

# DOLORES RIVER CORRIDOR



## MANAGEMENT PLAN

U.S.D.I. Bureau of Land Management  
Montrose District

# Dolores River Corridor Management Plan

**U.S. Department of the Interior  
Bureau of Land Management  
Montrose District  
Colorado**

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# Dolores River Corridor Management Plan

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## I. Introduction

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### A. Location and Setting

This plan encompasses approximately 106 miles of the Dolores River, beginning at the Bradfield Bridge access (east of Cahone, Colorado, and roughly 12 miles downstream of McPhee Dam and Reservoir) and ending at the Montrose Bureau of Land Management (BLM) District boundary (approximately 8 miles downstream of the San Miguel River confluence). The plan also addresses public lands (generally between canyon rims) adjacent to the river proper.

Included within the plan boundary is the 28,539-acre Dolores Canyon Wilderness Study Area (WSA). The planning area stretches across portions of three counties in southwestern Colorado—Dolores, San Miguel, and Montrose. Cities and towns within a half-hour drive of the planning area include Cortez, Dolores, Pleasant View, Cahone, Dove Creek, Egnar, Slick Rock, Naturita, Nucla, Bedrock, and Paradox. The river corridor is accessed by State Highways 141 and 90, and U.S. Highway 666. See Maps #1 and #2 for general vicinity and detailed planning boundaries.

### B. Background

The Dolores River has historically been recognized by BLM and the general public as a nationally-significant, unique resource capable of providing highly sought after, widely-valued recreation opportunities. In 1975, the Departments of Interior and Agriculture recommended "Wild and Scenic River" status for roughly 94 miles of the river downstream from the Bradfield Bridge.

The deep meandering canyon between Little Gypsum Valley and Bedrock, Colorado, was recommended for inclusion in the nation's Wilderness Preservation System as a result of a BLM wilderness study as addressed in the draft San Juan/San Miguel Resource Management Plan (RMP) and Wilderness Technical Supplement. This WSA is now being managed by BLM under the Interim

Management Policy and Guidelines for Lands Under Wilderness Review, until such time that Congress decides upon final wilderness designation or non-designation.

In 1981, BLM adopted a new recreation management policy which provides administrative recognition of certain public lands as Special Recreation Management Areas (SRMAs). By definition, these are areas where significant recreation issues and management concerns exist and where special and more intensive management of recreation is required. The Dolores River canyon was recognized and identified through this process. In the spring of 1984, Montrose BLM began regulating commercial outfitter use on the Dolores River via the Special Recreation Permit (SRP) program. The 1985 San Juan/San Miguel RMP confirmed the earlier identification of a portion of the Dolores River corridor as an SRMA. The RMP directed the BLM to manage 94 miles of the river utilizing appropriate Recreation Opportunity Spectrum (ROS) guidelines (See Appendix 1). The RMP also called upon BLM to develop a Recreation Area Management Plan (RAMP) that would address and emphasize cooperative and concurrent recreation management efforts of the U.S. Forest Service and the Bureau of Reclamation's McPhee Dam and Reservoir operations. The RAMP would also address recreation carrying capacity, visitor use and preferences, and permits.

As part of the mitigation for lands inundated by McPhee Reservoir, the Bureau of Reclamation (BOR) acquired various private tracts of land from McPhee Dam to just below Bradfield Bridge. Since these acquired lands were to be transferred to BLM, the U.S. Forest Service and Colorado Division of Wildlife for management responsibility, all four agencies entered into a Memorandum of Understanding in 1983 which coordinates management (especially from a wildlife and recreation perspective) of these lands. The final planning document resulting from this group effort is the Lone Dome Implementation Plan, completed in 1987. Among other management actions, this plan addressed construction of four recreation sites immediately downstream from

McPhee Dam. The last of these would be the Bradfield Bridge river access, from which most boating trips on the Dolores River originate.

The spring of 1985 marked the beginning of BOR's 3-year filling program for the recently-constructed McPhee Reservoir. With the gradual implementation of more predictable downstream flow regimens and increasing commercial boater interest (from 7 SRPs in 1984 to 33 in 1987), BLM funded start-up of a RAMP in November 1987. After considering increasingly-valued and diverse wildlife issues developing since the advent of sustained, year-round flows in the Dolores River, Montrose BLM decided to broaden the RAMP effort into more of a multi-resource emphasis plan.

In order to stabilize boating use to allow BLM time to identify resource impacts and management needs for the river corridor, the Montrose District instituted a moratorium on commercial whitewater permits (both permit numbers and overall use levels) for the 1988 and 1989 seasons. Under terms of the moratorium, only those outfitters who held Dolores River permits in 1987 and declared user-days for those permits were allowed permits in 1988 and 1989.

As an initial step to involve the public in the planning process, BLM in early 1988 assembled a task force of about a dozen people representing diverse interests, including local governments and private landowners, wildlife and fishing enthusiasts, resource conservationists, private and commercial boaters. This step was closely followed by several public meetings which BLM hosted in local communities surrounding the planning area. These initial sessions were primarily oriented toward issue identification.

BLM met several more times with the task force in order to determine social and physical carrying capacities for the river canyon and to formulate various management options for allocating recreational use. BLM then sent a mass mailing of the BLM/task force proposals to over 150 interested individuals, outfitters, and organizations. Comments were also solicited at a BLM-hosted open house held on March 9, 1989, at the Anasazi Heritage Center in Dolores, Colorado. Details of the public participation schedule and names of task force members are listed in Appendix 2. A

copy of the mass mailing and a summary of comments received are shown in Appendix 3. BLM analyzed all comments and then prepared a draft plan for widespread public review during July and August of 1989. Additional comments were collected and studied in conjunction with the task force before making final revisions which are incorporated in this document.

The purpose of this Dolores River Corridor Management Plan (DRCMP) is to establish management objectives and resultant actions which effectively provide appropriate recreation opportunities and enable sustained management of the diverse biotic communities within the river corridor. The plan ties management actions to a variety of issues identified during initial internal and public scoping sessions. The plan also identifies constraints and existing or potential conflicts which BLM must address in the final management program. The plan is intended to direct BLM's management of the area for the next ten years. Therefore, an implementation schedule is included in Section V. Detailed site plans and facility designs, where needed, will be formulated following approval and funding of the management actions. If conditions affecting management of the corridor change significantly prior to 1999, BLM will amend or revise the DRCMP as necessary to address such changes.

## C. Resources—Past, Present, Future

### 1. Climate

The climate of the planning area is essentially semi-arid and is characterized by low precipitation and humidity, abundant sunshine, a fairly large daily temperature range, and moderate westerly winds. As a result of topographic changes, the local climate exhibits large variations within short distances, with increases in precipitation and decreases in temperature from southwest to northeast. Average annual precipitation varies from roughly 10 to 20 inches. Generally, June is the driest part of the year and July through October is the wettest. Afternoon showers commonly occur from July through mid-September, occasionally reaching flash-flood intensity.

The combination of typically clear skies and high solar radiation and moderate elevation result in

warm days and cool nights during spring, summer, and fall. Days are also comfortably warm during the winter, but nights are quite cold. Maximum daytime temperatures range from about 32-40 F in January to 80-90 F in July, with corresponding nighttime minimums ranging from nearly 0 F to around 50 F. It is not uncommon for snow or freezing rain to blanket the corridor in April and early May, months which typically mark the start of the whitewater boating season on the river.

## 2. Air Quality

Based on Colorado Department of Health data, the counties of Montezuma, Dolores, and San Miguel all meet Federal particulate standards for air quality. All three counties are rural, with few industries to affect air quality. Wood waste-disposal burners, open-burning disposal areas, and home woodstoves and fireplaces are the major sources of suspended particulates. Under certain weather conditions, long-range transport of air pollutants (sulfate and nitrate compounds) from coal-fired power plants near Farmington, New Mexico, may impact the planning area, resulting in decreased visibility.

The Department of Health predicts that air quality for the counties will continue to meet Federal particulate standards. Factors influencing this trend include favorable climate, low population density, enforcement of Colorado regulations, and continued intergovernmental coordination with neighboring states.

## 3. Water

Flows in the Dolores River vary seasonably. High flows result from spring snowmelt in the headwaters of the Dolores and San Miguel Rivers and in the La Sal Mountains of Utah. High intensity thunderstorms also cause localized peak flows intermittently during July, August, and September. Tributaries, except those draining mountainous areas, are ephemeral or intermittent.

Historical water uses such as irrigation, transbasin diversions, and domestic and industrial uses have resulted in flow reductions in the Dolores River. Additional flow reductions have resulted from the BOR's construction and operation of the McPhee

Dam. The dam was completed in 1984 and is located approximately 12 miles upstream from the Bradfield Bridge on the main stem of the Dolores River. With dam-controlled releases, boating flows in an average-snowpack year have ranged from about 800 to 2,000 cubic feet per second (cfs), occasionally surpassing 3,000 c.f.s. during early peak snowmelt.

The storage capacity of the reservoir is 381,000 acre-feet. Approximately 145,000 acre-feet is presently being diverted into the San Juan River Basin, mostly for irrigation use. This has required a minimum streamflow strategy to be implemented below the dam to protect the various resource values of the river system. BOR's Dolores Project Environmental Statement requires that, during a normal water year, the flow be maintained at a minimum of 50 cfs. During wet and dry years, the flows will be maintained at minimums of 78 cfs and 20 cfs, respectively. Prior to McPhee Dam, downstream river flows had been practically nonexistent during very dry summers.

Water quality of the river varies with both flow rate and location. Total dissolved solids (TDS) concentrations increase further downstream, with large contributions coming from Disappointment Creek and groundwater discharge from the Paradox salt anticline. The BOR's brine water deep well injection program is geared to reduce the high salt concentrations in the lower canyon. Intense thunderstorm activity also occasionally results in peak turbidity contributions from several Dolores Canyon side drainages.

The BLM Service Center has initiated an instream flow study on the Dolores River. The study objectives are to: 1) determine the availability of water for downstream resource management purposes, 2) develop relationships between stream flows and river resource values, and evaluate minimum flow requirements to maintain resource values, 3) identify and evaluate flow protection strategies within the context of state law, and relate these strategies to management issues and alternatives.

The study is not intended to interfere in the operations of McPhee Reservoir or antedate existing adjudicated water rights. The final report of the study is scheduled for May 1990 and will be added as an appendix to this document. The instream

study report will include an array of practical alternatives, identifying minimum flows and associated protection strategies necessary to maintain river resource values.

#### 4. Soil

The soils in the plan area are comprised primarily of fluvents. These soils are commonly deep, well drained, and are found on the floodplain, terraces, and fans associated with the Dolores River. These soils are subject to periodic flooding. Runoff is slow to medium and the hazard of water erosion is slight to high. This soil unit is important wildlife habitat and is suitable for livestock grazing under a well-planned grazing system. A large portion of the remainder of the plan area is rock outcrop.

#### 5. Geology and Minerals

The plan area is located in the northern part of the Colorado Plateau, within the salt anticline region of the Paradox Evaporite Basin. The Dolores River generally flows from south to north in a deep canyon that is interrupted only where the river crosses Gypsum and Paradox Valleys. A series of anticlinal and synclinal valleys result from a sequence of northwest-trending folds within the area.

Formations exposed along and within the river corridor range from the Morrison Formation of Jurassic age to the Moenkopi Formation of Triassic age. The Rico, Cutler, and Hermosa Formations are also apparent in various locations north of Disappointment Valley. Alluvial deposits of Quaternary age are present along the river throughout the entire length of the planning area.

Much of the river corridor's scenic beauty stems directly from the spectacular geology of the various canyon segments. These resources also offer BLM unique interpretive opportunities for educating visitors to the area.

Mineral occurrences commonly associated with the exposed geological formations and alluvial deposits include uranium, oil and gas, and placer gold. Past development of uranium mineralization occurred to a minimal degree, but none is

currently operating. Oil and gas leases exist along most of the planning area, but no development has occurred within the river corridor due to the "no surface occupancy" designation along the river.

The entire management area has had various levels of interest regarding placer gold exploration and mining. Much of the interest has been downstream from the confluence of the San Miguel. Currently, one known operation is being conducted approximately 1-1/2 miles upstream from Disappointment Creek under a plan of operations approved pursuant to BLM's Surface Management Regulations (43 CFR 3809).

There has been considerable interest in the sand and gravel deposits along the river at and near Bradfield Bridge.

BLM anticipates future interest in placer resources, sand and gravel deposits, and possibly uranium exploration or development. Placer operations could occur almost any place along the river and could range from individual dredging and recreational panning to full-scale exploration and development. Accessible alluvial deposits may draw more attention from local governments or private developers as other sand and gravel sources are depleted and demand for gravel increases. Also, uranium mining proposals could surface if the currently depressed uranium market starts to improve.

#### 6. Lands and Realty

Patented lands within the planning area are limited to sites of gentler relief where settlers to Slick Rock, Disappointment Valley, and Paradox Valley could gain access to the river. Most patents were issued as Homestead Entries at about the turn of the century. Current private land uses include ranching and small commercial developments. Management actions outlined in this plan pertain only to public lands managed by the BLM. As such, the plan is subject to all existing legislation that governs use and management of public lands, such as the General Mining Law of 1872, the Wilderness Act of 1964, and the Federal Land Policy and Management Act of 1976.



a. Withdrawals

From 1948 to 1954, more than 700 square miles of public land were withdrawn from mineral entry under Public Land Order 459 to the former Atomic Energy Commission (now the Department of Energy). Of 25,000 acres withdrawn in the Uruvan Mineral Belt, about two dozen DOE lease tracts remain, several of which include public land within the Dolores River corridor.

b. Classifications

BLM orders of 1953, 1955, and 1956 opened Power Site Classifications in much of the planning area subject to Sec. 24 of the Federal Power Act.

c. Rights-of-Way

Rights-of-way for electric transmission and distribution lines, telephone lines, oil and gas and water pipelines, access roads, county roads, and state highways have been granted in the river corridor. Master Title Plats should be consulted for recorded existing rights granted in a specific location.

d. Land Acquisition

The BOR acquired about 700 acres of John and Margaret Black's private land which surrounds Bradfield Bridge. The purpose of the acquisition was for wildlife mitigation and development of recreation facilities. Lands south of the bridge were conveyed to the Colorado Division of Wildlife (CDOW), and lands north of the bridge (478.59 acres) were transferred to BLM. A Memorandum of Understanding clarifying the terms and conditions of the land transfer between BOR and BLM was effected in January of 1988.

7. Socio-Economic

Based on related studies of Colorado River user expenditures, BLM estimates that \$60 per day is spent in the local area by the average person rafting on the Dolores River and \$18 per day is spent by the average fisherman. Expenditures often include groceries, gas, lodging, restaurants, and miscellaneous boating and fishing supplies.

The following table shows the 1986 contribution of recreation and fishing activities on the Dolores River to the economic study area (ESA), which includes Montezuma, Dolores, San Miguel, and Montrose Counties.

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

Activity	Total 1/ Output	Total Labor Earnings 1/ Generated	Total Employment 1/ Generated	% of Total ESA Employment
Boating	\$1,269,600	\$412,740	33	Less than .1 of 1 percent
Fishing	38,088	12,382	1	Less than .1 of 1 percent
Total	\$1,307,688	\$425,122	34	Less than .1 of 1 percent

1/ Includes multiplier effects

Notes: Estimated white water boating visitor use days 10,000 (based on outfitter and BLM visitor records). Estimated fishing visitor use days 1,000. Once the Dolores Project is fully developed, there will be an average of 24 whitewater days (flows exceeding 500 cfs) available annually. In 1986, by contrast, there were over 80 days of flows exceeding 500 cfs.

## 8. Cultural and Paleontological Resources

### a. Cultural

The nature and significance of the cultural resources within the Dolores River corridor in general is discussed in an early BLM publication (Toll, 1977). This publication documents the results of several short-season reconnaissance surveys of the river corridor from the McPhee Dam site several miles west of Dolores, Colorado to the confluence of the Dolores River with the Colorado River several miles south of Gateway, Colorado. These preliminary surveys are by-no-means comprehensive to current standards but they do give an indication of the density and diversity of cultural resources that can be expected so that a discussion of potential effects from river recreation development and management can be assessed.

An intensive (Class III) cultural resource inventory and evaluation program was initiated in 1988 to provide the level of data necessary to understand the importance of the cultural resources in the Dolores River corridor and to enable an adequate level of protection commensurate with river management goals and planned recreation development. Fieldwork required to complete this assessment is tentatively scheduled for completion by the fall of 1993. A separate activity plan (Cultural Resource Project Plan) and cultural resource synthesis will be completed following fieldwork. See Appendix 5 for additional information.

Public lands covered by this plan contain 106 cultural properties identified from survey data at this time. These sites include prehistoric rock shelters with deep cultural strata and excellent potential for a multiple occupation record; simple and elaborate rock art panels with potential for rare and dateable associations; masonry cliff rooms, resource procurement and processing areas, and lithic source sites and reduction areas. Many of these sites have high interpretive potential as well and are easily accessible by river travel. These sites represent the remains of many diverse

cultural events and associations. Data from sites in the Dolores River Canyon indicate that associations from Archaic, Fremont, Anasazi, Navajo, and Ute cultures are present and a Fremont/Anasazi variant may exist as well. Also present within the known cultural resources in the canyon corridor are numerous historic Native American and historic European sites. These consist of standing interpretable wickiup sites; homesteads with standing wooden structures in good condition (also interpretable); cowcamps and sheepcamps documenting the early livestock industry in the area; and a variety of mining structures and mining features. The significance of this resource as a whole appears to be very high, but the importance of each site's contribution cannot be assessed until additional data is generated. Preliminary studies suggest that many of the recorded (known) cultural resources in the corridor could be considered eligible to the National Register of Historic Places. Many more sites are expected to exist, and a more comprehensive understanding of their data potential, interpretive potential, and location is needed.

### b. Paleontological

Outcrops and stratigraphic exposures of several fossil-rich geological formations can be found in the planning area. These include members of the Morrison Formation, widely accepted as rich in fossil-bearing strata. As such, invertebrate and vertebrate fossils are not rare in the canyon proper and several unique specimens and localities have been found, ranging from intact fossil bone and dinosaur tracks to rare Triassic-age fish fossils of high scientific value (BLM, 1989) and numerous invertebrate shelled fossils.

## 9. Range Utilization

Most of the Dolores River corridor is licensed for livestock grazing through BLM's system of grazing allotments. The following table summarizes allotments that are either totally or partially contained within the planning area. All grazing is by cattle and horses.

Allotment Number	Name	Use Season	Total Preference Animal Unit Months (AUM's)	Percent of AUM's Within DRCMP Boundary*
8004	Snyder	11/1 - 3/31	500	40%
7034	Slick Rock	10/16 - 5/15	1,125	< 10
7025	Island Mesa	11/1 - 5/31	1,910	< 10
7036	Disappointment	11/1 - 5/31	4,200	< 10
7011	La Sal Creek	4/15 - 6/5, 11/1 - 11/30	139	40
7004	Dolores Canyon	1/1 - 2/20	202	< 10
7039	Ute Ranch	mid-May, mid- October, or end of December	2,273	< 10
7014	Mesa Creek	3/1 - 4/15	1,900	< 10

\* Based upon BLM's Soil Vegetation Inventory Method (SVIM) range data.

Prior to 1985, the former Dolores River Allotment (#8004) included the river canyon from the Bradfield Bridge to Joe Davis Canyon and was licensed for 1546 AUM's. Approximately 350 cattle used the allotment from November 15 to March 31. Since that level of use was leading to excessive forage utilization, BLM issued a decision in 1985 to the grazing permittee, reducing his grazing preference from 1546 AUM's to 912 AUM's and eliminating from the allotment the portion of the canyon between the Bradfield Bridge and the Dove Creek pump station for unsuitability reasons. Between 1985 and 1989, grazing use continued at this reduced level but was still resulting in unacceptable forage utilization levels. BLM met with the permittee in April 1989, at which time the permittee agreed that recent grazing use was not appropriate and relinquished a portion of his permit. Therefore, allotment #8004 is now licensed for 500 AUM's and no longer includes any of the river canyon between the Bradfield Bridge and the south end of the Snyder private land (approximately one mile upstream from the Disappointment Creek confluence).

Allotments #8004, #7004, and #7036 are currently managed intensively, with #7004 and #7036 under existing Allotment Management Plans (AMPs). Grazing use on the allotments is predominantly outside of the planning area for the DRCMP. No range improvements are currently planned on any of the allotments. Vegetative studies monitoring utilization, trend and

climatological data are currently being conducted on all allotments except #7014. Current data does not conclusively indicate that grazing reductions are warranted.

#### 10. Wildlife Values

Wildlife values associated with the Dolores River are very diverse and complex. To ensure an adequate discussion of these values, five major headings have been selected to address differing aspects of the Dolores River corridor. These five major headings are; Riparian Habitat, Terrestrial Wildlife, Aquatic Wildlife, Amphibians and Reptiles, and Threatened and Endangered Species.

##### a. Riparian Habitat

Habitat along the Dolores River is comprised of four vegetative types: Montane, foothills, Upper Sonoran, and Desert salt shrub. However, interspersed throughout these communities is a very diverse and rich riparian plant community. This community, because of its narrow, winding character, tends to intensify species diversity and abundance. Also, the geophysical nature of the canyon has contributed toward creating separate and distinctive local plant and animal populations.

Riparian communities are characterized by an abundance of surface flows and higher ground water. The variances of north and south facing aspect create situations where there are visible

yon. Increased sightings of black bear in the canyon often occur during this period.

Desert bighorn sheep historically occupied the entire river corridor. However, during the early 1900's, these animals were extirpated from the Dolores River corridor due to human disturbance, livestock conflicts, habitat loss, hunting pressure, and disease.

In April of 1986, BLM and CDOW entered into a Memorandum of Understanding (MOU) for the reintroduction of desert bighorns into the Dolores River Canyon. The MOU provided for the release of up to 125 desert bighorns on public land in Dolores and San Miguel Counties. A total of 56 desert bighorn sheep have been released by CDOW since the development of the MOU. The MOU authorized the introduction of desert bighorns at approximately R.M. 150 or R.M. 144 on the north or south side of Mountain Sheep Point. Since the initial release, the sheep have moved well above Pyramid Park and as far downstream as Sinbad Valley. It is unknown at this time why the sheep have ranged as far as they have from their initial release site; however, past studies on introduced populations indicate a similar pattern during their first few years in unfamiliar habitat. Escape cover and direct access to escape cover are the most important components of desert bighorn habitat. Habitat preferred by bighorns usually contains steep, broken rocky cliffs of over 80% slope. These cliff sites will usually be in excess of 700 feet in height. Lambing areas are usually in steeper and more rugged terrain. Rams rather than ewes will use areas farther from escape terrain. However, past studies have indicated that only 10% of observed groups will utilize habitat farther than 800 feet from escape terrain. This would indicate that sheep are more restricted to escape terrain than previously suggested. The reintroduced population has been observed foraging on mountain mahogany, serviceberry, and oakbrush along the breaks and steeper canyon walls. In the lower portion, they also forage extensively on wild rye, Indian ricegrass, needle and thread, and other bunchgrasses.

Mountain lion observations in the Dolores River corridor have increased over the past 5 years. Mountain lions utilize the entire river corridor either as residents or as migratory animals, and they have historically utilized resident deer and elk populations as prey base. With the addition of desert bighorns in the lower portion of the canyon, a greater diversity in the prey has also been added. Several of the recently killed bighorns were attributed to mountain lions. Mountain lions are generally intolerant of people and tend to avoid areas where people concentrate.

