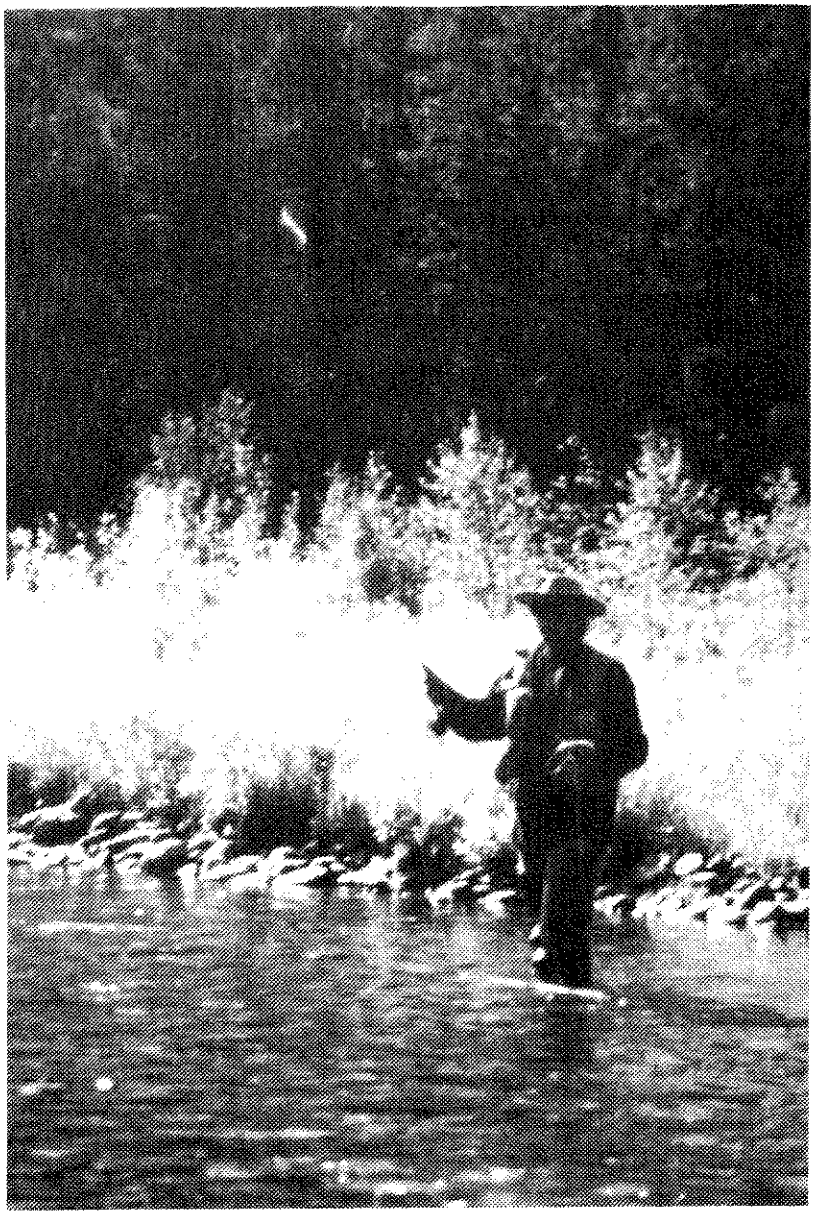
1989

ROCK CREEK FISHERIES MANAGEMENT PLAN

SEPTEMBER 1989 – SEPTEMBER 1994



Montana Department of Fish, Wildlife & Parks

REGION 2

SEPTEMBER 1989

ROCK CREEK FISHERIES MANAGEMENT PLAN

FOR THE PERIOD

SEPTEMBER 1989 TO SEPTEMBER 1994

ADOPTED BY THE

MONTANA FISH AND GAME COMMISSION

ON SEPTEMBER 15, 1989

PREPARED BY

MONTANA DEPARTMENT OF FISH, WILDLIFE & PARKS

REGION 2

ASSISTED BY

JOEL A. SHOUSE

CONSULTING SERVICES

BOZEMAN, MONTANA

ROCK CREEK FISHERIES MANAGEMENT PLAN

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I. SUMMARY OF MANAGEMENT PLAN

The major elements of this five year Fisheries Management Plan are summarized under the following headings:

FISHERIES MANAGEMENT - The Department will continue the present fisheries management program which has a goal of maximizing the opportunities for catching fish over 14 inches in size. Fish populations and angler catch data will continue to be monitored. Current drought fishing regulations which restrict catch to two fish under 14 inches will remain in effect until the end of March 1990. At that time the special regulations of two fish under 12 inches and one over 20 inches, or three fish under 12 inches, will be reinstated. When and if significant changes are noted in the fishery and/or the desires of anglers, the Department will propose Management Plan changes and bring them before the public for thorough consideration prior to any action being taken.

