of the Management Plan. Therefore, final details pertaining to these actions are not available now. To the extent possible, this EIS has quantified impacts. Further quantification of impacts resulting from these actions will be done as a part of management planning.

Dolores EIS 8



DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT, CORPS OF ENGINEERS
650 CAPITOL MALL
SACRAMENTO, CALIFORNIA 95814

REPLY TO
ATTENTION OF

SPKED-W

20 January 1976

Bureau of Outdoor Recreation
Mid-Continent Region
US Department of the Interior
PO Box 25387
Denver Federal Center
Denver, Colorado 80225

1976
Curb
AA
H. C. Smith

Gentlemen:

We have reviewed the joint Department of Agriculture/Department of the Interior draft environmental statement, DES 75-64, for the proposed Dolores National Wild and Scenic River in Colorado. The proposal to designate a portion of the Dolores River as a component of the National Wild and Scenic Rivers System will not conflict with any programs within our jurisdiction. This reply constitutes a consolidated response from the Corps of Engineers.

Sincerely yours,

for
George C. Weddell
GEORGE C. WEDDELL
Chief, Engineering Division

No response necessary



Dolores EIS 40

UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Science and Technology
Washington, D.C. 20230

April 7, 1976

APR 13 1976
PAGE _____ INITIAL _____
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_____ *W*
_____ *Book JB*

Mr. Derrell P. Thompson
Bureau of Outdoor Recreation
U.S. Department of the Interior
603 Miller Court
Lakewood, Colorado 80225

Dear Mr. Thompson:

The draft environmental statement for the "Proposed Dolores National Wild and Scenic River," which accompanied your letter of March 3, 1976, has been received by the Department of Commerce for review and comment.

The Department of Commerce has reviewed the draft environmental statement and has no comment.

We are pleased to have been offered the opportunity to review this statement.

Sincerely,

Sidney R. Galler
Sidney R. Galler
Deputy Assistant Secretary
for Environmental Affairs

No response necessary



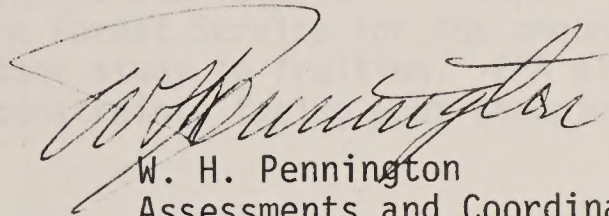
The following are errors noted in the report:

- (1) Page 11-39, line 16
Total pounds of V_2O_5 produced prior to 1945 is 24,842,100 instead of 12,842,100.
- (2) Page 11-40, line 12
Should read probable and possible potential resources of U_3O_8 , respectively.
- (3) Page 11-42, line 2
Should be T. 41 N. instead of T. 40 N.

2

Thank you for the opportunity to provide these comments and we hope they will be useful in the preparation of the final statement.

Sincerely,



W. H. Pennington
Assessments and Coordination
Officer
Division of Biomedical and
Environmental Research

cc: CEQ (5)

Response to Comments Received from the
Energy Research and Development Administration

1. These comments are directed toward Study Report recommendations and were considered in preparation of the final Study Report. The environmental statement assesses the impacts of the Study Report recommendations.
2. These corrections have been made on pages II-31 and -33.



Dolores EIS 25

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VIII
1860 LINCOLN STREET
DENVER, COLORADO 80203

MAR 1 1976

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Ref: 8W-EE

FEB 27 1976

Mr. Derrell P. Thompson
Regional Director
Bureau of Outdoor Recreation
U.S. Department of the Interior
Mid-Continent Region
P.O. Box 25387 DFC
Denver, Colorado 80225

Alvin Acosta
Book JB 3/3

Dear Mr. Thompson:

The Region VIII office of the Environmental Protection Agency has completed its review of the draft environmental impact statement for the proposed Dolores Wild and Scenic River. I would like to compliment both the BOR and the Forest Service for the amount of work done in bringing this important study to fruition. EPA also sympathizes with the short time constraints facing your agencies in developing this study.

EPA has already gone on record in the comments of the EPA Washington office on the proposed Review Draft Report for the Dolores River Wild and Scenic River Study, on the need to look at the river in a comprehensive manner. I would like to include portions of those comments below for your consideration, because I think they are still relevant to the decisions at hand:

One of the assumptions of the Federal-State team was that both the McPhee reservoir site of the Dolores Project and the Paradox Valley site for the Colorado Salinity Control Project were "in-place." Thus no consideration could be given to these areas as potential wild and scenic river stretches.

Information provided by the Bureau of Reclamation (USBR) and others have indicated that the McPhee reservoir area is a significant elk and deer migratory route. Restricted access by the 300 foot deep reservoir could have serious consequences for these game animals and their natural predators. Further information suggests that the McPhee dam area may have significant archaeological importance. Approximately 80 sites were identified in a recent study of the area.

1

We do not wish to unnecessarily impede these Bureau of Reclamation projects; however, it should be pointed out that apparently neither the Dolores nor the Paradox Valley Projects have had the benefit of a National Environmental Policy Act review. The USBR has mentioned elsewhere that 50 alternative sites to the McPhee reservoir had been considered, although these have never been identified to the best of our knowledge. Similarly, the Paradox Valley Project should be evaluated for cost-effectiveness, environmental impact and project alternatives. Some of the project alternatives could possibly be compatible with one or more of the wild and scenic river designations. We thus suggest that it seems premature to dismiss these areas from consideration at this time.

1 If the sections of the Dolores river recommended for wild and scenic designation are approved by Congress, the exclusion of the upper reaches of the main stem of the Dolores could pose some formidable management problems for the lower segment. Water quality, fish and wildlife in particular, may be adversely affected by streamside mining or other operations. The value of a recreational designation for this reach could provide a set of consistent criteria for any private activities in the stream corridor under which to operate. The Wild and Scenic Rivers Act intends to preserve existing private ownership and activity patterns, so long as the activities are compatible with the uses of the river under the wild, scenic, and recreational classifications.

We support the idea of considering the entirety of the Dolores river under the Wild and Scenic River Act criteria on the merits of each of the important stream segments, including the main stem of the Dolores, the West Dolores, McPhee dam area, the Paradox Valley area and the lower reach from the San Miguel river to Gateway. By restricting their consideration of the segments, the Federal-State team may have compounded the problem of evaluation of the Dolores and Paradox Valley projects under NEPA. Information on these two sites relevant to wild and scenic status could have been useful information for decision-making on alternatives to these projects. It may result that the present McPhee damsite is the best for environmental reasons; however, such a judgment at this time could create problems when the EIS's for the Dolores River and Paradox Valley projects are released.

2 It is our understanding that the EIS for the Dolores Project will be released in early 1976. The Federal-State team may wish to consider the possibility of recommending that a decision on wild and scenic status for the Dolores River await the outcome of the NEPA review on both projects.

2

In addition, we note per your November 11, 1975 memorandum that the draft EIS will be sent to the Forest Service (FS) and the Bureau of Outdoor Recreation (BOR) for transmittal to Congress along with the report. We question whether the National Environmental Policy Act (NEPA) requirements can be fulfilled unless Congress awaits comments from the final EIS. We appreciate the time restrictions, however the decision makers should be made well aware of this particular point and the fact that the public comment period will not be complete.

3

To date, EPA has not received a draft EIS for the Dolores Project. The Region VIII office did review the environmental assessment for the project. EPA noted that the assessment was deficient in not identifying and analyzing the 50 or so site alternatives to the presently proposed McPhee damsite. I would continue to stress that such evaluations should be done under the National Environmental Policy Act. There should be no question that the Dolores Wild and Scenic River Study needs to give special recognition to Congressionally authorized projects in planning; however, the dam site location needs to be documented for its environmental as well as engineering or economic suitability.

For this reason, I would urge your Agency to determine from the U.S. Bureau of Reclamation the status of the draft EIS for the Dolores Project. It would be particularly helpful if the environmental analysis for the McPhee alternatives could be used to evaluate the Wild and Scenic River alternatives and vice-versa.

A second point to be made is that if there are reasonable alternatives to McPhee Reservoir on or off the main stem of the Dolores River, the alternatives for wild and scenic designation may be correspondingly different. I would therefore urge you to obtain the most recent environmental information from the USBR regarding the McPhee dam area.

4

It should be made clear that EPA fully supports the Paradox Valley salinity control project. The value of the NEPA review would be to define the proposed project and its alternatives. One or another alternatives could be more compatible with Wild and Scenic river criteria than others. If it is necessary to exempt the Paradox Valley segment from classification in order for the project to be viable, the EIS should spell out the legal or institutional reasons why.

5

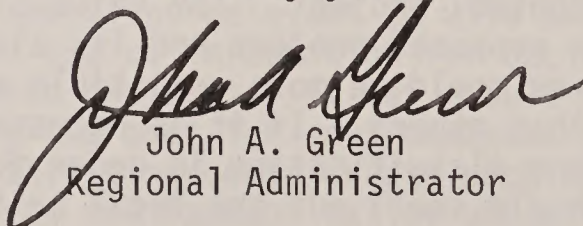
The draft EIS outlined four basic alternatives to the presently proposed wild and scenic classification of the Dolores River. However, the analysis stopped short of a comparison between these alternatives in any way that would explain to the reviewer why the proposed action was chosen.

In particular, EPA is concerned with the elimination of the West Dolores segment from classification. Pages VIII-9 through 13 indicate that the river in this stretch contains high-quality water, high recreation use and little impact expected on mining or agriculture if the segment were to be classified. The only justification for elimination of this segment is found on page I-7: "The first-segment, the 35-mile long West Dolores, met the criteria for recreational designation. However, the cost of including this segment in the system outweighed the environmental and recreational benefits that would result, and therefore it was not recommended for inclusion by the Federal study team agencies." Taken by itself, this statement cannot be corroborated on the basis of information in the draft EIS.

5 I therefore recommend that following the Section VIII description of classification alternatives and impacts that a thorough comparative analysis be presented explaining the rationale for the final choice. In view of EPA's position that the entirety of the river needs to be given the maximum protection consistent with local needs and uses of the river, I cannot see why the West Dolores should not at least be afforded the minimum protection of "recreational," as recommended by the State. The argument of increased administrative costs should be secondary in evaluating the suitability of wild and scenic river potential. The recommendations of the C.U. Wilderness Study Group should be given close consideration for a "wild" designation in that portion of the West Dolores flowing from the Mount Wilson Primitive area in the upper reaches.

Based on the system of categorizing the adequacy of environmental impact statements EPA has developed, I have rated this EIS as ER-2. This means that insufficient information has been presented in the present EIS, that could have serious environmental implications. My staff stands willing to assist your agency by whatever means available to resolve the issues EPA has surfaced.

Sincerely yours



John A. Green
Regional Administrator

Response to Comments Received from the
Environmental Protection Agency

1. These are comments on the draft Study Report, and have been considered in preparing the final Study Report. However, we wish to point out that the study area boundaries, as well as the time frame for the study, were delineated not by the study team but by the Congress when it authorized the study. Public Law 93-621, amending the Wild and Scenic Rivers Act, states:

§ 5(a)(56) Dolores, Colorado: The segment of the main stem from Rico upstream to its source, including its headwaters; the West Dolores from its source, including its headwaters, downstream to its confluence with the main stem; and the segment from the west boundary, section 2, township 38 north, range 16 west, NMPM, below the proposed McPhee Dam, downstream to the Colorado-Utah border, excluding the segment from one mile above Highway 90 to the confluence of the San Miguel River.

This Act also required submission of the report to the Congress by January 3, 1976.

Additional definition of the study approach and scope is contained in the legislative history of P.L. 93-621. Senate Report 93-1207 clearly states that the stretch of river on which the McPhee Dam is located is not to be studied. The segments of the Dolores upstream from the damsite and between the Highway 90 bridge and the confluence of the San Miguel River were excluded specifically so as not to delay the McPhee Dam nor interfere with either the Dolores Reclamation Project or the Paradox Valley Project.

The scope of both the Study Report and environmental impact statement conform to the intent of Congress as set forth in the Act and supporting legislative history.

2. The Bureau of Reclamation plans to release an environmental impact statement for the Dolores Project in mid-1976. As noted above, P.L. 93-621 required submission of the Dolores Wild and Scenic River Study Report to the Congress by January 3, 1976. Since legislation is required to include segments of the Dolores River in the Wild and Scenic Rivers System, the Congress may, if it desires, defer action on the Wild River proposal until it has considered the EIS for the Dolores Project.
3. The Bureau of Reclamation participated in both the wild river study and preparation of the environmental impact statement, and provided information on the Dolores Project for the Study Report and EIS.

Additional data developed by the Bureau of Reclamation since release of the draft statement for the Dolores Wild and Scenic River have been included in this document.

4. As set forth in item 1 above, the segment of the Dolores from 1 mile above Highway 90 to the confluence of the San Miguel River was specifically excluded from study by P.L. 93-621.
5. It is our position that comparison of alternatives and attendant justification of the proposed action are not appropriate to an environmental impact statement. An environmental impact statement should not serve as a project justification document to convince the reader of the need or suitability of the proposed action; rather it should set forth for the decisionmaker (and readers) an objective analysis of the environmental consequences of the proposed action, as well as alternative courses of action.

Alternative #2 describes the proposal to include the 35-mile West Dolores along with the 105-mile reach of the main stem in the National Wild and Scenic Rivers System and discusses the incremental and cumulative environmental impacts of this alternative.

Dolores EIS 29

FEDERAL POWER COMMISSION
WASHINGTON, D.C. 20426

IN REPLY REFER TO:

MAR 1 1976

MAR 5 1976

Mr. Derrell P. Thompson
Regional Director, Mid-Continent Region
Bureau of Outdoor Recreation
Department of the Interior
P.O. Box 25387
Denver Federal Center
Denver, Colorado 80225

Handwritten initials and signatures:
CMB
St. A/C...
9/13

Reference: D4219 Dolores

Dear Mr. Thompson:

This is in reply to your letter of December 22, 1975, addressed to the Commission's Advisor on Environmental Quality, inviting comments on the draft environmental statement for the proposed Dolores National Wild and Scenic River in Colorado. The proposed action would involve the inclusion of a 105-mile segment of the Dolores River upstream from the town of Bedrock, Colorado, in the National Wild and Scenic Rivers System. Of this 105-mile segment, 33 miles would be classified as wild, 41 miles would be scenic, and 31 miles would be recreational.

These comments of the Federal Power Commission's Bureau of Power are made in accordance with the National Environmental Policy Act of 1969 and the August 1, 1973, Guidelines of the Council on Environmental Quality. Our principal concern with proposals affecting land and water resources is the possible effect of such proposals on bulk electric power facilities, including potential hydroelectric developments, and on natural gas pipeline facilities.

1 | The Commission has recently reviewed the wild and scenic river study report on the Dolores River, Colorado, prepared by the Departments of the Interior and Agriculture and the State of Colorado. In its letter to the Secretary of Agriculture, dated January 15, 1976, (copy attached) the Commission noted that there is a site for possible pumped storage hydroelectric power development within the segment of the Dolores River recommended for inclusion in the national system. However, there are no known plans to develop the site. It also noted

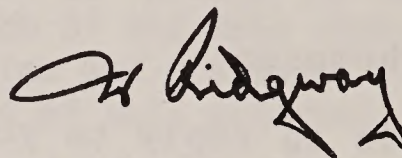


2

that an existing power transmission line and a natural gas pipeline cross a segment of the Dolores River recommended for classification. It further noted that additional crossings of powerlines and natural gas pipelines may be required in the future. It pointed out that natural gas deposits may underlie the Dolores River basin. Apparently, these existing facilities and possible future powerlines, natural gas pipelines, and natural gas production facilities, would be compatible with, or can be adapted to, the desired qualities of the proposed river classifications.

The opportunity to review the draft environmental statement is appreciated.

Very truly yours,



W. Ridgway
Acting Chief, Bureau of Power

Enclosure: Copy of letter
to the Secretary
of Agriculture,
dated January 15,
1976.



Response to Comments Received from
the Federal Power Commission

1. The presence of the potential pumped storage hydroelectric power development site near Mountain Sheep Point has been noted in the final environmental impact statement. See page II-80.
2. The existing power transmission line and natural gas pipeline that cross the Dolores River will not be affected by national designation, except that screening, repainting of structures, or some other action to reduce obtrusiveness may be called for by the Management Plan, which will be prepared following designation. Possible future powerlines, natural gas pipelines, and natural gas production facilities may not be permitted within the immediate river corridor. This item has been added to the FEIS; see page III-12.

According to Section 7(a) of the Wild and Scenic Rivers Act, P.L. 90-542, "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 . . . 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 . . . Nothing contained in the foregoing, 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 approval of this Act." In Section 7(b), the Act gives the same protection to rivers authorized for study as potential wild and scenic rivers, including the Dolores River.

Section 10(a) of the Wild and Scenic Rivers Act states that "Each component of the national wild and scenic rivers system shall be administered in such a 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 . . . (and that) primary emphasis shall be given to protecting its esthetic, scenic, historic, archeologic, and scientific features. Management plans . . . may establish varying degrees of intensity for its protection and development, based on the special attributes of the area."

The Management Plan will address the question of future request for use of the river corridor for pipeline and powerline crossings. However, it will be necessary to contact the managing agency (BLM or FS) for the portion of the river corridor involved in any proposed utility development. The agency will determine if and where the river can be crossed

and what screening or other special measures will be required if the development is to be permitted.

3

The EIS should consider, as an alternative to the proposal, inclusion of the West Dolores River as wild and scenic and modification of the basic proposal to exclude those segments of the river which pass through the Uravan Mineral Belt. Such an alternative has benefits from an energy resource development standpoint and should be discussed and analyzed.

4

The EIS does not mention oil shale as either a potentially valuable mineral or one which is found within the Basin. The outer fringes of the Piceance Creek Basin extends into Mesa County, Colorado, the same county that the Dolores River passes through. Since the Piceance Creek Basin contains some of the world's richest oil shale reserves, it would be useful to know whether oil shale deposits are found in or near the Dolores River Basin.

5

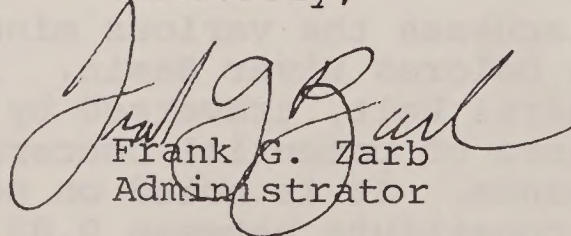
Other minerals, petroleum reserves, and geothermal resources do have potential for development but not in the near future. Although the coal reserves in the actual river corridor are small, the potential coal resources in the Dolores River Basin could be significantly greater. The EIS does not address the effect that designation of part of the Dolores River as a wild and scenic river would have on the ability to mine coal in areas drained by tributaries of the Dolores River. The EIS should discuss alternative designations that would allow for necessary developments.

6

Consideration should be given to the curtailment of mining and the impact on the local economy and employment picture. The designation of a national wild and scenic river will increase recreation use and the tourist trade, but this gain may be offset by the economic loss from mining on a year-round basis.

We appreciate the opportunity to review this document and hope that our comments will be of use to you.

Sincerely,



Frank G. Zarb
Administrator

Response to Comments Received from
the Federal Energy Administration

1. "Impacts on Mining" and "Impacts on the Economy" in Section III of the FEIS both treat how the proposal may inhibit or limit the extraction of energy-producing minerals. We believe these discussions, which have been expanded, treat this subject adequately. The specific boundary of the withdrawn area in Slick Rock Canyon, as well as mining regulations and policies covering other designated reaches, will be established during management planning. This will further quantify the impacts on mineral prospecting and recovery.
2. The EIS fully discusses this subject. See Section II - "Mineral Resources," Section III - "Impacts on Mining" and "Impacts on the Economy," and Section V - item 5.
3. We call your attention to the fact that the alternative of classifying the West Dolores was treated in both the Study Report and the EIS, and that except for the seen-area corridor of the 33-mile-long Slick Rock Canyon segment (an area of unproven reserves), mining will be permitted throughout the Uravan Mineral Belt.
4. Although oil shale deposits are found in Mesa County, there are none within the Dolores River Basin.
5. Information on coal and the developability of the coal resource has been added to the FEIS on pages II-9, -10, and -35. Designation of the Dolores River should have no effect on the ability to mine coal along Dolores tributaries.
6. Narrative on this subject has been added to the FEIS on pages III-11 and -12. We do not have any specific discussion of the impact of river designation on mining industry employment; however, no impacts on the present employment situation are expected.

Dolores EIS II

JAN 30 1976



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
REGION VIII
FEDERAL OFFICE BUILDING
19TH AND STOUT STREETS
DENVER, COLORADO 80202

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OFFICE OF THE REGIONAL DIRECTOR

Barry two copy

January 28, 1976

Mr. Derrill P. Thompson
Regional Director
Bureau of Outdoor Recreation
Department of the Interior
P. O. Box 25387
Denver, Colorado 80225

Dear Mr. Thompson:

Thank you for the opportunity to review the draft Environmental Impact Statement for the proposed Dolores Wild and Scenic River in southwest Colorado.

It appears that the impacts expected to result from the proposed project and reasonable alternatives thereto have been adequately addressed.

Sincerely,

Rulon R. Garfield
Regional Director

cc: Phyllis Hayes, Office of Environmental Affairs,
Washington, D. C. (w/control slip)
Warren Muir, Council on Environmental Quality,
Washington, D. C. (two copies)

No response necessary





DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
 REGIONAL OFFICE
 FEDERAL BUILDING, 1961 STOUT STREET
 DENVER, COLORADO 80202

Dolores FIS 37

REGION VIII

IN REPLY REFER TO:
 8DE

March 18, 1976

Mr. Derrel P. Thompson
 Regional Director
 Bureau of Outdoor Recreation
 Post Office Box 25387
 Denver Federal Center
 Denver, Colorado 80225

Perf
Sanchez

Dear Mr. Thompson:

This is in response to your letter of March 3, 1976, to Mr. Richard Broun in our Central Office, reminding us of your draft environmental impact statement for the proposed Dolores Wild and Scenic River. We did receive a copy of the draft statement, and it is our responsibility to review and comment for the Department.

I apologize for the lack of our response to your draft statement and hereby inform you that we will be unable to appropriately review your product. In the future I hope that we will be able to perform this function in a timely manner.

Sincerely,

David L. Witt

David L. Witt, Director
 Environmental Quality Division
 Community Planning and Development

No response necessary

IX-29

2 any faunal and floral species and their habitats in the proposal area-- those species officially listed by the Department of the Interior and those which may later be officially listed--as Endangered or Threatened or which may be candidates for such status. This includes the two species of birds now officially listed as Endangered: The American peregrine falcon and the Southern bald eagle. These protective administrative actions would include, for example, the restriction of human encroachment on the habitat of such animals during critical periods of their life cycles, such as the nesting seasons of the Endangered birds."

3 3. Vegetation (pages II-63, et seq). Our Report Comment No. 3 applies to this section. The brief summary recommended should be added, probably under the subheading General. The summary should include, of course, the fact that the occurrence in the proposal area of plant genera and species thereof which are referred to in Report Comment No. 3 remains to be determined, as mentioned in that comment.

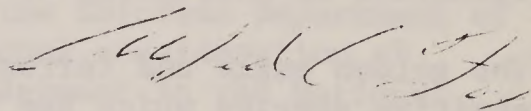
4 4. Fish and Wildlife (Table II-11, pages II-116, et seq.; and subsection Rare and Endangered Species, page II-115). Table II-11 contains the species listed in Appendix H of the report, except for about 10 species of mammals. We suggest restoring these species to the table, including the marten which is mentioned in our Report Comment No. 4, unless their omission was recommended by biologists familiar with the local fauna.

4 The Rare and Endangered Species subheading should be changed to Threatened and Endangered Species. The first sentence of paragraph 2 thereunder should be deleted and the following substituted: "Two birds found in the basin, the American peregrine falcon (Falco peregrinus anatum) and the Southern bald eagle (Haliaeetus leucocephalus leucocephalus), are officially classified as Endangered by the Federal government.

"The golden eagle and ferruginous hawk, and a mammal--the marten--are sensitive species which are susceptible to habitat destruction and other activities by man. (Note: The marten should be deleted from the above sentence if it is not considered by biologists to be a basin resident.) The existing 2nd sentence (1st and 2nd words) of paragraph 2 will then have to be changed to "The peregrine falcon. . .", and perhaps that sentence should begin a new paragraph.

- 5 5. Impact on Soils and Vegetation (pages III-13, 14) and Impact on Fish and Wildlife (pages III-15, 16). These sections should contain at least a sentence indicating that implementation of the proposal will achieve the beneficial effect of aiding in the protection of those plant or animal species in the area which are officially listed as Endangered, or may in the future be listed as Endangered or Threatened, or may be candidates for either status.
- 6 6. Mitigating Measures. . .(pages IV-1, 2). A sentence should be added in the text under this heading to the effect that plant and animal species now listed as Endangered or those which may later be listed as Endangered or Threatened will be protected in the proposal area, in line with Comment No. 2 above. On page IV-2, the first sentence of the 3rd paragraph should be revised in accordance with that comment also.
- 7 7. Alternative 1 (No Action), under Impact on Vegetation and Soils (page VIII-4) and Impact on Fish and Wildlife (page VIII-4). Under these subheadings, sentences should be added which mention the lack of protection for concerned plant species and concerned animal species. This lack contrasts with the situation that would occur for endangered/threatened species as described in Comments No. 2 and 5 above. Also, the impact on fish should be mentioned under the Fish and Wildlife subheading.
- 8 8. Alternative 2 (Inclusion of the West Dolores), under subheadings Impact on Vegetation and Soils (page VIII-11) and Impact on Fish and Wildlife (same page). The paragraphs under these subheadings require the addition of statements on the effect of Alternative 2 on endangered/threatened plants and animals. In this case the effects would generally be beneficial, in line with Comments No. 2 and 5, above.

Enclosure



Response to Comments Received from the
Fish and Wildlife Service

1. This comment relates to a finding and recommendation of the Study Report, not the adequacy of the EIS. However, we wish to point out that the Secretary of the Interior supports the findings and recommendations of the Dolores Wild and Scenic River Study Report and the environmental impact statement. These recommendations do not include designation of the West Dolores.
2. The first portion of this comment has been incorporated into a correction made on page I-16 of the FEIS. The portion of the comment dealing with "administrative actions" has been incorporated into a correction made on page IV-2.
3. A brief reference to the subject covered in this comment has been added to page II-55. The two pages of "enclosure" information provided on the plants has been made appendix C of the FEIS.
4. These additions and corrections have been made to table II-11 and on page II-87.
5. Statements on pages III-8 and -9 of the FEIS have been expanded to accommodate this comment.
6. Some language has been added on page IV-2 as a result of the suggestions made in comment #2. It adequately covers this comment.
7. The appropriate additions have been made on page VIII-3 of the statement.
8. The appropriate additions have been made on page VIII-6.