## 2) Small Game

Major small game species inhabiting the corridor are cottontail rabbit, showshoe hare, Abert's squirrel, and red squirrel.

The small game species occurring in the greatest densities are the desert cottontail and the Nuttall's cottontail. The Nuttall's cottontail occurs in the upper portion of the Dolores River canyon. It predominantly occupies montane and foothills communities, living in dense stands of oak brush and serviceberry.

The desert cottontail occupies habitat in the lower portion of the river corridor. It predominantly occupies upper Sonoran and salt desert shrub communities. The highest densities of these rabbits are found south of the Dove Creek pump station. They feed primarily on herbaceous plants, such as bunch grass, shrubs, forbs, and sedges.

## 3) Furbearers

Major furbearer species inhabiting the Dolores River corridor include beaver, muskrat, bobcat, raccoon, mink, short-tailed weasel, badger, gray fox, ringtail, kit fox, and coyotes. Kit fox are considered rare in Colorado and extremely rare in southwestern Colorado. The mink, ringtail, gray fox, and kit fox are species which utilize a large prey base and are considered omnivorous. Because of their opportunistic feeding habits, these species will tend to con-

concentrate along riparian areas where the greatest diversity of plants and animals occurs. Also, these riparian routes provide the best cover and easiest means of transportation for such species.

Since these species are primarily nocturnal in character, their presence is difficult to determine. However, historic records have documented the occurrence of these species within the Dolores River corridor.

#### 4) Upland Game Birds

Within the past three years there has been a significant increase in wild turkey populations along the upper portion of the Dolores River. Past reports indicated that small flocks were only present in the area above the town of Dolores. Present surveys indicate that turkeys are utilizing major drainages of the Dolores to expand their present distribution and reestablish themselves within the Dolores River corridor. Turkeys have been observed from Narraguinnep Creek (R.M. 166) to as far down stream as Pyramid Park (R.M. 136). Wild turkeys are primarily associated with ponderosa pine and pinyon-juniper woodlands. Their expansion into these areas along the Dolores River corridor is directly related to the abundance of dense oak stands associated with these two communities. Acorn mast is the primary winter food source for wild turkeys. These areas also provide excellent nesting habitat.

Chukar populations are scattered throughout the lower portion of the Dolores River corridor. Past surveys indicated very low numbers in certain areas, and populations may have been depressed far enough that they may not have been able to sustain themselves. Chukar populations are subject to extreme fluctuations which appear to be caused as much by environmental conditions as by predator/prey relationships.

During 1988, the Colorado Division of Wildlife introduced chukars into several sites along the

lower Dolores River from R.M. 70 to well below R.M. 48 to supplement existing populations. Chukars characteristically prefer broken rim-rock country associated with very hot and dry areas.

Mourning doves can be found throughout the entire Dolores River corridor. Seasonal concentrations occur primarily in the lower portion of the river. Dove nesting occurs along the riparian corridor wherever there are thick stands of vegetation. They frequent drier sites and prefer areas close to agricultural farming.

#### 5) Nongame Birds

Because of the variability in vegetation along the entire river corridor, intensive inventories were not possible. However, sites which appeared to be representative of the vegetation within each identified section were selected for intensive inventories. Also, within each section, sites which showed heavy use within the riparian zone were selected for inventory to see if there were any noticeable differences between representative undisturbed sites and heavily used sites as far as avian species occurrence and distribution were concerned.

On an overall basis, riparian bird species appeared to be distributed in relationship to the type of vegetation present in each section. In the montane and foothills section, avian species such as the ladder-backed woodpecker, red-shafted flicker, acorn woodpecker, white-breasted nuthatch, broad-tailed hummingbird, MacGillivray's warbler, pine grosbeak, and dipper were more abundant.

In the foothills transition section, a greater variety of species was present. Birds representing a greater range were seen. Poor-wills, white-throated swifts, Lewis woodpecker, belted kingfisher, black-chinned hummingbird, American goldfinch, evening grosbeak, Bullock's oriole, American robin, mockingbird, Steller's jay and mountain bluebirds were the most abundant.

In the Upper Sonoran section, birds which are more adaptive to a variety of habitat were observed. Species such as great blue heron, common egret, killdeer, common nighthawk, barn swallow, cliff swallow, western kingbird, rufous-sided towhee, and scrub jay were more abundant.

In the desert shrub section, species which were more tolerant of hot dry climates and not as canopy dependent were observed. Species such as burrowing owl, cliff swallow, white-throated swift, horned lark, pinyon jay, lark bunting, canyon wren, ash-throated flycatcher, and house finch were more abundant.

The most significant observation from the bird surveys was an obvious change in numbers and varieties of species from disturbed sites to undisturbed sites. Heavily used areas would typically have significantly less birds utilizing them than areas immediately across the river from sites which showed little to no use.

Areas where the canopy had been disrupted either naturally or by human disturbance would show abrupt changes in bird numbers. Further studies will be conducted to determine if there is a correlation between human activity and a decrease in overall species distribution.

### c. Aquatic Wildlife

#### 1) Sport Fisheries

The Dolores River supports both cold and warm water sport fisheries. The most recognized fishery on the river is the designated quality water section on the upper portion of the river from McPhee Dam to Bradfield Bridge. It is also thought that historically a cold water fishery existed in that portion of the river from Bradfield Bridge to Dove Creek pump station (section 1) and that during dry periods these fish survived in deep pools along the river corridor until flows returned to the river.

Presently, a cold water sport fishery is developing from Bradfield Bridge (R.M. 166)

downstream to a point immediately upstream of the Disappointment Creek confluence. Surveys conducted by Colorado Division of Wildlife during the 1988 and 1989 field seasons indicate an average trout size of 14 inches or larger in the upper portion of the river from Bradfield Bridge to Dove Creek pump station (section 1). During the 1988 CDOW fish sampling of the Dolores, CDOW personnel caught trout in excess of 14 inches as far downstream as McIntyre Canyon (R.M. 112). The most common cold water fish in the Dolores are rainbow and brown trout. Brook trout and smallmouth bass are also found in this section of the river; however, their presence is not well documented and they may only occur in relatively small numbers.

The electroshocking survey conducted by the CDOW during September of 1989 provided the following fish and relative numbers:

Species	Number Collected
Rainbow Trout	2
Brown Trout	5
Fannemouth Sucker	10
Bluehead Sucker	4
Speckled Dace	22
Round-tail Chub	55
Mottled Sculpin	69

The average size of rainbow trout was 12.9 inches and the average size of brown trout was 12.8 inches. The average weight of rainbows was 11.5 ounces and the average weight of brown trout was 14 ounces. Size of rainbows varied from 10-16 inches and 5.6-19 ounces. Brown trout varied in size from 12-14 inches and from 10-17.6 ounces.

The survey determined that trout in this portion of the river corridor averaged 2.2 pounds/acre for rainbows and 4.8 pounds/acre for brown trout. In an effort to improve existing trout numbers CDOW stocked 7,000 brown trout approximately 5 miles downstream from Bradfield Bridge and 8,000 rainbow trout just below Dove Creek pump station in June of 1989.

Limiting factors both natural and human caused have the potential of significantly influencing the viability of this establishing cold water fisheries. Since the establishment of this fisheries is relatively new, cumulative impacts associated with controlled flows are relatively unknown at this time. Controlled flows during the summer in the 78 c.f.s. and lower range may impact the existing fisheries. During summer months, temperatures fluctuate from 45 degrees to 72 degrees in a 24-hour period. During winter months, reduced flows could cause significant loss of fry and juvenile trout.

Bjornn (1971) concluded low temperatures induce fish to seek shelter in the substrate. Such behavior affords protection against predation and downstream displacement. Fish may move downstream if suitable winter cover is unavailable. Bjornn (1971) concluded the amount of winter cover plays a major role in regulating the number of fish overwintering in streams.

This information coupled with conclusions concerning regulated flushing flows in gravel bed rivers for channel habitat maintenance, indicates that regulated low flows not only during the summer but also during the winter months will significantly impact fry and juvenile survival. The elimination of abrasive flood flows and a new river regime of stable flows between September and May have resulted in increased riparian vegetation.

The primary concerns related to sand and silt accumulation in the gravel are the effects on spawning, survival, rearing, and wintering over of juveniles in the substrate. Sand in the interstices of the gravel is not by itself a serious problem unless it occupies over 35% of the void space (Fredericksen 1980). But a high interstitial sand content traps silts and clays that can be harmful to eggs and fry even in small quantities by lowering intra-gravel permeability and the supply of dissolved oxygen. The consequence may be lower survival and stunted size of fry (Tagart 1976).

In natural stream systems, occasional peak flows occur with sufficient energy to move gravels and cobbles, releasing the trapped fines. Because these natural flushing flows are eliminated, the gravel interstices throughout much of the river have filled with sand and silt thereby decreasing the cover for fry.

Algae growth, stimulated by nutrients has occurred on the fine sediments and caused fine silt and clay to collect and form a cemented layer or crust. It is impossible for juvenile fish to find cover or overwinter in this substrate, and spawning is greatly reduced. (Nelson 1987).

Sedimentation and compaction have also adversely affected the production of fish food organisms. Benthic invertebrates require small interstices between gravel for shelter from water velocities and they cannot survive and reproduce without this habitat.

According to historic data and discussions with local fishermen, a warm water fishery has existed for several years in the lower portion of the river. A list of species provided by CDOW indicates that the most common warm water fish in the lower portion of the river are channel catfish, yellow and black bullheads, bluehead sucker, flannelmouth sucker, and roundtail chub.

The majority of warm water fish species occur below Joe Davis Hill (R.M. 122). This primarily may be due to a change in water quality, waterflow, and channel bottom character. Above R.M. 122, the river channel is generally steeper gradient with small rapids, clear water with cobble and boulder bottoms. Below R.M. 122, the gradient of the river channel flattens, water quality is predominantly turbid, and the river bottom is silty with mixed cobble.

## 2) Nongame Fisheries

A rather complex and widespread nongame fishery exists within the Dolores River corridor. These diverse populations interact with all aspects of the riparian and aquatic system and represent one of the major cornerstones for

ensuring biodiversity within the river corridor. Such species as the mottled sculpin, speckled dace, and sand shiner utilize a variety of food sources. They feed upon aquatic vegetation, algae, surface and subsurface water insects, and egg masses deposited by amphibians and other fishes.

This fishery includes bluehead sucker, flannelmouth sucker, common carp, speckled dace, roundtail chub, mottled sculpin, longnose sucker, fathead minnow, and red shiner.

Species such as the roundtail chub, bluehead sucker, and the flannelmouth sucker have adapted themselves to certain highly specialized habitat parameters. Because of this, the distribution of these species has been reduced in this watershed since the early 1940's. These fish require areas that are adjacent to fast moving waters. They prefer to concentrate in swirling pools forming small groups to move into the faster moving waters to feed. The young of the year prefer shallow, fast-moving water and will tend to concentrate in eddies and back water flows. The young feed on small insects and algae films, while older fish will take both terrestrial and aquatic insects along with small amphibians. Adults are also known to prey on any variety of small fish available.

The control of high flows and the blockage of historical spawning routes have eliminated some species from the upper tributaries of the Colorado. Also, the introduction of exotic game fish such as smallmouth bass and rainbow trout into the Colorado and tributaries such as the Dolores has caused competition for habitat and significantly increased the amount of predation occurring upon native species. Because of the reduction in numbers and distribution of these species in a relatively short period of time, little or no information is known about the habitat requirements for these species. Since most of these species require optimal water temperatures, sustained flows released from the bottom of the reservoir pool where water temperatures average below 50 degrees could severely impact the majority of these species.

#### d. Amphibians and Reptiles

Very little data has been collected concerning the distribution and abundance of amphibians and reptiles within the Dolores River corridor. However, existing data does indicate that certain isolated areas act as a refuge for species not commonly found throughout the Colorado Plateau. Also, distribution of certain species appears to be scattered. A certain amphibian or reptile may occur in one portion of the corridor and then be absent for several miles before reappearing. The direct cause of this scattered distribution is not known.

##### 1) Amphibians

Such species as Tiger salamander, western spadefoot toad, bullfrog, and woodhouse toad can be found in several areas along the river. Habitat for these species appears to be quite varied. Other species such as canyon treefrog, northern leopard frog, and red-spotted toad require specialized or restricted habitat. The northern leopard frog is found in the upper portion of the canyon. The canyon treefrog is scattered throughout the river corridor, and it can be found in riparian forests and isolated pockets of dense vegetation. The more stable populations appear to be in isolated pockets within side canyons on the Dolores. Areas such as Bull Canyon, Spring Canyon, and La Sal Canyon represent key areas for the canyon treefrog and the red-spotted toad.

##### 2) Reptiles

Major reptiles found within the Dolores River corridor are the collared lizard, leopard lizard, sagebrush lizard, common tree lizard, plateau striped whiptail, western terrestrial garter snake, western rattlesnake, bullsnake, side blotched lizard, and western whiptail. These species are widely distributed throughout the river corridor. The majority of species found in the area are adapted to a drier climate and prefer rocky sites. Other species that are uncommon to the area but occur in some of the more vegetated sites



which resemble riparian communities are the racer, common kingsnake, night snake, pine-gopher snake, black-necked snake, longnose snake, western skink, western whiptail, corn snake, and the western black-headed snake. These species require a wetter climate and some feed upon aquatic species. Because of these specialized requirements, their distribution within the river corridor is limited to that area of vegetation most heavily influenced by water.

e. Threatened and Endangered (T&E) Species

The U.S. Fish and Wildlife Service has provided BLM with the following list of Federally and State listed threatened and endangered species which are known to occur, or have the potential

Bald Eagle	<u>Haliaeetus leucocephalus</u>
Black-footed ferret	<u>Mustela nigripes</u>
Peregrine falcon	<u>Falco peregrinus</u>
Gray Wolf	<u>Canis lupus</u>

to occur within the Dolores River corridor. Also, the BLM has recognized the State's designation of endangered wildlife. Species officially listed by the Colorado Division of Wildlife will be provided protection and conservation of habitat and assured that actions funded, carried out, or authorized by BLM do not contribute to the need to list any of these species.

Bald Eagles:

Bald eagle use of the river corridor occurs primarily during the winter. Extensive BLM inventories of this river corridor in 1979 and 1980 resulted in very few bald eagle sightings, and the BLM at that time classed the Dolores River as a "No use" area for wintering bald eagles. Since that time, bald eagle use of the river has been monitored by the BLM, and the number of wintering bald eagles appears to be increasing.

Two winter roost sites have recently been located. Winter roosting appears to be concen-

centrated in the vicinity of Bradfield Bridge and above Dove Creek pump station.

Bald eagle activity begins as early as late October with sightings of immature birds along the corridor. By early December, most wintering birds have arrived, and they are usually seen moving up and down the river. Wintering bald eagles begin to leave as early as March and are usually gone by mid April.

A historic nest site was located during the 1989 field season near the confluence with Disappointment Creek. During the 1989 field season, a pair of bald eagles were routinely observed along the portion of the river from Bradfield Bridge to Slick Rock, Colorado. Gerald Craig, Raptor Biologist with CDOW, feels there is a great probability that bald eagles will begin to nest in the corridor within the next four years.

Peregrine Falcon:

Peregrine falcon populations have increased substantially within the corridor since 1980. There was one active eyrie in 1980 and four known eyries by 1987, as well as two other possible eyries. CDOW biologist, Gerald Craig, expects this population to continue to expand to fill the available habitat. At saturation, eyries would be located three to four miles apart.

Peregrines are observed in the corridor as early as March and will stay through September. Peregrines have been observed around Steamboat Hill and Pyramid Park and there do not appear to be known nesting pairs located elsewhere on the river.

Black-footed Ferret:

Historically, the black-footed ferret occurred throughout Colorado. Literature and recent field studies document a close association between prairie dogs and black-footed ferrets. Prairie dog populations were once quite abundant throughout the southwestern part of the state. However, eradication efforts employed during the 1950's have greatly reduced the

present range of prairie dogs. Scattered populations of prairie dogs are found throughout Disappointment Valley, Big Gyp Valley, Dry Creek Basin, and Monogram Mesa.

We are unaware of any historic sightings or collections of black-footed ferrets in this portion of the Dolores River drainage.

No recent surveys for black-footed ferrets have been conducted in this area. Because of the scattered and rather low density of prairie dogs within this area, it is highly unlikely that black-footed ferrets would occur on the areas covered by this plan.

#### Gray Wolf:

The gray wolf has a historical range which includes a significant portion of the river corridor.

Little is known about the present distribution of the gray wolf, but recent studies have not documented occurrence in any western state south of Montana.

#### f. Federal Candidate Species

Along with the above Federally listed species, the Fish and Wildlife Service has provided BLM with a list (as shown below) of candidates for official listing as threatened or endangered. Although no legal protection under the Endangered Species Act is provided for these species, the BLM through its own policy has established regulations which require that all actions authorized, funded, or carried out do not affect habitat needs for candidate species or contribute to the need to list any such species as threatened or endangered.

North American Lynx	<u>Felis Lynx canadensis*</u>
Southwestern Otter	<u>Lutra canadensis sonorae*</u>
Kachina Daisy	<u>Erigeron kachinensis</u>
Paradox Lupine	<u>Lupinus crassus</u>

\* The Colorado State List identifies these as State Endangered; it does not specify the southwestern subspecies of otter.

#### North American Lynx:

Little information is available concerning the present distribution of lynx in Colorado. Historically, North American Lynx were widely distributed throughout Colorado and the southern Rocky Mountains. The upper portion of the river corridor provides excellent habitat for such species. Because of the species preference for seclusion, lynx could be present as a winter resident or during early spring as a casual forager.

#### Southwestern Otter:

The entire Dolores River was once habitat for the southwestern otter. As early as 1830, trapping of otter along the Colorado Plateau had significantly reduced the distribution of southwestern otter. Continued trapping and pollution of rivers and streams from hard rock mining is believed to have almost caused the extirpation of the species by 1900 throughout Colorado. Limited sightings of southwestern otter occurred along the Colorado River drainage until the late 1940's. It is unknown whether they were completely extirpated from the tributaries of the Colorado River or not.

#### Colorado State Listed River Otter:

During the preparation of the San Juan/San Miguel RMP (September 1985), a recommendation was developed and carried forward to allow for the reintroduction of river otter into the Dolores River. In May 1988, CDOW and BLM entered into a Memorandum of Understanding for the reintroduction of river otters into the Dolores River.

To date, 19 river otters have been introduced into the Dolores River just above Snaggletooth rapids. Otters for reintroduction were obtained from Oregon and Alaska. The introduced population is not considered as the same species that once occupied the Dolores. The introduced population has been observed as far down stream as the confluence with Disappointment Creek and as far up stream as Five Pine

Canyon. It is believed that this population utilizes a greater area; however, this cannot be confirmed to date.

Habitat preference by the introduced population appears to be for beaver den sites within slower moving water. Selected den sites are usually on steeper banks with heavy willow growth that provides root structure and soil holding capabilities.

The initial data provided by CDOW indicated that river otters would almost exclusively feed on slower moving nongame fish and catfish. The river otters trapped in Oregon and Alaska fed primarily on trout and salmon. When released into the Dolores the otters were observed feeding on a variety of species; however, within a short period of their introduction, their diets changed almost exclusively to crayfish.

Home range or territory of these otters varies greatly from season to season. During the winter, the otters appear to move only short distances from den sites. When high flows return to the river in early spring and summer, the otters will move great distances during a 24-hour period. Once these high flows drop off, the otters appear to return to a home range similar to the one occupied during the winter months.

Historic data on river otters indicates that nursing dens are selected in areas where banks are steep and access to the den is well above high water mark. There is some indication that entrances would be well out of water possibly in the dense stands of willows growing along the bank. It is suspected that this is done to protect the nursing den from any possible flooding. No reproduction of the introduced population has been documented to date. All introduced otters have been implanted with radio transmitters and are monitored on a weekly basis. BLM has authorized CDOW to introduce up to 30 otters into the Dolores River.

Kachina Daisy:

This species is known to occur in seeps and shaded alcoves of otherwise dry canyons. The species usually creates a hanging garden effect. Because of its rareness and remoteness of habitat sites, the species is considered extremely rare in Colorado (O'Kane, 1988). New populations have been located in recent years. Because of its association with Mimulus eastwoodiae, areas such as Bull Canyon, Summit Canyon, Spring Canyon, Coyote Wash, La Sal Canyon, and others are excellent habitat sites for these species.

Paradox Lupine:

This species is known only from western Montrose County where it grows 4500 feet to 5500 feet in elevation. It is usually found growing beneath junipers on fairly open ground but may also be found in stands of mixed pinyon and juniper. Soils are usually sandy and are derived from the Chinle formation.

Some plants are occasionally found on loamy to clayey soils and even on adobe hillsites. This species is recognized by its succulent herbage and low growing posture (O'Kane, 1988).

## 11. Recreation

As noted in Section I.B. Background, the planning area includes the Dolores Canyon WSA, the Dolores River SRMA, and approximately 94 miles of river recommended for "wild and scenic" designation. BLM's 1985 San Juan/San Miguel RMP also included off-road vehicle (ORV) restrictions covering public lands within the DRCMP planning area. ORV Designation Order #CO-030-8601 (published in the Federal Register in September 1986 - see Appendix 4). formally closed the entire WSA to ORV use, as well as closing that portion of the SRMA between Cahone and Secret Canyon. Also, the balance of the SRMA was designated as limiting ORV use to designated roads and trails.

The DRCMP boundaries encompass over 50,000 acres of public lands offering a wide variety of recreation opportunities. Although whitewater boating has historically been the most notable and widespread use of the river, the planning area also offers outstanding opportunities for hiking, climbing, photography, nature study, hunting, canoeing, camping, picnicking, and (more recently) fishing. Scattered cultural sites and unique wildlife species (including mountain lions, peregrine falcons, desert bighorn sheep, and river otters) enrich the recreation experience opportunities afforded even the short-term, casual canyon visitor. However, these resources may also be particularly sensitive to human disturbance.

As a result of the Bureau of Reclamation's 1977 Dolores Project Definite Plan Report, developed river access sites are scheduled for construction at Bradfield Bridge, Mt. Sheep Point, Little Gypsum Valley, and Bedrock. When finished, these sites will offer parking, water, toilets, some camp spaces, and boat ramps. The first site, to be developed at Bradfield Bridge, is scheduled for construction in 1990. The other sites should be finished during the following two years. Meanwhile, BLM maintains river registers at Bradfield Bridge, the Dove Creek pump station access, Slick Rock, Little Gypsum Valley, and Bedrock. A temporary boat ramp and parking area have been graded off at Bedrock, and a temporary toilet vault has been placed at the Bradfield Bridge put-in.

With controlled water releases from McPhee Reservoir, boatable flows normally occur over several weeks (usually late April thru early June) in an average snowpack year. BLM has only recently begun accumulating accurate private use data, but the recent rapid increase in commercial use seems to indicate an overall steadily rising demand for boating trips on the Dolores River. The recent development of a self-sustaining trout fishery between the dam and Dove

Creek should add pressure for fishing float trips as well.

In 1984, the first year of Montrose BLM's SRP program, seven commercial outfitters received Dolores River permits. As reservoir-filling at McPhee reached completion and predictable whitewater flows materialized, user numbers increased the next few years. BLM issued 24 SRPs in 1985, 25 in 1986, and 33 in 1987. Commercial user-days also swelled, from approximately 2800 in 1985 to over 5000 in 1987. This rapid increase contributed to BLM's funding to initiate formulation of a management plan for the Dolores River in early 1988. Associated with the initial planning stages was a moratorium on commercial use for the 1988 and 1989 seasons. BLM also entered into a cooperative agreement with Arizona State University (ASU) to conduct a recreation study of river floaters, both private and commercial. Part of BLM's goal was to find out if post-McPhee Dam use differed noticeably from pre-dam use. The 1988 ASU study was structured very similarly to an earlier river study, described below.