FEB 18 1976
POSTER INITIAL

UNITED STATES GOVERNMENT

Memorandum

Trust Facilitation
EQ

FEB 17 1976

DATE:

TO : Regional Director
Bureau of Outdoor Recreation

FROM : Director, Office of Trust Responsibilities - BIA

SUBJECT: Review of Draft Environmental Impact Statement for the Proposed Dolores National Wild and Scenic River (DES 75/64)

We have reviewed the subject statement within our jurisdiction and special expertise. The following comments are our single consolidated response as requested.

- 1 | 1. Page I-8, the first line refers to the Bradfield Ranch to Bedrock Segment as number 2. This should be Segment 3.
- 2 | 2. Page III-15, the statement is made that minimum flows resulting from the Dolores Project are 20 cfs in dry years, 50 cfs in normal years and 78 cfs in wet years; whereas on Page VIII-3, it is stated that the construction of the McPhee Dam and Reservoir will provide a minimum sustained flow of 50 cfs. This apparent discrepancy should be explained or corrected.
- 3 | 3. No assessment has been made of the impact of maintaining minimum flows below McPhee Dam upon the water supply required for the operations of the Dolores Project.
- 4 | 4. Page II-95, the statement is made that "a comparison of the average annual discharge for the Dolores River, the total annual appropriations from water rights, discloses that the river is over appropriated." The statement does not explain the effects which construction of McPhee Reservoir will have on alleviating the over appropriation, and at the same time provide for maintenance of minimum flows as mentioned on Pages III-15 and VIII-3. The final statement should explain how the construction of the reservoir will cope with the over appropriated condition and at the same time provide for the stated minimum flows in the Dolores River.

Ralph J. Keen



Response to Comments from the
Office of Trust Responsibilities, Bureau of Indian Affairs

1. This correction has been made in the FEIS. See page I-7.
2. This item has been corrected. See page VIII-3.
3. The minimum stream flows referred to are not a proposal of the wild and scenic river study. They have been programmed into the authorized Dolores Project by the Bureau of Reclamation. Such flows are normally provided in projects of this type. The Bureau is now completing an environmental impact statement for the project. Any assessment of the impacts of maintaining minimum stream flows should be included in this statement; comments relating to this assessment should be directed to the Bureau of Reclamation in Durango, Colorado.
4. This section has been revised to explain why depletions remove only a portion of the river's flow and yet the river is over-appropriated. Revisions have also been made to explain more clearly what effects the Dolores Project would have on water rights and the over-appropriated condition of the river. See page II-73 in the FEIS.



Dolores EIS 17

IN REPLY REFER TO:

United States Department of the Interior

1793(260)

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

FEB 17 1976

DES 75-64

Memorandum

FEB 18 1976

ROUTE	
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To: Regional Director, Bureau of Outdoor Recreation,
Mid-Continent Region

Through: Deputy Assistant Secretary, Land and Water Resources *2/13/76*

From: Director, Bureau of Land Management

Subject: Review of Draft Environmental Impact Statement,
Proposed Dolores Wild and Scenic River, Colorado

This memorandum consolidates all BLM review comments including those of BLM's Colorado State Office in Denver.

General Comments

We find that most of the errors and omissions cited by BLM in reviewing the rough draft have been corrected; we are pleased that BOR has heeded most of our suggestions. However, the document remains deficient in two areas of prime concern to BLM, described as follows.

1 | First, the maps are excellent except for the omission of National resource lands. Note that Forest Service lands are always shown. We submitted maps of National resource lands within the study corridor at various scales throughout the study, but Interior's land ownership pattern has not been adequately shown.

2 | Second, there are several places where the document should spell out that the proposal for the "wild" area is for a withdrawal which averages 1/4-mile wide. (See specific comments for pages I-1 and I-17.)

3 | There are other areas where the description of the environment could be improved and potential environmental impacts more thoroughly analyzed. For example, although sections describing the existing environment and analyzing impacts for "Population" and "Economy" are included, the document really doesn't come to grips with the impacts the proposal can be expected to have on the local people.



4 | Also, although there are several comments on the visual resources of the area, no information has been accumulated to specifically define either the scenic zones or their relative quality. Systems are available to accomplish this.

5 | It is perhaps inevitable that an impact statement on the proposed designation remain generalized in its treatment of potential environmental impacts since the detailed management and development plan is prepared later. We note on page I-17 the indication that separate environmental assessments will precede construction of any recreation facilities shown in the conceptual development plan (Figure I-5). We believe it would be appropriate for the authors to indicate at the beginning of the document, on page I-1, all types of specific actions for which it is anticipated environmental assessment will be prepared.

6 | Specific Comments

6 | Page I-1. The description of the proposal as now drafted does not reflect the entire proposal as detailed on pages iv and v of the study report.

7 | The description of the proposal also does not spell out the recommended change in language for Section 9(a)(iii) of the Wild and Scenic Rivers Act to go from a straight $\frac{1}{4}$ -mile wide withdrawal in "wild" areas to an average of $\frac{1}{4}$ -mile wide.

8 | Page I-2. Purpose #1 talks of preserving the river and its immediate environment in its existing primitive setting. That stated purpose applies directly to "wild" areas only. Management direction is not necessarily directed to that end for scenic or recreation areas.

9 | Page I-5, second paragraph. The Wild and Scenic Rivers Act is purported to require four criteria of the Wild and Scenic River System. The W&SR Act in itself requires items in #1 and part of #3. The interagency guidelines provide the other criteria.

10 | Page I-8. Segment 2 of the river extends from one mile below the McPhee Dam - not the Bradfield Ranch.

11 | Page I-16. Discussion here should define the administrative boundaries between BLM and the U. S. Forest Service as shown on page 96 of the study report.

12 | Page I-17. The third paragraph should spell out that the proposal for the wild areas is for a withdrawal which averages $\frac{1}{4}$ -mile wide.

13 | Pages I-17 & 18. The third paragraph discusses, in some detail, regulations which have not yet been developed. We should just say that regulations will be developed. There should be no embellishment on specific details.

- 14 | Page I-19. The peregrine falcon is "endangered," not "threatened."
- 15 | Page I-19. The second paragraph should include rockhounding as a permitted resource use.
- 16 | Page II-13. Lack of development of the coal resource is not due to just a lack of adequate transportation. The text should indicate that other more complex factors are also involved in coal marketing.
- 16 | Page II-46. The factors underlying the statement that canyons of the Dolores River have no potential for coal production need to be adequately explained.
- 17 | Page II-48. The statement on Anaconda's claims should note that these claims are in the Chinle formation, whereas most previous claims have been staked in the Morrison formation.
- 18 | Page II-67. The heading under the photo uses the phrase "Pinyon Pine." This is incorrect. The word "Pinyon" should be used without the word "Pine."
- 19 | Page II-110. The only Dace in the upper Colorado River system is Rhinichthys Osculus (speckled Dace).
- 20 | Page II-115. In the third paragraph, the word "Poisons" should be replaced with "toxic chemicals." In the fourth paragraph, the prairie falcon is not classified as "rare" in status by Colorado. There should also be more mention of the canyon habitat for raptors, notably the golden eagle.
- 21 | Page II-119, Table II-11 on this page should be rechecked for species use by habitat type, e.g., the Canada Goose would also occur on cropland and river bottom.
- 22 | Page II-137. We believe BLM land ownership would be more meaningfully portrayed by dividing the description of the corridor between the proposed McPhee Dam site and the point one mile above the Bedrock Bridge into two parts. BLM and Forest Service lands occur on the reaches from the McPhee Dam to Disappointment Creek as the Dolores crosses the Forest Service boundary several times; on this 52 mile reach only 16 miles are Forest Service while 26 miles are National resource lands and 10 miles are private. On the reaches from Disappointment Creek to Bedrock (53 miles) there are no Forest Service lands, 41 miles of National resource lands and 12 miles of private lands.
- 23 | Page III-9. Impact on land use and ownership should discuss the administrative boundaries for the river between BLM and the FS as explained on page 96 of the study report.

Page III-11. The sentence at the top of the page should be amended to read ". . . corridor along the "wild" segment, the impact on mining in this area is likely to be significant, since designation would prohibit their extraction from within the seen area corridor."

Robert L. Jones

2/10/88

Response to Comments Received from the
Bureau of Land Management

1. The National Resource Lands pattern for the Dolores River area is complex and not practical to show on the many maps in the environmental statement. As a result, National Resource Lands are shown on the Basin Land Ownership Map only (figure II-25, page II-102) with other maps referenced to the ownership map for this particular information. We believe this is a practical and adequate approach.
2. This item has been corrected in or added to the FEIS wherever necessary. Most importantly, see pages I-1 and I-15. However, language has been used that reflects the final position taken by the Departments of Agriculture and the Interior. This position involves a recommendation that the Management Plan determine logical boundaries for the wild segment (with these boundaries conforming generally to the tops of the rims of the rather narrow and deep canyon).
3. Several sections of the "Impacts" chapter, including those on Recreation, Water Resources, Land Use and Ownership, Agriculture, The Economy (which has been expanded), and "Other Impacts," (which has been added) discuss impacts on local communities or the local area in general. In total and within our ability to predict, we believe these present a reasonable picture of local impacts of the proposal. Despite the apparent desirability of doing so, we believe it impractical to prepare a section on "Impacts on the Local Communities" (or "People"). The impacts, if any, on the rancher on the river, the businessman in Cortez, the mine or claim owner near Slick Rock, and the hopeful river rafter in Grand Junction are all quite different and not susceptible to generalization. The best approach appears to be one of showing impacts on different resources, resource industries and services, and facets of the local economy. This is the approach used in this environmental statement.
4. Maps showing the approximate visual corridor are found in chapter III of the report. It is not the task of a wild and scenic river study report or environmental impact statement to "specifically define the scenic zones or their relative quality." Instead, it is our responsibility to evaluate the river's and riverscape's characteristics against criteria in published "Guidelines" to determine eligibility and classification levels. This, we believe, has been effectively done in chapter IV of the report. Any systematized definition and quality analysis of scenic zones, if needed, should be done as a part of the management planning effort.
5. It is not feasible to list each action for which an environmental assessment will be prepared. The detailed Management Plan prepared by the Bureau of Land Management and the Forest Service will set forth specific actions requiring environmental assessments.

6. The "Description of the Proposal" on page I-1 has been revised to describe how the boundaries of the wild segment withdrawn area would be determined. (Also, see our response to comment #2.) Other portions of the report recommendations that are not included on this page, specifically those relating to the 8.5-mile segment below Gateway and the West Dolores, are not elements of the Federal proposal that calls for any specific Congressional or Federal agency actions. The 8.5-mile segment recommendation is covered on page I-4, while the State proposal for designation of the West Dolores is fully described in section VIII as Alternative 2.
7. With language consistent with the final position taken on this by the Departments of Agriculture and the Interior, this addition has been made on page I-1 of the FEIS. Also, see our responses to comments #2 and #6.
8. The first item under "Purpose of the Proposal" on page I-2 of the FEIS has been revised.
9. This correction has been made, and the fourth criterion has been expanded. See page I-3 of the FEIS.
10. The only error found in this description involves "Segment 2" on the first line of the page. This has been corrected to "Segment 3." The descriptions of the four parts of this segment are correct.
11. This item reflects the desires of the Colorado BLM State Director.
12. See our response to comment #2. This item has been added on page I-15 of the FEIS.
13. The regulations cited in detail are established Forest Service, USDA, regulations which have been included at the agency's request. Some corrections have been made in the paragraph on page I-15, which clarify that BLM regulations will be developed later.
14. This correction has been made on page I-16.
15. This addition has been made on page I-16.
16. Explanation has been added and corrections made on page II-35. Also see pages II-9 and -10.
17. This explanatory sentence has been added on page II-38.
18. The photo caption on page II-49 has been corrected.
19. This correction has been made on page II-83 of the FEIS.
20. These corrections and additions have been made on pages II-87 and -92.

21. As suggested, table II-11 on page II-91 has been rechecked for species occurrence by habitat type, and missing information has been added.
22. We do not believe that dividing the McPhee Dam site to Bedrock segment into two segments is warranted. The presence and lengths of BLM, National Forest, and private lands cited do not provide a convincing argument for resegmenting the river. In addition, segmenting used is based on that in the final Study Report. Using different segmenting in the two documents would be confusing.
23. All details of the administrative arrangements involving the proposal to divide Forest Service and BLM administration of the Dolores-San Miguel County Line, by joint agreement between the two agencies, are being deferred to the management planning effort. Therefore, it is not practical to discuss specific impacts of this action in the FEIS. If any significant impacts are involved, they should be presented in the Management Plan.
24. This clarification has been included in the FEIS. See page III-6.



United States Department of the Interior

GEOLOGICAL SURVEY
RESTON, VIRGINIA 22092

Dolores EIS 24

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OFFICE OF THE DIRECTOR

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FEB 13 1976

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Memorandum

To: Regional Director, Bureau of Outdoor Recreation
Lakewood, Colorado

Through: ^{Deputy} Assistant Secretary--Energy and Minerals *Rolland R. Reed*
FEB 18 1976

From: ^{Acting} Director, Geological Survey

Subject: Review of draft environmental statement for Dolores Wild and
Scenic River, Colorado

We have reviewed the subject draft environmental statement as requested
in your letter of December 22.

- 1 | In segment 4 which is proposed for Wild River status there are 896 mining claims in the river corridor (app. A). If this section is to be removed from mineral entry, proposed disposition of these claims should be discussed under section III.
- 2 | It is possible that reclamation measures for mining could be accomplished to add potential development sites to the recreational support facilities that would be utilized by the users of the Wild River. If this is anticipated, it should be so stated.
- 3 | There are ten active surface and subsurface mines within the proposed river corridor as well as a large number of uranium claims. Continuance of operations and status of the mining claims has not been discussed in a clear manner in the environmental statement, and this should be rectified.
- 4 | On page II-80, table II-8, under the heading "Annual, acre-feet," the words "Instantaneous," "Annual" and "daily" should be deleted.

Henry W. Carter
Acting Director



Response to Comments Received from
the U. S. Geological Survey

1. Material on page III-6 on mining claims and withdrawal of the "wild" segment corridor has been revised, and a sentence has been added on the status of the unpatented mining claims in the wild segment should this area be designated.
2. If mined area reclamation can produce needed potential recreation development sites, this will be covered in the Management Plan. Based on study team findings, it appears that sufficient potential development sites are now available.
3. Material relating to these concerns has been revised and added to the FEIS under "Impact on Mining." See pages III-6 and -7.
4. The suggested corrections in table II-8, page II-62, have been made.

MAR 8 1976
ROUTE INITIAL

Dolores EIS 30

OFFICE OF THE DIRECTOR



United States Department of the Interior

BUREAU OF MINES
2401 E STREET, NW.
WASHINGTON, D.C. 20241

Handwritten initials and signatures
BAT *af*

March 1, 1976

DES 75-64

Memorandum

To: Regional Director, Mid-Continent Region, Bureau of Outdoor Recreation, Denver, Colorado

Through: ^{Deputy} Assistant Secretary--Energy and Minerals *Rolland R. Reid*
MAR 5 1976

From: Director, Bureau of Mines

Subject: Draft environmental statement, Bureau of Outdoor Recreation-Forest Service, proposed Dolores River National Wild and Scenic River, Colorado

The Bureau of Mines Intermountain Field Operation Center, Denver, has reviewed the draft environmental statement for the proposed Dolores River National Wild and Scenic River in Colorado, prepared jointly by the Bureau of Outdoor Recreation and the Forest Service. The proposal would classify as "wild," "scenic," or "recreational" a 105-mile length of the river from McPhee damsite to Bedrock embracing 56,400 acres of land, 90 percent of which is in public ownership. Only the 33-mile segment between the Montrose-San Miguel County boundary and the town of Bedrock is proposed for "wild" classification that would be withdrawn from appropriation under the mining laws and from operation of the mineral leasing laws, subject to valid existing rights.

The statement contains one of the best descriptions of mineral resources and mining history and potential that we have reviewed. However, we would like to suggest adding the following paragraph at the bottom of page II-48:

1

Placer mines have operated in the past at several locations on the river, including one at Rico in Dolores County and another in Montezuma County just below the Montezuma-Dolores County line. Both operated as late as 1973 and may still be operating. Although both operations are in an area considered ineligible for inclusion in the system as wild, scenic, or recreational, they prove that placer deposits occur in the river gravels and indicate that other valuable placers are likely to occur in reaches of the river proposed for inclusion. Still other placer operations were active during the 1930's and at least one as late as 1960.



2 | Also, we suggest that a statement be added on page II-45 acknowledging the existence of manganese and barite. Many of the old mines in the region yielded these minerals but they were not recovered. However, under future economic conditions, they might possibly be recovered when mining is resumed.

3 | The section on water rights, pages II-95-98, makes no mention of water use by the mineral industry either within or outside the proposed river corridor. We believe that it would not only be possible but essential to withdraw water from the stream for mining and/or processing purposes without unduly affecting the "wilderness experience" of those wishing to use the river for such purposes. A discussion of that possibility should appear in the final report.

Inclusion of the additions suggested above would improve the excellence of the minerals portion of the statement.

T. V. Falke

Director



Response to Comments Received from the
Bureau of Mines

1. This information has been incorporated into the final environmental impact statement on page II-38.
2. A statement acknowledging this possibility has been added to the FEIS. See page II-35.
3. A paragraph covering this subject has been added on page II-75. The portion of the paragraph that indicates it may not be possible to locate a mineral processing plant on or near the Dolores River is consistent with information presented in the report. It is based on material given to the Forest Service by the Energy Research and Development Administration.

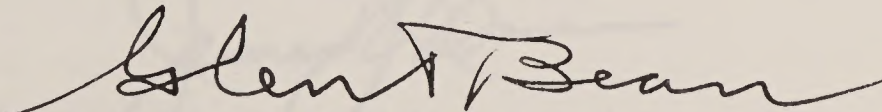
the National Register November 20, 1975, when the final statement is prepared.

3 Page II-140, Line 6: National Registry of "National" Landmarks should be changed to National Registry of "Natural" Landmarks in the final environmental statement.

Page III-17, Line 12: Should read "National" Register, not "Federal" Register.

4 Appropriate procedures to protect historic and archeological sites within the project area have been identified, among these are the professional surveys of cultural resources completed to date. We are pleased to note that additional land areas to be affected by the project developments will be surveyed and cultural resource sites appropriately identified and evaluated in accordance with Executive Order 11593, Section 2(b). If there are any such sites that will be inundated or adversely affected, which do meet National Register criteria, project impact upon them and how they are to be mitigated should also be addressed in the final environmental statement.

We also believe further study needs to be devoted to what will be the need for greater surveillance of all cultural resource sites located within the defined limits of the proposed National Wild and Scenic River area. Undesirable uses of these lands could result in an adverse effect upon them. Accordingly, we suggest that the final environmental statement address this concern and indicate in what manner and by whom appropriate actions for their protection will be taken.



Deputy Regional Director

Lynn H. Thompson

Response to Comments Received from
the National Park Service

1. A January 12, 1976, letter from the Colorado State Historic Preservation Office has been included in the FEIS with other comments received on the draft environmental statement. A CSHPO attached listing of cultural sites that may be impacted by national designation of the Dolores River has been sent by memorandum to the Bureau of Land Management and the Forest Service for their later use in river management planning.
2. In addition to the National Register publication of February 10, 1976, all supplementary Federal Register listings of National Register sites through May 1976 have been checked. Appropriate corrections have been made in the FEIS as a result. We believe the environmental impact statement is sufficiently clear on the point of reference to the National Register of Historic Places. It should not be necessary to explain what and how Register listings were consulted.
3. These corrections have been made on pages II-106 and III-10.
4. As stated in the September 1975 Memorandum of Agreement, including attached memoranda between the President's Advisory Council on Historic Preservation, the CSHPO, and involved Federal and State agencies (see EIS appendix), appropriate efforts will be made during management planning to cover these concerns and implement "mitigating measures needed to prevent or reduce the adverse effects of added public pressure" should the Dolores River be nationally designated.

Part I--Description of the Proposal

- 1 | 1. Page I-3, Background - Suggest discussing why the stretch of the Dolores River between Rico and McPhee Dam is not included in the study.
- 2 | 2. Page I-8, first paragraph - Substitute "Segment 3" for "Segment 2."
- 3 | 3. Pages I-16 through I-20 - These pages indicate that a management plan will be prepared jointly by the Bureau of Land Management and the Forest Service. The subsequent discussion addresses administrative and management actions which "will" be undertaken; however, many of the actions will be difficult, if not impossible, to put into effect. Commitments for land use controls, design standards for private buildings control and distribution of visitors, requirements for portable chemical toilets, withdrawal of mineral claims, regulation of off-road vehicles, control of timber harvests, and a prohibition against disposal of public land will be difficult to obtain since many public agencies and private individuals are involved. Since these commitments are important to the development of the proposal and affect its impacts, it is suggested that the proposed legislation and/or regulations necessary to accomplish management objectives be included in the statement.
- 4 | 4. Page I-19, first paragraph - Specific reference should be made to compliance with the Endangered Species Act (section 7) and the procedures outlined there; such as, determination of critical habitat, etc.

Part II--Description of the Environment

- 5 | 5. Page II-14, Main Stem to Rico - Identify who is responsible for the "construction activities" in the photo (e.g., Corps of Engineers' flood control, mining activities, etc.) and the frequency of occurrence of the "construction activities."
- 6 | 6. Page II-90, third paragraph - Water quality data available from the Environmental Protection Agency and the Colorado Department of Health indicate no significant effect from mining near McPhee nor Paradox Valley. Samples taken near the town of Dolores show iron, zinc, and mercury as the only heavy metals present in detectable amounts. All of these constituents were at levels below the recommended limits for drinking water. Arsenic and selenium were also present but at levels that domestic users could tolerate.
- 7 | Samples taken at Bedrock, Colorado (Paradox Valley), show iron and molybdenum as the only heavy metals at levels greater than recommended for drinking water, but within limits suitable for livestock use. A high pH probably prevents existing heavy metals from readily going into solution. The only other detectable toxic substance found was selenium; however, it was within recommended limits for domestic use.
- 8 | 7. Page II-95, Water Rights - A brief analysis of water rights desirable for the Dolores River esthetics or management under the Wild and Scenic Rivers Act should be presented.

9 8. Page II-95, third paragraph - The accuracy of this statement is questionable for two reasons: (1) most appropriations are for irrigation which does not occur during the full year, and comparison of total annual appropriations should not be made with average annual flow; (2) the location for making the comparison (Cisco, Utah) is below the diversion points and thus reflects flows after diversions.

10 9. Page II-96, first paragraph - Montezuma Valley Irrigation Company (MVIC) has absolute rights totaling 807.7 c.f.s. In addition, MVIC has 592.3 c.f.s., of conditional rights bringing the total to 1,400 c.f.s.

11 10. Page II-99 - The completion schedule for the Dolores Project is out-of-date. We suggest that a new schedule be provided.

12 11. Page II-102, first paragraph - This paragraph states that in addition to the 105,000 acre-feet of water already diverted by the MVIC, 90,900 acre-feet of water stored by the proposed project will be diverted out of the Dolores River Basin and into the Montezuma Valley area. Historically, the MVIC diverts about 105,000 acre-feet of water annually from the Dolores River Basin into the San Juan River Basin. In addition to MVIC's diversion, the Dolores Project will convey about 101,200 acre-feet of Dolores River into the San Juan Basin.

12 12. Page II-103, Table II-10--Dolores Project Water Allocations - The "Water (acre-feet)" section of this table should be revised as follows:

WATER (ACRE-FEET)

13

Irrigation	90,900
Cortez Municipal and Industrial	6,200
Dove Creek Municipal and Industrial	600
Dolores Water Conservancy District	900
Towaoc Municipal and Industrial	1,000
Future Fish and Wildlife Enhancement	800
Ute Mt. Ute Future Fish and Wildlife Enhancement	800
*Fish, Wildlife, and Esthetic Release (McPhee Dam)	<u>25,400</u>
	126,600

*Remains in the Dolores River Basin

14 13. Page II-108, second paragraph - Reference made to the trout fishery infers that this cold water fishery is limited to an area above Slick Rock, Colorado. A contradictory implication is then given that this excellent trout fishery was found below Bedrock which is very unlikely.

15 14. Page II-109, third paragraph - This paragraph states that several reservoirs are owned by MVIC. All the reservoirs listed are owned by private irrigation companies, but MVIC owns and operates only Groundhog, Totten, and Narraguinnep Reservoirs.

Part III--Environmental Impacts of the Proposed Action

- 16 | 15. Page III-3 - This page states that recreation activity will increase by 3 percent annually, resulting in an increase of about 220,000 recreational days by 1990. However, the environmental impacts associated with this additional 3 percent increase in recreational activity are not quantified on this page or subsequent pages.
- 17 | 16. Page III-6, third paragraph - There are no data or analyses provided to support the conclusion that ". . . neither of these (human waste contaminants and industrial discharges) produce significant water quality problems." On page II-III we are told, "Wastes from the mining and processing of uranium and vanadium at Uravan in the late 1950's and early 1960's virtually eliminated game fish from Uravan to the State Line."
- 18 | 17. Page III-11, third paragraph - The 3,000 acres should actually be about 500 acres.
- 19 | 18. Page III-12 - It would be helpful in this sentence to point out what "sanitary cutting" involves and describe its impacts.
- 20 | 19. Page III-20 - Details were lacking on the economic impacts of the program on future mining activities.

Part V--Unavoidable Adverse Environmental Impacts

- 21 | There was no analysis of the significance of adverse impacts presented. For example, what is the expected increase of litter and pollution as a result of the program; what are the environmental and/or economic effects of not being able to dispose of public lands; what is the net impact on the local economy if the development uranium and vanadium were foregone, etc.? These questions should be answered to present the significance of the adversity.
- 22 | 20. Page V-2, first paragraph - Item 5 of this section should also be included in the impacts chapter.