In 1980, prior to construction of the McPhee Reservoir and Dam, the North Central Forest Experiment Station of the U.S. Forest Service conducted on-site interviews and followup mail surveys with several hundred Dolores River boating recreationists. This project was part of the much broader-based National River Recreation Study which researched river recreationists nationwide. Responses to questionnaires focused on characteristics of visitors and their respective river trips, and visitor opinions and preferences.

Although 1988 flows were much lower than normal, ASU was able to collect data from 372 boaters who floated the Dolores that season. Similarities and differences among the study results follow as well as observations gleaned from BLM records and personal experiences:

### a. Characteristics of River Trip

#### 1) Upper River (Bradfield Bridge to Slick Rock)

Although kayak use has increased somewhat in proportion to raft use, rafts generally still account for about 80% of all watercrafts on this section of river. As might be expected, raft usage among commercial groups is about 10-15% greater than private groups.

Most visitors (about 56%) spend two nights on the river. A greater proportion stayed beyond two nights in 1988 (16%) compared to 1980 (2%). A greater percentage of privately-outfitted boaters made one-night trips in 1980 (37%) than did commercial boaters (21%).

Commercial groups tend to average roughly twice the number of persons (12 or 13 per group) as private groups (5 or 6 per group).

#### 2) Lower River (Slick Rock to Bedrock)

Raft usage has proportionately decreased in 1988 (63% of all crafts) compared to 1980 (89%). More visitors in 1988 used kayaks and inflatable kayaks (28%) and canoes (7%). However, within the commercial sector, rafts in 1988 still accounted for 96% of all crafts used. Among private boaters in 1988, rafts accounted for 50% while kayaks and inflatable kayaks made up 37% of all crafts used.

As on the upper river, most visitors (65% in 1988) spent two nights on the river. Again, a greater proportion stayed beyond two nights in 1988 (30%) compared to 1980 (15%). Commercial groups were more likely to stay beyond three nights than private boaters.

Commercial trips tend to average 10 or 11 persons per group while private trips average 6 per group.

### b. Characteristics of Visitors

#### 1) Upper River (Bradfield Bridge to Slick Rock)

About 60 to 70% of all boaters reside in Colorado. Another 16% hail from New Mexico, Utah, or Arizona. In 1988, visitors came from 21 states scattered from coast to coast, as well as from Alaska. Eighty-five percent of repeat visitors in both 1988 and 1980 were Colorado residents.

In 1988, 53% of visitors were 31 to 45 years old and 16% were 26 to 30. This compares to 36% being 31 to 45 and 37% being 26 to 30 in 1980. More visitors in 1988 had at least four years of college (70%) than in 1980 (49%).

Approximately 61% of boaters were floating this river section for the first time in 1988, compared to 70% in 1980. In both years, privately outfitted visitors had larger percentages of repeat visitors (49% in 1988, 33% in 1980) than did commercial groups (30% in 1988, 27% in 1980).

#### 2) Lower River (Slick Rock to Bedrock)

About 65% of all boaters reside in Colorado. Utah accounts for another 12%. Repeat visitors in 1988 were 60% Colorado residents and 23% Utah residents, compared to 83% and 12% in 1980.

Approximately 45% of visitors in both 1988 and 1980 were 31 to 45 years old. Roughly 10 to 12% were over 45. In 1988, 80% of users had at least four years of college.

Approximately 60% of boaters were floating this river segment for the first time in 1988, compared to 65% in 1980. As on the upper Dolores, privately outfitted visitors had larger percentages of repeat boaters (48% in 1988, 35% in 1980) than did commercial groups (21% in 1988, 32% in 1980).

#### c. Reasons for Visiting the River

In both 1988 and 1980, visitors to either section of the Dolores most desired running rapids, viewing scenery, and peace and calm as preferred activities or experiences. These preferences tend to remain the same when comparing rafters to kayakers, commercials to privates, and first timers to repeats.

#### d. Problems Encountered by Visitors

In 1980, river users listed the number one problem as inadequate toilet facilities at put-ins and take-outs. Too few drinking water sources, and litter on river banks were other problems, though not nearly as prevalent. Crowding on the river and at campsites was generally not perceived as a notable problem. In 1988, the number one problem for all users was low water. Excessive fire rings and lack of toilets at access points were more of a problem to upper Dolores boaters than to lower Dolores boaters (although lower Dolores visitors noted a greater problem with too few toilets between access points). Campsite deterioration did not appear to be too great of a problem on either segment, but overcrowding of campsites was more evident on the lower segment than on the upper.

#### e. Resource Impacts

In both 1980 and 1988, about 75% to 80% of visitors to both river segments felt that the river environment was not being damaged by recreational use. In 1980, approximately 90% to 95% of visitors felt that the river corridor was in good condition. This satisfaction decreased a bit to 85% to 90% in 1988. Visitors perceived a slightly worse condition of the lower Dolores than the upper segment in both years.

While nearly all kinds of damage were rated noticeable by less than 20% of visitors, campsite overuse appeared to be the most prevalent problem in 1988, while human waste and litter problems ranked slightly higher in 1980. Fire rings were also noted by about 15% of the boaters in 1988.

#### f. River Use Levels and User Conflicts

Overall for both 1980 and 1988, 20% to 30% of boaters felt there were too many people on the river, and about 10% to 20% felt there were too many at camps. In 1988, commercial users were more likely to feel crowded on the upper Dolores, yet less likely on the lower Dolores when compared to private boaters.

In both 1988 and 1980, nearly 50% or more of the visitors supported restricting the number of people using the Dolores River at any one time, while 20% to 30% opposed such an action. Opposition decreased slightly in 1988 compared to 1980.

In both years and for both river segments, roughly 90% of visitors did not feel that conflicts exist between different groups of river users.

#### g. Possible Management Actions

Management actions strongly supported by 1988 visitors include packing one's own trash and prohibiting motorized watercraft on the river. Off highway vehicle restrictions were also favored quite highly.

Actions opposed by 50% or more visitors in 1988 include prohibiting wood fires, assigning campsite locations, providing more public access points to the river, providing toilets along the river, and assigning launch times to groups.

Most visitors favored temporarily closing heavily-used sites for rehabilitation and restricting the number of people using the river at any one time. A few more people supported requiring permits for all visitors than those opposed to such a requirement; however, slightly more people opposed requiring user fees for all visitors than those supporting such a policy.

In 1988, most visitors favored a longer season with 1200 cfs average flow over a shorter season with 3000 cfs average flow. Somewhat surprisingly, kayakers indicated a greater preference for the longer season than did the

rafters. Similarly, private boaters favored it more than did commercial boaters.

#### h. General Satisfaction of Visitors

In 1980, 60% of upper Dolores visitors felt managers were doing a good job managing the river; 46% of lower Dolores visitors shared that feeling. In 1988, the figures rose to 62% and 70%, respectively.

### D. Major Issues

In the spring of 1988, a broad range of issues was identified by BLM, the general public, and the 12-member Dolores River Task Force (assembled by BLM to represent diverse public interests relating to future management of the river corridor). These issues can be generally categorized as relating to: a) carrying capacity/use allocations, b) protection/enhancement of the biotic community, c) visitor needs, d) regionally or nationally significant resources of the Dolores River, and e) multiple-use opportunities and conflicts.

#### 1. Carrying capacity/use allocations

Many people voiced concern that BLM should properly manage boating use to avoid adverse peaks which could degrade one's social experience as well as the river environment itself. Related to concerns over too many groups per day and people per group were comments about private/commercial use allocations. Various people noted that overall use could be better spaced out throughout the boating season; people also noted that different people desire different experiences while floating the Dolores River, and that user desires tend to change with the different river segment being travelled (particularly the Bradfield Bridge-to-Slick Rock vs. Slick Rock-to-Bedrock segments). Allocation issues also include questions concerning permits and user fees--who needs them, when, what amounts, at what periods in the season, etc.

#### 2. Protection/enhancement of the biotic community

Because of widely-recognized values attached to riparian areas, certain wildlife and plant species, and the special management potential offered by the Dolores River corridor in particular, many people have cited concerns that BLM adequately manage these components not only to sustain existing populations and communities, but also to, in some cases, enhance the existing situation. Of special concern are endangered species protection, management of the developing fishery below McPhee Dam, wildlife/recreationist conflicts, and overall recreationist impacts on the riparian community. Other issues include hunting and fishing regulations, introduction or reintroduction of "new" species (such as river otters and desert bighorn sheep), and noxious weed control (especially leafy spurge).

#### 3. Visitor needs

Visitor needs can generally be categorized as relating to health and safety provisions, information dispersal, and provision of adequate recreation opportunities and accompanying facility development. Health and safety issues for the Dolores River include on-river as well as land-based concerns. Besides the obvious dangers inherent to whitewater boating, BLM must address search and rescue needs, traffic and parking congestion along the road to Snaggletooth Rapid, sanitation needs, and adequate maintenance of developed facilities.

Information dispersal should cover not only the health and safety concerns, but also management policies directly affecting recreationists and orientation materials (pamphlets, maps, informal talks, news releases, etc.) that will further educate the public and hopefully delay the need for more restrictive management actions. Initial scoping meetings for the DRCMP revealed a common public aversion to over-regimentation and too many restrictions. An effective educa-

tional/informational campaign will go a long way toward minimizing such regimentation.

Provisions of recreation opportunities and associated facilities should recognize and avoid unnecessary federal competition with existing private enterprise. BLM should also ensure that proposed developed access sites adequately meet the needs of Dolores River boaters, and BLM must properly maintain such sites once they are constructed. Several of the boating publics stressed the need for "freedom of choice;" that is, any person desiring to float the river should have an equal opportunity to float privately or to travel as a paying client on a commercial trip.

#### 4. National/regional significance of the Dolores River

Many people voiced concern that BLM should properly recognize the regionally, and often nationally, significant features of the Dolores River corridor. Not only is it recommended for wilderness and wild and scenic designations, but it also contains several noteworthy cultural and paleontologic sites. Associated with potential wilderness designation is the question of water rights affected by such action.

#### 5. Multiple-use opportunities and conflicts

The unique diversity of this planning area offers many opportunities for use and enjoyment of

the several resources; however, with this diversity come many conflicts, both existing and potential.

For example, the Dolores River currently offers year-round flows capable of supporting boating and fishing excursions within a corridor boasting rich wildlife and riparian communities. However, optimum timing and magnitude of boating flows are not so optimum for highly valued fishing opportunities. Moreover, too much pressure from any and all types of users would no doubt adversely impact biotic communities. Livestock grazing and gravel or placer mining may also offer expanded use of the corridor's resources, but usually at the expense of other valued resources.

BLM and the general public have identified many other concerns falling within this category. Included are local community economic development opportunities, off-road vehicle use, existing private property and water rights, powerlines and other rights-of-way crossings, motorized water crafts, horseback/hiking trails in river segments currently accessible only by boat, desalinization projects, low-level military flights, and agricultural demands on the water retained in McPhee Reservoir.



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## **II. Management Goals, Objectives and Constraints**

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Objectives and constraints are tied to the general management guidelines prescribed in the 1985 San Juan/San Miguel Resource Management Plan (RMP). Other considerations relate to BLM's recreation and wildlife management policies for Colorado and the Montrose District.

Terrestrial, aquatic, riparian, and T&E species objectives will vary. Because of changes in physiographic character of the river, the management needs for certain portions of the river will also change. Therefore, certain objectives may only apply to specific reaches of the river.

### **A. Overall Goals and Objectives**

Overall goals and objectives for management of the Dolores River Corridor are to:

1. Protect and enhance the natural and cultural resources of the Dolores River Corridor while allowing compatible uses.
2. Maintain or improve the existing quality of riparian and wildlife habitat by identifying and implementing management opportunities and strategies. Determine the present condition and ecological structure of riparian and aquatic communities. Identify areas which provide unique habitat features for species considered relic or unusual to this physiographic region.
3. Provide full protection to threatened and endangered species. Determine distribution of and identify all areas that provide habitat for federally listed, state listed, and BLM sensitive species to ensure the continued existence of such species and the conservation of their habitats.
4. Coordinate with Colorado Division of Wildlife for management of wildlife and fisheries resources within the river corridor.

5. Protect and enhance cultural resource values by identifying significant cultural resources and paleontological sites and perform necessary documentation. Identify and implement appropriate management actions.

6. Conduct planning for the Dolores River within a "regionalized system of rivers" context.

7. Maximize availability of impounded water releases for river management opportunities by coordinating with Dolores Water Conservancy District.

8. Provide for recreational opportunities in the fall and winter seasons in addition to standard spring/summer activities (i.e., boating and fishing).

9. Maintain primitive and semi-primitive experience opportunities by limiting and/or distributing visitor use and commercial guide/outfitter use.

10. Protect those public lands which are utilized intensively as recreational sites by exploring the need for and feasibility of withdrawing from mineral entry.

11. Develop recreation sites as prescribed in the Dolores Project ES, the Dolores River Downstream Site Report (as modified), and in accordance with BLM's MOU with Bureau of Reclamation and U.S. Forest Service.

12. Minimize potential conflicts with recreational use of public lands by working closely with private landowners and users. Maintain options to develop Bureau of Reclamation funded sites if private enterprise chooses to close area to public.

13. Ensure consistent and/or complementary management of adjacent lands, especially in terms of commercial use and facility maintenance/management by coordinating with the U.S. Forest Service and the Lone Dome Management Plan.

14. Reaffirm BLM's support for the inclusion of the Dolores River into the Wild and Scenic Rivers System (as per recommendation in the 1976 Dolores River Wild and Scenic River Report).

## **B. Management Unit Objectives**

### **1. Unit I**

(Disappointment Creek to Gypsum Valley Bridge) and (Bedrock to Montrose/Grand Junction District Boundary).

This unit encompasses approximately 12,000 acres of the SRMA.

These units, on public lands, are to be managed to provide a naturally appearing environment with human evidence subordinate to the natural scene. Concentration of users is moderate with encounters with other users commonplace. Resource modification and utilization of natural resources are evident, but generally harmonize with the natural environment.

The BLM will coordinate with landowners near Slick Rock to ensure that the public will always have an opportunity for river access in the Slick Rock locality.

Location of rights-of-way, utility corridors, management facilities, and other surface disturbing activities would be favored in these units over placement in Unit III, Unit II, or Unit IV when applicable. Motorized vehicle use is allowed.

Recreational activities in these units include river running, car camping, ORV activities, mountain biking, picnicking, hunting, hiking, photography, viewing scenery, nature study, and horseback riding.

The Disappointment Creek to Gypsum Valley Bridge will be managed consistent with criteria used to recommend "Recreational" classification status as per findings in the 1976 Dolores River Wild and Scenic Rivers Study Report.

Frequency of managerial contact with visitors is presently low.

### **2. Unit II**

(Dove Creek Pumps to Disappointment Creek)

This unit encompasses approximately 9159 acres of the SRMA.

This unit is to be managed to provide a predominantly natural or naturally appearing environment. Human evidence is present but generally subtle. Motorized vehicle use is permitted on designated routes. Concentration of users is low to moderate, but there is often evidence of other users. Group encounters should not normally exceed 10 per day. On-site interpretive facilities, the low standard road and trails, trailheads and signing should stress the natural environment in their design and be the minimum necessary to achieve objectives.

If utility corridors, rights-of-way, and other surface disturbing projects are proposed within this unit, efforts will be taken to minimize and reduce the impacts on the natural environment when practical. Recreational activities occurring in this unit include car camping, river running, fishing, picnicking, hunting, hiking, mountain bicycle riding, photography, horseback riding, nature study, and viewing scenery.

This unit will be managed consistent with criteria used to recommend "Scenic" classification status as per findings in the 1976 Dolores River Wild and Scenic Rivers Study Report.

Frequency of managerial contact with visitors is presently low.

Specific wildlife objectives:

- To identify all riparian and key wildlife areas which are in less than good condition. Initiate management actions to improve all areas in less than good condition whenever feasible.

- Monitor all key areas to maintain an overall condition class rating of good.
- Determine the present distribution of aquatic and macroinvertebrate species. Develop and implement actions to enhance conditions whenever possible.
- Monitor selected aquatic species to determine which factors may be influencing habitat conditions or restricting species from maintaining viable populations.
- Survey and map all areas which provide unique habitat features for species of plants and animals considered as relic or unusual to this area of Colorado.

### 3. Unit III

(Bradfield Ranch to Dove Creek Pumps)

This unit encompasses approximately 7063 acres of the SRMA.

This unit is to be managed to be largely free from the evidence of humans. Motorized vehicle use is prohibited within this unit. Any project designs should stress protection of natural values. The area will be managed to maintain an environment that offers some degree of risk and challenge with infrequent contact of other users (normally less than 10 group encounters per day).

Backcountry use levels and management of the resources will be dependent on maintaining a natural ecosystem. The consumption of renewable resources will be subject to protection of backcountry recreation values. Recreational activities occurring in this unit include river running, hiking, backpacking, horseback riding, picnicking, hunting, camping, viewing scenery, photography, fishing, and nature study.

This unit will be managed consistent with criteria used to recommend "Scenic" classification status as per findings in the 1976 Dolores River Wild and Scenic Rivers Study Report.

Frequency of managerial contact with users is very low.

Specific wildlife objectives:

- Identify all riparian and key wildlife areas which are in less than good condition. Initiate management actions to improve all areas in less than good condition whenever feasible.
- Monitor all key areas to maintain an overall condition class rating of good.
- Determine the present distribution of aquatic and macroinvertebrate species. Develop and implement actions to enhance conditions whenever possible.
- Monitor selected aquatic species to determine which factors may be influencing habitat conditions or restricting species from maintaining viable populations.
- Survey and map all areas which provide unique habitat features for species of plants and animals considered as relic or unusual to this area of Colorado.

### 4. Unit IV

(Gypsum Valley Bridge to Bedrock)

This unit encompasses approximately 28,539 acres and includes the Dolores River Canyon Wilderness Study Area.

This unit is to be managed to be essentially free from human evidence. Motorized vehicle use is prohibited within this unit. The area will be managed to maintain a high probability of experiencing isolation from the sights and sounds of others, with not more than 3 group encounters per day between users. In addition, the area will be managed to ensure an environment which offers a high degree of risk and challenge, closeness to nature, and self-skills on the part of the user.

Backcountry use levels and management of resources will be dependent upon maintaining natural ecosystems which allow for natural ecological changes. The consumption of renewable resources will be subject to the protection of backcountry recreation values. Recreational activities occurring in this unit include river running, fishing, hiking, backpacking, horseback riding, hunting, picnicking, camping, viewing scenery, photography, and nature study.

The unit will be managed consistent with criteria used to recommend "Wild" classification status as per the findings in the 1976 Dolores River Wild and Scenic Rivers Study Report.

Continue to manage the Dolores River Canyon Wilderness Study Area (CO-030-290) consistent with the BLM's "Wilderness Interim Management Policy and Guidelines for Lands Under Wilderness Review" (IMP) until such time as Congress acts on the Department of Interior recommendations.

Frequency of managerial contact with users is very low.

### **C. Constraints**

1. Allow no sales of wood products in the Dolores River SRMA.
2. Management of the Dolores Canyon WSA will follow non-impairment standards until Congress acts on wilderness designation or non-designation of the area.
3. Any mineral leasing operations from Bradfield Bridge to Disappointment Creek and from Big Gypsum Valley to one mile above Bedrock will include no-surface-occupancy stipulations.
4. Management actions will adhere to requirements of the 1966 National Historic Preservation Act as Amended, the 1906 Antiquities Act, FLPMA (1976), and the Archeological Resources Protection Act of 1979, in order to protect

and manage archeological, historic, sacred and paleontological resources.

5. Proposed management actions must comply with the requirements of the Endangered Species Act. The Bureau will conduct species clearances on all Bureau authorized actions and enter into consultation with the U.S. Fish and Wildlife Service when appropriate.
6. Formalized in 1986 as a result of RMP decisions, off-road vehicle (ORV) designation order #CO-030-8601 restricts vehicle use to designated roads and trails in that portion of the SRMA between Secret Canyon and Gypsum Valley; it prohibits ORV use in the entire WSA and in the SRMA between Bradfield Bridge and Secret Canyon.
7. Executive Orders 11990 and 11988 prohibit placement of structures in floodplains and require that planned projects consider natural and beneficial values of affected floodplains.
8. Montrose BLM maintains a district-wide 14-day limit on campsite use by any one group or individual occupying a given site.
9. Management actions tied to Dolores River flow volumes and daily flow rates are constrained by upstream water commitments by BOR and the Dolores Water Conservancy District.
10. Existing private property holdings along the river corridor may limit certain proposed BLM management actions.
11. Management actions should consider potential impacts to future Wild and Scenic River Act designation possibilities. Current Federal agencies' classification recommendations include "Scenic" rating from Bradfield Bridge to Disappointment Creek, "Recreational" from Disappointment to Little Gypsum Valley, and "Wild" from Little Gypsum Valley to Bedrock.

12. The San Juan/San Miguel RMP calls for reestablishment of river otters and bighorn sheep along the Dolores River.

13. RMP prescribes Visual Resource Management (VRM) Class II guidelines for management actions between Bradfield and Disappointment Creek; VRM Class III between Disappointment and Gypsum Valley Bridge.

14. RMP prescribes management for walk-in recreation opportunities from Bradfield to the Dove Creek pump station, four wheel from the pumps to Disappointment Creek, highway-rural from Disappointment to Gypsum Valley Bridge,

and back country from Gypsum Valley Bridge to Bedrock.

15. RMP prescribes management for the upper Dolores River and its tributaries. Objectives to protect or improve aquatic and riparian habitat will become part of all activity planning processes. Management techniques will be used to minimize degradation, maintain, improve, or enhance resource conditions associated with aquatic/riparian habitat.

### III. Management Program

The management program is designed to protect and enhance unique resources of the Dolores River corridor while allowing compatible uses and activities desired by the visiting public. Where potential conflicts or resource impacts may occur, BLM will stress education of users before implementing more restrictive, use-limiting measures to stay within carrying capacities.

As part of the planning process, BLM met several times with the Dolores River task force in order to attempt to define carrying capacity indicators and limits. Carrying capacity generally consists of physical, biological, and social limiting factors. The river corridor will sustain certain levels of visitor use before its natural resources (both physical and biological) show signs of deterioration. Similarly, certain human use levels will be accommodated prior to exceeding social capacity limits. In other words, at some point the canyon could become so crowded that visitors' experiences are unacceptably degraded. For the Dolores River, BLM and the task force decided that social carrying capacity limits would likely be approached at lower use levels than the natural resources could actually sustain.

The indicators we decided upon include number of group encounters (80% of the boatable season); number of campsite locations within sight and sound of other campsites (80% of the boatable season); and number of campsites exhibiting heavy, moderate, or low user impacts. The "80%" factor allows some flexibility to accommodate temporary, unusual circumstances - for example, the peak use traditionally witnessed on Memorial Day weekend.

Our next task was to reach a consensus on the maximum group size limits and estimated number of launches per day that could be accommodated within a given carrying capacity. These figures, for each major segment of the Dolores River, are indicated in Appendix 3, under the heading "Preferred." For example, for

the Gyp Bridge - Bedrock segment, BLM and the task force felt group encounters should be limited to three, campsite locations within sight and sound of other campsites should not exceed two, and no camps should exhibit heavy impacts while only two should be allowed moderate impacts. To achieve these goals, group size should be limited to sixteen and estimated number of allowable launches per day could reach three without much risk of hitting the river segment's carrying capacity.