Response to Comments Received from
the Bureau of Reclamation

1. The legislative history of P.L. 93-621, indicates that Congress excluded the Dolores River between Rico and McPhee Damsite because of the private ownership on this segment and to avoid any possible conflict with the authorized Dolores Project.
2. This correction has been made in the FEIS. See page I-7.
3. Some minor corrections and additions have been made in this material. With these changes, all of the actions cited are within the ability and responsibility of the managing agencies to implement. Also, please note that the environmental statement says that necessary land use controls "will be determined." This material covers only a few of the more important controls and outlines the management objectives. We do not believe it is appropriate or necessary for the environmental statement to list specific agency and departmental regulations and policies necessary to accomplish the stated river management objectives.
4. This reference has been added to the FEIS. See page I-16.
5. The caption for the photograph on page II-11 of the FEIS has been corrected to provide more information and a more accurate description of the location. The work is being done by or for a local landowner on a non-study segment of the river. We do not have information on the frequency of occurrence of this activity, nor is it needed for completeness of the environmental statement.
6. The statements referred to do not indicate any significant effect on water quality at Dolores or Paradox Valley from mining spills. In fact, the environmental statement says that "the effects have not been evident 38 miles downstream at the Town of Dolores."
7. Most of this paragraph, which is additive information, has been placed in the FEIS on page II-69.
8. Most of the section on "Water Rights," pages II-71 through 75, has been revised to improve accuracy and completeness. However, it does not provide an "analysis of water rights desirable for Dolores River esthetics or management under the Wild and Scenic Rivers Act." Such an analysis would be an academic exercise, as the river is over-appropriated and also will be controlled by the McPhee Project. The only water that will be expressly available for recreation, wildlife, and esthetics will be spring run-off spills and 20 to 78 cfs

of year-round discharge from McPhee Dam to maintain a minimum flow. Purchase of water rights for recreation and esthetics is considered infeasible due to very high cost and the very large volumes of stored water that would be required to sustain white water boating past the spring runoff period.

9. This paragraph has been revised. See the FEIS, page II-73.
10. This item has been corrected. See page II-73.
11. This item has been corrected. See the FEIS, page II-76.
12. This correction has been made on page II-76.
13. The corrections in table II-10B, page II-79, have been made.
14. A portion of the subject paragraph on pages II-80 and 83 has been reworded to eliminate the possibility of incorrect interpretation.
15. This correction has been made. See page II-83 of the FEIS.
16. The various impacts cited in the EIS which are associated with wild and scenic river designation take into account the expected 3 percent increase in recreation use.
17. We believe that sufficient information to support the statements referred to concerning water quality is presented in section II of the environmental statement under "Water Quality." This information is presented in narrative fashion and is not devoid of data. However, it is based on more detailed data which have been collected by the Environmental Protection Agency, the Colorado Water Quality Control Division, and the Colorado Water Conservation Board and which, in part, have been published. Some of the water quality data, for example those supporting the fact that "neither human waste contaminants nor industrial discharges produce significant water quality problems (in the study segments)," do not lend themselves readily to tabular presentation and analysis. However, this and the facts concerning fish kills below Uravan are supportable and known to the agencies cited above.
18. This correction has been made in the FEIS. See page III-7.
19. This suggested addition has been made on page III-7.
20. Beyond estimates of (1) the quantity of uranium and vanadium found in the "wild" segment to be withdrawn from mineral entry and (2) the higher costs of mining the "scenic" and "recreational" segments, it is impossible to quantify the impacts of wild and scenic river designation on mining. As stated in the FEIS, page III-6,

"The degree of actual impact. . . (in the "wild" segment) would be relative to the amount of uranium and vanadium proven within the corridor, the ability to mine within the narrow and mostly sheer-walled canyon, and the future demand for and prices of those resources." However, in addition to some corrections made in the section "Impacts on Mining," information relative to this comment has been added to both this section and "Impacts on the Economy," pages III-11 and 12.

21. We believe that unavoidable adverse impacts relating to litter and pollution are sufficiently covered in the FEIS. As stated on page V-1, with adequate on-the-ground management as described in Section I, these items would not be significant environmental impacts.

The item on page V-1 dealing with the unavoidable adverse impact of not being able to dispose of public lands has been expanded for clarification. As stated in the FEIS, the impacts of this constraint would be minor or nonexistent.

With the details that are presented in Section III on foregone minerals development in the "wild" segment, we believe this item is adequately treated in the FEIS. As stated earlier, it has not been possible to expressly quantify the "net impact" of foregoing the exploration and development of minerals within the withdrawn wild river corridor. Expressing the net impact of foregoing mineral development on all designated river segments has not been treated in the environmental statement, as this is not part of the proposal or any alternative considered.

22. This item has been included in section III of the FEIS. See pages III-6, 11 and 12.

Inclusion of Segments 1 and 4 in the designation would have severe impacts on the highway system since the river in these segments is paralleled by State Highways. We would strongly oppose inclusion of these segments.

Segment 2 would have no impact on the highway system.

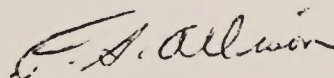
Environmental Impacts of the Proposed Action:

- 2 | Page III-18., Impact on Transportation states "The present highway system is adequate to handle any increase in traffic volume resulting from the proposal." Projected increases in traffic on affected highways would seem appropriate in order to verify this statement.

Miscellaneous:

- 3 | The first sentence on page I-8 refers to Segment 2. We believe this should be Segment 3.

In summary, except for possible highway impacts due to increased traffic volumes, designation of Segment 3 for inclusion in the National Wild and Scenic Rivers System should have no significant adverse highway impacts. Inclusion of Segments 1 and 4 would have severe impacts and should be strongly opposed.



F. S. Allison

Response to Comments Received from
the Federal Highway Administration, Department of Transportation

1. The Colorado Division of Highways received and commented on the draft environmental impact statement through the Colorado State Clearinghouse, "A-95" process. The Division noted the proposal would "not appear (to have) any direct impact on Colorado Division of Highways plans or projects."

Notification of the release and availability of the Dolores River Study Report and draft environmental impact statement was accomplished through use of press releases and broad-based mailing lists. Articles also appeared in a number of state newspapers. Club 20 and other groups have had ample opportunity to obtain and review the study documents.

2. Detailed traffic projections for all transportation routes in the study area have not been computed. However, as described above, the Colorado Division of Highways noted no apparent direct impacts.
3. The correction has been made on page I-7 of the FEIS.

MAR 11 1976



UPPER COLORADO RIVER COMMISSION

355 South Fourth East Street
Salt Lake City, Utah 84111

March 9, 1976

ROUTE	INITIAL
RD	
INFOR	
ADMIN	
LUC	
RA	
✓ RPS	CS
FILE	

Handwritten signatures and initials: CS, JTB, DAT

Mr. Derrell P. Thompson
Regional Director
Bureau of Outdoor Recreation
P. O. Box 25387
Denver Federal Center
Denver, Colorado 80225

Dear Mr. Thompson:

We regret the delay in furnishing comments on the draft environmental statement for the proposed Dolores Wild and Scenic River in Colorado.

First, I want to compliment you and your team for the high quality of your report. It is one of the best environmental statements that I have seen. It reflects a lot of honest, objective investigation and constructive thinking.

We have the following very brief comments which, we hope, are constructive:

1 | Page II-92 - last sentence, first full paragraph: The Statement "all water use results in increased salinity" should be qualified. Hydroelectric power generation and certain recreational uses would not increase salinity and some uses, such as the Sun Desert Nuclear Plant, would reduce salinity by using cooling water of a higher salinity than the river water.

2 | The report does not mention the fact that the proposed Dolores Project's McPhee Reservoir would provide sufficient releases in Segment 3 to permit a live stream year round in lieu of the present condition wherein the streambed is frequently dry. Didn't Mark Twain say, "I didn't realize how much water added to the beauty of a river"--when he viewed the Rio Grande?

3 | Along this same line, Objective No. 2, which states: "To preserve the free flowing condition of the waters" implies that Dolores River is a natural uninterrupted stream rather than one subject to being presently used for various purposes by man and dry or with periods of very low flow.

Thank you for the opportunity to provide these brief comments.

Sincerely yours,

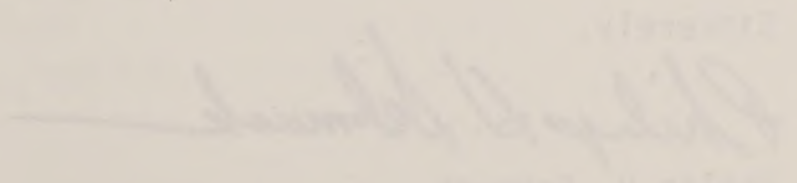
Ival V. Goslin

Ival V. Goslin
Executive Director

IVG:hiw

Response to Comments Received from the
Upper Colorado River Commission

1. This item has been corrected. See page II-70 of the FEIS.
2. This point has been covered in several places in the environmental statement. See page II-73, II-76, and table II-10B.
3. An addition has been made to Objective 2 on page I-2 to accommodate this concern.


Philip H. Schuck
Director, State Clearinghouse
Enclosures
cc: See attached list



Dolores EIS 27

**Department of Local Affairs
Colorado Division of Planning**

Richard D. Lamm, Governor

Philip H. Schmuck, Director

March 1, 1976

Refer to: D4219
Dolores

MAR 4 1976

BA
Stewart / Cron
BA

Mr. Derrell P. Thompson
Regional Director
United States Department of the Interior
Bureau of Outdoor Recreation
Mid-Continent Region
Post Office Box 25387
Denver Federal Center
Denver, Colorado 80225

SUBJECT: Draft Environmental Statement
Proposed Dolores Wild and Scenic River in Colorado

Dear Mr. Thompson:

The Colorado State Clearinghouse has implemented the provisions set forth in Section 102(2)(C) of the National Environmental Policy Act of 1969, and OMB Circular A-95 which requires the State Clearinghouse to disseminate impact statements to state and local agencies, which are authorized to develop and enforce environmental standards, and provide these agencies an opportunity to make comment.

Enclosed are all comments and reviews received and circulated by the Colorado State Clearinghouse. In accordance with the Council on Environmental Quality Guidelines, these comments must be incorporated with the Final Impact Statement.

Thank you for providing the opportunity to comment and distribute this impact statement. This office apologizes for the lateness of the comments.

Sincerely,

Philip H. Schmuck
Director, State Clearinghouse

PHS/vt
Enclosures

cc: See attached list

No response necessary

Dolores National Wild & Scenic River DES

March 1, 1976

Page 2

cc: Jim Monaghan, Assistant to the Governor on Natural Resources
 Dr. Jeris A. Danielson, Deputy State Engineer, Division of Water Resources
 Frank J. Rozich, Director, Water Quality Control Division
 E. N. Haase, Chief Engineer, State Department of Highways
 Bill Roundtree, Chairman, San Juan Basin Regional Planning Commission

RECEIVED
 FEB 23 1976
 DIVISION OF WATER RESOURCES

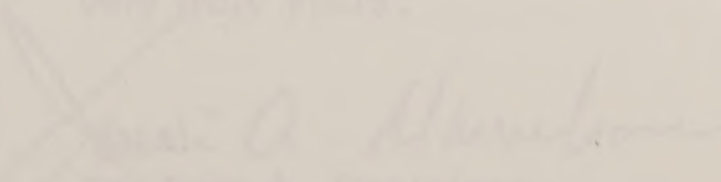
RECEIVED
 FEB 20 1976
 DIVISION OF WATER RESOURCES

Mr. Frank J. Brown
 Director
 1525 Sherman Street
 Denver, Colorado 80202

Mr. Frank J. Brown
 Director
 1525 Sherman Street
 Denver, Colorado 80202

Department of Water Resources
 Division of Water Resources
 We have received the Draft Environmental Statement proposed for the Dolores National Wild and Scenic River. It does not appear that this project will have any direct impact on Colorado Division of Highways plans or projects.

For a more detailed review of the project, please refer to the attached report. The project is located on the Dolores River, and it is recommended that the project be permitted. The project is located on the Dolores River, and it is recommended that the project be permitted.

Very truly yours,

 Jeris A. Danielson
 Deputy State Engineer

Bureau of Outdoor Recreation
and U.S. Forest Services
Delores National Wild & Scenic
River

STATE DEPARTMENT OF HIGHWAYS

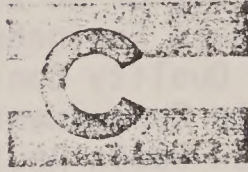
JACK KINSTLINGER

EXECUTIVE DIRECTOR

75-135

DIVISION OF HIGHWAYS
E. N. HAASE
CHIEF ENGINEER

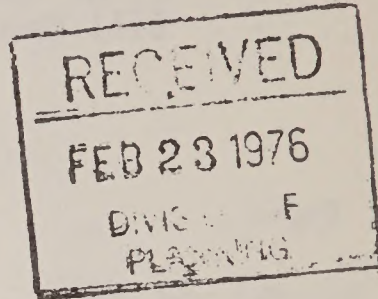
STATE OF COLORADO



COLORADO STATE PATROL
COL. C. WAYNE KEITH,
CHIEF

4201 EAST ARKANSAS AVENUE • DENVER, COLORADO 80222 • (303) 757.9011

February 19, 1976



Mr. Richard L. Brown
Colorado Division of Planning
1845 Sherman Street
Denver, Colorado 80203

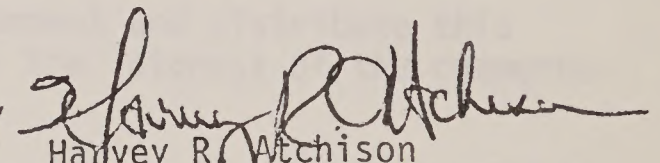
Dear Mr. Brown:

We have reviewed the Draft Environmental Statement, Proposed Dolores National Wild and Scenic River. It does not appear that this proposal will have any direct impact on Colorado Division of Highways plans or projects.

Thank you for the opportunity to review this statement. If we can be of further assistance, please contact this office.

Very truly yours,

E. N. HAASE
Chief Engineer

By 
Harvey R. Atchison
Staff Environmental Manager

HRA/es

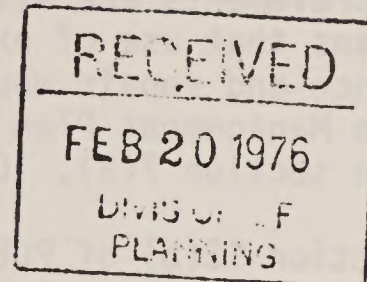
No response necessary



DIVISION OF WATER RESOURCES

Department of Natural Resources
300 Columbine Building
1845 Sherman Street
Denver, Colorado 80203
Administration (303) 892-3581
Ground Water (303) 892-3587

February 19, 1976



Mr. Richard L. Brown
Colorado Division of Planning
1845 Sherman Street
Denver, Colorado 80203

Re: Dolores Wild and Scenic River
Draft Environmental Statement

Dear Mr. Brown:

This is to acknowledge receipt of the above referenced Draft Environmental Statement. As requested, I have reviewed the Statement and the following comments are presented for your consideration:

- 1. There are no assurances provided that access for equipment to maintain, repair, and improve existing diversion structures in this reach of the Dolores River affected by this proposal will be permitted.
- 2. There are a number of decreed conditional water rights within the area of the proposal which may be perfected in the future. Again, no assurances are provided that this proposal will not materially affect these water rights.

I do not recommend approval of this Draft Environmental Statement until it addresses the above comments. If this proposal does adversely affect existing and conditional water rights, then mitigating measures must be provided.

Very truly yours,

Jeris A. Danielson
Dr. Jeris A. Danielson
Deputy State Engineer

JAD/HDS:mvg

cc: R. Kelling

Response to Comments Received from
the Colorado Division of Water Resources

1. The Wild and Scenic Rivers Act (P.L. 90-542) and subsequent amendments permit retention of existing diversion structures as long as the lands and water rights involved are not required for public purposes and the structures do not significantly diminish the scenic, recreational, and fish and wildlife values present. Normally, these improvements are allowed to remain functional. This, of course, means that use of existing access roads to the structures for maintenance and repair would be permitted. Specifics would be covered in the Management Plan for the area. Applicable references in P.L. 93-621 are section 7(a), 10(a), 12(b), 13(b), 13(g), and 15(b).

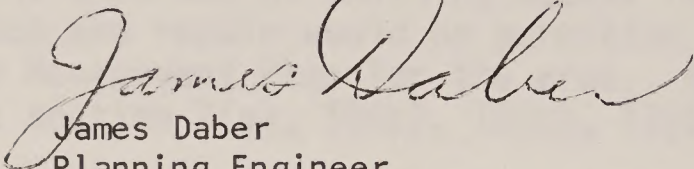
2. Section 12(b) of Public Law 90-542 (as well as amendments to that act) states that "nothing in this act shall constitute an expressed or implied claim or denial on the part of the Federal Government as to exemption from State water laws." The Act also provides for just compensation for any water rights taken by the Federal Government. However, no need is foreseen for acquiring any privately held water rights in the Dolores River. No distinction has been made by Public Law 90-542 and subsequent amendments or in the Dolores River Study Report and EIS between perfected and conditional water rights.

Regional Director
Bureau of Outdoor Recreation
January 21, 1976
Page 2

If you have any questions about these comments, please contact the Division for further clarification.

Very truly yours,

FOR DIRECTOR, WATER QUALITY CONTROL DIVISION



James Daber
Planning Engineer
Water Quality Management Planning Section

JD/mb

cc: Jim Ohi, Colorado Division of Planning

Response to Comments Received from the
Water Quality Control Division, Colorado Department of Health

1. In accordance with provisions of the Wild and Scenic Rivers Act, P.L. 90-542, mining would be permitted in the scenic and recreational segments. However, regulations to be developed during the management planning period along with expected full compliance with State water quality standards should prevent any significant degradation of water quality in the river. Because of this, we also do not anticipate any downstream pollution problem.
2. The subsection on "Water Quality" has been revised. See the first paragraph after the heading on page II-66.
3. The subsection on "Water Quality" has been revised. See page II-69.
4. This item was discussed with Mr. Daber of the Water Quality Control Division by telephone in April. After checking with the local area Department of Health Engineer and other sources of information, Mr. Daber agreed with others who supplied information on this subject that there is no evidence that spills from mining operations in the Rico area have significantly affected water quality below the McPhee Dam site, the portion of the river discussed here.

75-135

COLORADO REGION 9 PLANNING

SAN JUAN BASIN REGIONAL PLANNING COMMISSION

1911 NORTH MAIN AVENUE

DURANGO, COLORADO 81301

PHONE 303 259-1440

February 19, 1976

Colorado State Clearing House
Colorado Division of Planning
615 Columbine Building
1845 Sherman Street
Denver, CO 80203

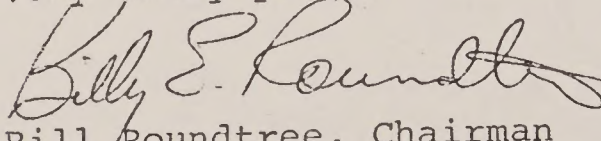
Gentlemen:

Transmitted herewith are the comments of the Draft Environmental Impact Statement on the Dolores River.

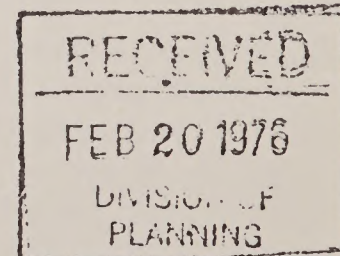
We hereby request to be included in all subsequent mailings for data, hearings, and consultation on matters concerning this element and all other similar elements that may affect the San Juan Basin.

For further information on this report, please contact David M. Denton at Montezuma County Courthouse, Room 303, Cortez, CO 81321, Phone (303) 565-8317.

Very truly yours,


Bill Roundtree, Chairman
San Juan Basin Regional
Planning Commission

/BR:cl



RECEIVED
FEB 20 1976
DIVISION OF
PLANNING

TO: Colorado State Clearing House
Colorado Division of Planning

FROM: San Juan Basin Regional Planning Commission

SUBJECT: Draft Environmental Statement
Proposed Dolores National Wild and Scenic River

PREFACE:

The staff of the San Juan Basin Regional Planning Commission has reviewed the subject Draft Environmental Statement. Such staff review and comments herewith submitted have been endorsed by the Regional Planning Commission and submitted as the Commission's response.

The staff, having only a time of some eight days' access to the statement, has not had full opportunity to provide a complete point by point evaluation. Several portions of the report were not reviewed due to time constraints and the technical material submitted.

GENERAL EVALUATION:

We raise many questions about statistics, inventories and conclusions. We feel it most important that the facts be accurate in order that full evaluation can be made. Also, the findings and conclusions of the report will serve as a basis for any future management plans. We note that there are some inconsistencies in the report, particularly when citing various studies and reports.

1 | We feel the report does not give enough impact data on those communities immediately outside of the river basin which depend socially and economically on the river.

2 | The statement does not speak of the burdens that may be brought on local government in the more remote areas for fire control, search and rescue, and general policing activities.

3 | We take strong exception to the fact that local planning agencies were not consulted in the preparation of the Study Report or the Environmental Impact Statement. Further, the distribution of the report was not made to us; therefore, our comments come through informal contacts.

ITEM BY ITEM RESPONSE:

4 | Page I-2 Item 2. What is the definition of "free-flowing"?
There are two schools of thought on this.

5 | Figure I-3 Critical Sight Lines -- Is this to be taken as 90° from the river at any given point or as any visual sighting from a given point? This will cause a significant difference in mapping visual corridors.

6 | Page I-16 Speaks of those preparing the management plan. No mention is made of local planning agencies which are recognized by the state. Also, Memorandums of Understanding between the Forest Service and BLM calls for such involvement.

7 | Page I-17 Speaks of withdrawal of all mineral extracting on the 33 mile Wild section. Does this mean in the prime corridor or does this include the visual corridor as well? Example, side canyons and valleys.

8 | Page I-18 Speaks of the mining regulations. Do these regulations speak of noise?

9 | Page I-18 Will search and rescue operations permit mechanical equipment use in these areas?

10 | Page I-19 Speaks of Division of Wildlife continued management of their activities on the river and states no action such as periodic closure of certain areas are anticipated. This is not the case; during certain nesting, spawning, and plantings, closures may be necessary.

11 | Page I-19 Division of Wildlife Management -- Colorado Statute now provides for local governments to designate certain areas for Wildlife Management in concert with the Division.

12 | Page I-21 The Statewide Comprehensive Outdoor Recreation Plan is now being revised and the 1970 plan will no longer be in effect.

13 | Page I-21 The Colorado Land Use Plan calls for such measures listed to be identified and implemented by local governments with help from the state.

14 | Page I-22 Speaks of compatability with Wilson Wilderness and Wild River Designation -- The West Dolores is only considered in a minority report as Recreational; therefore, not compatible to the upper five miles of the river.

15 | Page II-4 Transportation - Implies that the Dolores River is isolated when, in fact, it is not. Federal Highways and commercial air service is available within 10-12 miles of the river in general and a Federal Highway passes within three miles of the river in places.

16 | Page II-4 & 5 State Highway 141 from Dove Creek to Naturita
crosses the Dolores River at Slick Rock.

17 | Page II-7-9 Population - This report does not include those areas
just outside the basin. Does not provide any population
forecasts which we have, nor does it give any indication of
the population decline reasons.

18 | Page II-9 & 10 Economy - Percentages engaged in employment is wrong,
see Montelores Economic Base Study (1972).

19 | Page II-10 A significant portion of Montezuma County is devoted
to dryland farming.

20 | Page II-12 Oil and gas production is now a fact in both Montezuma
and Dolores County.

21 | Page II-13 Carbon dioxide discoveries have been made in the Dove
Creek area and a dome identified reaching as far east as Dunton.

22 | Page II-13 Recent coal deposit studies performed by Montezuma and
Dolores Counties indicate large deposits of coal in both counties.
The final report will be available in May 1976. The geothermal
potential near Dunton was not included.

23 | Page II-13 The large sawmill near Dolores was omitted.

24 | Page II-16 There was more than exploratory mining in the Navajo Basin.
Records indicate significant production.

25 | This section should also state that the first five miles of
the river are in the proposed wilderness area.

26 | Page II-17 An occasional private home -- in excess of 60 privately-owned, habited units is more than occasional in a 26 mile stretch of the river.

27 | Page II-17 From the McPhee Dam site to the Bradfield Ranch significant agricultural activity is experienced. Limited amounts of coniferous timber is found in this area.

Page II-26 Time does not permit our reviewing this geology section.

28 | Page II-37 Uranium and Vanadium production has been experienced in the Dunton area. The Wilson Wilderness Study refers to uranium and vanadium showings in that area.

29 | Page II-39 & 40 ERDA production -- does not include the scenic corridor. What portion of our nation's present and future needs do these figures reflect?

30 | The recent markets have reflected yellow coke beds from \$20.00 to as high as \$40.00.

31 | Page II-44 The production of the Dunton area is not complete.

32 | Gravel and similar materials are known in much of the river basin. The McPhee Project will make use of these deposits, most important as most of our aggregates come from the area to be covered by the project.

33 | Page II-46 New exploration is now taking place adjacent to the river corridor for fossil fuels in both Montezuma and Dolores Counties.

34 Page II-48 States that information on mining claims is only available from the McPhee Dam site down. Dolores and Montezuma County records show many claims in the areas above this point.

Page II-49 Time does not permit a review of the soils data.

35 Page II-57 Present Geologic Hazard studies being conducted by Montezuma and Dolores Counties indicate most of the West Dolores valley corridor slopes are unstable. Report available May 1976.

36 Page II-78 Natural flow - True, water flows are generally slow in summer and fall. Should be included, the fact that the highest flows on the river are recorded in early fall (September and October).

37 Page II-86 Water Quality. We suggest that the Water Quality Management Plan for the Colorado River Basin be used for all water quality determinations and management plans. This plan whould be finalized soon.

38 Page II-99 Montezuma Water Company serves into Dolores County to Cahone. The Montezuma Water District No. 1 is not listed. It serves a small industrial and residential area south of Cortez.

39 Page II-104 The salinity problem is also related to an international treaty with Mexico.

40 Page II-109 We know of no section of the West Fork or main stem of the river on which fishing is prohibited. Some two miles requires permission by the owner.

41 | Page II-109 We question the five mile segment of the East Fork
from Stoner downstream. Some channelization has occurred as
flood measures.

42 | Page II-125 Narraguinnep Reservoir provides extensive water skiing.
This lake should also be added to the flat-water boating and
fishing list.

43 | Page II-136 Regarding land ownership along the West Dolores is
totally wrong. Previous statements in the report indicate
half and half. There are actually 40 parcels from Dunton
to the Forks.