With this explanation in mind, the Dolores River management program consists of the following components:

#### **A. Other Resource Programs**

##### **1. Cultural and Paleontological Resources**

###### **a. General**

Identify all significant cultural resources along the river corridor and in areas where river access brings increases in recreation activity. Evaluate the resources inventoried as to their affiliation and function, age, and condition to the extent possible.

Protect important cultural properties from damage due to recreation activity such as visitation, trampling, camping, unauthorized removal, or vandalism.

Protect important cultural properties from the effects of erosion or controlled fluctuations in river flow.

Develop and interpret the cultural resources and cultural resource setting in the management area for public education, enjoyment, and resource protection.

Periodically monitor significant cultural resources to assess cumulative impacts and track site condition.

Conduct a paleontological overview of geological formations to determine scientifically important and interpretable fossil remains. Remains that are significant scientifically would be protected from unauthorized collection.

**b. Site Specific**

Complete testing at archeological site 5DL1090 to evaluate impacts from access construction to the Bradfield Recreation Site.

Interpret the Bradfield Homestead (5DL1075) and install protective signing.

A late prehistoric or historic Ute wickiup site (5DL1267) needs protection from wood-gathering activities associated with a high-use campsite adjacent to it. Reduction in use or elimination of use at this campsite may provide adequate protection.

Stabilize, map, and interpret 5DL180 and 5DL181 (Kayenta House) near the Dove Creek pump station. There is no campsite here, but sites are visible on the canyon wall and get considerable visitation. The sites are not in good condition and need treatment to preserve their architecture and interpretive value.

Investigate and map several trails that access the river from the rim near the Dove Creek pump station, Pyramid Park, and near the upstream portion of Gypsum Valley. These are actively used by wildlife and likely were prehistoric access routes as well. Investigations would indicate this type of use and could be interpretable and scientifically significant.

Protect and interpret prehistoric Wickiup site (5DL1269) near a high-use campsite.

A geologic fault near the Dove Creek pump station provides a foot route that goes from the river up the east side of the canyon to the rim. This should be investigated to determine if used prehistorically. The geological fault may also be interpretable.

A potential stratified prehistoric rockshelter needs to be tested to determine cultural use and affiliation. Use levels here are low; however, a high-use campsite lies nearby within easy walking access.

A historic mining habitation (5SM1979) has been pillaged in the past for wood and household furnishings. The site currently retains most of its integrity, however, and should be interpreted to give a perspective on historic European use of the river corridor. The theme would be vanadium mining and its effects on the river corridor and regional settlement.

Shaman Cave (5MN72) needs to be tested to determine if intact subsurface deposits exist and what impact camping in this rockshelter has had. Shaman Cave is a popular protected campsite and has been recently vandalized. Fragile pictographs and petroglyphs in the shelter need to be interpreted and a protective message conveyed to recreationalists.

A large petroglyph panel (5MN3195) near Bull Canyon is near a high use campsite and should be interpreted and protected.

Another popular campsite, at higher water levels, is Smiling Scorpion Shelter (5MN73). This site has had reduced levels of on-site camping since the dam was built and river flows lowered. However, visitation levels remain high as a popular campsite lies nearby. Protective measures should be taken to reduce the levels of abrasion to petroglyphs in the shelter. Intensive monitoring is needed to determine if natural forces will adequately protect this site or if restrictions in visitation are needed. Poison ivy has intruded into the shelter area and should be allowed to continue as a protective measure.

Sites at the Coyote Wash campsite could be interpreted. They include a small rockshelter and rock art site. A nearby lithic scatter (5MN75) should be mapped and collected to prevent damage from unauthorized removal. It is not suitable for interpretation. An established hiking trail up Coyote Wash would provide op-

opportunities to view and interpret other cultural areas.

A petroglyph panel (5MN3249) and prehistoric campsite (5MN3202) near Muleshoe Bend should be interpreted and a protective message conveyed to visitors. Site 5MN3202 should be mapped and collected. A rock shelter area at 5MN3202 needs to be tested as it receives considerable recreation use as a campsite, and impacts from this use are not readily identifiable.

The La Sal Creek Petroglyphs (5MN439) need to be protected from continued abrasion from visitors and erosion. They also need to be intensively recorded using enhanced photographic techniques as many are barely visible now.

Dinosaur tracks near La Sal Creek Rapid could be interpreted easily and are visited at moderate levels. Monitoring is also needed to evaluate impacts from visitation and if fossils are impacted, protective measures may be needed.

Triassic fish fossils and armored crocodile fossils near the Bedrock Recreation Site could be interpreted to the public. More investigation on location and research into this fossil locality is needed prior to interpretation. The BLM Geologic Advisory Group has evaluated this area and has recommended that it be designated as a Research Natural Area (RNA). Appropriate steps need to be taken to implement this designation.

Note: Additional measures for site protection or public education will be incorporated into this document as additional inventory and evaluation is completed.

## 2. Wildlife

### a. General

Inventory aquatic and riparian habitats on the Dolores River from Bradfield Bridge to the Montrose District boundary.

On an overall basis, riparian systems will be improved to, or maintained in, good condition. Restoration activity would be initiated on all degraded sites which have good restoration potential.

Apply stipulations and mitigating measures to all Bureau authorized actions to prevent or mitigate habitat degradation.

Identify essential wildlife habitat areas throughout the corridor and monitor them to ensure that downward trends in condition do not develop.

In support of the watchable wildlife initiative, cooperate with the recreation program to develop interpretive material for the river brochure and interpretive signs for the river.

### b. Specific

#### ● Aquatic Wildlife

Inventory fishery habitat within the entire Dolores River segment covered by this plan.

Establish permanent aquatic habitat monitoring sites concurrent with completion of level III aquatic inventories. A minimum of 3 sites will be established in the cold water sections of the river. These locations will be monitored a minimum of once every 5 years. A minimum of 2 sites will be established in the warm water sections. These sites will be monitored a minimum of once every 5 years.

Establish a minimum of 2 macroinvertebrate sampling sites within the cold water fishery area. Three consecutive years of baseline data will be collected; studies will be repeated as needed.

Develop an agreement with the Southwest Regional Office of the Colorado Division of Wildlife to sample fish populations in the Dolores River at 5 year intervals.



- Riparian

Inventory all riparian habitat along the Dolores River, concurrent with the aquatic habitat inventory. All habitat will be evaluated and prioritized for future management actions and monitoring.

Key riparian sites will be monitored using standard Bureau monitoring methods. Changes in current management will be initiated on all sites showing a downward trend in overall condition.

In cooperation with the recreation program, heavily impacted riparian areas such as the boxelder grove at Dove Creek pump station, Bradfield Bridge put-in, Narraguinne Canyon, McIntyre Canyon, Snaggletooth and Pyramid Park will be inventoried and disturbance documented. The recreation and wildlife programs will jointly determine acceptable levels and kinds of use for each site. Specific actions which may be used to improve riparian condition include: designating campsites, restricting vehicle access, road or trail closures, designated vehicle parking areas, and designated put-in/take-out areas.

Determine the species of non-game birds present and their distribution within the river corridor.

Grazing management along the Dolores River will be designed to maintain or improve the existing condition of the riparian community. Authorized livestock use will be managed through the development of specific objectives and management actions incorporated into Allotment Management Plans.

- Terrestrial Wildlife

Provide sufficient habitat to support a population of 300 desert bighorn sheep within the Dolores River corridor. Crucial habitats such as lambing grounds, watering sites, and seasonal concentration areas will be protected through management stipulations and, if required, seasonal closures.

Sensitive time periods for desert bighorn sheep are: lambing season (March-May), breeding season (August-October), and crucial wintering periods (December-February).

Inventory the river corridor to determine key habitat areas for priority species such as golden eagles, waterfowl, and ferruginous hawks.

In cooperation with CDOW, update and map all information concerning the location of big game migration corridors and crucial ranges.

Cooperate with the Colorado Natural Areas Program to have significant areas that may be potentially unique habitat sites such as Bull Canyon, Spring Canyon, and McIntyre Canyon assessed.

In cooperation with CDOW, complete habitat suitability study for Desert Bighorns within the Dolores River corridor. A two-year study will be initiated in 1990 and will identify habitat preference, distribution patterns, associated human impacts, reproductive cycles, and potential conflicts with existing Desert Bighorns in the Dolores River corridor.

- Threatened and Endangered (T&E) Species

Inventory and determine to the extent needed the distribution of federally listed and state listed species and candidates within the Dolores River corridor.

Monitor key sites identified as habitat for federally and state listed species. Through monitoring, determine if ongoing activities are having any impact to species distribution or conservation of habitat for listed species.

As agreed to in the MOU between BLM and CDOW, cooperate in the establishment of an initial population of 30 river otters. After further study, BLM and CDOW will jointly determine the carrying capacity for river otters in the Dolores River.

Assist the CDOW in banding, eggshell collection, and prey surveys for peregrine eyries in the corridor.

In cooperation with the CDOW, continue annual monitoring of wintering bald eagle roost sites in the upper canyons.

Monitor all known sites where federal candidate plant species have been documented. When funding is available, conduct inventories to determine distribution of candidate plant species.

### 3. Grazing

Continue to intensively manage livestock grazing including preparation of Allotment Management Plans (AMP's) where appropriate. Grazing will be managed, as required by RMP, to be compatible with the recreation, wildlife, fisheries, and riparian resources.

### 4. Geology/Minerals

Allow no commercial gravel removal operations from public lands within the planning area. Also, pursue administrative mineral withdrawals for the developed river access sites discussed in section III. G. 1.

While scattered gravel deposits exist on several benches of the river, BLM considers large-scale removal operations to be basically incompatible with the unique recreation/riparian/wildlife values for which the planning area is being managed. There is also a need to control unforeseen and incompatible mineral exploration and/or extraction at the developed recreation sites planned for Bradfield Bridge, Mountain Sheep Point, Slick Rock, Gypsum Valley, and Bedrock.

## B. Land Tenure Adjustments

1. If possible, acquire the John Black property bordering the Dolores River near the Disappointment Creek confluence (T. 43 N., R. 18 W., Secs. 3, 10 and 11).

This acquisition would facilitate more effective management of the river segment from Slick Rock upstream to the Bradfield Bridge. BLM could ensure that future uses of the lands specified would be compatible with other resource values being managed for along this stretch of river.

2. If possible, acquire BOR property near Bedrock (T. 47 N., R. 18 W., Secs. 30 and 31).

Management efficiency could be improved if BLM acquires BOR-purchased lands not utilized in the salinity injection well project. These lands could then possibly enhance the Dolores River WSA and Wild and Scenic River proposal.

3. If possible, acquire private property immediately upstream from the Slick Rock bridge (T. 44 N., R. 18 W., Secs. 30 & 31).

BLM would develop this river access site only if the current privately owned facility at Slick Rock becomes inaccessible or otherwise impractical for general public use. Since Dolores Project mitigation funds will cover design of this access site, BLM will assemble the facility design package as soon as possible, even though actual construction may not be necessary for several years.

If unable to acquire the above site, BLM will develop river access on public lands in the Slick Rock vicinity in order to ensure future public access and meet user needs.

4. Pursue acquisition of scenic and/or conservation easements from willing landowners between Slick Rock and the Gypsum Valley Bridge.

This stretch of river, while bordered by mostly private lands and recommended for "recreation" status under the Wild and Scenic Rivers study, still offers some outstanding recreation opportunities in primarily natural settings. Easements of this type could enhance public boating ex-

periences while not impinging upon private landowners' rights.

5. Acquire an easement for foot traffic up McIntyre Canyon (T. 44 N., R. 19 W., Sec. 13).

This canyon offers the premier hiking opportunity for recreationists travelling on the river between Slick Rock and the Gypsum Valley Bridge. Future trespass problems may arise if access is not controlled to some extent.

6. Coordinate with the town of Dove Creek to repaint the existing pump station structures so as to minimize visual contrast with the natural surroundings.

The current water tank and building are metallic silver-gray in color. Less obtrusive shades of brown or green could be used to achieve greater blending with the rock, earth, and vegetation which form backdrops when viewed from the river.

7. Maintain flexibility to accommodate other currently unforeseen easement, acquisition, or exchange proposals that might offer the BLM opportunity to more effectively manage the recreation and wildlife resources within the Dolores River Corridor.

### C. Off-Highway Vehicles

1. Maintain BLM's ORV Designation Order #CO-030-8601.

This designation, formalized in 1986 as a result of RMP decisions, closes the Dolores Canyon WSA to off-highway vehicle use. It also closes the Dolores River SRMA from the Bradfield Bridge put-in to Secret Canyon. Off-highway vehicle use in that portion of the SRMA between Secret Canyon and Gypsum Valley is limited to designated roads and trails only. All the above restrictions are necessary to protect soil and water and recreation resources.

2. Allow no motorized watercraft in any portion of the Dolores River between Bradfield Bridge and Bedrock.

Although demand for motorized boating on the river has been all but nonexistent in the past, more interest may materialize as the public's recreation desires and preferences change. However, such use in this particular stretch of river is incompatible with the unique recreation opportunities and wildlife resources valued so highly by the visiting public.

3. Allow aircraft landings in the WSA (Gypsum Valley to Bedrock) and the river segment between Bradfield Bridge and Disappointment Creek only in cases of emergencies.

As with motorized vehicle and watercraft use, aircraft landings are incompatible with the present character of the Dolores River corridor. Exceptions would be allowed to deal with life-threatening injuries or threats of immediate and substantial resource damage.

4. Allow no casual vehicle use from a point approximately one mile downstream from Snaggletooth Rapid, to a point approximately one mile upstream from Disappointment Creek, from February 1 to June 30 of each year. When use is allowed (July 1 thru January 31), request all vehicular drivers to register at BLM register boxes, in order to help BLM assess levels of motorized use. If monitoring detects unacceptable physical or biological resource impacts, BLM will institute a year-round closure.

Although an unmaintained, driveable trail parallels the river beyond the Pyramid Park area, uncontrolled vehicle use may disrupt habitat for fish, desert bighorn sheep, and peregrine falcons along this stretch of the river. Such use would also detract from the solitude and naturalness valued by boating recreationists. A seasonal closure would allow occasional motorized tours during low water while preserving fragile springtime peregrine habitat and allowing whitewater trips to continue without needless motorized intrusions. Moreover,

locating the closure downstream from Snaggletooth would still allow vehicular access to those boaters taking off the river after the rapid or to those needing attention after a particularly difficult run through Snaggletooth.

5. Implement on-the-ground road closures at the Bradfield Bridge put-in, the locations noted in item #4 above, and key access points along the WSA boundary.

Unless visual signs and/or barriers are placed at closure points, many visitors may not be aware of particular off-highway vehicle restrictions. As recently as the November 1988 hunting season, vehicle tracks were spotted across shallow river fords several hundred yards downstream from the Bradfield Bridge access site.

6. Allow no mechanized travel within the WSA and the river corridor between Bradfield Bridge and the Dove Creek pump station.

BLM will attempt to preserve outstanding opportunities for solitude away from human sights and sounds by implementing this restriction. Several adjacent areas of public lands offer unique mountain biking opportunities for those people desiring such recreation opportunities.

#### **D. Visitor Services**

1. Develop a waterproof river map and brochure, to include interpretive features, safety points, user regulations, and river etiquette/low-impact camping tips.

BLM will place high priority on an intensive education/information campaign in order to achieve voluntary compliance with Dolores River carrying capacity guidelines to the maximum extent possible before implementing more restrictive (and probably much less popular) measures. A comprehensive river guide, readily available to the general public, is a necessary tool for such a campaign.

2. Continue providing the Dolores River hot-line service and periodic news releases during the boating season.

BLM's hot-line and BOR's news releases have proven to be valuable means of informing the public about flow conditions and notable river regulations, as well as changing conditions which can potentially impact public visitors (e.g., the Williams Draw Road closure during the 1989 boating season).

3. Develop cooperative agreements with local search and rescue groups in order to provide prompt, efficient attention to emergency situations.

Natural environmental dangers are inherent to the river canyon. Injuries or illnesses may result from hypothermia, near-drowning, rock-climbing, hunting, snake-bites, or poison ivy, just to name a few. It is vital that emergency response personnel are readily available, possess adequate skills, and can quickly access all reaches of the river canyon should significant accidents occur.

4. During boating season, conduct weekly patrols of the entire river corridor, using BLM personnel and volunteers. Patrols will be by boat, vehicle, foot and possibly horse travel.

A greater management presence is necessary to educate users, monitor carrying capacity guidelines, monitor unsafe conditions, assist visitors in need of help, and detect unauthorized use, acts of vandalism, etc. Patrols should be geared toward friendly assistance and occasional subtle, non-obtrusive visitor contacts rather than frequent disruptive, regimented, police-oriented confrontations.

5. Starting in 1990, require all boaters to register at respective put-ins.

This action is necessary to furnish BLM with more accurate and reliable data concerning visitor use (group sizes, distribution over the season, total numbers of users and user-days,

private versus commercial use, etc.). It will also serve to help phase in a private permit system when carrying capacity limits are exceeded.

6. Restrict all groups floating from Bradfield Bridge to Gypsum Valley Bridge to 25 persons per group. Groups launching at Slick Rock or Gyp will be limited to 16 persons per group. One WSA float-thru trip (launching above the Slick Rock access) of 16 to 25 persons will be allowed each week, with commercial outfitters and private groups alternating launches. These groups must notify BLM at least two weeks in advance of launching, and the groups must not enter the WSA portion of the river canyon on a Friday or Saturday. Unreserved weekly launches from either sector (commercial or private) will be made available to the other sector.

Upper River, low-water (after June 19) groups will be limited to 12 persons per group.

BLM will implement these limits in order to meet resource and social carrying capacity guidelines. Historically, very few groups have exceeded these numbers in either river segment. While the upper segment has several well-dispersed campsites capable of accommodating fairly large groups, the lower segment has only a very few. Moreover, WSA status in the lower canyon warrants greater protection of the solitude expected by visitors to this area. Although social impacts vary according to individuals making up each group, proximity of one group to another, and each group's size, one can generally assume that a fairly large group (say, 20 to 30 people) will have a significantly more adverse impact on a neighboring party's recreation experience than would a much smaller group (say, 4 to 6 people).

The float-thru policy is intended to allow some flexibility for those few outfitters that have historically run large groups on week-long trips from Bradfield to Bedrock, or beyond.

The low-water limit of 12 persons per group would enhance fishing conditions and solitude

opportunities for fishermen and slower moving floaters, especially since smaller watercrafts (and possibly more of them) would likely be used at low flows.

7. Initially, allocate campsites for all users on a "first come/first serve" basis. Once developed access sites are built and river maps/brochures are readily available to the boating public, request voluntary sign-up for certain campsites via river registers.

User surveys have indicated a widespread distaste for assigned campsites. BLM will rely on voluntary measures as long as possible to achieve adequate spacing and tolerable social encounters. If this tactic fails, BLM will consider more restrictive actions, such as assigning campsites to all groups via a permit system and on-the-ground campsite markers.

## E. Special Area Permits/Allocation of Use

### 1. Overall Allocation Guidelines

River use allocation is based on the management objectives for the river corridor and its recreational carrying capacity/limits of acceptable change. The primary concern of the BLM in river use allocation is to manage for desirable recreation activities which are compatible and consistent with overall river management guidance prescribed in the San Juan/San Miguel RMP, while still protecting and maintaining the natural resources of the Dolores River SRMA. The RMP also directs that the Dolores River will be managed consistent with recommendations from the Wild and Scenic River Study (1976) and be guided by specific ROS classifications. In addition, allocation of recreational use from Gypsum Valley Bridge to Bedrock is managed to ensure an environment which offers recreationists a true wilderness experience.

As mentioned previously, BLM has worked with a public task force since early 1988 to determine carrying capacities and formulate management options for the Dolores River. Social and physi-

cal carrying capacity parameters and estimated target limits for various river segments are noted in the attachment to Appendix 3. When prescribed limits are exceeded, BLM will institute appropriate measures to remedy the situation. Indirect allocation actions (such as education of users or voluntary campsite sign-up) will be initiated and exhausted before direct allocation actions (such as use of reserved campsites or scheduled launch times) are implemented.

BLM, for purposes of intensive river corridor management, has recognized two primary zones along the Dolores River. These zones basically coincide with separate historical floating trip stretches, as well as distinctive zones of geology, vegetation, and hydrology. Zone 1 stretches from the Bradfield Bridge put-in to Slick Rock. Zone 2 stretches from Slick Rock to Bedrock, and includes the Dolores Canyon Wilderness Study Area. (Use beyond Bedrock has been minimal in years past, but will be monitored to ensure non-degradation of resources and visitor experiences.)

River use allocation usually addresses two primary boater groups - commercial and private. Commercial groups consist of outfitters, their employees, and paying clients. All commercial outfitters on the Dolores River must be permitted by BLM. Private groups can be considered non-commercially-outfitted groups. As of 1989, BLM has not required permits for private boaters on the Dolores.

With the recently changing river flows and fisheries emergence, BLM has also broken allocation of use into two separate seasons. The traditional "whitewater" season is characterized by flows normally greater than 600 c.f.s. For planning purposes, it falls within the April 1 to June 18 time period. The "low water" season is an essentially new season for the Dolores and is characterized by flows generally requiring smaller watercraft such as canoes, or hardshell or inflatable kayaks. This season would extend from June 19 to March 31, and users would normally consist of fishermen and day-floaters.

BLM will manage user allocation for the above-mentioned zones, groups, and seasons as follows:

#### **Zone 1 (Bradfield Bridge to Slick Rock)**

##### Whitewater Season (April 1 - June 18)

Beginning in 1991, the guaranteed daily total commercial river allotment will be three launches. Commercial launches will be assigned by the BLM and allocated among 18 multi-year outfitters and 18 annual outfitters who have had previous Dolores River permits. All outfitters will be ranked according to historical years under permit, total historical launch numbers, and total historical user-days, using a weighted ranking formula devised by commercial outfitter representatives on the task force. Total launches allocated to each of the 36 total outfitters each year will range from approximately two to fourteen, depending on an outfitter's weighted rank. No outfitter will be assigned more than one launch on any given day.

Additionally, in 1991, there will be two daily common pool launches available. Pool launches are intended to provide BLM and commercial outfitters some flexibility in meeting changing client demands or river conditions and in accommodating scheduling conflicts. These pool launches would be non-guaranteed from year to year. By September 15th of each year, BLM will determine the following year's available pool, based upon monitoring results and meeting total carrying capacity restrictions. Common pool launches will also be available to both multi-year and annual permittees, using the same weighted ranking system mentioned above.

Though BLM has recently started gathering specific use statistics for private boaters, current historical data is insufficient and somewhat unreliable. Therefore, BLM will monitor all recreation use for 3 to 5 years before making final allocation decisions. At the end of this monitoring period, BLM will determine an equitable allocation system of launches and user-

days for private and commercial boaters. This system will include a common pool of launches and/or user-days accessible to both groups of boaters in order to allow continuing flexibility to accommodate the dynamic nature of Dolores River whitewater opportunities and public needs and demands. The initial estimated private use is about six launches per day, based upon somewhat sketchy BLM use records. BLM will also institute a non-limiting mandatory private boater registration system, beginning in 1990, in order to help gather reliable user data and also to lay the groundwork for eventual limiting permits, should they become necessary. Additionally, such a system will allow BLM to emphasize and help ensure compliance with low-impact and no-trace camping techniques.