44 | Page II-138 Rico and Dunton on the Dolores River were founded as
mining communities. Rico, an incorporated town, remains a
mining community. Dunton was one of the area's richest mining
camps with as many as 1,000 residents.

45 | Page II-140 The Escalante Ruin near Dolores is now listed on the
National Registry.

46 | Page II-147 Fishing on those sections above the McPhee lake
cannot be expected to increase as present usage strains the
capacity of the river to produce catchable fish.

47 | Page II-148 Under management objectives. Nothing is said about
flood control measures. Numerous hydrology and soils studies
indicate continued erosion along the streambed can be expected
unless flood and erosion correction measures are adopted.

48 | Page II-149 Item 3 recreation development for recreationists -

This should include all recreationists which means all social, economic and physical segments.

49 | Under identified recreation sites by the Forest Service. We understood the only reason for not developing these at the present time was available funding.

50 | Page II-149 The BLM will withdraw -- Should this not be "will recommend for withdrawal"? Such actions are subject to public hearings, etc.

51 | Page III-1 Item 4 We question this and feel we can support our position. See statement relating to Page VIII-3.

52 | Page III-7 Water use will be restricted as small irrigators will be unable to maintain their diversion structures which now must be maintained and reconstructed annually.

53 | Page III-11 Statement - The proposal will not affect nor restrict agricultural uses -- false. Individual water diversion structures not permitted; therefore, present irrigation practices will be terminated -- corridors along the river will possibly be fenced, limiting movement of livestock to cross river pastures and water access.

54 | Page III-19 \$122,000 more tourist dollars because of designation -- we question this. Local retailers will receive virtually no effect as users of this type will bring their equipment with them. They generally do not use commercial housing and restaurants.

55 | Page IV-1 How can the proposal and subsequent legislation be
evaluated without the management plan?

56 | Page IV-1 Preservation for future generations -- Wild and Scenic
designation by its very nature eliminates the usage by those
of limited income, the old and young, and the physically
handicapped. What percent of the population will this really
serve?

57 | Page VIII-1 Another alternate -- set aside those archaeological and
geological and environmentally fragile areas under the National
Park and Monument system.

58 | Page VIII-3 We are unable to follow the recreational evaluations
for the entire report. First, the report speaks of regulated
recreational use. Rafting on the white water sections will
generally be limited to twenty five days. Given this many
rafting days -- how many can use the river under these regulated
conditions. Speaking of the West Dolores, the main use would be
fishing on the section from Dunton to the Forks. This section
of the river cannot support any significant traffic increase
due to the capability of the river to support a greater fish
population.

59 |
60 | It is estimated that some 800,000 visitors now visit this area.
80% of those visitors come to see Mesa Verde National Park,
other small percents to visit friends and relatives, hunt,
driving through the area, with less than 1% coming to fish,
hike, boat and such. The 3% increase is most unrealistic as
the visitor load at Mesa Verde may soon reach its capacity.

Recreational use of the West Dolores and the immediate area below McPhee is a 90-100 day season.

61 | Page VIII-5 Land Ownership and Development. The items mentioned cannot run unchecked due to Federal, State and local regulations.

62 | Page VIII-9 Provide protection for 30 not 35 miles of river. Five miles are included in the present primitive system and proposed wilderness.

63 | Page VIII-10 Water rights - (use) will be impaired as these users will not be able to get their water from the river.

64 | 12 miles of river is privately-owned with another mile in controversy of survey but presently occupied by private owners. 12 miles of 30 miles is actually 40% by survey or by occupancy 45%.

65 | Page VIII-11 continued economical use of private land cannot be sustained -- grazing costs will increase -- irrigation will be eliminated -- land values will depreciate from present estimated values along the river of \$2,500+ per acre to \$50 per acre.

66 | Page VIII-11 Will the Division of Wildlife have the power to close certain sections of the river for periods of time in the game and fish management process?

67 | Page VIII-11 \$80,000 expenditure by recreationists on the West Dolores is unrealistic. This type of recreationist spends practically nothing locally.

68 | Page VIII-9 will protect water quality. Not necessarily so --
local policing will not be possible; therefore, the 100,000
additional recreational days would increase the human excrement
and other wastes significantly. The Wilderness Area east of
Durango and Maroon Bells is a living example of this.

69 | Page VIII-10 Mining impair water quality not so -- presnet
regulations govern this.

70 | Page VIII-11 No consideration is given to the extensive forest
products harvest that will be lost by limiting harvest and
eliminating access roads. Environmental considerations
have already modified forest management plans to cause a
closedown of the area's largest manufacturing plant.

71 | Page VIII-21 The Wilderness Study Group proposal should not be
considered as an alternate. If other studies are to be
permitted, give our local groups an opportunity to prepare
their study.

72 | Page IX-1 & 2 No local professional planners or Commissions were
involved in the study process.

73 | Page IX-4 No comments requested on the statement from the above.

Response to Comments from San Juan Basin Regional
Planning Commission, Region 9

1. This comment is quite general and therefore difficult to respond to; however, information has been added to the "Description of the Environment" and "Impacts" sections, pages II-4 and -5, and pages III-11 and -12 on the communities immediately outside the river basin, and on impacts on the local area economy. Also, see our response to the Bureau of Land Management comments.
2. An item on this concern has been added to the FEIS. See page III-12.
3. At public meetings and in materials distributed through an extensive mailing list, all agencies, groups and individuals were invited to provide information and concerns, participate in the study, and become members of the Dolores River Study Steering Committee. Copies of the Study Report and environmental impact statement were also distributed through an extensive mailing list which included the State Clearinghouse and regional planning commissions. Copies of both documents were sent to local offices and libraries, with information on locations cited in press releases and newspaper articles which covered all concerned areas of the State. The San Juan Basin Regional Planning Commission and its staff were sent individual copies of the press release. The release stated that copies of the draft statement would be mailed on request. No requests were received from the Planning Commission or its staff.
4. "Free-flowing" is defined in section 15 of the Wild and Scenic Rivers Act, P.L. 90-542 as follows: "'Free-flowing', as applied to any 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."
5. We believe that figure I-3, following page I-8, is clear and amply answers this question. Generally, any visual sighting of any point up to the rims of the canyon or tops of the bluffs on either side of the river from any point on the river is within the seen-area corridor.
6. This correction has been made in the FEIS. See page I-13.
7. Clarification on this item has been added to the statement on page I-15. Determination of the withdrawn area boundary will be made during the management planning period following river designation.
8. Noise pollution is covered in the statement on the page cited.
9. This item will be covered by the Management Plan.

10. A correction has been made on page I-16 to accommodate this comment.
11. We are aware of and recognize the point made in this comment.
12. This correction has been made on page I-17. We are aware of the status of the new Statewide Comprehensive Outdoor Recreation Plan which has been released in preliminary form. The Dolores River proposal is still consistent with the goals of this plan.
13. We recognize the point made in this comment.
14. Designation of the West Dolores is considered in both alternatives 2 and 4, not just in a "minority report" recommendation. In addition, the Wilson Mountains area is a classified primitive area and has not been designated a wilderness. The area must be studied and either recommended for declassification or wilderness. If the latter status is authorized by Congress, present primitive area boundaries will undoubtedly change. If the upper West Dolores is designated as a component of the National Wild and Scenic Rivers System, the classification level of the stream will probably be made consistent with the wilderness designation (or recommendations for designation) for the area.
15. A correction has been made on page II-2 to improve the accuracy of the statement in question.
16. This clarifying item has been added to the FEIS on page II-2.
17. Information has been added to the statement on these items. See pages II-4 and 5.
18. Employment figures shown in the report are for the Dolores River Basin, which includes parts of five counties and excludes the City of Cortez. Montelores area information is for the whole of Montezuma and Dolores Counties only and is not comparable to basin data.
19. The statement indicates that a significant portion of the basin is devoted to dryland farming. We see no need to single out Montezuma County in this regard.
20. An addition has been made to accommodate this information. See page II-9.
21. We have made further inquiries with the Bureau of Mines and the Colorado Geological Survey regarding the carbon dioxide resource and the large "dome" east of Dove Creek. The information we received indicates that while further discoveries of CO₂ are likely, the large anticlinal structure referred to is mostly unproven in terms of its CO₂ reserves.

22. The draft environmental statement indicated large deposits of coal in the area (page II-9). However, some corrections have been made on pages II-9, -10, and -35 regarding the quality and developability of the coal resource. Also see our response to Bureau of Land Management comments. The geothermal potential near Dunton is covered under "The River System and Its Setting" - "Mineral Resources."
23. This item has been added to the listing of lumber mills on page II-10.
24. Information received from the Bureau of Mines and the Forest Service is not in agreement with this comment. The subject is treated in more detail on page II-34.
25. An addition has been made to accommodate this item. See page II-12.
26. The description involving this item has been rewritten. See page II-12.
27. A few words have been added to the description on page II-12, but we believe that the item in question is accurately described.
28. It has not been possible to substantiate the statement that uranium and vanadium production has been experienced in the Dunton area; however, an item has been added on page II-31 covering the rest of this comment. As described in the statement, vanadium production has occurred to the east of Dunton in a tributary drainage to the upper Dolores.
29. All information available from ERDA on uranium and vanadium production has been included in the statement. The statement contains estimates of the Nation's supply of uranium and vanadium found in the study area; however, there is no way to estimate the percentages of present and future needs that are involved.
30. Uranium prices used in the statement are those suggested by ERDA. They reflect old contract prices and average price increases for recent years.
31. This comment is unclear. Complete production information for specific areas is not presented here.
32. The comment concerns resources and areas outside the river study segments.
33. Recognition of this fact has been added to the statement on page II-35.
34. The Forest Service has informed us that it does not have complete information on unpatented mining claims for the West Dolores and

Dolores River above Rico comparable to that listed in appendix A for the lower river. However, information has been included here on the number of patented claims. See page II-36.

35. Information on soils of the West Dolores, which was provided by the Forest Service, has been rechecked and found to be accurate. This does not, of course, preclude the fact that there are areas of unstable soils, especially on upper slopes, and a slight wording change has been made to reflect this condition. See page II-45.
36. According to the Colorado Water Conservation Board, high water flows in September and October can occur but would represent a very unusual situation.
37. The suggestion is appreciated, but information used for any environmental statement must be based on data available at the time of writing and editing. This water quality management plan may be useful for river management plan preparation.
38. This additional information has been added to the FEIS. See page II-76.
39. We are aware of this relationship; however, it is not relevant to this study and its impacts.
40. A small correction has been made to improve the accuracy of this statement. See page II-83.
41. Two small corrections have been made on page II-83 to improve the accuracy of this statement.
42. This additional information has been added to the FEIS. See page II-96.
43. This information has been rechecked with the Forest Service and found correct based on official land status records for the West Dolores. The statement citing half private, half Federal ownership refers to the reach of the West Dolores between Dunton and its confluence.
44. This information is appreciated. An item of information on Dunton has been added to the statement on page II-105.
45. This correction has been made in the FEIS. See page II-106.
46. Present "capacity of the river to produce catchable fish," which can vary with the number of fishermen and other factors, does not necessarily determine whether there will or will not be significant

increases in fishing pressure. The Colorado Division of Wildlife has predicted increases in fishing use of the West Dolores as the result of both the development of McPhee Reservoir and national designation of and increased public access along the West Dolores. The Dolores River Study Team concurred with these projections.

47. Management objective number 2 in the material under "Probable Future Environment Without the Proposal" covers the concerns in this comment.
48. To the extent practical and consistent with the recreation opportunities and attractions available, recreation developments would be geared to all--or at least various types of--recreationists.
49. This comment does not pertain to the adequacy of the impact statement; and, therefore, no response is necessary.
50. This correction has been incorporated into the statement. See page II-114.
51. See our responses to comments #46 and #60.
52. There are no wild, scenic, or recreational river requirements or plans that would eliminate or limit maintenance of existing diversion structures.
53. Existing individual water diversion structures are permitted. Present irrigation will not be terminated. Corridors along the river will not be fenced, unless perhaps special conflicts are foreseen or develop between livestock and recreationists and fencing appears to be the only way to correct them. Every effort will be made to avoid any hardships on ranchers and livestock owners.
54. Our studies have indicated that the estimated increase in recreationist expenditures is reasonable. Although some recreationists will not use commercial lodging, many will; and many or most will purchase gasoline, meals, services, and supplies in the local area.
55. As directed by the Wild and Scenic Rivers Act, P.L. 90-542, management plans must be prepared following designation. In establishing this provision, Congress has provided for a plan tailored to its decisions (implemented through public law), instead of agency recommendations, which may be changed. The information presented in wild and scenic river reports, environmental impact statements, and legislative proposals should permit reasonable evaluation by all interested and affected agencies and individuals.

56. Recreationists representing all three groups cited in this comment use rivers, including remote white water streams. There is a nationwide interest in preserving outstanding rivers and scenic areas, and this effort has also been supported by those who have been unable or who have not chosen to use these areas themselves.
57. Congress could authorize a study of the Dolores River as a potential national park or monument if it chose to do so, which it has not. In addition, the river appears to best meet the criteria for addition to the National Wild and Scenic Rivers System, and not the National Park and Monument System.
58. Estimates of annual recreation use for different activities, including boating, are presented in table II-15. Estimates of optimum recreation use for different activities are presented in table II-15A. The management plan will further establish desirable limits for rafting use and other regulations necessary to preserve the primitive nature of the environment and of rafting experiences.
59. See our response to comment #46.
60. Our studies do not support the conclusions made in this comment regarding the percentage of area visitors that are general recreationists, or the effects of "near-capacity" visitor loads at Mesa Verde National Park. We recognize the normal recreation season length cited in the comment.
61. Our statements on impacts on resources, land use, and transportation are not meant to imply that problems would run "unchecked." The narrative simply points out that without designation of river segments, some degree of deterioration of natural values along the river would occur.
62. This alternative involves protection of 35 miles of the West Dolores. The present primitive area designation is temporary (see response to comment #14), and there is no guarantee the upper 5 miles will be reclassified as wilderness. In addition, it is possible to have a national wild, scenic, and recreational river segment within a designated wilderness.
63. Holders of existing water rights will not be affected. See our responses to comments #52 and #53.
64. As stated, 12 miles of the 35-mile-long West Dolores is 35 percent of this segment. All mileage references to the West Dolores cite its full length (35 miles), not 30 miles.

65. Existing private uses of land along the river will not be terminated, interfered with, or made uneconomical by designation. The decrease in land values along the river is based on unsupported fear that private owner rights will be abrogated.
66. According to the Division of Wildlife, it can close or restrict public access to fishing waters if they are open to the public. If the Division is the managing agency on the West Dolores and determines that temporary closures are necessary to protect the wildlife resource, it would do so; however, no necessity is foreseen by the Division to do this.
67. Our studies indicate that \$80,000 is a reasonable figure. See our response to comment #54.
68. As stated in the report and environmental statement, with designation--measures would be employed to handle increased human wastes and prevent any significant pollution problems.
69. Despite regulations and State water quality standards, past mining activities have impaired scenery and water quality and could do so again, particularly as the result of accidental spills and discharges. The material questioned deals with the realities of resource use, and the differences that might result from designation versus non-designation.
70. We know of no major commercial timber resource in the Dolores River corridor or plans to close any existing access roads; therefore, we do not expect any adverse effect on timber harvest. The Forest Service's establishment of water influence (protection) zones along the Dolores River has been called for by agency policy and has no bearing on the study of the Dolores as a potential wild and scenic river.
71. Opportunity was provided various groups to participate in the study process and provide alternative plans based on independent study of the river. The only group that did so was the University of Colorado Wilderness Study Group.
72. Invitations were extended to all who wished to participate in the study process by the study team. This included the opportunity to become a part of the Study Steering Committee. One local area group and one local citizen accepted the latter opportunity, and at their request several Dolores River area residents were placed on the study team's mailing list and participated in our May 1975 float trip. Also see our response to comment #3.

Delaware EIS 1

73. See our response to comment #3. Comments on the draft EIS were invited through use of a press release which was sent to the San Juan Basin Regional Planning Commission and its staff.

THE STATE HISTORICAL SOCIETY OF COLORADO

Mr. [Name] [Address] [City, State, Zip]

Dear Mr. [Name]:

The subject of this environmental impact statement has identified numerous historic and archaeological site designations in the [Location] area that will be affected by the project. Pursuant to the Memorandum of Understanding, we are enclosing a copy of affected sites. This listing represents our most current inventory but does not include site designations in progress or sites which may be determined eligible for designation at a future date.

Please inform this office as to further steps that will be taken for inventory completion, records search, and personnel involved, subject to project commencement.

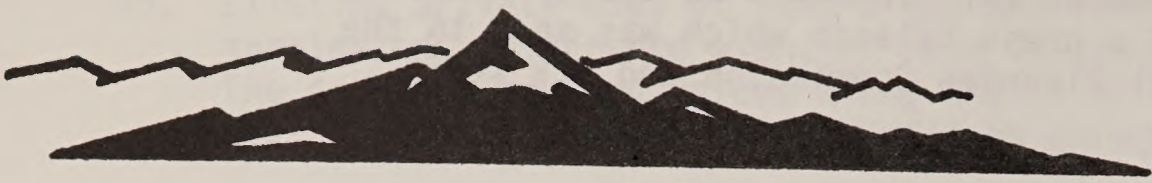
Additional comments regarding the archaeological sites will be solicited by the State Archaeologist's Office.

[Signature]

Cynthia Smith
Investigation Assistant
State Historic Preservation Office

cc: [Name]
[Name]

Dolores EIS 7



THE STATE HISTORICAL SOCIETY OF COLORADO

Colorado State Museum, 200 Fourteenth Avenue, Denver 80203

January 12, 1976

RPS-7

JAN 20 1976

ROUTE	INITIAL
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ADMIN	
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RPS	<i>amb</i>
FILE	<i>[Signature]</i>
	<i>[Signature]</i>

Mr. Derrell P. Thompson
 Regional Director
 United States Department of the Interior
 Bureau of Outdoor Recreation
 Mid-Continent Region
 Post Office Box 25387
 Denver Federal Center
 Denver, Colorado 80225

RE: Dolores Wild and Scenic River Draft Environmental
 Impact Statement, December 18, 1975

Dear Mr. Thompson:

1 | The subject draft environmental impact statement has identified numerous historic and archaeological site designations in the Dolores River corridor that will be affected by the project. Pursuant to the Memorandum Agreement, we are enclosing a copy of affected sites. This listing represents our most current inventory but does not include site designations in progress or sites which may be determined eligible for designation at a future date.

2 | Please inform this office as to further steps that will be taken for inventory completion, methods used, and personnel involved, subject to project commencement.

Additional comments regarding the archaeological sites will be supplied by the State Archaeologist's Office.

Sincerely,

Cynthia Emrick

Cynthia Emrick
 Preservation Assistant
 State Historic Preservation Office

cc: John Ware
 Britt Storey

Response to Comments Received from
the State Historical Society of Colorado

1. We appreciated the listing of historic and archeologic sites included with your letter. The information has been furnished to the Forest Service and Bureau of Land Management for use in preparing the Dolores River Management Plan, should the river be designated a component of the National Wild and Scenic Rivers System. National Register sites and sites recommended for nominations to the National Register on your list have been checked against listings in the environmental impact statement to ensure completeness of the FEIS.

2. Copies of your letter of January 12, 1976, have been sent to the Forest Service and Bureau of Land Management. These agencies will be responsible for completion of the Dolores River Management Plan and any additional cultural surveys. In an effort to fully meet the intent of the jointly signed Memorandum of Agreement of September 1975 (relating to planning for mitigation of Dolores River area cultural site impacts), we expect the Bureau of Land Management and Forest Service to keep you informed regarding cultural survey and management planning work.

Calvin L. Rampton
Governor



Dolores EIS 38

Burton L. Carlson
State Planning
Coordinator

STATE OF UTAH
Office of the
STATE PLANNING COORDINATOR
118 State Capitol
Salt Lake City, Utah 84114
(801) 533-5245

MAR 29 1976

INITIAL

March 23, 1976

Handwritten notes and initials:
LTC/Car KC
Barney
JB

Derrell P. Thompson
Regional Director
Bureau of Outdoor Recreation
Mid-Continent Region
P.O. Box 25387
Denver Federal Center
Denver, Colorado 80225

Dear Mr. Thompson:

The Utah State Environmental Coordinating Committee has reviewed the Draft Environmental Impact Statement for the proposed Dolores Wild and Scenic River and forwards the attached comments for your consideration.

Sincerely,

Burton L. Carlson
State Planning Coordinator

BLC/jn

Enclosure



STATE OF UTAH
DIVISION OF PARKS & RECREATION

1596 WEST NORTH TEMPLE
SALT LAKE CITY, UTAH 84116

328-6011

HAROLD J. TIPPETTS
DIRECTOR

Chaunce
FEB 27 1976
STATE PLANNING BOARD MEMBERS
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CALVIN L. RAMPTON, Governor
DEPARTMENT OF NATURAL RESOURCES
GORDON E. HARMSTON
Executive Director

February 26, 1976

Chauncey Powis
Environmental Coordinator
Environmental Council Committee
State Planning Office
State Capitol Building, Room 111
Salt Lake City, Utah 84114

Re: National Wild and Scenic
Rivers System

Dear Chauncey:

The Ad Hoc Committee met Friday, February 20, 1976 to review the Dolores River environmental impact statement and has the following comments:

1 It is our interpretation from the environmental impact statement that the Dolores River System was analyzed as though the McPhee Dam were in place. It was hard to tell in reading from the information on river flow whether this is the case or not. We recommend they clarify this issue. If, in fact, information on river flow is not with the McPhee Dam in place, then our needs would be a discussion on the impact of the dam on the river and clarification of in-stream water needs and the impact on "runable waters".

We support Senator Garn's study legislation for the 22 miles of the Dolores River in Utah and recommend this area be studied along with the adjacent 8½ mile section in Colorado.

Attached is a memo from Skip Anderson from the Department of Transportation with which we concur.

Sincerely,

Stan Elmer, Chairman
Ad Hoc Committee

SE:doc

Attachment

IX-95

BOATING ADVISORY COUNCIL

WILLIAM A. CARVER, Chairman

JACK CURREY

C. VICTOR DOVER

JOHN M. GARR

PETER WILSON

Response to Comments Received from the
Utah Division of Parks and Recreation

1. As stated on page I-5, the McPhee Dam was considered to be "in place."

TRANSPORTATION COMMISSION

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FEB 27 1976

STATE PLANNING OFFICE
STATE OF UTAH

Director
Blaine J. Kay, P.E.

Assistant Director
C.V. Anderson, P.E.

UTAH DEPARTMENT OF TRANSPORTATION

State Office Building
Salt Lake City, Utah 84114
February 19, 1976

Chauncey Powis, Environmental Co-ordinator
Environmental Council Committee
State Planning Office
State Capitol Building, Room 111
Salt Lake City, Utah 84114

Dear Chauncey:

Subject: National Wild and Scenic Rivers System

The Departments of the Interior and Agriculture are jointly proposing that 105 miles of the Dolores River in Colorado, together with 56,400 acres of land comprising the visual corridor, be designated by Congress as a component of the National Wild and Scenic Rivers System.

Though the idea originally was to include four separate portions of the river, two of these segments have been disqualified since they did not meet all of the necessary criteria under the proposal. One of these segments (No. 4), though disqualified as a whole, does contain one short stretch of river near its West end (8½ miles from the Utah border) that does possess the necessary qualities demanded by the Scenic Rivers Act. However, since this length of the river is too short by itself to be included in the proposal for Colorado, the Draft Environmental Statement suggests that it be considered for inclusion with the adjoining portion of the Dolores River West over the border, provided, of course, that the Utah segment meets the necessary criteria. If adopted, such a designation could have potential ramifications for one of Utah's highways, SR-128 from Moab to the junction of US-50 & 6.

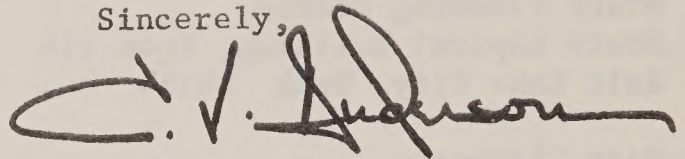
1 After entering Utah, the Dolores River meanders westerly some 25 miles before joining the Colorado River a few miles North of Fisher Towers. At this point, the river is very close to SR-128, and in accordance with the provisions of the Department of Transportation Act of 1966, if the Utah portion of this river should ever come under the protection of the National Wild and Scenic Rivers System, such an adoption could (by forcing the Department of Transportation to comply with 4(f) provisions) delay or prevent altogether any widening of or improvement of SR-128.

Chauncey Powis, Environmental Co-ordinator
Page Two
February 19, 1976

1

As more and more segments of I-70 are completed, SR-128 will undoubtedly take on greater importance as a short cut for private, as well as commercial vehicles, from the East whose objective is to travel South on US-163. The Utah Department of Transportation suggests, therefore, that should this portion of the Dolores River in Utah ever come under the protection of the Scenic Rivers Act that enough additional right-of-way be granted the Department of Transportation (as a condition of that Act) to allow for a 400-foot wide corridor for SR-128 through the protected area. Such a provision should accommodate any foreseeable expansion and development of this highway in the future.

Sincerely,




C. V. Anderson, P. E.
Assistant Director

Response to the Comments Received from the
Utah Department of Transportation

1. The Dolores River flows into the Colorado River more than 1 mile north of Dewey Bridge, the point where SR-128 crosses the Colorado River. Since the corridors for the Dolores River and SR-128 (even if substantially improved) do not intrude on each other, we see no conflicts between the two and anticipate no impacts now or in the future on SR-128.

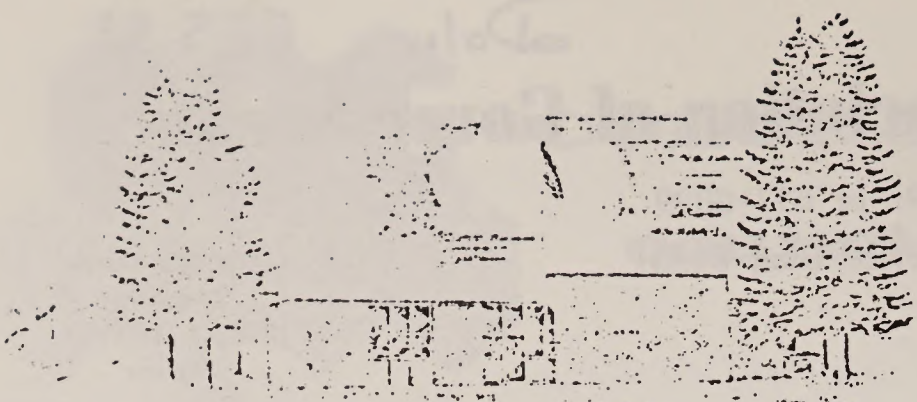
John P. Hilligan, Director
Utah Department of Transportation
1500 East 1000 South
Salt Lake City, Utah 84143


John P. Hilligan
Executive Director

Dolores ELS 19
TOWN OF DOLORES
INCORPORATED 1925

Dolores, Colorado 81323

January 16, 1976



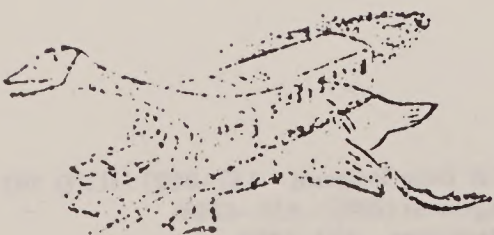
President Gerald Ford
President of the United States
White House
Washington, D.C. 20510

Dear President Ford,

The Board of Trustees of the Town of Dolores, Dolores, Colorado, at a Regular Meeting held October 7, 1975 unanimously adopted the following resolution: That the Town of Dolores was opposed of having the Dolores River turned into a Wild and Scenic River which would cause hardships to many residents of the Dolores River area.

Sincerely,

V. T. Boyd
V.T. Boyd: Mayor of Dolores



Response to Comments Received from the
Town of Dolores

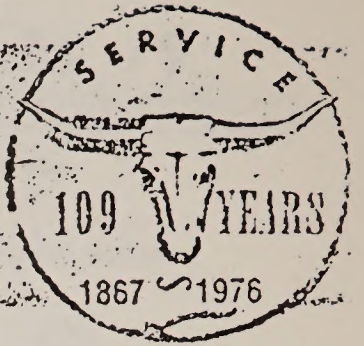
1. While there may be some conflict with the use of private lands along segments of the Dolores River that receive national designation, if any are designated, every attempt will be made to keep conflicts to a minimum. In general, present uses of adjacent lands will be allowed to continue, and no interference with existing uses of Dolores river water is anticipated.

While establishment of wild and scenic rivers may cause inconvenience to some and will result in losses of some landowner rights, we know of no situation that has resulted in hardships for significant numbers of local residents.

Dolores EIS 18



COLORADO CATTLEMEN'S ASSOCIATION



SUITE 220 LIVESTOCK EXCHANGE BUILDING / DENVER, COLORADO 80216 TELEPHONE 623-4347

January 23, 1976

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Denver 80216

Honorable Gerald Ford
President
White House
Washington, D. C.

Dear President Ford:

The Colorado Cattlemen's Association would like to bring to your attention, consideration being given to several Colorado rivers for inclusion in the U. S. Wild and Scenic Rivers System.

This particular issue has been considered at three of our conventions and in each instance, was completely and totally opposed.

Following are some of the reasons the 5,500 members of the Colorado Cattlemen's Association have opposed the inclusion of Colorado rivers in the U. S. Wild and Scenic Rivers System:

1. We have been told on numerous occasions that Public Law 90-542 "Wild and Scenic Rivers Act" is designed to protect the rivers recommended for inclusion in the System. However, after very careful consideration of Public Law 90-542, we find it doesn't protect the rivers in all cases.

We found that:

- a. Inclusion would stop developments which would include dams water diversion structures, irrigation ditches, flood control projects, etc.

We believe that while this country is experiencing definite energy shortages, and the world is facing obvious food shortages, that this particular kind of protection is unnecessary and unwise.

Honorable Gerald Ford
January 23, 1976

1

- b. We found that Public Law 90-542 opens the river banks, (including private property) up to unlimited recreational use. This is also in opposition to the intent of Public Law 90-542, for it has been the experience of many of our members that this type of use, in most cases, is extremely detrimental to the already protected environment.
- c. The creation of a recreational corridor as suggested in Public Law 90-542 would definitely interfere with the present uses of private lands, which in essence would be an infringement on private property rights without due compensation.

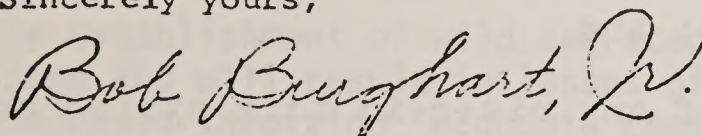
When one takes a look at the entire situation created by the inclusion of any river under the U. S. Wild and Scenic Rivers System, he could readily see that this would create economic chaos in the local area around a river designated "Wild and Scenic, or Recreational."

We respectfully request your help in recommending against the inclusion of any Colorado river under the U. S. Wild and Scenic Rivers Act, Public Law 90-542.

Enclosed is a resolution passed at our Annual Mid-Winter Convention, concerning the Dolores River, which has been recommended for inclusion in the Wild and Scenic Rivers System.

Your immediate consideration of this request will be greatly appreciated.

Sincerely yours,



Bob Burghart, Jr.
President
Colorado Cattlemen's Association

Enclosure, Resolution

RESOLUTION NO. 9

U. S. WILD & SCENIC RIVER ACT
ON THE DOLORES RIVER AND OTHER COLORADO RIVERS
MID-WINTER CONVENTION

December 16, 1975

WHEREAS, the Dolores River and other Colorado rivers have been proposed for inclusion in the U. S. Wild & Scenic Rivers system; and,

WHEREAS, the inclusion of any river in the U. S. Wild and Scenic Rivers System would be detrimental to the industries of ranching, farming, timber and mining; and,

WHEREAS, the inclusion of any river in Colorado in this system would also have a severe effect on the economy of the entire state of Colorado; and,

WHEREAS, the inclusion of any river in Colorado in the Wild and Scenic River System could prevent future development of water projects in Colorado; and,

WHEREAS, the inclusion of any river in this system could affect the water rights of all water users as well as the water rights of some Indian tribes; and,

WHEREAS, the inclusion of any river in Colorado hinders the rights of private property owners;

THEREFORE BE IT RESOLVED, that the Colorado Cattlemen's Association go on record as being opposed to inclusion of any Colorado Rivers in the U. S. Wild and Scenic Rivers System; and

BE IT FURTHER RESOLVED, that the Colorado Cattlemen's Association requests the Governor of Colorado and the Colorado Congressional delegation to take immediate action to prevent the Dolores River and all Colorado Rivers from being included in the U. S. Wild and Scenic Rivers System.

Response to Comments Received from
Colorado Cattlemen's Association

1. These are comments on the Wild and Scenic Rivers Act and its implementation, rather than on the adequacy of the Dolores River Study environmental impact statement. However, the following responds to the comments made.

Inclusion of the Dolores (and other Colorado rivers) in the National Wild and Scenic Rivers System would not eliminate existing diversion structures, irrigation ditches, flood control projects, and like developments. However, limitations may be imposed on adding new such improvements.

Through the acquisition of access easements, most private land riverbanks along the Dolores River would be opened to public use. However, the access area would be kept narrow, mostly 100 to 200 feet either side of the river centerline, and means would be used to control the amount of recreation use. We do not believe this will be detrimental to the natural environment. Although there could be some conflict with the use of private lands, every attempt will be made to keep this conflict and owner inconvenience to a minimum. Private landowners will be compensated for access easements and for scenic easements, which would prevent new private land developments and uses that significantly detract from the natural or pastoral environment.

While establishment of wild and scenic rivers may cause inconvenience to some and will result in losses of some landowner rights, we know of no cases involving "economic chaos in the local area."

1 information on the whole river which may help in assessing and evaluating the proposed action as well as for the successful management of the classification system.

2 2. The Study Report and DEIS are based on the premise that the Dolores Project will be constructed, a major deficiency in otherwise well prepared documents. In our opinion, these (Dolores Project and Dolores National Wild and Scenic Rivers) are two separate actions that require two separate impact statements. In fact, a DEIS for the Dolores Project is due to be released shortly. If the intent was to deal with the Dolores Project in the present DEIS as if it was an integral part of the proposed action, then the DEIS is considered greatly deficient in the information related to the Dolores Project. It includes (p. II-102, II-148, and VIII-3) the beneficial impacts of the project but it fails to mention even one of the adverse impacts on fish and wildlife, archaeology, recreation, mining, and other resources.

It should be emphasized that inclusion of the Dolores River in the National System and designation of its segments is technically possible without the construction of the Dolores Project and should have been included as one of the alternatives to the proposed actions. It is also possible that, because of economic feasibility or lack of funds, the Dolores Project might never be constructed. Are we going then to prepare a supplementary EIS? What would be the cost of the new study?

2 It would have been only wise to conduct the study on the entire river system without regard to the proposed Dolores Project, and append the report and DEIS with the information on the Project as long as the designation of the river and the construction of the project are "compatible" as claimed in the Study Report and DEIS.

3 3. We question the wisdom of the study report and DEIS in not including the West Dolores in the classification system despite the findings by the study team that it is indeed eligible for inclusion. In this regard we support the position of the State of Colorado on the necessity for inclusion of the West Dolores in the system and we strongly believe that it would be a serious mistake to eliminate this major tributary of the river with its alpine and mountain valley environments.

The federal members of the study team recommended that the West Dolores not be included "at this time" because of "extensive intermingling of private lands and structures leading to potentially difficult and costly administration" (p. iv-Study Report). At the same time, the DEIS states that "the cost of including this segment in the system outweighed the environmental and recreational benefits that would result." We reject these conclusions on the basis that:

(a) environmental and recreational benefits cannot be quantified in any simple way to develop a cost-benefit analysis.

(b) The one-time cost for inclusion of the West Dolores is \$430,000 and the annual cost thereafter is estimated at

\$65,000 (p. v-Study Report). This is not an excessive cost to this nation for the preservation of unique natural resources for future generations.

(c) The primary purpose of designation of a river as wild and scenic is to protect the river environment and provide public recreation uses (p. 95, Study Report). This factor was completely ignored in the decision to eliminate the West Dolores from designation.

3 In addition, as we stated before in comment No. 1, a river is a natural system that consists of a number of tributaries, and it is through the interactions of the different elements of the system that the overall characteristics and conditions of a river are determined. By eliminating a major tributary like the West Dolores, despite its outstanding scenic and recreational value, might be to the detriment of the designation system of the main stem and defies the spirit of the Act as amended (P.L.93-621). The elimination of the West Dolores from the system would also eliminate multiple land-use planning and development practices along the tributary which would result in major water quality and management problems in the designation segments along the main stem.

4 4. The river segment from the confluence of the San Miguel River to Gateway was declared ineligible for inclusion in the system "due to lack of outstandingly remarkable values"

(p. 58, Study Report). However, the DEIS (p. VIII-28) claims that the reason for ineligibility was poor water quality. The assertion that this segment is ineligible for classification because of poor water quality is in direct conflict with the statement made in the DEIS (p. II-89) which states that waters of the river from Dolores to the State line are classified as B₂ but that this classification is "based on natural phenomena and (does) not exclude use of the Dolores River for general recreation activities associated with wild or scenic river designation." Indeed the poor water quality did not preclude classification of the segment below the confluence of the San Miguel River. In addition, water quality of the river in this segment may be unsuitable for recreation purposes, but it is clear that it can be restored which is one of the intents of the Act.

As to the lack of outstandingly remarkable values in this segment of the river, the University of Colorado Wilderness Study Group Report, June 1975 (pages 94 and 95) lists the following geologic and historic features: a natural arch (Juanita Arch), numerous side canyons for exploration, waterfalls, massive rock outcrops, vast canyon floodplains, and a historical "Hanging Flume."

In conclusion of this section, we support the position of the University of Colorado Wilderness Study Group recommending recreational classification for this section which also stems from our position of treating the river as an integrated system.

5 5. The segment of the main stem from Source to Rico was declared ineligible (Study Report, p. 63) because it "lacks outstandingly remarkable values." The University of Colorado Wilderness Study Group disagreed with these findings and emphasized the high recreational and fish and wildlife values of this segment. Again we support a recreational classification based on the fact that any developments along this segment, in the future would jeopardize the classification of lower segments.

6 6. The last 8.5 miles of the river in Colorado, below the State line, was not included in the classification because it is too short to be included by itself despite the fact that it possesses the necessary qualities (DEIS, p. I-6&7). The Guidelines for Evaluating Wild, Scenic, and Recreational River Areas (Study Report, p. A-18) states that "generally any unit included in the system should be at least 25 miles long. However, a shorter river or segment that possesses outstanding qualifications may be included in the system." There is no disagreement, anywhere in the DEIS or the Study Report, that this segment possesses outstanding qualifications for inclusion in the system. The only argument against its inclusion is its length which should not be a factor if we are to follow the Guidelines mentioned above. Besides, the problem of length can be overcome if the adjoining segment, upstream, is taken in consideration.

We commend the study team for their efforts in preparing the report. However, we recommend a similar study for the

segments of the river that were excluded from the report. This is essential for the purpose of having complete information on the whole river system which is necessary for a successful management of the proposed program. We also recommend reconsideration of the segments that have not been classified as mentioned in comments 3-6 above.

Response to Comments Received from
the Environmental Defense Fund

1. and 2. See response #1 to the Environmental Protection Agency.
3. Alternative 2 of the impact statement describes the proposal to include the West Dolores and discusses the incremental and cumulative impacts of this alternative.
4. The information in the draft statement was an error. The segment from the confluence of the San Miguel River to Gateway was found ineligible due to a lack of outstandingly remarkable values and substantial alterations in the natural environment. We have revised the final statement appropriately. See page VIII-19.
5. This comment concerns findings and recommendations of the Study Report.
6. The draft statement noted the recommendation (on page I-4) that the last 8.5-mile segment of the Dolores River in Colorado be included in any future study of the river in Utah.

Derrell P. Thompson
Regional Director
Bureau of Outdoor Recreation
Mid Continent Region
United States Department of the Interior
Post Office Box 25387
Denver Federal Center
Denver, Colorado 80225

February 2, 1976

RE: Response To Draft Environmental Impact Statement And Study Report
On The Proposed Dolores National Wild And Scenic River.

Dear Sirs:

Thank you for the opportunity to respond to the Draft Environmental Impact Statement and Study Report released on the proposed Dolores National Wild and Scenic River. The University of Colorado Wilderness Study Group is proud to maintain an active role in preservation policy and legislation in the splendid and majestic state of Colorado. Both the Draft Environmental Impact Statement (DEIS) and the Study Report on the Dolores River should be complemented on their organization, and technical presentation. The reports were well written from the vernacular and were enlightening in many instances.

The University of Colorado Wilderness Study Group will address its comments to four principal areas of discussion in responding to the DEIS and the Study Report.

1. Determination of eligibility of those portions of the river considered ineligible for classification by the Federal State study team.
2. Determination of classification of the portions of the river considered eligible by the Federal State study team.
3. The decision rendered by the Federal State study team to base their recommendations on the premise that the Dolores Project will be constructed.
4. Consideration of the effects of classification not previously alluded to in the above discussion where the Study Report or the DEIS needs clarification.

Determination of Eligibility

1 The two study segments, the Dolores River main stem, from the source to Rico and from the San Miguel confluence to Gateway, were declared ineligible for inclusion in the National Wild and Scenic River System. The Study Report states these segment are ineligible, "...due to a lack of outstanding values and substantial alterations in the natural environment, including a parallel-ing State highway and other intrusions." The DEIS on page VIII-28 in reference

to the section of the river from the San Miguel confluence to Gateway asserts, "The remaining 38 miles were found ineligible for inclusion due to poor water quality." The two arguments reveal conflicting reasons for determination of ineligibility. The DEIS, in further contradiction, on page II-89 states that the waters of the river from Dolores to the State line are classified as B2 in the Colorado Water Quality Standard Summary. The DEIS states, "However, these classifications are based on natural phenomena and do not exclude use of the Dolores River for general recreation activities associated with wild or scenic river designation." (page II-89), The river portion from the San Miguel confluence to Gateway is eligible for recreational classification, and the criteria for water quality established by the "Guidelines For Evaluation Wild, Scenic and Recreational River Areas," is exactly the same for scenic and recreational river classification.

The DEIS is ⁱⁿ error to state that this river section is ineligible for river classification on the basis of poor water quality. The Study Report does not cite water quality as a reason upon which the decision of ineligibility of this portion was derived. The Study Report does emphasize that water is currently unsuitable, but ^{is} being restored which is the precise criteria for a recreational river, i.e., "...is capable of being restored."

1 The University of Colorado Wilderness Study Report offers the following explanation of the aforementioned contradiction. The study bill segment of the Dolores River from the San Miguel confluence to Gateway was declared ineligible by the Federal State study team. This action was effectuated with no public input into the decision.

The Water Resource Council's "Principal and Standards," states; "Direct input from the public involved at the local and regional level is important and will be accomplished by:

c.) Holding public meetings early in the course of planning to advise the public of the nature and scope of the study, opening lines communication, listening to the needs and views of the public and identifying interested individuals and agencies."

The decision of ineligibility, at that point in time was mandated on the basis of poor water quality. Later, evidence surfaced that not only was the pollution of the river predominantly natural as described by the DEIS, but the water quality was suitable for the river to be considered for classification. Faced with a previous commitment of ineligibility for this river portion, the reason then presented was a lack of outstandingly remarkable values. This section of the Dolores River is blessed with:

1. A natural arch Juanita Arch.
2. Numerous explorative side canyons.
3. High scenic value which includes water falls and massive rock outcrops, a vast canyon floodplain, and mountainous canyon walls.
4. An historical "Hanging Flume".

1 This section of the river deserves recreational classification, as demonstrated in the CUWSG's report, "Recommendations for Classification of the Dolores River". The study team is incorrect in declaring on page 56 of the Study Report that there are no outstanding remarkable scenic, geological, or historical values. It is recommended that the study on this portion of the river accomplished by the Federal State team and its conclusions be proclaimed invalid and a new study on eligibility initiated.

2 The main Dolores River, from its source to Rico, was also determined ineligible for inclusion in the National System by the study team due to lack of outstandingly remarkable values. This judgement is subjective, predicated on the opinions of the members of the study team. The CUWSG disagrees with that judgement emphasizing the high recreational and fish and wildlife values, which the study team purports that this river section lacks. The CUWSG alleges that at the time the decision on eligibility was being deliberated, the short length of the river section was the overriding factor. The "Guidelines" refer to a length of river at least 25 miles long as providing the meaning experience necessary for a potential Wild and Scenic River. The intent of this statement is clearly understood to mean that solitary designation of a short stretch not possessing any outstanding qualities is to be avoided. Congress recognized that this 15 mile portion of the upper main Dolores River was to be considered as part of the entire river system by its inclusion into the study bill. This realization, the CUWSG alleges, forced the study team to redefine the merits of the arguments for its deduction of ineligibility.

The identical argument of short length may be employed in the defense of the section of river from Gateway to the State Line. This section is deemed ineligible due to its short length of eight miles. However, the study team recognizes the qualities of the river portion as being of Wild and Scenic calibre, and would be eligible for inclusion into the National System if combined with the twenty-three miles in Utah. As part of the Dolores River system, length is not a consideration in this eight mile segment, and concluding that river portion is ineligible for inclusion into a preservation system because it crosses political boundaries is absurd and in direct violation of the principle of preservation.

2 The CUWSG recommends that the eight miles of Dolores River from Gateway to the State Line receive proper classification of Scenic River and that, follow-up legislation designate the Utah portion of the Dolores River as Wild. Further, it is recommended that the eligibility of main Dolores above Rio to its source be re-evaluated, on the premise that the length of the river is irrelevant in this situation. Further, the CUWSG criticizes the federal state's study team for its failure to consider the possibility of recommending the portions of the Dolores river previously excluded from study by Public Law 93-621 where there is clear incentive that such action is warranted, case in point, being the main Dolores River, from Rico to the town of Dolores. Such action has been undertaken in the study of another Wild and Scenic River; the Penobscot River in Maine, setting the precedent. Unavailability of time and manpower is no excuse when determining the future of America's rivers.

3 Determination of Classification:

The Wilderness Study Group agrees with and supports the federal-state study team's recommendations of Wild River Classification for the Dolores River segment from Little Gypsum Valley to Bedrock. and Recreational Classification from Disappointment through Little Gypsum Valley. The CUWSG also agrees with and supports the State Department of Natural Resources' Recommendation of Recreational classification for the entire West Dolores River, excluding the segment above Burro bridge, which the CUWSG recommends as Wild.

4 The Wilderness Study Group remains steadfast in its conviction that the river should be studied in its entirety and therefore supports the recommendations cited in its report submitted to the study team June, 1975. The CUWSG will address the recommendations on two river sections where the study team has displayed serious narrow interpretation of the Wild and Scenic Rivers Act which has resulted in unjustifiable recommendation.

The West Fork has been recommended for no classification by the Federal State study team, but was considered eligible for inclusion. "Extensive intermingling of private lands and structures leading to potentially difficult and costly administration form the basis for this Federal position." (page IV Study Report). On page 85 of the Study Report, the study team further states that for the reasons of high cost of easements, development, operation and administration, and adverse environmental impact; the West Dolores would be best protected by continuing Forest Service Multiple Use Management.

The DEIS in reference to the classification of the West Dolores states, "the cost of including this segment in the system outweighed the environmental

and recreational benefits that would result,...." Furthermore, Table IV-1, Capsule Summary of Eligibility, discloses that the West Dolores and McPhee Dam to Bedrock river segments have no recreational values. This is contrary to eligibility for recreational classification.

The objectives for which a Wild and Scenic River should be managed include such terms as preserve, protect, prevent, provide, and assure; each of these words ^{is} associated with maintaining the quality of the river environment and the resources the river system possesses. The potential benefits that can be attained in future utilization of river resources beyond the scope of those directly related to water are incommensurable. The implication that administrative costs should even be considered when evaluating environmental and recreational benefits acquired through a preservation system is inconsistent and preposterous. The exclusion of the West Dolores from classification will not only permit administrative practices designed for multiple development but would present difficult management problems for the lower segments. Recreational classification for the West Dolores would allow a consistent management program to be affected on a larger scale for the entire river and may even as a result facilitate administration. The Colorado Department of Natural Resources, on pages 94 and 95 of the Study Report reiterates that the purpose of a Wild and Scenic River is to protect and preserve the river environment, thereby enhancing the associated recreational values. This important concept is ignored in the Federal State study team decision of no classification of the West Dolores River.

The Dolores River from the proposed McPhee Dam to Bradfield Ranch is, beyond any reasonable doubt, a river segment eligible for 'Scenic' River classification. The Federal State study team is recommending Recreational. The justifications that follow prove the river is eligible for Scenic designation:

1. Mans' intrusions are limited.

A couple of rustic cabins appeared along the river.

A corral and a two old oil derricks are visable.

A low water diversion exists.

Extremely short stretches of a road paralleling the river may be seen from the river in several instances. The road, however, strays from the river to perhaps to more than a quarter mile away, rising high at times above the river on the mesa.

Conclusion: the above intrusions do not exclude the river from Scenic classification even in the most narrow interpretation.

2. The river corridor has extremely high scenic, geological, and archaelogical values.

3. The river corridor is an excellent educational tool which illustratively depicts the transition zone from a mountain to a desert ecosystem.
4. The river corridor is an extremely crucial wildlife habitat, supporting critical winter range and migration routes for elk and mule deer as well as a habitat for a mountain lion population. Raptor's hunting activity is also high.
5. Management of the river segment as recreational river, promoting extensive recreational development, including trails, river access points, campgrounds, picnic grounds, concessionaire facilities, and road pavement will have a drastic adverse effect on wildlife and severely degrade the scenic and archaeological characteristics.

4 Conclusion: The Wilderness Study Group challenges the study teams recommendation of Recreational classification for this river segment. The river resources are of extremely high quality. The study team did not float this portion of the river during the study process, therefore, the study team's capability to expertly arrive at a decision of Recreational classification is subject to question. The Wilderness Study Group further alleges that the study was influenced by the fact that the Dolores Project has provided for recreational developments for this river section that will accrue benefits to a marginal benefit-cost ratio for the project. The credibility of the study for eligibility and preservation purposes is suspect. If this section of the river and the portion from Bradfield Ranch to Disappointment Creek were classified as Scenic, consistent management practice could be employed.

Concluding the discussion of classification on the segment of the river from Bradfield Ranch to Disappointment Creek, the Wilderness Study Group disagrees with the study team's recommendation of Scenic classification and recommends Wild classification for the reasons outlined in the CUWSG's report, "Recommendations for Classification of the Dolores River". The Wilderness Study Group alleges that the study team's decision was influenced by possible high mining interest for uranium and vanadium, thereby disregarding the other environmental resource values.

Dolores Project 'in place' Assumption

5 On page IV of the Study Report, the following statement occurs, "The recommendations expressed below are based on the premise that the Dolores Project will be constructed". The DEIS references the same argument on page I-5 and III-1.

One of the objectives of a Wild and Scenic River study is to examine all possible alternatives and resulting impacts. The Water Resource Council's "Principals and Standards for Water and Related Land Resources," Federal Register (Vol. 38 #174) September 10, 1973, contains the following statements:

II. Objectives

C. Beneficial and Adverse Effects on EQ

"The beneficial and adverse effects of alternative plans on the environmental characteristics of the area under study or elsewhere in the Nation will be evaluated. Environmental effects will be displaced in terms of relevant physical and ecological criteria on dimensions including appropriate qualitative aspects. Such an evaluation would be displaced in the environmental quality account and include the effects of the proposed plan on:

- a. Open and green space, wild and scenic rivers,...."

IV. General Evaluation Principals

A. General Setting

"Alternative plans will take into account established standards and goals for the quality of the environment and other factors".

B. Beneficial and Adverse Effects

"Beneficial and adverse effects of each alternative plan will be determined by comparing the conditions expected with the plan to the conditions without the plan. Since substantial changes may be expected even in the absence of the plan, care should be taken that this fact is properly reflected in plan formulation and evaluation".

E. Consideration and Comparison of Alternatives

"A range of possible alternatives capable of application by various levels of governmental and by nongovernmental interests, should be studied. These alternatives should be evaluated or judged as to their contribution to the objective".

V. Sensitivity Analysis

"Plans should be examined to determine their sensitivity to data available and to alternative assumptions as to future economic, demographic, environmental, and technologic trends. Selected projections and assumptions of alternative futures that are reasonably probable and that, if realized would appreciably affect plan design or rescheduling, should be analyzed".

V. Plan Formulation

C. Formulation of Alternative Plans

"The number of alternative plans to be developed for each planning effect

will depend upon complementarities or conflicts among specified components of the objectives, resources capabilities, technical possibilities, and the extent to which the design of additional alternative plans can be expected to contribute significantly to the choice of a recommended plan".