If unacceptable resource damage begins to occur or carrying capacity limits are exceeded more than twenty percent of the days of the use season, limiting private permits will be initiated. User fees will be charged with the use of a private special recreation permit system.

BLM, through outfitter stipulations, may schedule commercial launches and/or manage floatboaters' use patterns so as to reduce group encounters. This could include, but may not be limited to, requiring day trips to launch prior to overnight trips, and earlier morning launches camp farther down river than early afternoon launches.

If, even after instituting limiting private permits, reductions in use become necessary (prior to completion of BLM's 3-to-5 year monitoring effort) in order to reduce resource or user impacts, BLM will then cancel the ten lowest-ranked annual commercial permits. This action is intended to both meet carrying capacity objectives and reduce total commercial permit numbers to a more manageable level for the Dolores River. If further use reductions are still necessary, BLM will proportionately reduce each sector's launches based upon average weighted use for the preceding three years. This action would probably be accom-

panied by further cancellation of some or all of the remaining eight annual commercial permits, thereby leaving only multi-year permittees for future seasons. If an increase in launch numbers becomes feasible, BLM will allocate additional launches based on proven demand from one sector of boaters, or the other. Reductions in use may be enacted within one season if carrying capacity is threatened. However, increases or shifts in allocated launches would not occur more often than three years apart, in order to allow BLM sufficient time to discern changing trends in demand. Also, increased use would only be allowed if associated resource impacts are negligible.

#### Low Water Season (June 19 - March 31)

Beginning in 1991, the guaranteed daily commercial allotment will be one launch. Commercial launches will be assigned by the BLM. Commercial "low water" permits are considered as a relatively new use of the Dolores River. BLM will "grandfather" in permits for those outfitters having proven historical permitted use during the late season (i.e., after June 18) at flows of 600 c.f.s. or less. Additional permits, if warranted, will be issued on a combination prospectus and lottery system. Prospectus items used to rate each outfitter's capability and qualifications would include financial capability, previous Dolores River guiding experience, employee qualifications, safety experience and training, previous performance on BLM-managed rivers, type and condition of equipment, and ability to meet desired user service needs during the late, low-flow season. BLM's goal will be to provide the general public with a sufficient number (initially ten) and choice of qualified outfitters to meet the various needs and desires of the recreating public. Current desires seem geared toward float-boating and sightseeing trips and fishing trips.

As during the whitewater season, all boating use will be monitored for 3 to 5 years. Non-limiting permits and/or registration will initially be used for private boaters, with limiting permits phased in when carrying capacity dictates or after

monitoring provides BLM with sufficient use data on which to base final allocation decisions. Later reductions in use would be proportionately split between commercial outfitters and private boaters based on then current levels of use in each sector. Once again, BLM will eventually include a common pool of launches and/or user-days accessible to both private and commercial boaters in order to provide flexibility in meeting changing demands of the general boating public.

## **Zone 2 (Slick Rock to Bedrock)**

### Whitewater Season (April 1- June 18)

Beginning in 1991, the weekly commercial river allotment will be four launches, with no more than one launch per day. This does not include nor restrict float-thru trips originating from Bradford Bridge or Dove Creek; it pertains only to launches originating at either Slick Rock or Gypsum Valley. (If float-thrus significantly increase and adversely affect carrying capacity, BLM will restrict float-thru trips accordingly.) Besides the four allotted launches per week, three additional non-guaranteed pool launches will be available in 1991. All outfitters with current Dolores River permits will be eligible to request launches in this section of river, but historical users of the lower river will be given preference for launches if outfitter demand exceeds available supply of allotted launches. Similarly, preference will be given to historical users of certain launch dates if two or more outfitters desire the same future launch dates.

Commercial launches may occur on any days of a given week, but only one commercial launch may occur on any one day.

Private boater policy will be the same as that during whitewater season for Zone 1. Estimated use would be two launches per day initially. When BLM determines a final allocation system, common pool launches and/or user-days would be available for all boaters, commercial or private.

### Low Water Season (June 19 - March 31)

Beginning in 1991, the weekly commercial river allotment will be four guaranteed launches and three non-guaranteed pool launches, with no more than one launch per day. Only those outfitters with commercial permits for the "low water" season will be allowed commercial use on this section of the Dolores River during this time period.

Private boater policy will follow that of low water season for Zone 1. Also, a common pool policy will eventually be implemented as discussed above.

## **2. Method of River Outfitter Selection (Whitewater Season)**

Only those commercial river outfitters who had a special recreation permit for the Dolores River prior to 1988 are eligible for a permit beginning in 1991. There will be two categories of river outfitters; multi-year and one-year temporary. Term of the multi-year permit will initially be three years. The long-term goal is to have 18 commercial river outfitters operating on the Dolores River, providing high quality service and a broad range of types of outfitted trips to the general public. Allowing the outfitters not issued a multi-year permit to operate under a temporary one-year permit is intended to allow for gradual attrition. As long as temporary one-year permitted outfitters meet the minimum requirements and operate within BLM performance standards, the permit may be issued the subsequent year. If additional multi-year permits become available (via non-renewal, forfeiture, cancellation, etc.), the highest-ranked one-year temporary permittees will be given the opportunity to attain multi-year status.

Those outfitters allowed multi-year permits will be determined based upon a weighted ranking system devised by the Dolores River Task Force commercial boating representatives. This rank-



ing system uses numbers of launches, total user-days, and numbers of years permitted to determine each outfitter's overall weighted rank. Allotted launch dates will be distributed among all permittees, and numbers of launches per outfitter will be based on weighted rankings.

One-year temporary permittees will share allocated and common pool launches. These permits will be nontransferable, and launch dates will not hold any historic preference in future years. A temporary permittee may not use more than three launch dates in a given year.

### 3. Method of River Outfitter Selection (Low Water Season)

As mentioned previously, BLM will grandfather in historical low water users. A prospectus and lottery will be used to select additional outfitters, if needed. Low water outfitters may run any segment of the Dolores River within the Montrose District and will be offered annual, non-transferable permits during the course of BLM's 3-to-5 year monitoring period. After monitoring and adjusting permit numbers accordingly, (either up or down), BLM will initiate multi-year permits for the low water season.

The BLM may, in the future, choose to issue additional commercial river permits for the "low water" season if the need, public demand, and objectives of the management plan can still be met. No decision of this type would be made until after the 3 to 5 year monitoring period.

### 4. Non-Use of Launches/Transfer of Launch Dates/Disposition of Unused Launch Dates

BLM will meet with all multi-year outfitters in order to formulate Dolores River policy for non-use of allocated launches. Penalties could include permit cancellation or reduction of launches for outfitters consistently under-utilizing their available launches.

High water and low water will be taken into consideration as valid reasons for non-use of launch dates. If the river flows exceed a manageable level and an outfitter chooses not to use launch dates for safety reasons, the outfitter will not be penalized. If the river flows are too low and an outfitter chooses not to use launch dates because of the risk to equipment, the outfitter will not be penalized. Last minute customer cancellations or vehicle breakdown will not be considered as valid reasons for non-use of launch dates.

An outfitter may not sell launch dates to another outfitter. The BLM will be notified and will approve any assigned dates used by another outfitter.

Launches assigned to an outfitter, but used by another outfitter (i.e., traded), will count only for the outfitter who used that launch date. The original outfitter does not lose that launch date, just the credit for its use. Launch dates used from the common pool will count towards an outfitter meeting his/her launch requirements.

Should launch dates become available through any manner or means (e.g., permit cancellation, non-renewal, reduction in use) the BLM may reassign those launch dates in a manner deemed appropriate after consultation with Dolores River permittees. For example, launch dates may be divided among the existing outfitters, BLM may issue a prospectus open to proposals by new outfitters, or the launch dates may be retired from commercial outfitter allocation.

### 5. Non-Boating SRPs

BLM will consider all other SRP requests (such as for hunting, mountain bike races, triathlons, etc.) on a case-by-case basis. These SRPs, when issued, would be annual permits. This policy will allow BLM to monitor new uses and potentially unforeseen impacts upon the canyon resources before committing to long-term, possibly incompatible ventures.

## 6. WSA Restrictions

BLM will allow no competitive events within the Dolores Canyon Wilderness Study Area. Such uses are deemed incompatible with the philosophy and intent of wilderness interim management policy.

### F. Concessions

1. Allow no concessions on public lands within the planning area, unless present private access facilities at Slick Rock become impractical or unfeasible for general public use.

BLM feels that concession facilities, for the most part, are incompatible with the surrounding river canyon. On the other hand, boaters have come to rely upon certain amenities currently provided by private enterprise on the privately-owned Slick Rock river access site. Should the river access ever relocate to public land, BLM would consider allowing a concessionaire to provide similar amenities.

### G. Site/Facility Development

1. As partial mitigation for the Dolores Project, BOR will fund the design and construction of five river access sites between the Bradfield Bridge and the Bedrock Bridge. All sites will be administered and maintained by BLM. Each site will provide parking spaces, boat ramp, toilets, well water, and throw-down camping space. Facilities at Bradfield Bridge and Mountain Sheep Point (near Dove Creek pump station) will also include designated camping spaces. The three other site locations are Slick Rock, Gypsum Valley, and Bedrock. The Slick Rock access would be constructed if future access for the general public cannot be guaranteed at the currently privately-owned and operated facility. The Bradfield Bridge facility is scheduled for 1990 construction; the other sites are scheduled to be built one year later.

2. Allow no permanent facility placement other than at the five river access sites. Emergency signing (e.g., warning sign at Snaggletooth), and minimal campsite markers (in the event BLM eventually designates camps) would be possible exceptions.

3. Provide dump stations or sanitary trailers at Slick Rock and Bedrock.

Currently, no sanitary dumping facilities exist in close proximity to either of these primary take-out points. If BLM continues to require porta-potties on all overnight river trips, boaters should have a dumping facility readily available once they take off the river.

4. Analyze the feasibility of and the need for a foot trail from the Dolores Canyon Overlook down to the river's edge.

A fragmented trail now exists in that location. With increasing use by recreationists, multiple trailing or less-than-desirable trail siting is apt to occur. BLM could head off these potential problems by taking the initiative to plot trail location before use gets out of hand.

### H. Resource Protection/Manipulation/ Rehabilitation

1. Continue requiring all recreationists to pack out their own trash.

Most boaters already comply with this common-sense approach to garbage removal. Many people even go so far as to pick up other trash when they happen to find it. While trash receptacles will be provided at the developed access sites, their placement between access points would be unacceptable and incompatible with the environment BLM is attempting to maintain.

2. Continue requiring porta-potties for all groups on overnight river trips.

The confined nature of this pristine river canyon cannot accommodate indiscriminate digging of shallow pit toilets for each group travelling down the river. Most experienced river-runners already use porta-potties; those who do not should be educated as early as possible.

3. Encourage all visitors to use stoves, charcoal or packed-in firewood. Allow no collecting of dead or down firewood. Require firepans for all campfires. By 1991, allow no collection of driftwood for fires, and require all campers to pack out fire ashes.

The presence of McPhee Dam now greatly reduces the natural supply of driftwood downstream; supplies are no longer replenished on a yearly basis. Though periodic death of green trees will augment the canyon bottom's natural firewood supply, increasing and sustained demand by boaters and other campers would likely deplete this supply in the near future. Also, driftwood piles along river banks provide unique habitat for species such as weasels, mink, lizards, ringtails, etc. Packing out ashes is just another tool for maintaining as clean a river as possible.

4. Continually monitor the river corridor during boating seasons and periodically conduct surveillance patrols the remainder of each year. Implement temporary closure, rehabilitation, or rotation of use for campsites suffering excessive abuse or resource damage.

BLM's number one priority for the Dolores River canyon is protection of resources. Hopefully, an intensive informational/educational campaign and certain administrative actions will succeed in maintaining a relatively pristine, untrampled corridor of unique wildlife, cultural, and recreation resources. However, more immediate and effective remedies need to be available should use periodically exceed environmental tolerance.

5. Use environmentally acceptable, economically feasible means to halt the proliferating

spread of tamarisk and thistle along the river banks.

McPhee Dam's tendency to moderate river flows has greatly reduced high, peak flow flushes which tend to prevent certain vegetative species (such as tamarisk) from becoming firmly established along the river's edge. Thistle has been spread by animals, wind and water. Both species detract from streamside recreationists' experiences.

6. Close off former motorized access trails and rehabilitate those trail remnants located within the Dolores WSA.

These measures not only visually enhance the WSA over the long term, but they also remove the lures to future unauthorized vehicular travel. Priority trails are: Bedrock trail paralleling the river upstream toward LaSal Creek, Gypsum Bridge entry way, Coyote Wash entry way, and Bull Canyon entry way.

#### I. Maintenance

1. Once the developed access sites are constructed and ready to use, BLM will rely primarily on seasonal employees and volunteers to maintain the facilities during boating season. Permanent employees will share more of this workload the rest of the year, on an as-needed basis. BLM will also attempt to enter into a cooperative agreement with USFS for maintenance of the Bradfield site, since USFS's upstream Lone Dome sites will likely require similar on-going maintenance. Opportunities also exist for BLM to develop cooperative agreements with local agencies or public service groups to "adopt" sites such as the Dolores Overlook picnic area, the Bedrock take-out, the Mountain Sheep Point facility, or various trails within the river corridor.

2. Continue current road maintenance arrangements with local road crews.

Dolores County currently maintains gravel access roads to Bradfield Bridge and the Dove

Creek pump station. Minimal maintenance is occasionally required from the pump station downriver to Snaggletooth Rapid. San Miguel County maintains the Gypsum Bridge access road, and Montrose County maintains the Bedrock take-out access road.

#### **J. Administration**

1. BLM currently has one full-time employee responsible for recreation and forestry programs in the San Juan Resource Area and one full-time recreation planner in the Uncompahgre Resource Area. During boating season, BLM also funds one seasonal employee to patrol the Dolores River, primarily by raft and vehicle. Once this river plan is finalized and approved and the developed access sites are constructed and in use, extra personnel will be required. One more seasonal (GS 3-5) will be needed for river patrols, and seasonals (or one seasonal plus a volunteer) will be needed for campsite maintenance. Overall duties will include visitor contact and information dissemination, facilities maintenance, monitoring OHV regulations and carrying capacity guidelines, and ensuring compliance with permit stipulations. Law enforcement duties within BLM will reside with the Ranger located in the Montrose District Office, who will periodically travel the river and respond to incidents reported by the District employees. Creation of a Ranger position within the San Juan Resource Area should be initiated to assume this responsibility as soon as possible. If wild and scenic river designation or wilderness designation is granted in the near future, additional workmonths may be needed to manage for those unique resource values.

2. BLM river patrols will use rafts, kayaks, and canoes on the Dolores River. Two, and occasionally three, vehicles will be needed during peak boating season (April, May, June) for patrols, shuttles, and maintenance activities. Two-way radios will be made available for potential emergency situations and normal intra-office communications. Also, two small camp trailers should be available for placement at selected developed river access sites.

3. Volunteers will be used as often as possible to help achieve management goals. Types of work include clean-up trips of sites along the river, clean-up/maintenance of developed access sites, assistance to BLM personnel conducting monitoring and visitor contact patrols along the river, sign installations, site rehabilitation projects, trail construction and/or maintenance, etc.

4. BLM will construct or otherwise procure long-term housing for seasonal employees in the Dove Creek vicinity. Such facilities will allow more efficient use of staff for management of Dolores River resources; moreover, eventual cost savings could result from decreased need for travel expenditures. Housing could also be used by permanent employees year-round, thereby leading to further savings on per diem expenses.

5. BLM will pursue cooperative agreements with the U.S. Forest Service (USFS), Colorado Division of Parks and Outdoor Recreation (DPOR), and CDOW for more efficient site maintenance and river patrols, respectively. As previously mentioned, the Forest Service's Lone Dome recreation sites will often need clean-up and maintenance coinciding with the Bradfield Bridge access site. Also, CDOW will be on the river conducting project work and fishing and hunting patrols, and DPOR rangers will be monitoring boating regulation compliance. Cost and time savings can be achieved by sharing duties between the agencies.

6. BLM will initiate law enforcement agreements with local sheriff's offices; agreements already in place will be renewed indefinitely. Even with a BLM Ranger located in the Montrose District, there will likely be incidents better handled and more promptly responded to by local law enforcement personnel. Cooperative agreements would probably also facilitate improved, ongoing lines of communication between BLM and respective sheriff's departments.

7. BLM will host an annual post-season coordination meeting with BOR, CDOW, Dolores Water Conservancy District, USFS, and representative outfitters, farmers, and private recreationists in order to critique recent flow release scheduling, communication suitability, impacts to natural resources and public users, and opportunities for improvements. In recent years, both the Dolores River environment and the needs and desires of the affected public have been steadily changing and adapting to change. Communication and coordination have improved significantly, but even better

results can be achieved through continual, year-to-year discussions involving managing agencies and public representatives.

8. BLM will develop a Programmatic Agreement with the Colorado State Historic Preservation Officer and the Advisory Council on Historic Preservation upon completion of the proposed Cultural Resource Project Plan for the Dolores River corridor. This will provide them the opportunity to consult and to comment which is legislatively required by the 1966 National Historic Preservation Act as amended.

**IV. Environmental Assessment and Decision/Record Rationale:**  
**EA # CO-030-SJ-90-46**

**A. Decision/Record Rationale**

**1. Dolores River Corridor Management Plan**

The proposed Dolores River Corridor Management Plan (DRCMP) would reduce recreation use impacts within the river corridor while maintaining or enhancing the many diverse physical, cultural, and biological resources of the canyon. Based upon the environmental assessment, a net beneficial impact to the natural resources and human environment would result from implementation of the proposed action. Therefore, the Management Program as described in the DRCMP will serve as policy, guidance, and direction for managing the Dolores River corridor.

**2. Alternatives**

a. Alternative 1 - The Proposed Action (see DRCMP).

b. Alternative 2 - No Action - No change would be made from the present level of management.

**3. Decision and Rationale**

**a. Decision**

Adopt the Proposed Action

**b. Rationale**

The 1985 San Juan/San Miguel Resource Management Plan (RMP) directed BLM to determine Dolores River carrying capacities and develop a recreation area management plan for the corridor. The RMP also directed BLM to develop an aquatic/riparian habitat management plan for the upper Dolores River. The DRCMP would accomplish these directives. The proposed action is compatible with the RMP as well as designations and Federal laws applicable to the planning area. The proposed action will alleviate resource degradation and visitor use conflicts resulting from increased and sometimes indiscriminate visitor use.

**c. Mitigation**

The mitigation incorporated in the proposed action is adopted as part of the decision. No additional mitigation is necessary at this time.

**d. Compliance/Monitoring**

Compliance and monitoring is outlined in section III. of the DRCMP.

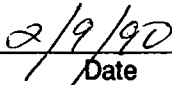
**4. Conclusion**

Based on the analysis in the attached EA, I conclude that selection of the Proposed Action will result in no significant impacts to the environment and therefore conclude that no EIS is necessary.

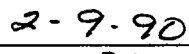
  
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Area Manager, San Juan Resource Area

  
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Date

  
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Area Manager, Uncompahgre Resource Area

  
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District Manager, Montrose District

  
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## **B. Purpose and Need**

The primary purpose of the proposed action is to provide an integrated management program which effectively protects and preserves unique, highly valued natural resources and features within the river corridor while ensuring that a wide range of recreation oriented opportunities and other multiple uses are available and compatible.

The BLM's San Juan/San Miguel Resource Management Plan (RMP), completed in 1985, directed BLM to determine Dolores River carrying capacities and develop a recreation area management plan for the corridor. The RMP also directed BLM to develop an aquatic/riparian Habitat Management Plan (HMP) for the upper Dolores River. The DRCMP would accomplish the recreation and wildlife directives, and it would provide baseline data for eventual development of the HMP for the upper Dolores.

This environmental analysis evaluates the impacts of land use decisions and management actions proposed in this plan. Site specific environmental analyses will be performed for resource disturbing activities prior to on-the-ground implementation. Examples of such cases include installation of boat launching or visitor facilities, trail construction, cultural site stabilization, or reintroduction of a native terrestrial or aquatic species.

## **C. Description of Alternatives**

### **1. Alternative 1 - The Proposed Action**

The proposed action is to adopt all general and specific management objectives as identified in II. A. and B., and implement the management program outlined in III.

### **2. Alternative 2 - No Action**

Management in the river corridor would continue at current levels. This management is

outlined in I., B. and C. Factors currently influencing management are identified in II. C.

## **D. Affected Environment**

Affected environment is described in I., A. and C.

## **E. Environmental Consequences**

### **1. Alternative 1 - The Proposed Action**

#### **a. Critical Elements**

1) There will be no effect to the following critical elements: air quality, areas of critical environmental concern (ACEC's), prime or unique farmlands, or floodplains.

2) Prehistoric and historic cultural values and paleontological resources: The increased emphasis on public education and BLM patrols along the Dolores river corridor would help to reduce impacts from vandalism. Where deemed appropriate, establishing trails to and around cultural and paleontological resources will channel human use and minimize the effects of dispersed trampling. The proposed additional inventory and monitoring of sites will allow cultural resource managers to detect site degradation more effectively so that actions can be taken to mitigate impacts. Stabilization of more heavily visited and/or vulnerable sites will reduce deterioration from human use or natural elements.

Increased visitation expected along the Dolores River corridor could result in increased resource deterioration. By monitoring use along the corridor, BLM will be better able to correlate visitor use with cultural and paleontological site degradation. This will establish a basis for education and management of visitors if necessary to protect cultural and paleontological resources. Many of the cultural and paleontological resources will be protected due to the remote and inaccessible nature of River Units III and IV, and to a lesser degree Unit II.

In all cases, where site specific resource disturbing activity is proposed, as in the case of facility installation or site stabilization, cultural clearances, consultation and mitigation will be conducted in accordance with all applicable laws including Section 106, 36 CFR 800 and the Programmatic Agreement for BLM, Colorado, State Historic Preservation Office (SHPO), Colorado, and the Advisory Council on Historic Preservation (1987).

3) Native American Religious Concerns: Due to the lack of information regarding Native American religious concerns in the planning area, the impacts of the proposed actions are unknown.

4) Threatened or Endangered Species: Informal consultation with the US Fish and Wildlife Service was conducted on Threatened and Endangered Species. In all cases, where site specific resource disturbing activities are proposed, clearances for these species will be conducted in accordance with the Endangered Species Act.

Since there is very little likelihood for the occurrence of the Southwest River Otter, Gray Wolf, or Black-footed Ferret in the planning area, no impacts to these species are anticipated. Data on the North American Lynx is so limited that predicting impacts is not feasible.

Proposed additional studies of all threatened, endangered or candidate species will provide the baseline information essential for effective management of these species. These studies will benefit all species of concern in the long term.

#### Bald Eagle

Since bald eagle use of the river corridor is primarily during the winter, impacts from human activity on wintering birds are unexpected. During the 1989 field season, State of Colorado Raptor Biologist Gerald Craig speculated that a pair of bald eagles routinely observed along the river between Bradfield Bridge and Slick Rock

might begin to nest in the area within the next four years. Although human activity in the form of whitewater boating is anticipated to increase during this period, the probability of influencing bald eagle nesting is unlikely. The Utah Division of Wildlife has conducted extensive observations of boating use impacts on bald eagle nesting and fledging success along the Colorado River near Westwater. They have found that boaters simply passing by are not likely to impact nesting or reproduction. Much of this is related to timing. Bald eagle young generally hatch in this area around the end of February and the critical period is past by the time recreational boating occurs in April through the summer months.

Should bald eagles nest along the Dolores, monitoring will evaluate possible impacts to the species. Camping or stopping near a nest will be discouraged and possibly regulated to mitigate impacts during critical periods if deemed necessary.