E. Reconsideration of Specified Components of the Objective

"As planning proceeds, the specified component will be reviewed and reconsidered as appropriate. This reconsideration may result from new information, revised projection, changes in policy or technical innovation. Reconsideration of components may result in modifying alternatives in developing additional alternative plans".

Possible river classification without construction of the Dolores Project is a technical possibility ^{and} should appear as an alternative plan in both the Study Report and the DEIS. Both documents are in violation of the Water Resource Council's, "Principals and Standards".

It is very conceivable that the Dolores Project may not receive construction funding. Political and economic realities preclude construction as a foregone conclusion, despite exclusion of the project portion of the river from the study bill P.L. 93-621. Failure to examine the characteristics and resource value of the Dolores River in the absence of the Dolores Project, discloses the deficiency of the study.

The Wild and Scenic River (W&SR) study and evaluation of the Dolores Project are two separate and distinct issues from the viewpoint considering river classification. The W&SR study should identify those characteristics and resource values for which the river is eligible for study; and impact upon those values should be addressed in the Dolores Project Environmental Impact Statement. The merits of the project will decide whether or not construction should be implemented

The Federal State study team is considered in error by the Wilderness Study Group for:

1. Failure to examine all possible alternative circumstances under which the river may receive classification as dictated by the "Principals and Standards".
2. Prejudging the merits of the Dolores Project without the necessary information that will be provided by a final project plan.
3. Overstepping the study team authority in judging the environmental impacts of the Dolores Project on the Dolores River before release of the Environmental Impact on the Dolores Project. The evidence may demonstrate that the overall environmental impact of the project on

the wild and scenic values of the Dolores River will be detrimental.

5 The study team has based its assumption that Dolores Project "...construction will enhance the outstanding wild and scenic values of the Dolores by ensuring that a live streamflow will be maintained below McPhee Dam". This assumption ignores the impacts on wildlife, archaeology, recreation, and other resources that may possibly be degraded by project construction. Furthermore, the DEIS does not address the problems relating to recreational development as a function of the project, on wildlife, archaeology, scenic or esthetic values on the river section below the proposed dam. Such impacts can not be completely analyzed until a final Dolores Project plan is published, at which time the responsibility of the evaluating the project impacts will be undertaken and the impacts disclosed in an Environmental Impact Statement. This premature assessment of these project impacts on a potential Wild and Scenic Dolores River by the study team is flavored with illogical reasoning, unsanctioned authority and illicit politics.

Clarification

The CUWSG recommends that the following considerations, not previously alluded to, be clarified.

1. Uranium and vanadium mining:

6 Page 88 of the Study Report contains the statement with reference to proposed "Wild" river canyon, "Although there are no known reserves of uranium or vanadium the scenic designation would permit exploration whereas "Wild" will not." On page 48 of the Study Report uranium reserves within the line-of-sight land along the river are estimated at over 257,000 pounds which at the present price of \$15 per pound amounts to 0.03% of the U.S. total known \$15 reserves. At \$30, the potential resource of the United States in the river corridor is nearly 0.32% of the total. On page 83 of the Study Report, 0.26% of the total U.S. reserves of uranium stated to be within the designated area. On page 98 of the Study Report, it is reported; "At present there are 10 active surface and subsurface mines within the River corridor." Most of these are uranium mines as stated by the Study Report. The DEIS, page III-9, explains uranium and vanadium deposits exist all along the proposed area except the upper 15-20 miles. The DEIS further states; ERDA (Energy Research Development Administration) has estimated probable potential uranium reserves at 0.32% of the total U.S. \$30 reserves. Of this

total potential quantity in the corridor, 28% is "estimated to be within the corridor along the "wild" segment."

Comparing the two reports the following inconsistencies are noted:

A. Study Report

No known reserves in "wild" corridor.

0.32% of total U.S. reserves in river corridor.

0.26% in designated area.

B. DEIS

28% of 0.32% of total U.S. in "wild" corridor.

Uranium and vanadium exist all along proposed area except upper 15-20 miles.

Clarification is necessary:

1. Exactly where are the uranium reserves, both \$15 and \$30 potential reserves?
2. What is the difference between river corridor and designated area? Why is there a different percent of total U.S. reserves for each?
3. Why is the DEIS and Study Report giving opposite accounts of known reserves in "wild" corridor?

2: Preservation of water quality:

Page E-4, Study Report, "Several components of EQ were eliminated in the second level specifications:

(2) "Preservation of air and water quality were eliminated as components, since this is not a direct purpose of the Wild and Scenic Rivers Act." This is an indefensible and completely fallacious statement; page A-19, Study Report, "Guidelines for Evaluating Wild, Scenic and Recreational River Areas, states in the second paragraph, second sentence, "A concept of nondegradation whereby existing high water quality will be maintained to the maximum extent feasible will be followed in all river areas included in the national system." One of the purposes of the Wild and Scenic Rivers Act is to preserve water quality. Section I, paragraph b, of the Wild and Scenic Rivers Act (PL 93-621), last sentence, states: "... preserves other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such river...." Section 12, paragraph c, "The head of any agency administering a component of the national wild and scenic rivers system shall cooperate with the Secretary of the Interior and with appropriate State water pollution control agencies for the purpose of eliminating or diminishing the pollution of the waters of the river."

7 The validity of alternatives in the Environmental Quality plan is deemed subject to question, for omission of one of five principal components. Failure to identify water quality benefits and costs results in an improper evaluation of NED plan, thereby inducing irrevocable errors in total economic analysis. Any precautions that are planned to ensure the maintenance of high water quality should be expounded upon in the DEIS if the argument in the Study Report eliminating the preservation of water quality as an EQ component is to be assumed.

3. Wildlife:

Page E-4, Study Report, the following component of environmental quality was also eliminated in the second level specification.

(1) "Preservation and protection of endangered species of wildlife were eliminated from the analysis, since none were positively identified as occurring in the corridor and because action to provide protection is beyond the authority provided by the Wild and Scenic Rivers Act and is thus, not an alternative available to the planners."

8 Page III-15, DEIS, last two sentences, directly contradicts the above statement: "The peregrine falcon, an endangered species is known to inhabit the river canyons. River designation will aid in protecting this species' habitat." Page IV-2, DEIS, "Any nesting sites of the American peregrine falcon and prairie falcon will be identified in order to provide protection by restricting human encroachment. This action will be initiated early in the detailed planning process." Page 8 of the Study Report, reveals the inconsistency further, in stating the prairie falcon and the peregrine falcon are present although the latter occurs as a migrant. Actions to provide protection are alluded to in PL 93-621, in Section 1, paragraph b, Section 7, paragraphs a and b, Section 10, paragraph a, and Section 13, paragraph a. As previously stated, the alternatives of the Environmental Quality plan fail to recognize this aspect, necessitating a review of the entire EQ plan.

Continuing the discussion of wildlife, page III-15 of the DEIS states "There are six elk crossings between Dolores and Bradfield Ranch which are heavily used during the winter and would be protected by National designation." This is an erroneous assumption; at least two of migration crossings will be inundated by the proposed McPhee Reservoir, utilization of remaining migration routes by both elk and mule deer will be curtailed by recreational development planned as a function of the

8 } Dolores Project, i.e., paving the Forest Service road from the dam site to Cahone bridge, campgrounds, picnic grounds, river access developments, and concessionaire facilities. This argument further demonstrates the misconception of the unwarranted position that assuming the Dolores Project, "in place" without full knowledge of its environmental impacts creates.

4. Recreational Development

9 } Throughout both the Study Report and the DEIS, references are made to recreational developments such as trails, campgrounds, picnic grounds, river access for boat launching, and other administrative facilities. These developments significant^{ly} affect both the cost and benefit analysis of various classification alternatives as revealed in the NED plans. This arbitrary designation of recreation facilities as well as the determination of which lands will be mandated for easements should receive some direction through public involvement. The administrative agencies should only be permitted to construct recreation facilities where a definite need can be forecasted. CUWSG challenges the superfluous costs of unnecessary recreational developments which depreciates the desirability of proposed classified river area on an economical basis. The purpose of preservation by the Wild and Scenic Rivers Act is being negated by emphasis on recreational development to increase the recreational population to an overbearing extreme. The authority allowing the administrative agencies to construct wanton recreational facilities must be restricted by a controlling public interest, perhaps an advisory committee. Mismanagement of the resources of a wild and scenic river will result if the same type of performance shown in the Federal State study process and reports is allowed to occur. If history repeats itself this should be a foregone conclusion.

Summary

The University of Colorado Wilderness Study Group reiterates that the most effective and beneficial river basin planning is accomplished when the entire river and its environment are studied and evaluated as a continuous and inter-relating system. It is mistake and a misconception to believe that protected classified sections of a river will suffer no adverse effects from unclassified and unprotected river segments. Therefore, consideration of all the important stream segments, the Main Dolores, the McPhee Reservoir area, Paradox Valley, and the Dolores River in Utah should be undertaken to examine the merits of each

as a potential Wild and Scenic river and the relationship of each to the total system. Recommendation by the federal-state study team to Congress to study those river segments excluded by PL 93-621 was not beyond the scope of the study team's authority and failure to do so exhibits the study teams limited incentive and prejudiced providence. Complete river basin planning can provide valuable information and consistent criteria for evaluating water resource projects that may prove compatible with preservation classification. The Dolores River study refutes that possibility.

Recommendations

1. Based on the arguments regarding the determination of eligibility, particularly in reference to public input, the Dolores River study should be re-initiated with total river basin planning as a goal as emphasized in the "Principals and Standards." The minimum acceptable recourse would be re-evaluation of the river portions determined ineligible.

2. Analysis of the river qualities and characteristics should be executed for all alternatives as directed by the "Principals and Standards", i.e. with and without the assumption of the proposed Dolores project being constructed. However, this is not possible without a project EIS, therefore, the river should be evaluated for its own merits, and any impacts on the possible classified portions of the river should be examined and described on the project EIS.

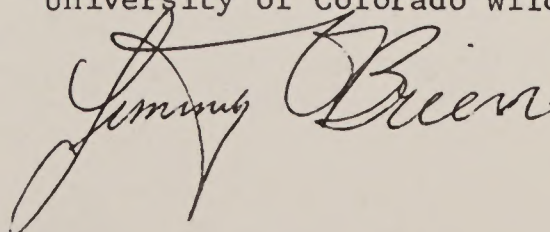
3. Based on items 1 and 2 above and previously discussed classification arguments, proposed river designation demands review.

4. As illustrated by the numerous contradictions, mistakes, and inconsistencies, discovered in the Study Report and DEIS, both documents are considered to be ineffectual, insufficient and a failure in the outlined objectives for publishing such documents. Both should be corrected and partially or wholly reformulated where conclusions and recommendations are proven invalid.

The Wilderness Study Group appreciates the opportunity to respond to the Study Report and DEIS and welcomes any comments or question.

Respectfully submitted,

Jimmy S. O'Brien
University of Colorado Wilderness Study Group



Response to Comments Received from
Colorado University Wilderness Study Group

1. See response #4 to the Environmental Defense Fund.
2. These comments relate to Study Report findings and recommendations, rather than the adequacy of the environmental impact statement.
3. See response #1 to the Environmental Protection Agency.
4. These comments relate to Study Report findings and recommendations, rather than the adequacy of the EIS.
5. See responses #1 and #2 to the Environmental Protection Agency.
6. All of the referenced numbers and statements regarding uranium and vanadium resources have been carefully checked for accuracy, consistency between the report and EIS, and clarity. The only error found in the EIS involves the quantities of estimated potential uranium and vanadium resources in the river corridor between McPhee Dam site and Bedrock, as described in Section III, under "Impact on Mining." The corrected figures are found on pages III-5 and -6 of the final environmental statement. In addition, at the request of the Energy Research and Development Administration, we have corrected EIS references to "probable potential uranium (and vanadium) reserves" to "probable and possible potential uranium (and vanadium) resources."

The references cited in this comment are taken out of context from various pages and paragraphs in the EIS and the Study Report, mostly without supporting explanation and clarification. Depending on the particular reference, different segments and subsegments of the river are involved; however, in all cases the segment or segments of river being discussed are identified at the point of reference or by the heading preceding the item. In addition, ERDA differentiates between "known reserves" and "probable and possible potential resources," which may seem confusing, but both are clearly identified as to area and percentage of U. S. and corridor totals involved. If the EIS and Study Report are read carefully and progressively (at least within each section), we believe that they are clear and accurate, and to the extent that data are available, adequately portray information on the location and extent of uranium and vanadium resources.

7. This comment is primarily directed to the Study Report, which presents the "Principles and Standards" analysis of alternatives. The function of the EIS is to discuss the impacts of the proposed action on water (and other resources), as has been done on pages III-4 and V-1, as well as under the several alternatives as described in Section VIII.
8. The application of "Principles and Standards" in the analysis of alternatives is a function of the Study Report. However, as pointed out in the EIS, the preservation of Threatened and Endangered Species will be aided by river designation. Identification of Threatened and Endangered Species' environment and the means to accomplish protection will be addressed during management planning. Additional material on Threatened and Endangered Species has been added to the FEIS on pages III-9, IV-2, and VIII-6, and we believe that this subject is adequately considered and discussed.
9. These comments related to Study Report findings and recommendations. No response needed.

February 19, 1976

FEB 20 1976

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FILE
Stacy Chan
du Sullivan
OB *has copy*

Darrell P. Thompson, Regional Director
Bureau of Outdoor Recreation
Mid-Continent Region
U.S. Department of Interior
P: O. Box 25387
Denver, Federal Center
Denver, Colorado 80225

Dear Mr. Thompson:

After reviewing the Draft Environmental Impact Statement and the Study Report regarding the proposed Dolores National Wild and Scenic River, The Wilderness Society would like to take this opportunity to submit the following comments.

1

The Wilderness Society maintains the unswerving conviction that, in order to properly assess a river for its possible inclusion within the National Wild and Scenic Rivers System, study of that river must be approached upon the basic concepts and principles of total water basin planning. In the case of the Dolores River, only certain segments of the river were mandated for study by legislation. However, as river ecosystems do not stop and start at arbitrary state and other political lines, consideration of the entire river is absolutely necessary in order to arrive at any valid judgments or subsequent recommendations.

These directives have been very specifically delineated in the Water Resources Council's Principles and Standards for Planning regarding Water and Related Land Resources (printed in the Federal Register, Volume 38, No. 174, September 10, 1973).

The Wilderness Society will address its remarks to two primary points of discussion regarding the Dolores Wild and Scenic River Study: (1) Determination of Eligibility; and (2) Management Alternatives.

Determination of Eligibility

The Interdisciplinary Study Team determined two segments of the Dolores River ineligible for inclusion within the Wild and Scenic Rivers System. These segments are the main stem of the Dolores River from its headwaters to Rico, Colorado, and the portion from the confluence of the San Miguel River to Gateway, Colorado. It is stated in the Study Report that these segments are ineligible "due to lack of outstanding values and substantial alterations in the natural environment, including a paralleling State Highway and other intrusions."

2

The segment from the confluence of the San Miguel to Gateway was determined ineligible because of poor water quality. The Wilderness Society maintains that this is an invalid argument and is in direct conflict with the Wild and Scenic Rivers Act.

2 Poor water quality in this section is due to man-made and natural phenomena. The Draft Environmental Impact Statement states that these conditions do not exclude the use of this portion of the river in relation to general recreational activities associated with wild or scenic river designation. Furthermore, the Wild and Scenic Rivers Act states that if water is currently unsuitable and that if it is capable of being restored, such rivers or segments of rivers can qualify for the water quality criteria as established for "scenic" or "recreational" classification. It is known that water quality in this segment of river is improving. The uranium plant at Uravan presently must maintain state water quality standards for discharges into the San Miguel River. If the Paradox Valley de-salinization project becomes a reality, salinity problems will be greatly reduced. This section of river does have a highway paralleling its entire length. Such development is allowed under "recreational" classification. This section of river is of high scenic quality. It contains several beautiful side canyons, scenic and massive canyon walls, an historic hanging flume, and one natural arch. To state that this portion has no outstandingly remarkable values is a very obvious error on the part of the Study Team.

The judgment of the Study Team regarding the ineligibility of this segment is purely subjective and incorrect. The Wilderness Society strongly recommends that this section be re-evaluated and studied for eligibility for inclusion within the National Wild and Scenic Rivers System.

3 The segment of the main Dolores River from its headwaters to Rico (15 miles) was considered ineligible because of a lack of outstandingly remarkable values. This section of river does have outstanding recreational, fish and wildlife values. The fact that this portion of the river was included for study by Congress brought recognition that it deserved serious consideration. If length was a factor for contributing for the decision of ineligibility for this section of river, The Wilderness Society feels that such an interpretation of the Wild and Scenic Rivers Act is unnecessarily restrictive and not in the best interest of protecting the river. The intent of the Wild and Scenic Rivers Act regarding the length of a river is that a river should be at least 25 miles long to provide a meaningful experience necessary for a potential Wild and Scenic River. It is clearly indicated that one segment of a river less than twenty-five miles should not be designated and included in the System by itself. However, when a river segment of less than twenty-five miles is viewed in relation with other segments and its outstanding qualities, The Wilderness Society strongly maintains that it does qualify for inclusion. Therefore, we recommend that this portion of the Dolores River be re-evaluated for eligibility, study, and possible inclusion within the Wild and Scenic Rivers System.

Another portion of the river, from Gateway, Colorado, to the Utah-Colorado state line, was determined ineligible and not studied because it was too short. Therefore, it was recommended for study with the Utah portion of the Dolores River from the state line to the confluence of the Colorado River which is presently included in a river study bill introduced by Congressman Howe and Senator Garn of Utah. The Study Team recognizes the fact that this portion of the river does qualify for inclusion within the Wild and Scenic River System. However, the decision not to study this portion was based upon the previous unsubstantiated judgments and opinions of the Study Team in determining the preceding segment from the confluence of the San Miguel River to Gateway, Colorado, as ineligible which left this eight-mile portion severed from other segments of the river.

The Wild and Scenic Rivers Act does allow flexibility for the agencies involved in Wild and Scenic River studies to extend their studies beyond legislative boundaries, particularly when approached from the directives established under the Water Resources Council's Water and Related Land Uses Principles and Standards. For example, in the 1968 Wild and Scenic Rivers Act, the "east and west branches" of the Penobscot River in Maine were specified for study for inclusion within the Wild and Scenic Rivers System. The study of the Penobscot, released in July 1975 by the Northwest Regional Offices of the Bureau of Outdoor Recreation, included the north and south branches of the river, plus four tributaries and two lakes. None of these additions are mentioned in the legislation. Intelligent water basin planning apparently led to their inclusion within the study because it was felt that an accurate assessment of the river could not be accomplished without addressing these important parts of the river system. Another example, 46 miles of Pine Creek in Pennsylvania were studied but an additional seven miles downstream were also examined and proposed for inclusion within the National System.

4 Therefore, The Wilderness Society alleges that the Study Team chose to interpret the Wild and Scenic Rivers Act and the amendment which enabled study of the Dolores River in a manner which was not in the best interest of the river and which did not provide for accurate analysis for all the rivers' values and qualities which exist in continuous natural systems within the river corridors. The Wilderness Society maintains that it is entirely feasible, under both legislative and policy directives, to have extended the Dolores River Study and examined the entire Utah portion of the river with the segment from Gateway to the state line.

Legislation regarding study for the Utah portion of the Dolores River is a very welcomed consideration of the river for Utah people. However, passage of such legislation may take some time, and portions of the river which deserve study should be examined now in regard to the rest of the river presently under consideration. An effort to coordinate with the Moab Office of the Bureau of Land Management and to extend the study to the confluence of the Colorado River in Utah was and is entirely within the jurisdiction of the Study Team and is an action which should have been taken.

In addition, other segments of the river which were not included in the Dolores River study legislation should have had more consideration by the Study Team in its analysis of the river. It is clear that these sections are critical to the natural intricacies of the continuous river corridor.

5 The West Fork of the Dolores was considered eligible for inclusion within the Wild and Scenic Rivers System, but was not recommended for classification by the Federal Study Team. The principle reasons for this action by the Study Team is stated to be the extensive private land ownership along this section, high cost of easements, administration, recreational developments, and adverse environmental impact. Therefore, it was recommended that this section of the river could best be protected by continuing Forest Service Multiple Use Management. The West Dolores certainly qualifies for recreational classification as it possesses outstanding recreational opportunities. Private land ownership is less than 50% of the segment.

5 It is a very serious mistake and an inexcusable oversight on the part of the Study Team to exclude the alpine and mountain valley zones of the West Dolores from inclusion within the Wild and Scenic Rivers System along side those portions of the river corridor which are of desert slickrock nature. This is one of the most obvious factors which makes the Dolores River so remarkable -- the fact that it passes through several very distinct ecosystems. Recreational Classification of this portion of the river would accomplish protection of the river and its immediate environment and enhance the recreational opportunities. The cost of establishing the West Dolores as a recreational river is not excessive or unreasonable for the preservation of a unique element of our natural heritage. Those activities which are presently in existence along this portion of the river corridor are not precluded by the Wild and Scenic Rivers Act. Future development will be constrained to activities which will not degrade the water quality or recreational values of the river. This kind of planning and these types of environmental considerations should take place anyway, regardless of whether the river is included in the National Wild and Scenic Rivers System. It is apparent that the Forest Service was searching for excuses to make classification of the West Dolores appear undesirable.

Management Alternatives

The Draft Environmental Impact Statement proposed four management alternatives for the Dolores River. The alternative proposed, "No Action," is an alternative which is always presented when considering management directions of natural resources but is not a valid consideration regarding the Dolores River. Congress and the people of Colorado have recognized for many years that this river is unique and that it does deserve protection and preservation within the National Wild and Scenic Rivers System.

6 The Wilderness Society supports the recommendations of the Federal Study Team regarding protection of 105 miles of the Dolores River for designation under the Wild and Scenic Rivers Act, and the additional 35-mile recommendation regarding inclusion of the West Dolores in the alternative recommended by the State of Colorado. However, we do not agree with the classification recommendations within each of those alternatives, and we hold to the unswerving conviction that all segments should be included within the System. The entire river should be considered in the light of sound water basin planning principles. None of the alternatives addressed, except alternative #4, provide the kind of protection, management, and designation classifications which this magnificent river deserves. The Wilderness Society strongly supports the Citizens' Alternative (alternative #4).

The portion of the river from the proposed McPhee dam site to Bradfield Ranch has been recommended for recreational status by both the federal agencies and the state. This portion of the river is definitely of "scenic" status quality. The river corridor in this section has extremely high scenic, geological and archeological values. It is crucial wildlife habitat. Critical winter range and six migration routes for elk and deer have been identified within this area. It also supports a mountain lion population. Raptor hunting activity is also substantial. If this portion of the river is managed under recreational classification, many types of activities and recreational development will take place which will not only degrade the quality of the area but will also severely affect the above-mentioned values. Man's evidence and

intrusions are limited. They include two rustic cabins, two old derricks and a short stretch of jeep trail which can be seen intermittently from the river, but diverts away from the river most of the time. None of these elements preclude this section of river from "scenic" status qualifications.

6 Also, it has caused grave concern that this section of river would be recommended for a less protective status than it deserves because of the promotion of recreational developments which would be allowed under recreational classification and which are included in the cost/benefit figures of the proposed McPhee dam project. The merits of this segment of river for scenic classification stand alone. Thus, it should be recommended.

The Wilderness Society recommends the portion of the river from Bradfield Ranch to Disappointment Creek qualifies and thus should be given "wild" classification, with the Dove Pumping Station included as a non-conforming use. We support the study team and state recommendations regarding recreational status for Disappointment Creek to Little Gypsum Valley, and for "wild" classification for the 33-mile section of river from Little Gypsum Valley to Bedrock.

7 Several inconsistencies were noted between the Study Report and the Draft Environmental Impact Statement. These need clarification. Figures regarding mineral reserves in the river corridor are vastly different in the two documents. Opposite accounts are given in the Study Report and the Draft Environmental Impact Statement of known reserves in that portion of the river the study team has recommended as "wild."

One of the primary purposes of the Wild and Scenic Rivers Act is to preserve water quality. Yet, in the Study Report, preservation of air and water quality were eliminated as components of the Economic Quality analysis, stating that such was not the purpose of the Wild and Scenic Rivers Act.

8 We are strong proponents of total water basin planning principles which provide valuable data regarding both protected and unprotected portions of the river. Such information regarding the Dolores River corridor and its tributaries has not been applied to the Dolores River Draft Environmental Impact Statement. Therefore, directives under the Water Resources Council's Principles and Standards have also not been applied.

The Wilderness Society finds that because of the deficiencies outlined above regarding determination of eligibility, inadequate evaluation of alternatives, incorrect and inconsistent information, the Study Report and the Draft Environmental Impact Statement must be redone.

Those segments of the river which were excluded from study because of the eligibility determinations of the Study Team should be re-evaluated and studied for inclusion within the National Wild and Scenic Rivers System.

Darrell P. Thompson

February 19, 1976

The Wilderness Society appreciates this opportunity to comment on the Dolores Wild and Scenic River Report and Draft Environmental Impact Statement.

Sincerely,

Sally Ranney
Sally Ranney
Wilderness Coordinator

Response to Comments Received from
The Wilderness Society

1. See response #1 to the Environmental Protection Agency.
2. See response #4 to the Environmental Defense Fund.
3. These comments relate to Study Report findings and recommendations, rather than the adequacy of the EIS. No response necessary.
4. See response #1 to the Environmental Protection Agency.
5. This comment relates to a Study Report finding and recommendation. The proposal to include the West Dolores is described in the EIS under Alternative 2.
6. These comments relate to Study Report findings and recommendations. Also see response #1 to the EPA.
7. See response #6 to the Colorado University Wilderness Study Group.
8. See response #7 to the Colorado University Wilderness Study Group.

Dolores EIS 22

(801) 259-7578

REAL PEOPLE PRESS

BOX F

MOAB, UTAH 84532

FEB 17 1976

ROUTE INITIAL

February 11, 1976

Darrell P. Thompson
Regional Director
Bureau of Outdoor Recreation
U.S. Dept. of the Interior
Box 25387 - Denver Federal Center
Denver, Colo. 80225

2/11 ✓
D. Thompson
has copy

Re: Draft Environmental Statement #75-64 Proposed Dolores National Wild and Scenic River

Dear Mr. Thompson:

As a resident on the lower Dolores River in Utah, I have considerable interest in the above proposal, which I favor strongly.

I have read the draft EIS carefully, and I believe that on the whole it is comprehensive and well done. I do have a few comments on specific portions of the EIS.

1) On page V-2, #5 The EIS states: "Contributions to the local economy through mineral exploration and development in the wild river segment would be foregone. Considering the potential for uranium and vanadium along this segment, this could be a major impact on the local economy and on National energy development programs."

However, on page 11-40, third paragraph, the EIS states: "The potential resources of uranium and vanadium have been estimated by ERDA for the corridor as shown on table II-2. That portion of the river proposed for wild and scenic river designation contains about .03 percent and .26 percent of the United States' total known \$15/lb. reserves and probable potential reserves of 0308, respectively."

If the known and probable potential reserves are only .03% and .26% of U.S. reserves, then I find it impossible to believe that the proposed Scenic corridor would have a "major impact.....on the National energy development programs," and I believe this part of the sentence should be eliminated.

There would be a major impact on the local economy because the local economy is so small. However, this would be offset by factors mentioned on pages III-19 and III-20: "Recreationists are expected to spend about \$122,000 more annually" and money to be spent includes \$65,000 for recreation developments, \$40,000 for annual operation and maintenance, and \$50,000 for annual administration."

I believe that somewhere in the EIS both the positive and negative benefits to the local economy should be placed side by side for comparison, and that the comparison should be on an annual basis over a long period of time - as is usually done for cost/benefit ratios for Reclamation projects, for instance. In other words, the one-

1 | time benefits of mineral extraction should be spread over 50 or 100 years to fairly compare with the continuing income from recreational use resulting from designation of the Dolores as a wild and scenic river.

In my opinion, the segments of the river most deserving of protection, are, in order:

- 2 | 1) The segment (proposed designation: wild) from little gypsum valley to 1 mile upstream from bedrock, and,
2) The segment (proposed designation: scenic) from Bradfield ranch to disappointment creek.

I believe that both these segments (especially the first) should certainly be protected. They are both relatively unspoiled and natural, and have outstanding recreational values.

3 | If the segment of the river from disappointment creek to little gypsum valley (the segment lying between the two segments mentioned above) were deleted from the proposal, much of the uranium and vanadium deposits mentioned earlier in my letter would not be affected by the proposal.

Therefore I believe that it would be useful to calculate the mineral resources and the economic impact for each segment of the river described in the EIS, so that the economic effects of inclusion of each segment can be weighed separately when the proposal is submitted to congress.

Sincerely,

John O. Stevens (JR)
John O. Stevens

JOS: jr

Response to Comments Received from
John O. Stevens, Real People Press, Moab, Utah

1. Despite the small percentages of United States uranium and vanadium reserves involved in the Dolores River corridor, the Bureau of Mines and Energy Research and Development Administration have expressed the opinion that these resources are important both locally and nationally and should not be described otherwise. However, corrections and additions have been made in the final environmental statement that indicate the impacts of restrictions on mineral extraction in the corridor may not be as great as they would appear to be (due to difficulty of removal, etc.) and that contributions to the local economy from recreationist expenditures may offset losses of mineral values. The FEIS also points out that designation of any of the segments can be modified or reversed by the Congress should it be in the national interest at some future time. See pages III-6, -11, and -12 and VII-1 for appropriate changes and references.

Analysis information on comparable benefits and losses under different Dolores River plans is presented in chapter V (Analysis of Alternatives) of the Study Report. Although this material does not consider all possible conditions and alternatives and is based on estimates, we believe it does address your concerns.

2. We appreciate your thoughts on this subject.
3. With the information shown in the Study Report and final environmental statement, much of which is presented by segment, we believe Congress will have sufficient information to determine which segments of the river, if any, should be designated.

TABLE A-1 MINING CLAIMS - DOLPES RIVER CORRIDOR

NOTE: The "number of claims" shown below by section, to a large degree, are those that fall within sections the Dolpres River passes through. In many cases, incomplete legal descriptions make exact claim placement difficult. Therefore, the actual number of claims found in the corridor is estimated at about 75 percent of the number shown, being a total of approximately 4,100 instead of 5,500. In addition, several hundred other claims are identified below that are more indefinite in location; these are tabulated separately.

County	Township	Range	Section	Number of Claims		
Dolores	37N	17W	4	18		
			5	18		
			6	0		
			7	0		
			8	0		
			14	0		
			15	0		
			16	0		
			40N	17W	3	14
					4	36
	5	1				
	6	0				
	7	50				
	10	17				
	16	129				
	21	89				
	22	1				
	27	7				
	47N	18W	1	30		
			2	44		
			11	64		
			12	54		
			13	26		
			14	141		
			23	48		
			24	135		
	25	57				
	26	29				
	27	87				
				37		

APPENDICES

TABLE A-1 MINING CLAIMS -- DOLORES RIVER CORRIDOR

NOTE: The "number of claims" shown below by section, to a large degree, are those that fall within sections the Dolores River passes through; in many cases, incomplete legal descriptions make exact claim placement difficult. Therefore, the actual number of claims found in the corridor is estimated at about 75 percent of the number shown below (total of approximately 4,100 instead of 5,500). In addition, several hundred other claims are identified below that are more indefinite in location; these are totaled separately.

County	Township	Range	Section	Number of Claims
Dolores	39N	17W	4	18
			9	16
			5	0
			8	0
			14	0
			15	0
			16	0
"	40N	17W	3	14
			4	36
			5	1
			6	0
			9	80
			10	11
			16	129
			21	89
			22	7
			27	7
			28	19
			32	2
			33	48
"	41N	18W	1	90
			2	44
			11	69
			12	54
			13	16
			14	131
			22	48
			23	135
			24	57
			25	29
26	82			
27	37			

TABLE A-1 MINING CLAIMS -- DOLORES RIVER CORRIDOR (Cont.)

County	Township	Range	Section	Number of Claims
Dolores	41N	17W	6	20
			7	29
			8	19
			17	105
			18	105
			19	78
			20	72
			28	87
			29	106
			30	23
			31	38
			32	23
			33	149
			34	76
"	42N	18W	22	9
			23	0
			24	0
			25	40
			26	124
			27	12
			35	100
"	42N	17W	31	0
			Dolores County Total -- 2,539	
Montrose	45N	18W	5	10
			6	0
			7	8
			8	13
			9	10
			17	0
			18	0
"	45N	19W	1	5
			12	10
"	46N	18W	31	2

TABLE A-1 MINING CLAIMS -- DOLORES RIVER CORRIDOR (Cont.)

County	Township	Range	Section	Number of Claims
Montrose	46N	19W	1	13
			2	6
			10	0
			11	6
			12	17
			13	18
			14	0
			15	6
			22	14
			23	0
			24	0
			25	0
			26	5
			27	19
			35	10
			36	0
"	47N	18W	30	3
			31	33
"	47N	19W	35	13
			36	1
"	48N	18W	3	107
			4	74
			5	15
			10	26
			11	39
			14	13
			23	30
			24	10
"	49N	18W	20	2
			21	2
			28	6
			33	10
			34	14
Subtotal, Claims That Likely Affect Corridor				592
Claims in Montrose County That Possibly Affect Corridor but Have Vague Legal Descriptions				<u>226</u>
Montrose County Total --				818

TABLE A-1 MINING CLAIMS -- DOLORES RIVER CORRIDOR (Cont.)

County	Township	Range	Section	Number of Claims
San Miguel	42N	17W	6	32
			7	62
" "	42N	18W	1	74
			2	178
			3	65
			11	38
			12	84
			13	3
			14	47
			23	6
" "	43N	18W	3	63
			4	52
			5	24
			9	3
			10	89
			11	25
			14	15
			15	53
			21	16
			22	77
			23	65
			26	41
			27	108
			28	15
			33	22
" "	44N	18W	4	4
			5	1
			6	0
			7	68
			8	13
			18	16
			30	14
			31	11
			32	44
			33	59
34	17			
" "	44N	19W	12	27
			13	104
			24	75
			25	25
			36	7

TABLE A-1 MINING CLAIMS -- DOLORES RIVER CORRIDOR, (Cont.)

County	Township	Range	Section	Number of Claims
San Miguel	45N	18W	17	0
			18	3
			19	6
			20	16
			28	0
			29	13
			32	9
			33	23
San Miguel County Total --				1,946
Mesa	49N	18W	5	1
			9	9
			10	2
			16	10
			20	1
			21	2
			Undocumented	1
"	49N	19W	5	1
			6	2
"	50N	19W	1	2
			2	17
			11	1
			22	1
			36	1
"	50N	18W	18	30 (Plus a possible 18)
			19	13
			28	2
			30	11
			31	1
			32	23
			Undocumented	2

TABLE A-1 MINING CLAIMS -- DOLORES RIVER CORRIDOR, (Cont.)

County	Township	Range	Section	Number of Claims			
Mesa	51N	19W	11	1			
			12	2			
			13	2			
			16	2			
			17	8			
			21	5			
			22	7			
			26	2			
			27	3			
			28	2			
			29	1			
			34	10			
			35	15			
			36	1			
			Undocumented	3			
			"	15S	104W	8	1
						17	3
18	1						
20	1						
21	1						
27	1 (Plus a possible 17)						
28	1						
34	3						
35	3						
Subtotal, Claims That Likely Affect Corridor				206			
Other Mesa County Claims That Possibly Affect Corridor but Have Very Incomplete or No Legal Descriptions (including 196 not included above)				<u>237</u>			
Mesa County Total --				443			

Figure A-1
DOLORES RIVER BASIN, COLORADO
Water Rights

- STATE BOUNDARY
- COUNTY BOUNDARY
- DOLORES RIVER BASIN
- CITY OR TOWN
- WATER RIGHTS LOCATIONS
- STREAM
- RESERVOIR

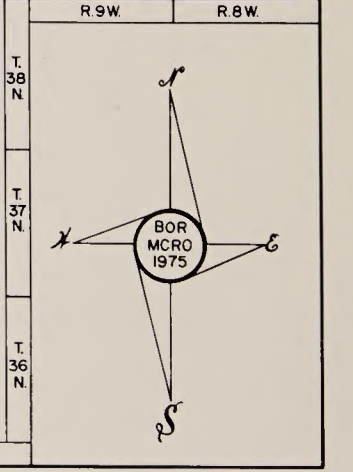
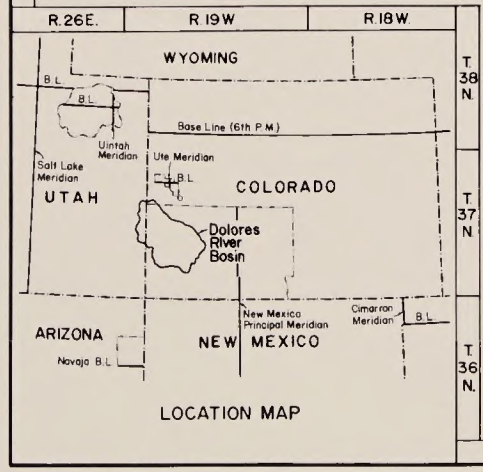
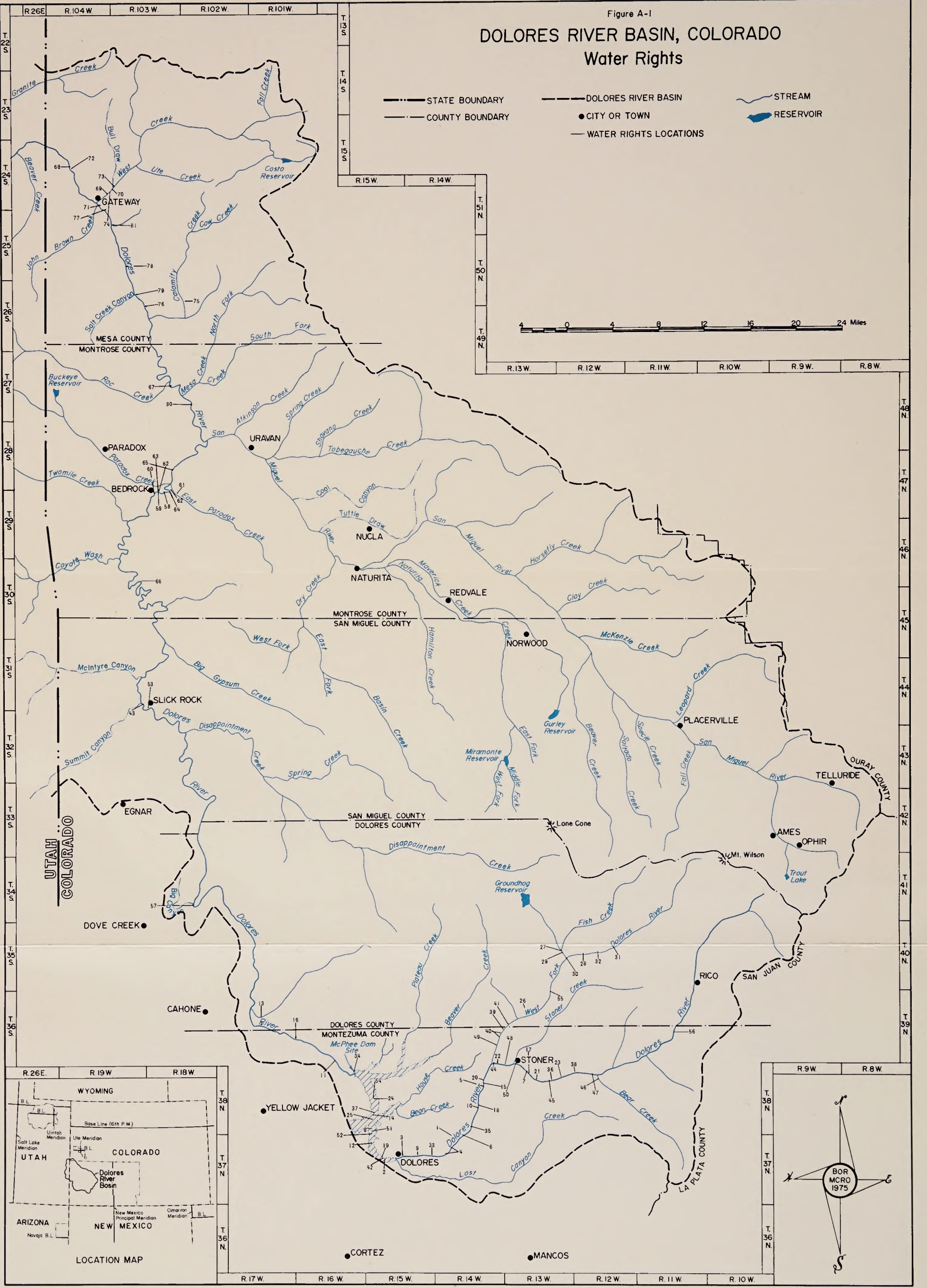


TABLE A-2

WATER RIGHTS LOCATED IN THE DOLORES RIVER CORRIDOR

Refer- ence No.	Structure Name	Use ^{1/}	Type ^{2/}	Source	Town- ship	Range	Section	Amount		Type Adj.	Adjudicated Date	Appropriation Date	
								Direct Flow CFS	Storage AF				
1	Dolores Water	MDO	*	Dolores River	38-N	14-W	33 SESWSW	1.0		Abs.	02-01-1892	05-31-1879	
2	Main Canal #1 and/or Main Canal #2	I	D	Dolores River	37-N	15-W	17 NENWSW	1.1		Abs.	02-01-1892	05-31-1879	
								1.1		Abs.		04-15-1880	
								1.0		Abs.		05-31-1882	
								1.0		Abs.		05-31-1883	
								707.7		Abs.		11-25-1885	
								592.3		Cond.		11-25-1885	
100.0		Abs.	11-25-1885										
3	Sheek	I	D	Dolores River	37-N	15-W	10 SESENW	0.9		Cond.	02-01-1892	05-31-1879	
								2.0		Abs.		12-18-1933	04-15-1903
4	Illinois Ditch	I	D	Dolores River	37-N	14-W	8 SWNWNE	2.763		Abs.	02-01-1892	04-15-1880	
								1.137		Cond.			
								0.14		Abs.		03-22-1963	12-22-1933
5	Home Ditch	IDS	D	Dolores River	38-N	14-W	15 SENESE	3.0		Abs.	02-01-1892	05-01-1880	
								DS	D	0.25			Abs.
6	Italian Ditch	I	D	Dolores River	38-N	14-W	33 SWSESE	1.0		Abs.	02-01-1892	05-01-1880	
								1.0				06-12-1891	
								1.0				12-18-1933	04-01-1903
								0.12				03-22-1963	05-01-1880
								0.33					
7	Morriarity Ditch	I	D	East Fork Dolores	38-N	13-W	5 NWSESE	1.0		Abs.	02-01-1892	12-31-1880	
								2.8		Abs.		06-18-1891	06-18-1891
								0.7		Abs.		03-22-1963	12-31-1890
								0.5		Abs.			
								2.0		Cond.			

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^{1/} I - Irrigation M - Municipal P - Fishery
 D - Domestic C - Commercial R - Recreation
 S - Stock F - Fire N - Industrial
 O - Other * - 4 or more of the previous
^{2/} D - Ditch SP - Spring PL - Pipeline
 R - Reservoir SE - Seep P - Surface pump
 W - Well M - Mine PP - Power plant
 O - Other * - 2 or more of the previous

TABLE A-2 (Cont'd)

WATER RIGHTS LOCATED IN THE DOLORES RIVER CORRIDOR

Reference No.	Structure Name	Use	Type	Source	Township	Range	Section	Amount		Type Adj.	Adjudicated Date	Appropriation Date
								Direct Flow CFS	Storage AF			
8	House and Sommers	I	D	Dolores River	38-N	15-W	31 SENENW	1.0		Abs.	02-01-1892	03-01-1881
								1.4		Abs.		04-06-1891
9	Bean Ditch	I	D	Dolores River	37-N	15-W	11 SWSENE	1.0		Abs.	02-01-1892	04-01-1881
								1.4		Abs.		06-24-1891
10	Burch and Longwill	I	D	Dolores River	38-N	14-W	27 NENWNE	1.0		Abs.	02-01-1892	04-10-1881
								0.8		Cond.		05-31-1882
								2.0		Abs.		06-17-1891
								4.0		Abs.		03-22-1963
11	Geo. P. Moore Ditch	I	D	Dolores River	39-N	16-W	33 NWSWNW	0.7		Abs.	02-01-1892	04-30-1881
								1.1		Cond.		
12	Aztec Ditch	I	D	Dolores River	37-N	15-W	7 NENWNE	1.0		Abs.	02-01-1892	05-01-1881
								4.0		Abs.		05-23-1891
13	D. D. Williams Ditch	I	D	Dolores River	39-N	17-W	15 SESWNW	1.0		Abs.	02-01-1892	05-01-1881
								1.8		Cond.		
								1.0		Abs.		01-10-1891
14	Kuhlman Ditch	I	D	Dolores River	38-N	15-W	20 SWNWSE	1.0		Abs.	02-01-1892	05-01-1881
								0.8		Abs.		
15	Hammond and Clark	I	D	Dolores River	38-N	14-W	11 SWSENE	1.0		Abs.	02-01-1892	05-10-1881
								2.0		Abs.		06-17-1891
								1.6		Cond.		
								3.0		Abs.		03-22-1963
16	Lone Dome Ditch	I	D	Dolores River	39-N	16-W	19 SESWSE	1.0		Abs.	02-01-1892	02-20-1882
								1.2		Abs.		06-04-1891
								2.4		Cond.		

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TABLE A-2 (Cont'd)

WATER RIGHTS LOCATED IN THE DOLORES RIVER CORRIDOR

Reference No.	Structure Name	Use	Type	Source	Township	Range	Section	Amount		Type Adj.	Adjudicated Date	Appropriation Date
								Direct Flow CFS	Storage AF			
17	Gould A. Moriarity	I	D	East Fork Dolores	38-N	13-W	4 SENWSW	2.25	Abs.	02-01-1892	05-15-1882	
		I	D					1.75				
		DSO	D					1.0				
17	Gould A. Moriarity	I	D	East Fork Dolores	38-N	13-W	4 SENWSW	1.0	Abs.	03-22-1963	12-31-1894	
		DSO	D					1.0				
18	Dunham and Johnson	I	D	Dolores River	37-N	15-W	8 SWNENW	1.0	Abs.		06-01-1891	
19	Sebastian Tam Ditch	I	D	Dolores River	38-N	14-W	11 NWSEW	1.0 0.6	Abs. Cond.	02-01-1892	05-31-1883	
20	Monument Rock Ditch	I	D	East Fork Dolores	38-N	13-W	10 SENENW	2.0	Abs.	02-01-1892	06-01-1885	
21	Lyons Ditch	I	D	East Fork Dolores	38-N	14-W	1 NWNWNW	0.3 0.7	Abs. Cond.	02-01-1892	04-30-1891	
22	Quarry #1 Ditch	I	D	East Fork Dolores	38-N	12-W	6 SWSWSW	6.5	Abs.	12-18-1933	03-21-1882	
23	Dickinson Ditch	I	D	Dolores River	38-N	15-W	17 SWNESW	1.66	Abs.	12-18-1933	10-31-1882	
24	Porter Ditch	I	D	Dolores River	38-N	15-W	30 SENWSW	1.38	Abs.	12-18-1933	05-01-1883	
25	Koenig Ditch	I	D	West Fork Dolores	39-N	13-W	9 SWNWNW	4.0	Abs.	03-08-1937	06-01-1883	
26	Rogers Ditch	P	D	Fish Creek	40-N	13-W	12 NWSESW	3.0	Abs.	03-08-1937	06-01-1884	
27	East Eder Ditch	I	D	West Fork Dolores	40-N	12-W	18 NESWSE	1.0	Abs.	03-08-1937	06-01-1885	
								8.5				

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APPENDIX A

TABLE A-2 (Cont'd)

WATER RIGHTS LOCATED IN THE DOLORES RIVER CORRIDOR

Reference No.	Structure Name	Use	Type	Source	Township	Range	Section	Amount		Type Adj.	Adjudicated Date	Appropriation Date
								Direct Flow CFS	Storage AF			
28	West Eder Ditch	I	D	Fish Creek	40-N	13-W	13 NWSENE	1.0		Abs.	03-08-1937	06-01-1885
								7.0		Abs.		06-01-1887
								1.0		Cond.		07-01-1936
29	Goebel Ditch	I	D	West Fork Dolores	40-N	13-W	24 NWSWNW	6.8		Abs.	03-08-1937	06-01-1887
30	Jesse Love Ditch	I	D	West Fork Dolores	40-N	12-W	11 SWSWSW	6.0		Abs.	03-08-1937	06-01-1887
31	Sulphur Gulch Ditch	I	D	Sulphur Creek	40-N	12-W	15 SENWNE	0.65		Abs.	03-08-1937	06-01-1887
32	Keystone Ditch	I	D	Dolores River	37-N	15-W	12 SWSENW	2.0		Abs.	12-18-1933	04-01-1889
33	Bradfield Ditch	I	D	Dolores River	38-N	16-W	1 SENWSW	3.0		Abs.	12-18-1933	05-01-1891
34	Ortiz Ditch	I	D	Dolores River	38-N	14-W	33 SENESE	1.0		Abs.	12-18-1933	05-01-1891
35	Linstrom Ditch	I	D	East Fork Dolores	38-N	13-W	11 NWSWNE	4.5		Abs.	12-18-1933	12-31-1894
36	Van Winkle Ditch	I	D	Dolores River	38-N	15-W	19 SENENE	1.5		Abs.	12-18-1933	05-01-1895
37	Roubidoux Ditch	I	D	East Fork Dolores	38-N	12-W	5 SWSWNW	3.5		Abs.	12-18-1933	08-15-1899
38	Rieva Ditch	I	D	West Fork Dolores	39-N	14-W	24 NESENE	5.0		Abs.	12-18-1933	03-21-1900

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TABLE A-2 (Cont'd)
WATER RIGHTS LOCATED IN THE DOLORES RIVER CORRIDOR

Reference No.	Structure Name	Use	Type	Source	Township	Range	Section	Amount		Type Adj.	Adjudicated Date	Appropriation Date
								Direct Flow CFS	Storage AF			
39	Garbarino Ditch #2 #3	I	D	West Fork Dolores	39-N	14-W	25 NENWNW	1.75		Abs.	12-18-1933	12-31-1900
					39-N	14-W	25 SWNENE	2.0		Abs.		
					39-N	14-W	24 NWNESW	1.0		Abs.		
40	Rossi Ditch	I	D	West Fork Dolores	39-N	13-W	18 SWSWSE	1.25		Abs.	12-18-1933	12-31-1906
41	Ritter Ditch	I	D	Dolores River	37-N	15-W	17 NENWNW	1.0		Abs.	12-18-1933	04-01-1908
42	Lawrence E. Rogers	I	D	Dolores River	44-N	19-W	25 SESWNE	1.5		Abs.	03-08-1937	04-01-1919
43	Carter Ditch	I	D	East Fork Dolores	38-N	14-W	1 NENESE	4.12		Abs.	12-18-1933	06-01-1930
44	Riverside Ditch	I	D	East Fork Dolores	38-N	13-W	11 NESENW	2.6		Abs.	12-18-1933	06-08-1931
45	Bear Creek Ditch	ID	D	Dolores River	38-N	12-W	9 NESWSW	10.6		Abs.	03-22-1963	06-01-1880
46	Frank Robinson	ID	D	East Fork Dolores	38-N	12-W	5 SESESW	4.1		Abs.	03-22-1963	06-01-1880
47	Starret Ditch	ID	D	East Fork Dolores	39-N	14-W	36 SESWNW	2.3		Abs.	03-22-1963	06-01-1882
48	Donald Wallace #2	ID	D	West Fork Dolores	39-N	13-W	36 NWNESE	2.0		Abs.	03-22-1963	07-10-1882
49	Stoner Ditch	***	D	East Fork Dolores	38-N	13-W	6 NWNESW	2.0		Abs.	03-22-1963	07-15-1882

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APPENDIX A

TABLE A-2 (Cont'd)