#### Peregrine Falcon

Impacts on Peregrines from increased recreational use along the river are difficult to assess due to limited data. Most observations indicate that humans passing by on boats or hiking will not likely cause nest abandonment. To date, both peregrine populations and recreational use have been increasing and no conflict has been observed. A report from Raptor Biologist Gerald Craig suggests that repeated disturbance within line of sight within one-half mile could result in enough disturbance to cause abandonment or failure to produce healthy offspring. Camping or stopping within one-half mile of an eyrie will be discouraged and possibly regulated if deemed necessary based on monitoring.

#### River Otter (candidate species)

Potential impacts are not known due to lack of baseline data on the recently reintroduced population. Since the otter's preferred denning habitat is along steeper banks with heavy willow



growth, it is not anticipated that camping or stopping by boaters will be a conflict. Special emphasis on management for this species in River Unit III will benefit the species.

Kachina Daisy and Paradox Lupine (candidate species)

The Kachina Daisy generally occurs in hanging gardens often in cliff faces, at the top of steep talus slopes, hidden alcoves, and areas which are not easily accessible by humans. Because the plant is often found in such remote locations, impacts from human activity along the main river corridor are not expected to occur very frequently. The Paradox Lupine occurs in sites which do not attract much recreation use.

5) Wilderness: The 28,539 acre Dolores Canyon Wilderness Study Area will be managed under the BLM's Interim Management Policies (IMP) to maintain its wilderness values. All activities within the WSA must comply with the nonimpairment standards as set forth under the IMP. Therefore, no impacts to wilderness values are anticipated.

Management actions geared toward user education, user limitation, and low impact camping would help protect and enhance the natural features and the outstanding opportunities for solitude and primitive, unconfined types of recreation which the Dolores Canyon WSA offers.

6) Wild and Scenic Rivers: The Bureau's endorsement for including the Dolores River in the Wild and Scenic Rivers System will provide administrative support for this action.

7) Hazardous or Solid Wastes: There are no impacts associated with hazardous waste anticipated. Installation of toilet facilities at major river access points and enforcement of porta-potty requirements would decrease fecal contamination of the watershed and river as well as reduce visitor exposure to unsanitary conditions.

8) Water Quality: As previously stated, toilet facilities at major access points and enforcement of porta-potty requirements would decrease fecal contamination of the watershed and river. Anticipated increase in visitor use could result in increased erosion and associated stream sediment loading along access trails from the river to campsites, launch sites, and take-out locations. Trail stabilization along the river and site hardening at major access locations will reduce these potential impacts.

9) Wetlands/Riparian Zones and Vegetation: The extensive studies proposed in the plan will inventory, evaluate and monitor ecological parameters of the wetland/riparian zones. These studies will serve as the basis for establishing restrictions or education to protect resources in good condition, identifying sensitive or degraded sites needing immediate management attention, and detecting human-caused degradation in areas that are used heavily. All of these efforts are aimed at maintaining good quality riparian habitat or improving deteriorated sites for ecological and recreational/aesthetic values. Controlling and regulating activity within key wildlife and riparian areas will benefit biological diversity and integrity. Grazing management practices are to be implemented to improve riparian resource integrity.

The monitoring and site restoration activities, while benefiting the riparian resources, may limit visitor use along the river corridor. Some areas may be closed to camping and/or human activity either temporarily or permanently. This may be perceived by visitors as a restrictive measure. These restrictions may be acceptable to visitors as they ensure natural values protection. As discussed earlier in the document, many visitors have expressed concern that BLM manage the biotic community responsibly to ensure long-term viability. Furthermore, most visitors favored temporarily closing heavily-used sites for rehabilitation or restricting the number of people using the river to protect natural and social values.

Requiring porta-potties will reduce contamination of the riparian zone with fecal matter as well as decrease vegetation trampling and trailing which result when people wander off from a campsite to dispose of human waste. Again, this is an additional restriction of the visitor, but one that is accepted according to visitor surveys.

Limiting group size will limit the size and extent of campsite impacts in the riparian zone. It has been widely documented that larger groups cause more extensive impacts and larger campsites. While some visitors may perceive this limit as an excessive regulation, the majority of visitors surveyed show support for such a limit if necessary for maintaining the natural environment.

Allowing vehicle access, while necessary to provide for recreational use, will result in loss of riparian habitat. Limiting vehicle access to primary access points will concentrate damage caused by vehicles and therefore limit the total extent of riparian habitat loss. Development of these access points will attract more visitors than already exist. This will result in some trampling, reduction in regeneration, and disturbance of wildlife in those areas adjoining the developed site. Education of visitors combined with monitoring and site rehabilitation will mitigate these off-site impacts.

Encouraging the use of stoves and charcoal will reduce potential for fires escaping control. These methods, combined with prohibiting the collection of down, dead, or drifted wood will retain the wood as an important component in habitat and nutrient cycling in the natural environment. The development of trails associated with wood collecting and destruction of live trees mistaken for dead will be eliminated by this regulation. These benefits cause some inconvenience to boaters by limiting the possibility for traditional wood fires in camp.

By closing off and rehabilitating old motorized access points, condition of the riparian zone will be improved.

Measures to control thistle and tamarisk invasion will allow natural ecological processes to proceed without the impediment of these non-native species.

Public education through river guides and site specific brochures will encourage visitors to minimize their impacts to the riparian community.

#### b. Other Affected Resources

1) Vegetation: The analysis of impacts to the riparian environment in the previous section applies to this section as well.

OHV use will result in damage to and loss of vegetation. Areas selected for OHV use are those best suited for this use and have been designated to provide for recreational needs and access to the river. Limits imposed on OHV use impact those individuals seeking OHV opportunities in the area. OHV designations and restrictions will concentrate impacts to vegetation to specific areas and limit the extent of vegetation damage and loss.

2) Range Utilization: Range utilization and livestock grazing will be altered in riparian areas identified as needing improvement. In those cases, grazing may be eliminated, reduced, or the timing of use shifted. This will be a negative impact on the permittees as it will shift and perhaps reduce available forage, yet it will benefit the riparian communities and recreational users.

3) Soils: Much of the impact analysis under the riparian section also applies to soils. Soil erosion will result from OHV use in designated areas. Erosion is limited/mitigated by designation of specific OHV use areas. Increased BLM use-supervision and education of recreationists would minimize OHV impacts and trampling impacts to roads, trails, river access sites, and undeveloped day use and camping sites within the planning area.

As previously stated, toilet facilities at major access points and enforcement of porta-potty requirements would decrease fecal contamination of soils. Requiring river parties to carry out ash will maintain uncontaminated soils in camping areas.

Anticipated increase in visitor use could result in increased erosion and associated stream sediment loading along access trails from the river to campsites, launch sites, and take-out locations. Trail stabilization along the river and site hardening at major access locations will reduce these potential impacts.

Soil compaction has occurred and will continue to occur in camping areas along the river corridor. Inventory and monitoring will detect site degradation along the river corridor and provide the basis for site rehabilitation. Rehabilitation of previously disturbed areas will improve soil conditions. These efforts will minimize soil compaction and erosion impacts.

4) Aquatic Wildlife: Since erosion and sediment loading associated with access sites and trails and camping areas is anticipated as minimal, no impacts are likely to occur to aquatic wildlife. Increased fishing is likely to occur; however, it is outside BLM's authority to regulate fishing. The Colorado Division of Wildlife is responsible for fisheries and assessing and regulating fishing pressure. Some impacts to fisheries could result from disturbance of fish or the disruption of normal activities (feeding, spawning, resting, etc.) by rafts either moving in the river or stopping along banks. Specific studies are needed to determine aquatic wildlife habitat requirements and life cycles and then the possible impacts to these parameters from river recreation.

Spawning areas along banks and in slow water, particularly during low water when spawning areas are limited, could be especially sensitive to boat mooring and launching. In low water, the best habitat would be reduced to deep pools and cutbanks where overhanging vegetation provides shade. These sites would probably be

the least desirable as mooring and launching sites; therefore, impacts are expected to be minimal.

5) Terrestrial Wildlife: Inventory, monitoring, maintenance and improvement of riparian communities (see section a. above) would benefit those wildlife species dependent upon riparian habitat.

Due to very limited information on wildlife species composition and distribution, specific impacts to wildlife are difficult to assess. Selected species and habitat parameters will be monitored to evaluate impacts resulting from recreational use. This will then provide the basis for seasonal restrictions or area closures if needed to maintain biological values. Such restrictions will benefit wildlife species, yet may negatively impact the freedom and opportunities for recreationists.

Habitat loss or degradation and reduction and displacement of wildlife species has occurred and will continue to occur in developed access sites and camping or stopping areas along the river corridor. These impacts are not anticipated to be significant. The extent of these impacts will be limited and concentrated by selecting and controlling access points and camping areas. Limiting group size will also mitigate the size of camp sites and amount of species displacement.

Where camping or picnicking occurs repeatedly, populations of rodents, ants, selected insects, and opportunistic feeders such as ravens, jays, magpies, and raccoons are likely to increase. These species will utilize food remains left by humans and they often become a nuisance to humans. Trash cans at developed facilities and the trash carry-out policy will reduce this impact.

Desert bighorn, especially during lambing and wintering periods, are often sensitive to human presence. This sensitivity is highly variable among individuals and populations and has not been studied specifically in the Dolores Cor-

ridor. Human/sheep interactions will be monitored so that necessary actions can be implemented to maintain population health. This will benefit the sheep.

Identifying and protecting big game corridors from disturbing human use will benefit those species.

Prohibiting the collection of dead, down, or drifted wood will maintain habitat provided by these three types of wood. This may restrict those visitors desiring wood fires in camp.

Controlling tamarisk will maintain the native, more diverse willow, cottonwood, box-elder habitat along the river corridor. Tamarisk invasion alters native processes and develops homogeneous stands of this species which support much less diverse wildlife communities.

Education of the public and use limitations would minimize human disturbance of unique and highly-valued wildlife species within the river corridor. Besides reducing the numbers of human-wildlife encounters, management actions would minimize adverse effects of such encounters.

6) Minerals: No surface occupancy stipulations along the river corridor for oil and gas leases limit the potential for oil and gas exploration and development. Because oil and gas resources under these conditions are not economically retrievable, no exploration or development is likely to occur within the foreseeable future. No new leasing and no surface occupancy within the WSA also limits the use of the WSA for oil and gas into the foreseeable future.

The WSA is closed from mineral entry, and the USGS Mineral Land Assessment Report (1987) states that mineral potential for uranium, copper-silver, or gold is low. Therefore, no exploration or development of mining claims is anticipated in the WSA.

While there is interest in and potential for placer gold exploration and development, sand and gravel deposits, and possibly uranium should the market improve, the plan proposes to not allow commercial gravel removal within the planning area. Management emphasis on cultural, biological, and recreational values in the planning area may limit opportunities for mineral extraction. Those interested in mineral extraction in the planning area may avoid this activity due to the potential for restrictions and public controversy raised by conservationists, biologists, and recreational users. While many mineral activities are still allowed, this may negatively impact (minimally) the potential mineral industry and those individuals associated with it in the area. Such limitations benefit the biological communities and recreational users who could be negatively impacted by the presence of mineral development.

7) Lands and Realty: All of the proposed acquisitions will benefit the recreational users and management efficiency. Trespass problems will be reduced and visitors will be provided more opportunities for hiking, stopping, or camping. Acquisition of a site near Slick Rock ensures that the public will always be provided access to the river at Slick Rock. The proposed scenic and/or conservation easements between Slick Rock and Gypsum Valley Bridge would enhance public boating experiences while not impinging on private landowner rights. Acquisition of an easement for foot traffic up McIntyre Canyon would provide a premier hiking opportunity and mitigate future trespass problems.

Painting the Dove Creek pump station would benefit the visitors by reducing the visual intrusion imposed by this structure.

8) Visual Resources: Visual Resource Management (VRM) classifications were analyzed in the San Juan/San Miquel RMP/EIS. Emphasis on natural values in River Units II, III, and IV will maintain and benefit visual resource values and the recreationists. Visual intrusions will occur at the developed facility locations, along disig-

nated OHV roads, and OHV use areas. These intrusions will be mitigated by careful design and placement of facilities to minimize visual impacts. Painting the Dove Creek pump station will mitigate its visual intrusion.

9) Socio-economics: It is difficult to assess socio-economic impacts due to limited information. It appears, however, that overall there will be increased economic benefits. Data presented in section I of the plan illustrates the past economic contribution of some major recreational activities. These activities and the revenues generated from them are expected to expand and grow thus increasing the revenues generated by boating, fishing, sight-seeing, and tourism. The season of use is also expected to expand producing more revenues spread out over a longer period of time. Revenues would result from expenditures for gas, groceries, lodging, restaurants, miscellaneous recreation supplies, and other services.

The proposed action has the potential to slightly reduce opportunities to generate revenues in Montezuma, Dolores, San Miguel, and Montrose Counties from sand and gravel production. This potential reduction is not anticipated to be significant to those local economies.

It is difficult to determine whether the percent of permits allocated to commercial versus private boaters would have any effect on socio-economic conditions due to lack of site-specific information on this topic.

The shift toward increased recreational use and tourism in the study area may impact social attitudes. Some long time residents may resist this shift, but as recreation begins to contribute to the local economies, it may become more widely accepted and supported. Such a shift has been observed over the last five years in Dolores, Montezuma and Montrose Counties. This trend is expected to continue.

10) Recreation: The four management units along the Dolores River Corridor provide an

array of social, biological, and recreational settings. This array, ranging from the WSA (Unit IV) where human evidence is essentially unnoticeable, to Unit I where the human presence is evident, benefits the maximum diversity of recreational user groups possible under the constraint of maintaining the natural scene. Although some groups may desire more opportunities than provided under this zoned management approach, they are at least afforded some use where it does not conflict with other groups or resource values.

Emphasis within the planning area on maintaining the natural scene and biological integrity will benefit the natural ecosystem as well as recreational users desiring opportunities to experience those natural values. Recreational or consumptive uses such as intensive OHV use or mineral extraction, which potentially compromise natural ecosystem processes, will be strictly limited or prohibited.

OHV designations and closures will reduce vehicle recreation opportunities, but enhance the more primitive recreational experiences along the river corridor.

Prohibiting motorized watercraft between Bradfield Bridge and Bedrock will benefit those visitors who seek a more primitive experience. It will also eliminate impacts to wildlife which might be caused by the presence of motorized crafts. The demand for this type of use has been nonexistent in the past, so impacts to potential motorized craft users are expected to be insignificant.

Limits on aircraft landings within the WSA and between Bradfield Bridge and Disappointment Creek (except in the case of emergencies) will minimize impacts to vegetation, wildlife and recreational users.

Seasonal and year-round road closures as well as prohibition of mechanized vehicles in certain areas will benefit those visitors seeking primitive values.

## Visitor Services

Increased emphasis on information through interpretive materials and facilities, safety information, the Dolores River hot-line, and patrols will enhance the visitor experience and improve visitor compliance with carrying capacity guidelines. Achieving voluntary compliance using interpretive methods will reduce the need to regulate river use.

Search and rescue services and increased patrols will benefit the visitors by providing effective assistance when necessary. Biological and cultural resources will also benefit as patrols will increase enforcement of measures to protect these values.

Restricting the number of launches as well as group size will benefit visitors along the river by ensuring that the total number of people encountered does not exceed a tolerable level. A fairly large group is expected to have a greater impact on a neighboring party's recreation experience than a smaller group, so in those river units managed for solitude (e.g., Dolores River Canyon WSA), group size is reduced. Restricting group size also restricts biological impacts in camping areas and maintains a more natural condition. This enhances the experience for those seeking to encounter the natural environment. To date, the average group size has not exceeded those levels set in the plan. Therefore, it is not expected to adversely affect users significantly.

Low water group limits of 12 persons per group would enhance fishing conditions and solitude opportunities for fishermen and slower moving floaters.

## Permitting and Use Allocation

In general, allocation of use will benefit the users seeking a primitive/backcountry/wilderness boating experience by maintaining established social carrying capacities for social encounters. Maintaining these levels also benefits the

biological resources by limiting the amount of impact caused by visitors.

Limiting numbers of launches is only proposed for commercial parties at this point; therefore only these groups will be impacted immediately. Restrictions on private boater permit allocations in the future may limit the opportunity for private boaters to obtain permits. Commercial outfitters perceive the present limitation as discrimination and favoritism toward the private users. This limitation is being imposed immediately based on the carrying capacity model to ensure equal opportunities to both commercial and private parties as well as to maintain the quality of the boating experience. Maintaining the recreational experience and equal opportunities for all users offsets the perception of discrimination against commercial users. Since visitor surveys indicate that the majority of users support restricting the total number of users along the Dolores, the impact of limiting use through permits is expected to be positive.

The method of selecting commercial outfitters benefits those who had special recreation permits prior to 1988 and will negatively impact those companies which did not.

## Site/Facility Development

Development of access facilities will positively impact the recreational users and their experience by providing quality access sites with toilets, launching, and camping facilities. This may not meet the expectations of those individuals seeking an undeveloped site, and these facilities may be perceived as intrusions. Reduced sanitation and resource damage problems, quality parking, and good launch sites balance out the perceived negative impacts.

Restricting facilities along the river corridor benefits the users by maintaining the primitive nature of the environment.

Dump stations will enable boaters to dispose of human waste generated during a river trip. This is a benefit to the visitor.

#### Resource Protection/Manipulation/ Rehabilitation

The restrictions imposed for protecting resources will benefit the visitors by maintaining the natural values they seek. Packing out trash, carrying porta-potties, and wood collecting restrictions burden river users. Since river user surveys indicate support for resource protection, these measures are not expected to cause significant negative impacts on the visitors. Opposition to restrictions on wood collecting suggests some negative impacts to the visitor.

#### c. Unaffected Resources

No impact is anticipated for climate, topography, or noise.

#### d. Cumulative Impacts

The proposed management program would maintain a broad range of recreation opportunities for many years to come. The social and biological carrying capacities established will ensure the provision of quality recreational experiences and maintenance of the natural environment. Wildlife, vegetation, riparian, water, soils, wilderness, T&E species, and Wild and Scenic Rivers will be enhanced by the proposed management. Some recreational uses, sand and gravel interests, and livestock use may be negatively impacted due to restrictions.

### 2. Alternative 2 - No Action Alternative/Current Management

#### a. Critical Elements

1) There will be no effect to the following critical elements: air quality, areas of critical environmental concern, prime or unique farmlands, or floodplains.

2) Prehistoric and historic cultural values and paleontological resources: Increasing visitation without any management actions toward education or patrols would likely result in loss of resources due to vandalism and recreational impacts. Undirected and uncontrolled visitation to sites would cause damage to these resources. There would be no increased inventory and monitoring and therefore no baseline for detecting loss of resources. Stabilization would not occur and resources would continue to deteriorate.

In all cases where site specific resource disturbing activity is proposed, clearances, consultation, and mitigation will be conducted in accordance with all applicable laws including Section 106, 36 CFR 800, and other relevant regulations and agreements.

3) Native American Religious Concerns: Due to lack of information regarding Native American religious concerns in the planning area, the impacts of the no action alternative are unknown.

4) Threatened and Endangered Species: In all cases where site specific resource disturbing activity occurs, clearances for these species will be conducted in accordance with the Endangered Species Act.

The discussion under Alternative 1 regarding Southwestern River Otter, Gray Wolf, Black-footed Ferret, Lynx, Kachina Daisy, and Paradox Lupine apply under Alternative 2.

No additional studies of T&E species would occur under this alternative; therefore management of these species would not be improved.

#### Bald Eagle

Impacts from human activity and river use as discussed under Alternative 1 apply to this alternative as well. Since restrictions on camping and stopping in the vicinity of a bald eagle nest would not be enforced under this alternative, negative impacts to this species could occur.

## Peregrine Falcon

The discussion of human impacts on Peregrines under Alternative 1 applies to this alternative as well. Since restrictions on camping and stopping within the vicinity of Peregrine eyries would not be enforced under this alternative, negative impacts to this species could occur.

## River Otter

Due to limited knowledge about this species along the Dolores, impacts are difficult to assess. The discussion under Alternative 1 also applies here. Since no special emphasis would be placed on this species in River Unit III, the river otter populations would not benefit.

## Wilderness

The Dolores Canyon WSA would be managed under the IMP under this alternative as well. Since actions for public education, user limitation, and low impact camping would not be implemented, wilderness values might deteriorate.

5) Wild and Scenic Rivers: No additional support for the recommendation would occur, thus slightly reducing Congress' inclination to include the Dolores within the Wild and Scenic system.

6) Hazardous or Solid Wastes: No hazardous wastes will be involved with this plan. Problems with human waste accumulation will continue at access points and along the river corridor without the development of toilets and the enforcement of the porta-potty policy. This will expose visitors to unsanitary and unpleasant circumstances. Furthermore, this will result in contamination of water and soils.

7) Water Quality: Water quality will slightly deteriorate from fecal matter contamination. Without improving access facilities and stabilizing access trails, erosion and sediment loading will reduce water quality.

8) Wetlands/Riparian Zones/Vegetation: Proposed studies to inventory, evaluate, monitor, and improve riparian areas will not occur. This will result in further degradation of sites in already poor condition as well as deterioration of quality sites due to human and livestock use. A decline in riparian quality could negatively impact the visitor experience by revealing the impacts of human use.

Visitors will not be restricted in terms of where they can camp, stop, or participate in any recreational activity. Group size will not be limited. This may be perceived by some visitors as a benefit.

Riparian areas will be contaminated with human waste and be trampled by people disposing of human waste.

More riparian habitat will be lost or damaged as a result of uncontrolled vehicle access along the river corridor. Those desiring access to the riparian areas will be positively impacted.

Without restriction of wood collecting or wood fires, there will be a loss of riparian habitat and vegetation. More use of wood fires increases the probability of a fire escaping from control.

Old access roads will not be closed off or restored, and these areas will not be enhanced for riparian values.

Tamarisk and thistle will continue to invade the riparian environment. This will alter native habitats and reduce community diversity. It will also result in a negative impact on camping opportunities.

There will be no public education to encourage minimum impact techniques while using the riparian areas.

## b. Other Affected Resources

1) Vegetation: The discussion under riparian (above) applies to this section as well.



2) Range Utilization: Livestock use will continue as is. No measures will be taken to improve riparian areas.

3) Soils: Much of the impact analysis under riparian and vegetation applies here. Without porta-potty or ash and trash carry-out requirements, soils would become contaminated and degraded. This would negatively impact the visitor experience.

Unregulated increasing visitor use will cause soil erosion along access trails and compaction in camping areas. Without education efforts, visitors will be less responsible about mitigating impacts to soils.

4) Aquatic Wildlife: Soil erosion and sediment loading will reduce water quality which could impact fisheries. This impact is not anticipated to be significant. The discussion of impacts on aquatic wildlife under Alternative 1 applies to this alternative as well.

5) Terrestrial Wildlife: No inventory, monitoring, maintenance, and improvement of riparian communities or wildlife species would occur under this alternative. No information baseline would be established, and no specific management to benefit wildlife would occur.

Habitat loss or degradation and reduction of wildlife species has occurred and will continue to occur in access, stopping, and camping areas. Some opportunistic species such as rodents, magpies, and jays will continue to increase in numbers and collect around heavily used sites. This will continue without monitoring or regulation to ensure protection of biological resource values. It will also negatively impact those visitors seeking experiences where the evidence of humans is not evident.

No restrictions for protecting wildlife values would be enforced. This would benefit those visitors seeking unrestricted opportunities.

No study or protection of critical bighorn areas would occur. This could negatively affect the species.

Habitat provided by down, dead, and drifted wood would not be available as habitat for wildlife.

Tamarisk and thistle would not be controlled and would increase. This would displace many of the native species present now.

Visitors would not be educated about minimizing impacts on wildlife. This would result in more human/wildlife encounters and negative impacts on wildlife.

6) Minerals: The WSA would remain closed to mineral entry, thereby limiting opportunities for mineral development. More opportunities for sand and gravel production could become available under this alternative, thereby benefiting those individuals with interest in mineral development and use.

7) Lands and Realty: Acquisitions of identified private lands as well as easements would not occur. Trespass problems on these lands would negatively impact both the private landowners and river boaters seeking opportunities for camping, hiking, or stopping.

The Dove Creek pump station would continue to be a visual intrusion to the visitor.

8) Visual Resources: VRM classifications would remain the same in this alternative; therefore the impacts would be the same as under Alternative 1.

9) Socio-economics: As in the discussion under Alternative 1, it is difficult to assess socio-economic impacts due to limited information. As identified earlier, increased tourism, fishing, boating, and other recreational uses could increase revenues to the local economy. Not limiting commercial or private boaters may contribute slightly, but not significantly to local employment and revenues. In the long term,

this could cause unacceptable resource degradation which would decrease visitation and reduce revenues. Under this alternative, more opportunities for sand and gravel production outside of the WSA could possibly generate more revenues.

Social attitude changes will be similar to those discussed under the Proposed Action Alternative.

10) Recreation: Without the zoned approach to management of the Dolores Corridor, there will not be an array of social, biological, and recreational settings provided. Various user groups will not be ensured of diverse opportunities. The natural environment will not necessarily be maintained, therefore those seeking recreation in a natural setting will not be ensured of those settings.

Those groups desiring recreational vehicle use will have more opportunities under this alternative.

Motorized craft, aircraft landings, and increased vehicle access along the river will provide opportunities for those desiring these uses, but will negatively impact visitors seeking a more primitive experience.

#### Visitor Services

There will be no additional emphasis on information or interpretive material and facilities. The visitor experience will not be enhanced by these actions, and visitors will not be informed about minimizing their impacts on the environment.

Search and rescue and patrol activities will not increase, and visitors may be unaided under emergency situations.

Without limits on group sizes, resource damage will occur at access and camping sites. Visitors seeking freedom to do whatever they desire will benefit.

Conflicts between groups desiring the same campsite could occur.

#### Permitting and Allocation

Due to resource degradation resulting from unregulated use, those users seeking primitive/wilderness experiences will be negatively impacted.

Those commercial outfitters who perceive discrimination under the proposed action will benefit under this alternative because commercial permit allocations will not be limited. This will result in a higher number of social encounters and resource damage that may negatively impact those seeking a wilderness experience.

Those companies that did not have special recreation permits prior to 1988 will benefit under this alternative.

#### Site/Facility Development

Access facilities may not be developed under this alternative. This will not provide quality facilities for visitors, therefore potentially negatively impacting the visitor. Sanitation problems and resource damage could occur; quality parking and good boat launch sites would not be available.

Dump stations will not be available, and visitors will be burdened with the disposal of human wastes. Additionally, there is a risk of river users disposing of these wastes in an unacceptable manner on site or elsewhere.

#### Resource Protection/Manipulation/ Rehabilitation

There will be no restrictions; therefore, the natural values many visitors seek will be degraded. Packing out trash, carrying portapotties, and wood collection restrictions will not occur. This will result in resource damage.

**c. Unaffected Resources**

No impact is anticipated for climate, topography, or noise.

**d. Cumulative Impacts**

No social or biological carrying capacity would be established or enforced to protect those values. Soil, water, vegetation, wildlife, cultural resources, and the recreational experience would continue to degrade as a result of uncontrolled recreational use. Sand and gravel pro-

duction opportunities, livestock grazing, and recreationists seeking unregulated environments would benefit from this alternative.

**F. List of Preparers**

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## V. Implementation Schedule

The Implementation Schedule with cost estimates is shown below. These actions will be implemented as scheduled only if the necessary funding is available each fiscal year. If funding is unavailable in the year identified, the implementation of that particular management action will be deferred to the following year. Those actions where costs are minimal are shown by an X. Numbers, where shown for particular actions and fiscal years, indicate thousands of dollars. Costs shown are in addition to current staffing/funding levels.

<u>Management Actions</u>	<u>Fiscal Years</u>									
	90	91	92	93	94	95	96	97	98	99
<u>Other Resource Programs</u>										
1. Cultural & Paleontological Resources										
a. Complete identification and evaluation of all cultural resources potentially affected and prepare activity plan.		6	6	9	9	15				
b. Periodically monitor significant cultural sites	X	2	X	2	X	2	X	2	X	2
c. Develop and interpret important cultural properties	X	X	2	X	X	2	X	X	3	X
d. Conduct paleontological inventory			3	3	3					
e. Testing at 5DL1090	3									
f. Interpret Bradfield Homestead			1							
g. Protective measures implemented - all sites and areas.	X	4	2	X	6	X	2	X	3	X
h. Stabilize, map, and interpret 5DL180 and 181.			3		2	2				
i. Investigate and map potential prehistoric trails.	X	X	2	X						
j. Interpret 5DL1269			1							
k. Test rockshelter near Mile 42			2							
l. Interpret vanadium mining (5SM1979)			1							
m. Test Shaman Cave and implement protective measures			4	2	4					
n. Interpret Bull Canyon rockshelter		1								
o. Interpret sites at Coyote Wash campsite - hiking trail	X	1								
p. Interpretation of sites at Muleshoe Bend				1						

**Management Actions**

**Fiscal Years**

	90	91	92	93	94	95	96	97	98	99
q. Interpretation of dinosaur tracks at La Sal Creek		1								
r. Designation of Triassic Fish Locality as RNA			2							
<b>2. Wildlife</b>										
a. Riparian/aquatic inventory	X	21	15	12	6					
b. Riparian monitoring	4	4	3	9	6	X	X	6	6	6
c. Aquatic habitat monitoring		3	6				X	3		
d. Benthic sampling		6	6	3	3					3
e. Riparian restoration	X	X	3	3	3	3				
f. Non-game bird surveys		X	X	X					X	X
g. Bighorn sheep study	12	12								
h. Relic site evaluation			3	3						
i. River brochure		4	4							
j. Interpretive signing & maintenance			4	X	X	4	X	X	X	1
k. Priority species inventory	X	X	X	X	9	15	6	3	X	X
<b>l. T &amp; E species</b>										
1) Bald eagle monitoring	2	2	2	2	2	2	2	2	2	2
2) Peregrine falcon monitoring	X	2	2	2	2	2	2	2	2	2
3) T & E plant surveys	X	4	4	4	4	4	4	4	4	4
4) T & E plant monitoring	X	4	4	4	4	4	4	4	4	4
<b>3. Grazing</b>	X	X	X	X	X	X	X	X	X	X
<b>4. Geology/Minerals</b>	X	3	6	X	X	X	X	X	X	X

**Land Tenure Adjustment**

1. Acquire Black Property			3	150						
2. Acquire BOR Property Near Bedrock			2	3						
3. Acquire Land Above Slick Rock	20	5								
4. Acquire Scenic/Conservation Easements			X	X	X	X	X			
5. Acquire McIntyre Canyon Easement			X	X	X	X	X			

**Management Actions**

**Fiscal Years**

	90	91	92	93	94	95	96	97	98	99
6. Repaint Dove Creek Pump Station		1								
7. Maintain Flexibility for Future Proposals	X	X	X	X	X	X	X	X	X	X

**Off Highway Vehicles**

1. Continue ORV Designation Order #CO-030-8601	X	X	X	X	X	X	X	X	X	X
2. No Motor Water Craft in SRMA and WSA	X	X	X	X	X	X	X	X	X	X
3. Restrict Aircraft Landings	X	X	X	X	X	X	X	X	X	X
4. Road Closure Below Snaggletooth	1	X	X	X	X	1	X	X	X	X
5. Other Road Closures	1	2								
6. Restrict Mechanized Travel	X	X	X	X	X	X	X	X	X	X

**Visitor Services**

1. Develop Map/Brochure		7	6				4			
2. Continue Hotline	1	X	X	1	X	X	1	X	X	X
3. Cooperative Search & Rescue Agreements		X	X							
4. Intensive BLM River Patrols		15	15	15	15	15	15	15	15	15
5. Mandatory Registration	1	1	X	X	X	X	X	X	X	X
6. Group Size Restriction	X	X	X	X	X	X	X	X	X	X
7. Voluntary Campsite Reservation			X	X	X	X	X	X	X	X

**Special Area Permits-River Use Allocation**

1. Overall Allocation Policy		4	1	1	1	1	1	1	1	1
2. Outfitter Selection (Whitewater)	X									
3. Outfitter Selection (Low Water)	X									
4. Non-use of Launches/Transfer of Launch Dates/Disposition of Unused Launch Dates	1	1	1	1	1	1	1	1	1	1
5. Non-boating SRPs	X	1	X	1	X	1	X	1	X	1
6. WSA Restrictions	X	X	X	X	X	X	X	X	X	X

**Concessions**

1. No Concessions Except Slick Rock										*X
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\* dependent on future status of current private access facilities at Slick Rock.

**Management Actions**

**Fiscal Years**

	90	91	92	93	94	95	96	97	98	99
<b><u>Site Facility Development</u></b>										
1. Downstream Sites	X	X								
2. Exclude Other Permanent Facilities	X	X	X	X	X	X	X	X	X	X
3. Sanitary Dump Stations				3	3	3	3	3	3	3
4. Trail Development	X	X	X	X						
<b><u>Resource Protection/Manipulation/Rehabilitation</u></b>										
1. Continue Pack-Your-Trash Policy	X	X	X	X	X	X	X	X	X	X
2. Continue Porta-Potty Policy	X	X	X	X	X	X	X	X	X	X
3. Firepan/Firewood Restrictions	X	X	X	X	X	X	X	X	X	X
4. Monitoring/Site Rehabilitation	1	1	X	1	X	1	X	1	X	1
5. Control Thistle and Tamarisk				1	1	1	X	1	X	1
6. Close & Rehab Trails in WSA		1	1	1						
<b><u>Maintenance</u></b>										
1. Maintain Developed Sites			8	8	9	9	9	9	10	10
2. Road Maintenance		3	3	3	3	3	3	3	3	3
<b><u>Administration</u></b>										
1. Increase BLM Workpower			18	18	18	18	18	18	18	18
2. Vehicle/Equipment Needs		3	3	3	3	3	3	3	3	3
3. Use of Volunteers	3	3	3	3	3	3	3	3	3	3
4. Construct Employee Housing							60			
5. Cooperative Agreements - USFS & CDOW		X	X	X	X	X	X	X	X	X
6. Cooperative Law Enforcement Agreements		1	X	X	1	X	X	1	X	X
7. Host Annual Post-Season Coordination Meeting	X	X	X	X	X	X	X	X	X	X
8. Historic Preservation Agreement					X					

## Appendix 1

### Recreation Opportunity Spectrum (ROS)

People engage in recreation to experience personal renewal and refreshment. These results are attained by participating in preferred recreation activities within preferred settings. The Recreation Opportunity Spectrum (ROS) is a method to characterize land areas in terms of the types of recreation experiences, activities, and settings provided. These opportunities are arranged within a spectrum of six land classes from back country to developed-urban.

The Dolores River planning area contains four of these ROS classes, referred to in the plan as Units I, II, III, and IV. These classes are named and described as follows:

Back Country (Unit IV)	Areas lying more than three miles from the nearest point of motor vehicle access, having unmodified landscapes, where there is little evidence of other people, and that are almost completely free of management controls.
Walk-in (Unit III)	Areas at least one-half mile from the nearest point of motor vehicle access but not as distant as three miles, having mostly natural landscapes, where there are some evidences of other people, and where there are very few management controls.
Four Wheel (Unit II)	Areas alongside or near 4-WD roads and trails, having mostly natural landscapes, where there are often evidences of other people but numbers seem to remain low, and where management controls are evident but not dominant.
Roaded Open Country	Areas alongside or near improved roads where pickups and cars can be driven, having naturally appearing but modified landscapes, where there are moderate evidences and numbers of other people, and where management controls provide a sense of security.
Highway-Rural (Unit I)	Areas alongside or near paved highways, or having heavily modified landscapes, where there may be considerable evidences or numbers of other people, and where management controls are easily seen.
Developed-Urban	Areas alongside or near paved highways, or where the natural landscape is dominated or replaced by human made developments, where there are great numbers of evidences of other people, and where management controls are numerous and dominant.

ROS classes for the Dolores River corridor were identified in the 1985 RMP. Recommendations were partially based on earlier inventories and studies which identified the Dolores Canyon Wilderness Study Area and recommended "wild," "scenic," and "recreational" status for various river segments under terms of the Wild and Scenic Rivers Act.



## Appendix 2

### Public Participation Summary

The Montrose BLM District genuinely appreciates the assistance and constructive criticism offered by the Dolores River Task Force over the past 18 months. These individuals have collectively donated over 500 work-hours, often spent under stressful conditions due to the widely divergent and often times conflicting viewpoints represented by individual members.

While BLM realizes that certain groups and individuals will disagree with portions of the DRCMP, rest assured that we made extensive efforts to involve the broadest array of interested "publics" from the very start of the planning effort. Moreover, we hope to continue periodically consulting with the Task Force throughout the life of the plan. Once again - to the participants - thanks for your time and your commitment to the Dolores River!

#### Dolores River Task Force Members:

<u>Name</u>	<u>Representing</u>
Steve Boyle/Gary Skiba	Colorado Division of Wildlife
Joe Greiner	Commercial Rafting
Tom Klema	Commercial Rafting
Tom Knopick	Commercial Fishing
Wayne Magness/Don Drummond	Local Communities
Russell Martin	Private Boating
Dave Mutz	Bureau of Reclamation
John Porter	Dolores Water Conservancy District
Rick Ryan	Private Boating
John Voelker	Colorado Wildlife Federation
Lynn Walz	Conservation Groups
Tim Wolfe	Private Boating
Dan Woodard	Local Communities/Neighboring Landowners

Donn Hicks, volunteer participant

Jennifer Sullivan Carney, cover artwork

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**Schedule of Public Participation:**

<u>Date</u>	<u>Event</u>
3-1-88	Task Force Meeting, Durango
4-4-88	Task Force Meeting, Durango
4-25, 26, 27, 28-88	BLM Hosted Public Meetings in Dove Creek, Naturita, Dolores, and Durango (scoping/issue identification)
5-7, 8-88	Task Force Meeting and on-river Orientation, Bradfield to Snaggletooth Float Trip
8-31-88	Task Force Meeting, Durango
9-6-88	Dolores River Rafting Outfitters Meeting, Durango
9-29-88	Task Force Meeting, Anasazi Heritage Center (AHC)
12-1-88	Task Force Meeting, Durango
12-8-88	Task Force Meeting, AHC
1-17-89	Task Force Meeting, Durango
2-6-89	Task Force Meeting, AHC
2-7-89	Task Force Meeting, Durango
2-21-89	Task Force Meeting, Durango
2-28-89	Mass Mailing of BLM/Task Force Options and Recommendations
3-9-89	BLM-Hosted Public Open House, AHC
4-26-89	Task Force Meeting, Durango
7-14-89	Draft Plan Issued for Public Review
8-9, 10, 14-89	BLM-Hosted Public Meetings in Dolores, Durango, and Denver
10-19-89	Task Force Meeting, Durango

## Appendix 3

### (Copy of Mass Mailing and Summary of Comments)

1. Copy of mailing (attached).
2. Summary of Comments:

As a result of the February 28th mailing and the March 9th open house, BLM received written comments from the following eighteen individuals or organizations.

Tom Beck  
Rob Tubbs  
Karl Kiser  
Breckenridge Outdoor Education Center  
Greg Felt  
Jimbo Buickerood  
Colorado Whitewater Association  
Telluride Institute  
Dick Anderson

Deer Hill  
Humpback Chub River Tours  
Peregrine River Outfitters  
Durango Rivertrippers  
Four Corners Expeditions  
Arkansas River Tours  
Wilderness Aware  
Gunnison River Expeditions  
Bill Dvorak's Kayak & Rafting Expeditions

Most comments dealt with allocating use between private and commercial boaters. Most outfitters favored a 50/50 launch split, while allowing at least annual permits to all historical Dolores River outfitters. Non-outfitters generally favored a commercial/private launch ratio of closer to 40/60 or 30/70. Overall, comments regarding maximum group sizes were quite varied. Some proposed a 25-person limit on the entire river, others proposed 25 for the upper river and 16 for the WSA portion, and still others favored a 16 or lower limit for the entire river. Some respondents proposed monitoring use in the WSA section for two or three years before allocating, noting that BLM's records for historical private use are particularly sparse for this section of river. A couple of outfitters also proposed allocating launches only on weekends, when use can normally be expected to be greatest. A few responses favored creation of occasional special exemptions (regarding launches and group size) for schools, camps, or therapeutic groups.

Several letters favored voluntary campsite registration at put-ins, as well as restrictions on driftwood collection. Many respondents also believed BLM should protect the river's uniqueness first, and manage for visitors within that constraint. Other miscellaneous comments related to needing tighter overall restrictions than those proposed by BLM, using education attempts prior to implementing extensive restrictions, assigning all campsites within the WSA, etc.

Copies of the eighteen letters received by BLM are on file and available for public review at the San Juan Resource Area Office in Durango, Colorado.

EXAMPLES OF POTENTIAL

MANAGEMENT ACTIONS - Bradfield Bridge to Slickrock

(Successful steps would be implemented only if previous steps are unsuccessful in meeting management goals)

**DEF**

Permit System:  
(Noncommercial)

- Step 1 - Continue to use river registration or an information gathering, self-issue non-limiting permit.
- Step 2 - Issue non-limiting permit but use contact with user to direct camping use (i.e. put-on before 11:00 am camp past mile 12, put-on after 11:00 am camp before mile 12).
- Step 3 - Issue limiting permit during use period if is needed.
- Step 4 - Issue limiting permit all season.

Campsites:

- Step 1 - 1st come, 1st served.
- Step 2 - Sign up for campsites at put-in register.
- Step 3 - Encourage campsite selection by users by utilizing river ranger at put-in with campsite suggestions.
- Step 4 - Designate commercial campsites.
- Step 5 - Identify by map and campsite markers designated campsites.
- Step 6 - Designate campsites through permit system.

Facilities:

- Step 1 - No facilities except at put-in/take-out.
- Step 2 - Small tie-up site above Snaggletooth Rapids and toilet at Snaggletooth Rapids site.

Fires:

- Step 1 - Allow driftwood fires in firepans.
- Step 2 - Allow driftwood fires in firepans only between September 16 and May 14.
- Step 3 - No wood fires; stoves and charcoal only.

Day Use:

- Step 1 - No "day use" only areas.
- Step 2 - Monitor resource conditions and people crowding and consider "day use" only at Anasazi graneries, Snaggletooth Rapids, and sensitive wildlife zones.

Management Presence:

- Step 1 - Management presence as necessary but primarily at put-in/take-out sites.

Allocation:

- Step 1 - Status quo
- Step 2 - Establish a 50/50 commercial/noncommercial split on launches with commercial launches set and private launches targeted.
- Step 3 - If carrying capacity limits are exceeded, set private launches to meet limits.

**DEF**

**MANAGEMENT ACTIONS - Slickrock/Gyp Bridge to Bedrock**

**DRAFT**

Campsites:

- Step 1 - 1st come, 1st served.
- Step 2 - Sign up for campsites at put-in register.
- Step 3 - Encourage campsite selection by users by utilizing river ranger at put-in with campsite selections.
- Step 4 - Identify by map and campsite markers (optional) designated campsites.
- Step 5 - Designate campsites through permit system.

Facilities:

- Step 1 - No facilities except at put-in/take-out.

Fires:

- Step 1 - Allow driftwood fires in firepans.
- Step 2 - Allow driftwood fires in firepans only between September 16 and May 14.
- Step 3 - No wood fires; stoves and charcoal only.

Day Use:

- Step 1 - No "day use" only areas.
- Step 2 - Monitor resource conditions and people crowding and consider "day use" only at both Anasazi Overhangs, Spring and Bull Canyons, and Coyote Wash.

Management Presence:

- Step 1 - Management presence as necessary but primarily at put-in/take-out sites.

Allocation:

- Step 1 - Status quo
- Step 2 - Establish a 10/90 commercial/noncommercial split on launches with commercial launches set and private launches targeted.
- Step 3 - If carrying capacity limits are exceeded, set private launches to meet limits.

Permit System:  
(Noncommercial)

- Step 1 - Continue to use river registration or an information gathering, self-issue non-limiting permit.
- Step 2 - Issue non-limiting permits but use contact with user by river ranger to direct camping use.
- Step 3 - Issue limiting permit during use period it is needed.
- Step 4 - Issue limiting permit all season.
- Step 4a - Use "freedom of choice" method for issuance of a permit. Allow two commercial trips a week "guaranteed" use through this section (launching from Bradfield or Slickrock put-ins).

Dolores River

**DRAFT**

Carrying Capacity Assumptions:

1. Group encounter = one group no matter how many times encountered that day.
2. River put-ins/take-outs (Bradfield, Dove Creek Pump, Slickrock, Gyp Valley, Bedrock) - any encounter at these sites will be considered as one group encounter.
3. Group encounters identified are water-based only (on river floatboating, or river-parties on shore).
4. Any group encounters at Snaggletooth Rapid, regardless of number of parties, will be considered as one group encounter.
5. Management actions and criteria would be geared to the most restrictive section of the river floated (i.e. Slickrock - Bedrock; use primitive group size criteria).
6. Vehicle encounters will not be counted.

Possible Dolores River Allocation Options

UPPER SEGMENT - Bradfield Bridge to Slick Rock (until June 18) Scenario A

COMMERCIAL

2 assigned launches per day 8 launches per day.  
2 common pool (yearly)\*

PRIVATE (Targeted)

**Rationale:** The average daily launch total for commercial outfitters is less than 2 launches per day historically. In 1987, there were a total of eight days with 3 or more commercial launches. In 1988, there were a total of four days with 3 or more commercial launches. Under this scenario in 1987, three outfitters (not including the eleven commercial launches starting Memorial Day Weekend) could not have launched on a specific day. In 1988, there would have been three outfitted trips that could not have launched on a specific day. There were other days, however, in which these launches could have been made. Visitor use on commercial trips is, on the average, two times greater than that on a private trip. Based on user days, 4 commercial and 8 private launches equates to 50/50 actual use.

\* If an outfitter is not going to use a trip it goes into a common pool. This would be without penalty if placed in the pool at least two weeks prior to the launch date (with certain exceptions). A lottery method would be used to select another outfitter requesting that date; or a private individual should a limiting private permit system be in place. Trading of dates between outfitters will not be allowed within the common pool. Assigned launches may be traded with prior BLM approval.

Travel downriver past Slick Rock to Bedrock can be accomplished two ways.

1. Only those outfitters would be allowed who have a verified commercial trip in 1987 and/or 1986 from Bradfield to Bedrock (or beyond).
2. Only those outfitters who have an assigned launch date for the lower segment may proceed past Gyp Bridge put-in/take out.

UPPER SEGMENT - Bradfield Bridge to Slick Rock (until June 18) Scenario B

<u>COMMERCIAL</u>	<u>PRIVATE (Targeted)</u>
100 users per day, maximum of 4 launches	100 users per day, maximum of 8 launches

Rationale: This would treat commercial use and private use at a 50/50 user-day allocation. This recognizes that visitor use on a commercial trip is, on the average, two times greater than that on a private trip. Thus, user days would be the same, but launches would be greater for the private sector due to smaller average group sizes.