WATER RIGHTS LOCATED IN THE DOLORES RIVER CORRIDOR

Reference No.	Structure Name	Use	Type	Source	Township	Range	Section	Amount		Type Adj.	Adjudicated Date	Appropriation Date
								Direct Flow CFS	Storage AF			
50	McPhee Pipeline	ND	D	Dolores River	37-N	15-W	5 NWSESW	2.17		Abs.	03-22-1963	11-01-1927
51	Alexander Ditch	IDS	D	Dolores River	36-N	15-W	7 NENWNE	1.0		Abs.	03-22-1963	12-22-1933
52	Troy Rose Diversion	IS	*	Dolores River	44-N	18-W	31 NWNWNW	2.0		Abs.	06-11-1968	06-01-1908
53	McPhee Reservoir	***	R	Dolores River	38-N	16-W	1 SWNWNW		400,000 250,000 100,000	Cond. Cond. Cond.	03-22-1963	09-10-1940
	McPhee Reservoir Inlet							585.0		Cond.		
54	Donald Wallace #1	I	D	West Fork Dolores	39-N	13-W	36 SESWSE	3.0		Cond.	03-22-1963	09-17-1950
55	Silvey Ditch	IS I	D D	East Fork Dolores	39-N	11-W	31 NENESW	0.8 1.6		Abs. Cond.	03-22-1963	09-21-1950
56	Dove Creek Dolores River Supply	***	*	Dolores River	41-N	18-W	23 SWNWNW	0.39 0.69		Abs. Cond.	06-11-1968	07-16-1951
57	Galloway Ditch	I	D	West Paradox Creek	47-N	18-W	18 NWNESE	0.67 0.05 1.0 0.15 0.15 1.0 2.13 7.5		Abs. Abs. Abs. Abs. Cond. Abs. Abs. Abs.	02-01-1892 02-01-1892 02-01-1892 02-01-1892 02-01-1892 02-01-1892 01-19-1926 01-19-1926	04-30-1881 04-30-1883 05-31-1883 05-10-1884 05-10-1884 05-31-1884 04-02-1909 03-01-1915

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TABLE A-2 (Cont'd)
 WATER RIGHTS LOCATED IN THE DOLORES RIVER CORRIDOR

Reference No.	Structure Name	Use	Type	Source	Township	Range	Section	Amount		Type Adj.	Adjudicated Date	Appropriation Date
								Direct Flow CFS	Storage AF			
58	Neathery Ditch #2	I	D	West Paradox Creek	47-N	18-W	18 NESWNE	0.23	Cond.	02-01-1892	04-30-1881	
							18 NWSENE	0.45				04-30-1883
59	W. D. Hamilton Private	I	D	West Paradox Creek	47-N	18-W	18 NESW	0.34	Abs. Cond.	02-01-1892	12-31-1883	
								0.66				12-31-1883
60	Merrill Springs Ditch	I	*	East Paradox Creek	47-N	18-W	27 NWNENW	0.08	Abs.	03-28-1911	04-01-1909	
61	Lower Swain Ditch	I	D	West Paradox Creek	47-N	18-W	17 NESWNE	0.99	Abs.	01-19-1926	04-02-1909	
62	Amended Laura Ditch	I	D	West Paradox Creek	47-N	18-W	18 NWSWNE	1.0	Abs.	01-19-1926	04-02-1909	
63	Nafus Ditch #2	I	D	West Paradox Creek	47-N	18-W	17 NWSWNW	0.42	Abs. Abs.	01-19-1926	04-30-1910	
								0.25				04-30-1919
64	Sand Wash Ditch	I	*	Dolores River	47-N	18-W	8 SE	720.0	Abs.	09-25-1942	07-20-1909	
65	Gamboleer Pipeline	DO	*	Dolores River	46-N	17-W	31 SENWNW	0.05	Abs.	09-25-1942	12-01-1921	
66	West	I	D	Dolores River	48-N	18-W	4	1.17	Abs.	02-11-1939	04-01-1898	
67	Wines #1	I	D	Dolores River	15-S	104-W	21 SESWSE	0.86	Abs. Abs.	02-11-1939	11-01-1899	
							27 SWNWNW	5.81				05-01-1900
68	Bartholomew Hatch	I	D	West Creek	51-N	19-W	15 SESWNE	3.75	Abs. Abs.	02-11-1939	02-01-1900	
		D					1.30	02-01-1900				

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APPENDIX A

TABLE A-2 (Cont'd)
 WATER RIGHTS LOCATED IN THE DOLORES RIVER CORRIDOR

Reference No.	Structure Name	Use	Type	Source	Township	Range	Section	Amount		Type Adj.	Adjudicated Date	Appropriation Date
								Direct Flow CFS	Storage AF			
69	Ren Hatch	I	D	West Creek	51-N	19-W	15	0.39		Abs.	02-11-1939	03-15-1901
								0.78		Abs.	02-11-1939	02-10-1939
70	Cottonwood	I	D	Dolores River	51-N	19-W	22 NWSW	2.6		Abs.	02-11-1939	06-15-1902
								2.45		Cond.	02-11-1939	06-15-1913
								5.2		Abs.	02-11-1939	02-10-1939
								4.9		Cond.	02-11-1939	02-10-1939
71	Boyd	I	D	Dolores River	15-S.	104-W	27 SWNW	0.9		Abs.	02-11-1939	10-15-1909
								0.42				11-16-1937
72	L. L. Hall	I	D	West Creek	51-N	19-W	14 NWNE	0.75		Abs.	02-11-1939	03-15-1910
								0.39		Abs.	02-11-1939	03-15-1910
								1.25		Abs.	02-11-1939	02-10-1939
								1.02		Cond.	02-11-1939	02-10-1939
73	Cliff Ranch	I	D	West Creek	51-N	19-W	15 NESESE	3.36		Abs.	02-11-1939	10-01-1910
								0.52		Abs.	02-11-1939	10-01-1910
								3.34		Abs.	02-11-1939	02-10-1939
74	Calamity	I	D	Dolores River	50-N	18-W	35	0.91		Abs.	02-11-1939	06-10-1916
								0.26		Cond.		11-16-1937
75	Tom Watkins	I	D	Dolores River	49-N	18-W	4 SWSWSW	1.04		Abs.	02-11-1939	07-20-1916
								2.08		Abs.	02-11-1939	02-10-1939
								0.52		Cond.	02-11-1939	02-10-1939
								0.26				04-01-1936
76	Red Cross	I	D	Dolores River	51-N	19-W	22 SENW	5.2		Abs.	02-11-1939	06-15-1918
								4.89		Cond.	02-11-1939	06-15-1918

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TABLE A-2 (Cont'd)

WATER RIGHTS LOCATED IN THE DOLORES RIVER CORRIDOR

Reference No.	Structure Name	Use	Type	Source	Town- ship	Range	Section	Amount		Type Adj.	Adjudicated Date	Appropriation Date
								Direct Flow CFS	Storage AF			
77	Moffet	I	D	Dolores River	50-N	19-W	13 NENE	3.18 1.25		Abs. Cond.	02-11-1939 02-11-1939	09-25-1922 09-25-1922
78	Foster Miner	I	D	Dolores River	50-N	18-W	31 NWSENE	10.15		Cond.	02-11-1939	10-11-1922
79	Dotsero	I	D	Dolores River	48-N	18-W	11	2.08		Cond.	02-11-1939	08-01-1933
80	Gateway Westside	I	D	Dolores River	51-N	19-W	35	12.2		Cond.	02-11-1939	06-01-1936
81	Wilcox Ditch	I	D	West Paradox Creek	47-N	18-W	17 NWSE	3.0		Abs.	09-25-1942	08-03-1941



United States Department of the Interior
BUREAU OF OUTDOOR RECREATION
MID-CENTURY REGION

IN REPLY REFER TO:

D4219 Dolores

MAILING ADDRESS:

Post Office Box 25387
Denver Federal Center
Denver, Colorado 80225

STREET LOCATION:

603 Miller Court
Lakewood, Colorado
Telephone 234-2634

AUG 26 1975

Mr. Robert R. Garvey, Jr.
Executive Director
Advisory Council on Historic
Preservation
1522 J Street NW
Suite 1030
Washington, D. C. 20005

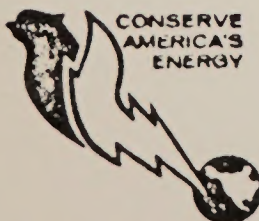
Dear Mr. Garvey:

On January 3, 1975, President Ford signed PL 93-621, an amendment to PL 90-542, the Wild and Scenic Rivers Act.

PL 93-621 requires that a study be made of segments of the Dolores River in southwestern Colorado to determine the river's suitability for inclusion in the National Wild and Scenic Rivers System (Section 5(a)(56)). PL 93-621 also requires that the study of the Dolores River be completed and the report thereon be completed by no later than January 3, 1976 (Section 5(b)(2)). This time constraint prohibits conducting a complete cultural survey before the study must be finished.

There are a great many historical and archeological sites situated within the study area. Some of the known sites are identified in the National Register. Many others have not been included in the Register. A list of the sites included in the Register has been compiled by the National Park Service and is presented here:

Rico City Hall	Convict's Bread Oven
Hovenweep National Monument	Mesa Verde National Park
Yucca House National Monument	Ute Memorial Site
Lowry Ruin	Telluride Historic District
Mesa Verde Administrative District	
Ut Mountain Ute Mancos Canyon Historic District	
Narrow Gauge Trestle of D&RG Crossing the Cimarron	



Mr. Robert R. Garvey, Jr.

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Many of the sites which have been identified but not included on the Register are probably suitable for inclusion. A list of those that we are aware of is presented here:

Narraguinnep Fort	Coke Ovens
Ophir Needles	Highland Mary Lake and Dam
Silverton Stage Route	Relay Creek Retaining Pond
Pinkerton Ranger Station	Old Durango
Bakers Bridge	La Plata Canyon
Rio Grande Southern Railroad	Gold Run Trail
Petroglyphs near Blue Creek	Petroglyphs in Unaweep Canyon
Site of Big Bend	Dominguez-Escalante Trail
Hanging Flume	Charcoal Kiln

If the study of some of the Dolores River segments results in their inclusion in the Wild and Scenic River System, public visitation will undoubtedly increase. An increase in visitation by the public will increase the probability of adverse effects on the sites. As a first step in preventing or reducing adverse effects, the agency managing the area will conduct, or cause to be conducted, a complete cultural survey to identify and evaluate potential National Register Sites. This will be done prior to the completion of the area management plan.

The Wild and Scenic Rivers Act also requires the managing agency to prepare a plan for necessary developments in connection with the administration of the river in accordance with its classification (Section 3(b)). This management plan, which will contain the results of the cultural survey of the entire area, will also contain the mitigating measures needed to prevent or reduce the adverse effects of added public pressure. The management agency will afford the Advisory Council an opportunity to comment on the management plan pursuant to 36CFR, Part 800, before it is published in the Federal Register or forwarded to the President of the Senate and the Speaker of the House (Section 3(b)).

Proceeding in this manner will permit the river study to be completed in the legislatively imposed time frame and also assure that no change in management activities affecting cultural resources will occur in the river study area until you have had a chance to review the management plan.

We have consulted with the State Historic Preservation Office regarding this matter and received informal concurrence with this course of action.

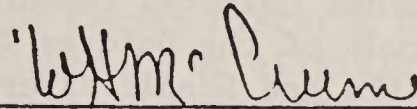
Mr. Robert R. Garvey, Jr.

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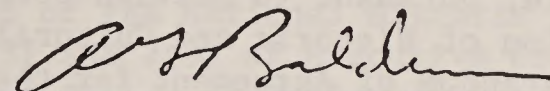
As agreed by Louis S. Wall in a meeting in May between representatives of the President's Advisory Council, the National Park Service, the Forest Service, and the Bureau of Outdoor Recreation, we would appreciate your preparing a memorandum of agreement. As explained above, this agreement would be signed by representatives of the Forest Service, BLM, the Bureau of Outdoor Recreation, the Colorado Department of Natural Resources, and the Colorado State Historical Society and would state that surveys of cultural resources of the Dolores River area will be completed and evaluated by the time of completion of a master plan for the area. This assumes that a segment or segments of the river are designated for inclusion in the National Wild and Scenic River System by the President and the Congress.

Your assistance and cooperation will be appreciated.

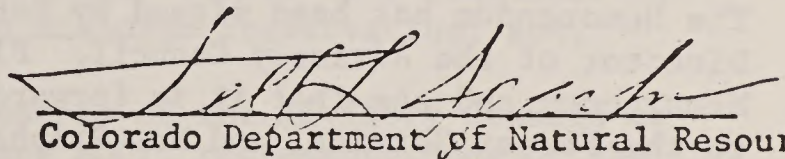
Sincerely,



Forest Service, USDA



Bureau of Outdoor Recreation, USDI



Colorado Department of Natural Resources

cc: Louis S. Wall
Advisory Council on Historic Preservation

Colorado State Director
Bureau of Land Management

Stephen H. Hart
Colorado State Historic Preservation Officer

Susan Treadway
Colorado State Historical Society

Charles Adams
Rocky Mountain Region
National Park Service

Advisory Council
On Historic Preservation

1522 K Street N.W.
Washington, D.C. 20005

Mr. A. G. Baldwin
Mid-Continent Region
Bureau of Outdoor Recreation
P. O. Box 25387
Denver, Colorado 80225

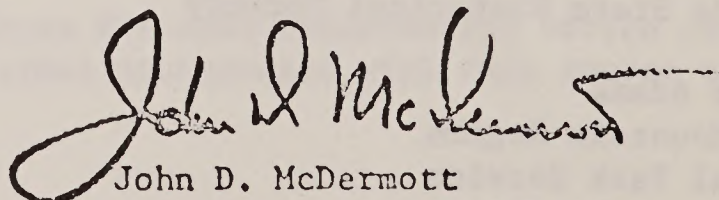
Dear Mr. Baldwin:

The Advisory Council has received your proposal of August 26, 1975, concerning the Ute Mountain Ute Mancos Canyon Historic District and numerous other cultural resources along the Dolores River in Colorado and the study of the Dolores River for possible inclusion in the National Wild and Scenic Rivers System of the United States. We have reviewed the proposal and have determined that it is sufficient. Therefore, pursuant to Section 800.5 of the "Procedures for the Protection of Historic and Cultural Properties" (36 C.F.R. Part 800), the Memorandum of Agreement for the project is enclosed.

The Memorandum has been signed by Robert R. Garvey, Jr., Executive Director of the Advisory Council. Please sign and date the enclosed Memorandum and see that it is forwarded with its attached proposal to the Forest Service, and Mr. Stephen H. Hart, Colorado State Historic Preservation Officer, for dated signatures. Thereafter, the Memorandum, with the attached proposal, must be returned to this office for approval by Dr. Clement M. Silvestro, Chairman of the Council. Ratification by Dr. Silvestro of the Memorandum of Agreement will complete the "Procedures for the Protection of Historic and Cultural Properties" and the undertaking may then proceed. A copy of the executed document will be provided for your records, and it will serve as evidence of agency compliance.

Thank you for your cooperation.

Sincerely yours,



John D. McDermott
Director, Office of Review
and Compliance

Enclosure

Advisory Council
On Historic Preservation

1522 K Street N.W.
Washington, D.C. 20005

MEMORANDUM OF AGREEMENT

WHEREAS, the Department of the Interior, Bureau of Outdoor Recreation and the Department of Agriculture, Forest Service propose to determine the suitability of the Dolores River, Colorado, for inclusion in the National Wild and Scenic Rivers System of the United States; and,

WHEREAS, the Department of the Interior, Bureau of Outdoor Recreation and the Department of Agriculture, Forest Service, in consultation with the Colorado State Historic Preservation Officer, have determined that this undertaking as proposed could have an adverse effect upon Ute Mountain Ute Mancos Canyon Historic District and numerous other cultural resources included in or eligible for inclusion in the National Register of Historic Places; and,

WHEREAS, pursuant to Section 106 of the National Historic Preservation Act of 1966 and Sections 1(3) and 2(b) of Executive Order 11593, the Department of the Interior, Bureau of Outdoor Recreation and the Department of Agriculture, Forest Service have requested the comments of the Advisory Council on Historic Preservation; and,

WHEREAS, pursuant to the procedures of the Advisory Council on Historic Preservation (36 C.F.R. Part 800), representatives of the Advisory Council on Historic Preservation, the Forest Service, the Bureau of Outdoor Recreation and the Colorado State Historic Preservation Officer have consulted and reviewed the undertaking to consider feasible and prudent alternatives to avoid or satisfactorily mitigate the adverse effect; now,

THEREFORE:

It is mutually agreed that implementation of the undertaking, in accordance with the attached letter of August 26, 1975, from W. H. McCrum of the Forest Service, A. G. Baldwin of the Bureau of Outdoor Recreation and Felix L. Sparks of the Colorado Department of Natural Resources, will satisfactorily mitigate any adverse effect on the above-mentioned properties.

Page 2
Bureau of Outdoor Recreation
Forest Service
Dolores River, Cultural Resources

Robert R. Garvey, Jr. Sept 15, 1975
(date)

Robert R. Garvey, Jr.
Executive Director
Advisory Council on Historic
Preservation

(date)
Bureau of Outdoor Recreation
Department of the Interior

(date)
Forest Service
Department of Agriculture

(date)
Colorado State Historic Preservation
Officer

(date)
Clement M. Silvestro
Chairman
Advisory Council on Historic Preservation

Advisory Council
On Historic Preservation

1522 K Street N.W.
Washington, D.C. 20005

November 18, 1975

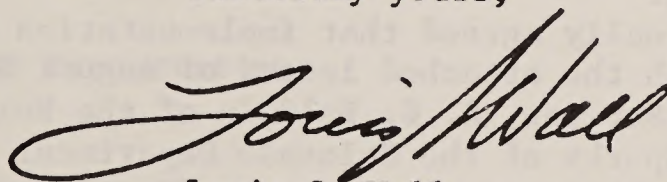
Mr. A. G. Baldwin
Mid-Continent Region
Bureau of Outdoor Recreation
P. O. Box 25387
Denver, Colorado 80225

Dear Mr. Baldwin:

The Advisory Council is pleased to inform you that the Memorandum of Agreement for the suitability study of the Dolores River, Colorado, for inclusion in the National Wild and Scenic Rivers System of the United States, has been approved by Dr. Clement M. Silvestro, Chairman of the Advisory Council. This completes the process for compliance with the "Procedures for the Protection of Historic and Cultural Properties" (36 C.F.R. Part 800). A copy of the Agreement is enclosed.

The Council appreciates your assistance in the development of the course of action that will satisfactorily mitigate any adverse effect of the undertaking on Ute Mountain Ute Mancos Canyon Historic District and numerous other cultural resources included in or eligible for inclusion in the National Register of Historic Places.

Sincerely yours,



Louis S. Wall
Assistant Director, Office
of Review and Compliance

Enclosure

Advisory Council
On Historic Preservation

1522 K Street N.W.
Washington, D.C. 20005

MEMORANDUM OF AGREEMENT

WHEREAS, the Department of the Interior, Bureau of Outdoor Recreation and the Department of Agriculture, Forest Service propose to determine the suitability of the Dolores River, Colorado, for inclusion in the National Wild and Scenic Rivers System of the United States; and,

WHEREAS, the Department of the Interior, Bureau of Outdoor Recreation and the Department of Agriculture, Forest Service, in consultation with the Colorado State Historic Preservation Officer, have determined that this undertaking as proposed could have an adverse effect upon Ute Mountain Ute Mancos Canyon Historic District and numerous other cultural resources included in or eligible for inclusion in the National Register of Historic Places; and,

WHEREAS, pursuant to Section 106 of the National Historic Preservation Act of 1966 and Sections 1(3) and 2(b) of Executive Order 11593, the Department of the Interior, Bureau of Outdoor Recreation and the Department of Agriculture, Forest Service have requested the comments of the Advisory Council on Historic Preservation; and,

WHEREAS, pursuant to the procedures of the Advisory Council on Historic Preservation (36 C.F.R. Part 800), representatives of the Advisory Council on Historic Preservation, the Forest Service, the Bureau of Outdoor Recreation and the Colorado State Historic Preservation Officer have consulted and reviewed the undertaking to consider feasible and prudent alternatives to avoid or satisfactorily mitigate the adverse effect; now,

THEREFORE:

It is mutually agreed that implementation of the undertaking, in accordance with the attached letter of August 26, 1975, from W. H. McCrum of the Forest Service, A. G. Baldwin of the Bureau of Outdoor Recreation and Felix L. Sparks of the Colorado Department of Natural Resources, will satisfactorily mitigate any adverse effect on the above-mentioned properties.

Page 2
Bureau of Outdoor Recreation
Forest Service
Dolores River, Cultural Resources

Robert R. Garvey, Jr. Sept 15, 1975 (date)
Robert R. Garvey, Jr.
Executive Director

Advisory Council on Historic Preservation
Preser

Alan D. Anderson 9/25/75 (date)
Bureau of Land Management, USDI

Donald L. Bock Sept. 18, 1975 (date)
Bureau of Outdoor Recreation
Department of the Interior

Wilmer Aun Sept. 18, 1975 (date)
Forest Service
Department of Agriculture

Stephen H. Hunt 10/20/75 (date)
Colorado State Historic Preservation
Officer

Clement M. Silvestro 11/10/75 (date)
Clement M. Silvestro
Chairman
Advisory Council on Historic Preservation

Information on Plants of the Dolores River Basin, Colorado, Which May be Candidates for Threatened or Endangered Listing by the Department of the Interior and Candidates for Rare and Endangered Status by the State of Colorado

The Federal Register 40(127, V) -- copy enclosed -- contains a list (page 27847) of 23 endangered and 17 threatened candidate plant species in Colorado, as determined by the Smithsonian Institution. Appendix H of the Dolores River Report (page H-16, et seq.) lists several plant genera for which species are indicated in the Federal Register Notice; to wit: Senecio, Arabis, Lesquerella, Stellaria, Astragalus, Oxytropis, Trifolium, Phacelia, Eriogonum, Aquilegia, Mertensia, and Draba. It remains to be determined whether the species listed in the Federal Register and especially those of the above-noted genera occur within the Dolores River Basin and the wild and scenic river study area.

Also, Carix microptera is mentioned in appendix H, and Carix microptera var. crassinervia is in the Federal Register notice. The presence or absence of the variety in the basin and study area remains to be determined.

According to Dr. William A. Weber, University of Colorado Museum, Boulder, Colorado, 80302 (phone 303/492/6171), who has prepared a draft list of rare and endangered plants of Colorado, Adiantum capillus-veneris and Bothriochloa barbinodis are found in the Dolores Basin, and Mentzelia pterosperma and Mimulus eastwoodiae are likely to be in the basin. Dr. Weber has indicated to us that the cliffs of the Dolores River area are not well known botanically because of their poor accessibility on foot. Thus, the area might have significant "hanging gardens" containing important floral elements.

If and when the study area is included in the national system, efforts should be made to protect any of the above species which may be located in the area.

NOTICES

List A

STATE LISTS OF ENDANGERED AND THREATENED SPECIES OF THE CONTINENTAL UNITED STATES

STATE	STATUS	FAMILY	SPECIES
COLORADO	ENDANGERED	BORAGINACEAE	CRYPTANTHA WEBERI
COLORADO	ENDANGERED	BRASSICACEAE	ARABIS OXYLOBULA
COLORADO	ENDANGERED	BRASSICACEAE	BRAYA HUMILIS SSP. VENTOSA
COLORADO	ENDANGERED	BRASSICACEAE	EUTREMA PENLANDII
COLORADO	ENDANGERED	BRASSICACEAE	LESQUERELLA PRUINOSA
COLORADO	ENDANGERED	CACTACEAE	SCLEROCACTUS GLAUCUS
COLORADO	ENDANGERED	CARYOPHYLLACEAE	STELLARIA IRRIGUA
COLORADO	ENDANGERED	FABACEAE	ASTRAGALUS DETERIOR
COLORADO	ENDANGERED	FABACEAE	ASTRAGALUS DETRITALIS
COLORADO	ENDANGERED	FABACEAE	ASTRAGALUS LUTOSUS
COLORADO	ENDANGERED	FABACEAE	ASTRAGALUS MICROCYMBUS
COLORADO	ENDANGERED	FABACEAE	ASTRAGALUS NATURITENSIS
COLORADO	ENDANGERED	FABACEAE	ASTRAGALUS DSTERHDÜTII
COLORADO	ENDANGERED	FABACEAE	ASTRAGALUS SCHMOLLAE
COLORADO	ENDANGERED	FABACEAE	OXYTROPIS OBNAPIFORMIS
COLORADO	ENDANGERED	FABACEAE	TRIFOLIUM LEMMONII
COLORADO	ENDANGERED	HYDROPHYLLACEAE	PHACELIA FORMSULA
COLORADO	ENDANGERED	ONAGRACEAE	GAURA NEOMEXICANA SSP. COLORADENSIS
COLORADO	ENDANGERED	POLYGONACEAE	ERIGONUM EPHEDRIDES
COLORADO	ENDANGERED	RANUNCULACEAE	ADUILEGIA MICRANTHA VAR. MANCUSANA
COLORADO	THREATENED	BORAGINACEAE	CRYPTANTHA ELATA
COLORADO	THREATENED	BORAGINACEAE	CRYPTANTHA STRICTA
COLORADO	THREATENED	BORAGINACEAE	MERTENSIA VIRIDIS VAR. CANA
COLORADO	THREATENED	BRASSICACEAE	ARABIS GUNNISONIANA
COLORADO	THREATENED	BRASSICACEAE	DRABA EXUNGUICULATA
COLORADO	THREATENED	BRASSICACEAE	PARRYA NUDICALLIS
COLORADO	THREATENED	BRASSICACEAE	RORIPPA COLORADENSIS
COLORADO	THREATENED	CACTACEAE	SCLEROCACTUS MESAE-VERDAE
COLORADO	THREATENED	CYPERACEAE	CAREX MICROPTERA VAR. CRASSINERVIA
COLORADO	THREATENED	FABACEAE	ASTRAGALUS WETHERILLII
COLORADO	THREATENED	FUMARIACEAE	CORYDALIS CASEANA SSP. CASEANA
COLORADO	THREATENED	POLYGONACEAE	PHIPPSIA ALGIDA
COLORADO	THREATENED	POLYGONACEAE	ERIGONUM BRANDEGEI
COLORADO	THREATENED	POLYGONACEAE	ERIGONUM SAURINUM
COLORADO	THREATENED	POLYGONACEAE	ERIGONUM VIRIDULUM
COLORADO	THREATENED	RANUNCULACEAE	ADUILEGIA CHRYSANTHA VAR. HYDBERGII
COLORADO	THREATENED	SAXIFRAGACEAE	SULLIVANTIA PURPUSII

FEDERAL REGISTER, VOL. 40, NO. 127—TUESDAY, JULY 1, 1975

ER'S CARD

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Pres National
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	OFFICE	DATE RETURNED
MM	SC-325	10-4-89
	JLH952602	3-15-90

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Center
Denver Federal
P. O. Box 25047
Denver, CO 80225-0047