UPPER SEGMENT - Bradfield Bridge to Slick Rock (until June 18) Scenario C

<u>COMMERCIAL</u>	<u>PRIVATE (Targeted)</u>
6 launches	6 launches

Rationale: This scenario is based on a 50/50 allocation, with an equal number of launches between commercial and private users. It recognizes that in 1988 there were approximately twice as many user days associated with commercial use over that of the private users in the Upper Segment, while total launch numbers for commercial groups roughly equalled total private launches.

UPPER SEGMENT - Bradfield Bridge to Slick Rock (until June 18) Scenario D

<u>COMMERCIAL</u>	<u>PRIVATE (Targeted)</u>
30% of user-days	70% of user days

Rationale: Based on an average group size of an outfitter being twice as large as the average group size of a private group, this would equate to 2 commercial launches and 10 private launches per day. Although present use of the Upper Segment is approximately 50 percent commercial launches and 50 percent private launches, approximately one-third of the commercial use is staff user-days and two-thirds is client user-days. This proposal is an attempt to base the allocation on the outfitted and the non-outfitted publics exclusive of the outfitter/guides.

UPPER SEGMENT - Bradford Bridge to Dove Creek (June 18 on)

COMMERCIAL PRIVATE (Targeted)

- 1. 1 assigned launch 4 launches
- 1 common pool

COMMERCIAL PRIVATE (Targeted)

- 2. 2 assigned launches 4 launches
- (or 50 users) (or 50 users)

COMMERCIAL PRIVATE (Targeted)

- 3. 3 launches 3 launches

Variation on #2 and #3 is under commercial

1 launch could be defined as day use only

UPPER SEGMENT - Dove Creek Pump to Slick Rock

A total of 3 launches would be targeted or assigned to launch at the Dove Creek Pump. Various methods could be used:

- 1. Alternate days: 1 assigned commercial launch, 2 private launches; 2 assigned commercial launches, 1 private launch.
- 2. 1 assigned commercial launch every three days. 2 private launches on commercial launch days, 3 private launches on non-outfitter launch days.
- 3. No assigned commercial launches, private use only (maximum of three launches). Outfitters could "move" an assigned or common pool launch from Bradford to the Dove Creek Pump and can pick up clients at Dove Creek Pump from a Bradford launched trip.

Day use running of Snaggletooth Rapid will be prohibited or discouraged. This type of use tends to clog the Snaggletooth area; both on-river (boats) and off-river (spectators and vehicles).



COMMERCIAL

1 launch every third day.

PRIVATE (Targeted)

2 launches on out-fitter launch days,  
3 launches on non-outfitter launch days.

Rationale: In 1987, there were a total of 19 commercial launches in this lower segment; with two days having two launches. In 1988, there were a total of 8 commercial launches; with three days having two launches. The average daily launch total for commercial outfitters is approximately one launch every three or four days. Private launches average one per day. Launch dates for outfitters would alternate every year and only outfitters with verified commercial use in this lower segment in 1987 and/or 1986 would be permitted.

COMMERCIAL \*

1 launch every other day.

PRIVATE (Targeted) \*

2 launches on out-fitter launch days,  
3 launches on other days.

Rationale: This scheme allows outfitter growth beyond the historical average of one launch every 3 to 4 days, yet it meets our estimate of 3 total launches per day in order to not exceed carrying capacity. The 1988 user study indicates average commercial versus private use ratio of about 28% to 72%. BLM records (outfitter trip logs and river registers) indicate average commercial group size of 10 or 11 and average private group size of 5 or 6. Therefore, the historical ratio of 28% to 72% would be maintained if roughly one of every six launches was commercial.

Since the 1988 user survey also showed that about 45% of private trip participants registered at put-in or take-out, this scenario also allows for somewhat expanded use of the lower canyon by private groups (2 or 3 launches per day versus about 1 per day based on 1988 river registers).

\* In addition, one fleet thru trip per day would be allowed originating from the Upper Segment.

COMMERCIAL                      PRIVATE (Targeted)

3 launches per day.                      3 launches per day.

Rationale:    A total of six launches would be allowed per day at Slickrock and Gyp Bridge. No more than 3 launches could launch at either put-in site. Two float thrus (one commercial, one private) would be allowed each day originating from the Upper Segment.

This would allow growth in the outfitter industry and would provide for a 50/50 launch allocation between private and commercial use.

Dolores River  
Carrying Capacity Options

River Segment: Gyp Bridge - Bedrock  
 ROS Classification: Primitive  
 Designation: Proposed Wild River, Proposed Wilderness

	<u>Alternatives</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>Preferred</u>
Group Encounters (80% of time)		6	3	0	3
Campsite Conditions (impacted)	# heavy	2	0	0	0
	# moderate	4	2	0	2
	# low	remainder	remainder	all	remainder
Campsite Locations (within sight & sound, 80% of time)		4	2	0	2
Group Size		25	16	12	16
Probable # launches associated with carrying capacity limits		6	3	1	3

(NOTE: Launch numbers shown are preliminary estimates, based upon Task Force/BLM experience and input.)

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River Segment: Bradfield - Dove Creek Pump  
 ROS Classification: Semi-primitive, non-motorized  
 Designation: Proposed Scenic River

	<u>Alternatives</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>Preferred*</u>
Group Encounters (80% of time)		15	10	6	10(4/1-6/17) 6(6/18 → )
Campsite Conditions (impacted)	# heavy	3	1	0	1
	# moderate	7	5	6	5
	# low	remainder	remainder	remainder	remainder
Campsite Locations (within sight & sound, 80% of time)		6	4	2	4
Group Size		31 (25 + 6 guides max.)	25	16	25(4/1-6/17) 12(6/18 )
Probable # launches associated with carrying capacity limits		18	12	8	12(4/1-6/17) 6(6/18 → )

\* Split season considers recent development of a viable fishery resource within this segment of the Dolores River; lower #s after June 17 would accommodate predominantly fishing use

River Segment: Dove Creek Pump - Slick Rock  
 ROS Classification: Semi-primitive, motorized, roaded natural  
 Designation: Proposed Recreational River

	<u>Alternative</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>Preferred</u>
Group Encounters (80% of time)		15	10	6	10
Campsite Conditions (impacted)	# heavy	6	1	1	1
	# moderate	8	5	5	5
	# low	remainder	remainder	remainder	remainder
Campsite Locations (within sight & sound, 80% of time)		10	6	4	6
Group Size		31 (25 + 6 guides max.)	25	16	25 3 (4/1-6/17)
Probable # launches associated with carrying capacity limits		4	3	2	7 (6/18 → )

Assumption: Will not count vehicle encounters. Any group encounters at Snaggletooth Rapid, regardless of number of parties, will be considered only as one (1).

River Segment: Slick Rock - Gyp Bridge  
 Bedrock downstream  
 ROS Classification: Roaded natural  
 Designation: Proposed Recreational River (Slick Rock - Gyp Bridge)

Group Encounters - No Limit

			Preferred
Campsite Conditions (impacted)	# heavy	50%	} # severe - 1 # moderate - 5 # low - remainder
	# moderate	50%	
	# low	50%	

Campsite Locations - No Limit  
(sight and sound)

Group Size\* - 31 maximum for overnight trips (larger possible w/prior BLM approval)  
 no limit on day trips

Assumption: Management actions and criteria would be geared to the most restrictive section of the river floated (i.e. Slick Rock - Bedrock; use primitive group size criteria).

## **Appendix 4**

### **Off-Road Vehicle Designation Order #CO-030-8601**

(excerpts applicable to Dolores River Corridor Management Plan)

## **APPENDIX 5**

### **Cultural Resource Study Plan**

BLM initiated an intensive (Class III) cultural resource inventory and evaluation program in 1988 to provide the level of data necessary to understand the importance of the cultural resources in the Dolores River corridor and to enable an adequate level of protection commensurate with river management goals and planned recreation development. Cultural resources was not identified by the public as an issue in the initial scoping process for this management plan but it was identified in BLM's San Juan/San Miguel Resource Management Plan as an important resource to be considered during recreation management and development within the Dolores River WSA and SRMA. The data gathering phase of the inventory and evaluation program will identify and assess the significance of all cultural properties in the canyon area together with those areas where recreation development may have effects. It will also evaluate current and potential effects specific to each resource or group of resources and their settings from recreational river use and other river management treatments. Results of the survey will supplement the Dolores River Management Plan and provide the database necessary to protect and interpret the cultural properties along the river corridor. Fieldwork required to complete this assessment is tentatively scheduled for completion by the fall of 1993. A separate activity plan (Cultural Resource Project Plan) and cultural resource synthesis will be completed following fieldwork.

A study plan has been developed by BLM to direct the inventory and evaluation of cultural resources in the Dolores River Corridor. This study plan outlines several objectives and research frameworks which were used to design the fieldwork methodology and enable a subsequent report. Once completed this will then be used to develop a Cultural Resource Project Plan which will provide for the management and protection of all cultural properties in the river corridor. The objectives used to direct this study include:

- To refine and update the sample survey of the Dolores River done by Toll in 1977
- To provide consideration to all significant cultural properties which may be affected by varying levels of recreational river use and recreational and wildlife developments
- To synthesize data about the cultural use of an important landform and transportation corridor in Southwestern Colorado
- To augment and refine the scientific knowledge of prehistoric and historic use of the Dolores River corridor and place it in a context with adjacent areas and the Colorado Plateau as a whole

Several research objectives have also been developed to guide data gathering activities. These are:

- To investigate the possible presence of a "Dolores River Techno-Complex" with regional and temporal variation conditioned by environmental response. This would include an evaluation of unique responses to the region and responses equivalent with those established for the Colorado River Corridor and the San Juan Basin.
- To document any evidence of the geographic or temporal reach of Anasazi, Fremont, or Formative Stage (unaffiliated) influence in the corridor

- To apply descriptive and functional site types and temporal ranges to as many sites as possible in order to better define settlement pattern and technology
- To achieve a working knowledge of current and past geomorphological processes unique to the Dolores River corridor and how this can be used to better understand and interpret physical (archaeological) remains in a cultural context independent of the geological forces which have acted on these remains through time

In summary, it is felt that the level of data existing at the time that this plan was initiated was enough to indicate that significant and vulnerable cultural resources exist in the Dolores River corridor. Their extent and specific value is not known. A study was thereby initiated to provide the level of data necessary to evaluate the cultural properties and assess potential impacts so that protective and enhancement measures could be effectively employed. Interim management measures have been outlined in this planning document but the more detailed analysis necessary to acknowledge, evaluate, protect, and interpret these significant resources is in process and will result in a Cultural Resource Project Plan which will present specific site management prescriptions together with important regional cultural interpretations in the form of a Dolores River Corridor Cultural Resource Synthesis report.

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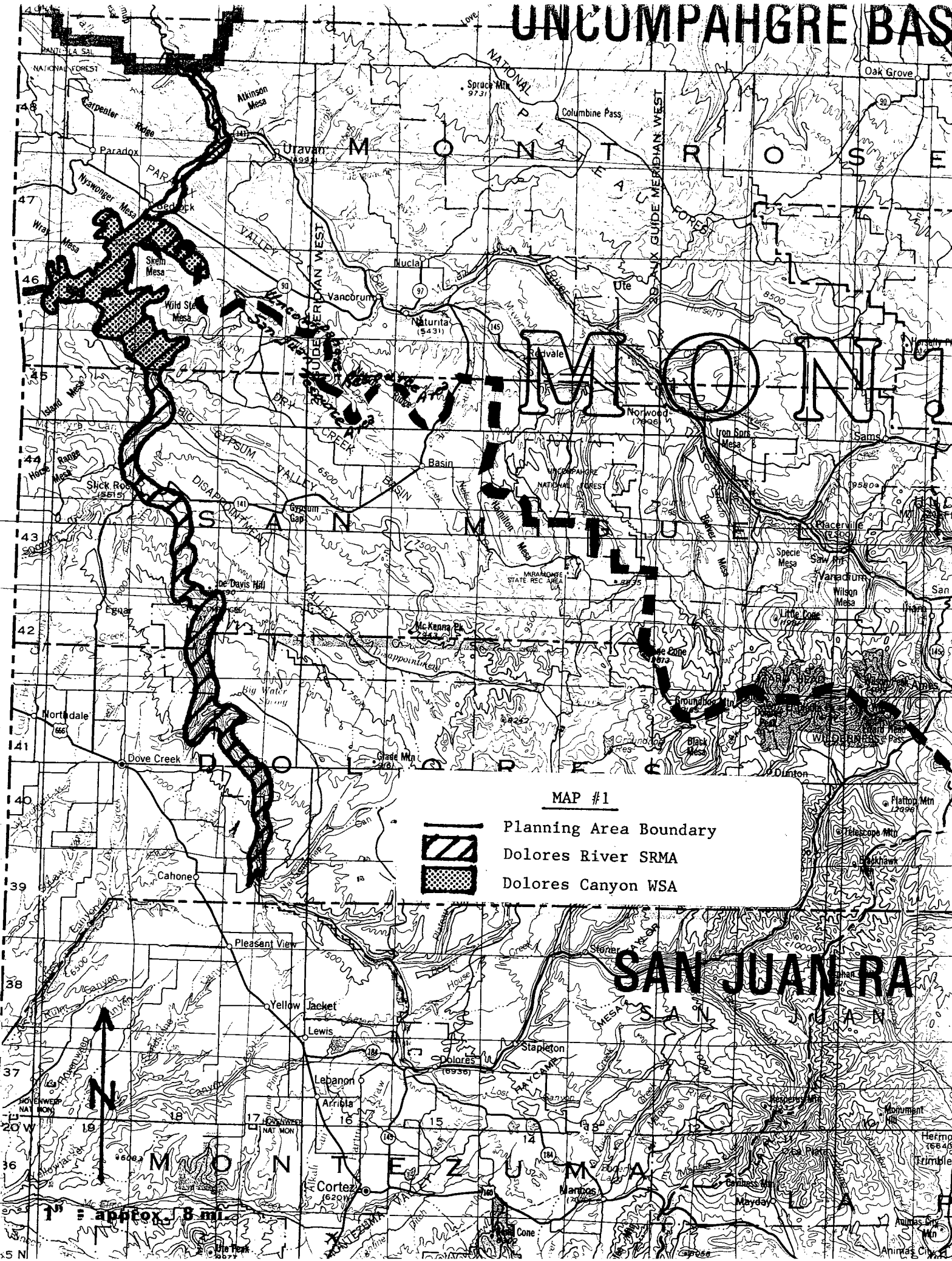
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# UNCUMPAHGRE BAS



MAP #1



Planning Area Boundary  
Dolores River SRMA  
Dolores Canyon WSA

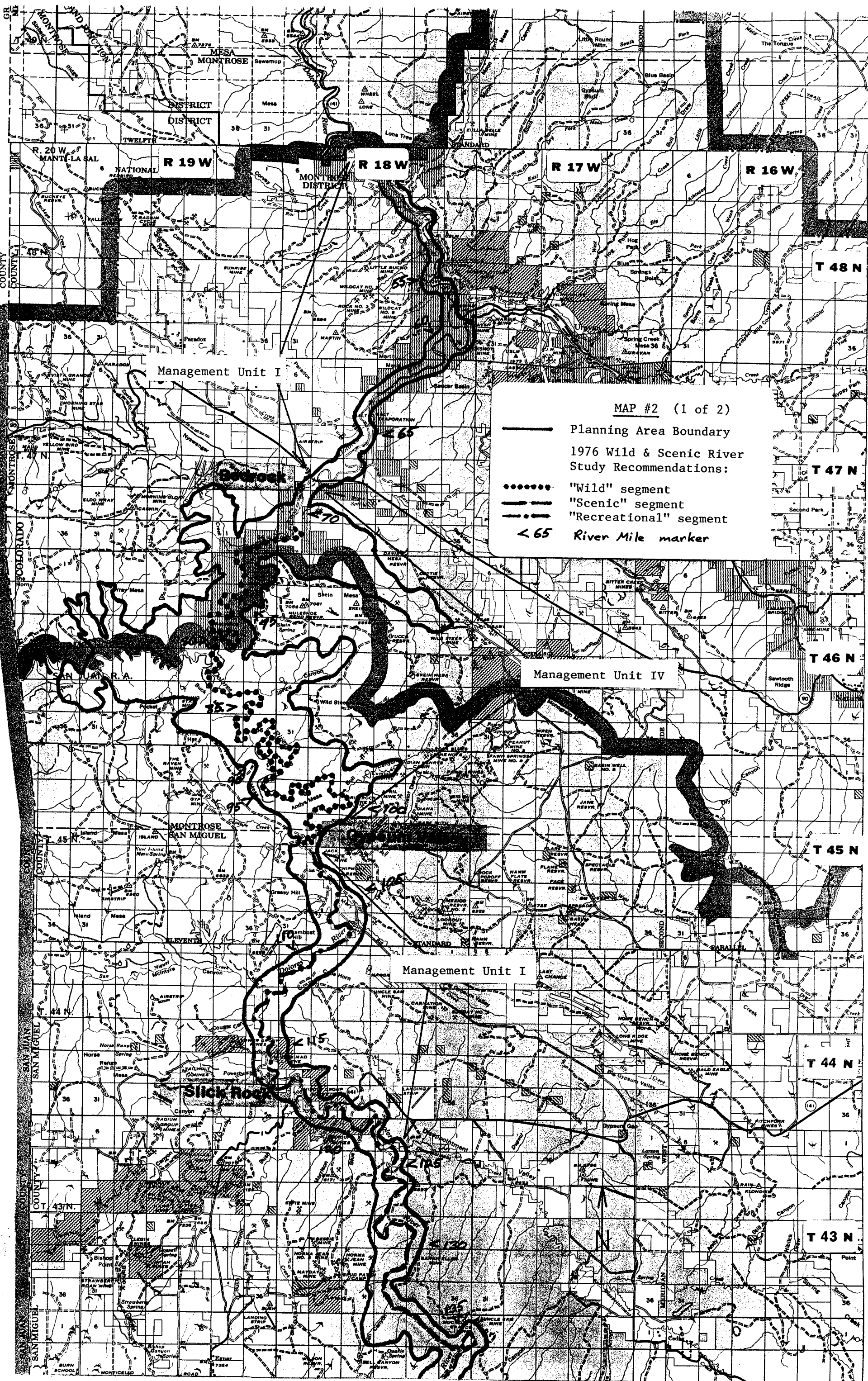
# SAN JUAN RA



1" = approx. 8 mi.

35 N

100 W



MAP #2 (1 of 2)

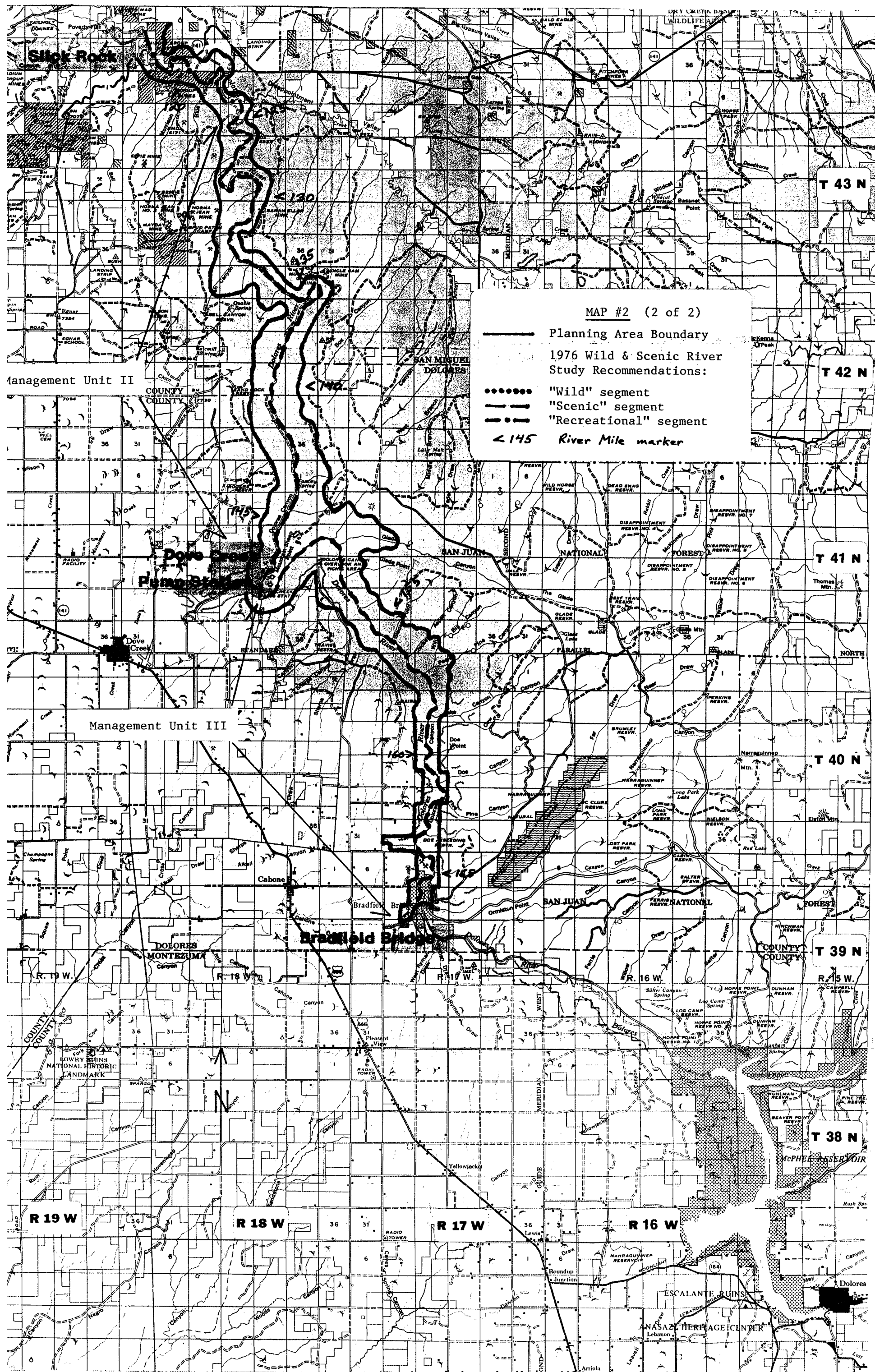
- Planning Area Boundary
- 1976 Wild & Scenic River Study Recommendations:
  - "Wild" segment
  - "Scenic" segment
  - "Recreational" segment
  - < 65 River Mile marker

Management Unit I

Management Unit IV

Management Unit I

Slick Rock



MAP #2 (2 of 2)

- Planning Area Boundary
- 1976 Wild & Scenic River Study Recommendations:
- "Wild" segment
- "Scenic" segment
- "Recreational" segment
- < 145 River Mile marker

Management Unit II

Management Unit III

COUNTY COUNTY

COUNTY COUNTY

LOWRY RUINS NATIONAL HISTORIC LANDMARK

R 19 W

R 18 W

R 17 W

R 16 W

T 39 N

T 38 N

T 40 N

T 41 N

T 42 N

T 43 N

San Miguel Dolores

Dore

Hump

Bradfield

ESCALANTE RUINS

ANASAZI HERITAGE CENTER

Dolores

San Juan

NATIONAL FOREST

PARALLEL

San Juan

McPHEE RESERVOIR

Escalante Ruins

Anasazi Heritage Center

Dolores