FISHERIES HABITAT - The Department will continue to monitor activities within the Rock Creek drainage which have the potential to impact the present excellent fisheries habitat. More specifically the Department will:

1. Protect water quality by;
   - insuring that monitoring is done in accordance with the agreement with the Rock Creek Advisory Committee and the subsequent National Forest Plans,
   - being involved in the planning process for mining, timber sales, grazing allotments, etc.,
   - participating in interdisciplinary team activities with the Forest Service and the Bureau of Land Management, and
   - monitoring activities on private lands.
2. Protect water quantity by:
   - enforcing the Department's instream flow rights, and
   - monitoring water use permit applications.
3. Protect the stream banks and bed by;
   - insuring that the provisions of the Stream Protection Act are enforced,
   - insuring that the provisions of the Natural Streambed and Land Preservation Act (310) are enforced, and
   - working with the Conservation Districts on private land problems.

RECREATIONAL USERS - The Department believes the improvements in the Rock Creek fishery will significantly increase angler use through the next decade. The challenge for the future of Rock Creek will continue to be the protection of the habitat from land use activities and will need to include better understanding of the interaction between various user groups and their effects on the resource. The Department intends to do just this.

Implicit in the management of public use is the measurement or monitoring of public use. This is also necessary in order to gain an understanding of the degree of satisfaction, or dissatisfaction, of users of the creek. This will be

accomplished by utilizing one or more of the following techniques:

1. Operation of census/interview station(s) similar to what was done during the 1988 fishing season.
2. Periodic spot surveys similar to what has been done in years previous to 1988.
3. Voluntary completion of user census forms at unmanned self dispensing check stations at the upper and lower exits from the creek.

The Department's authority to deal with floating use is generally limited to prohibiting fishing from boats. The Department feels that in order to properly manage the future recreational use of Rock Creek this authority needs to be strengthened and broadened to allow the control or limiting of floating use. At such time as public input identifies the need, the Department will seek such authority from the Legislature for the management of Rock Creek.

The Department views the management program for users as being applied incrementaly. As use increases and corresponding conflicts increase, additional management will be applied. The Department will conduct evaluations annually, and if changes in management appear to be warranted, the Department will conduct public hearings to seek public input on the proposed changes. The following paragraphs describe the specific measures included in the Department's management program.

1989 Season - The program of outfitter regulation by the Forest Service was continued with the Department participating with the Forest Service by means of an interdisciplinary team. This program featured an ending of commercial floating on June 30th or when a flow level on 700 cfs was reached, whichever occurred first, and certain area use restrictions. It also required that outfitted craft be marked so as to be clearly identifiable to bank and wade anglers as to the outfitter and craft number. In addition, private floaters were asked to voluntarily conform with the same restrictions as outfitters on ending of the float season.

1990 Season - The Fish and Game Commission will utilize its authority to regulate fishing from boats and will prohibit all fishing from boats on Rock Creek after June 30th, annually.

1991 Season - The Department in conjunction with the Forest Service will develop and make available to users an educational floaters guide of do's and don'ts for use in teaching floaters how to handle encounters with wade or bank anglers. The floaters guide will also address various areas of the creek where floater landowner conflicts have occurred to insure that floaters are aware of streamside ownership.

1992-1993 Census of Recreational Users - In either 1992 or 1993 the Department will operate a census/interview station for the entire season as was done during the 1988 season. Results will

be compiled as well as options for future management and be taken to the public for review and input.

Future Management - The Department anticipates that the management measures described above will be sufficient for the current 5-year management program which ends in 1994. However, the 1992-1993 census will determine whether additional measures will have to be taken in the current program or if they will be needed in the next 5-year program. Future management will consider:

1. The prohibiting of fishing from boats in specific sections of the stream. Current analysis of census data and input received by the Department through this Management Plan process suggests that the next management step should be the prohibiting of all fishing from boats downstream of Welcome Creek.
2. The seeking of additional authority from the Legislature to manage the recreational use of Rock Creek which may involve limits on amount of use, premit systems, and regulation of specific user groups.

DRAINAGE AREA AND STREAM CORRIDOR - The Department intends to take an active role in the review, discussion, and permitting (where required) of land use activities within the Rock Creek drainage to insure that they do not negatively influence the quality of the fishery, the fishery habitat, and opportunities and experiences available to the recreational user. Particular attention will be paid to the area adjacent to the stream; the stream corridor. The Department will work closely with both the Deerlodge and Lolo National Forests and will participate in interdisciplinary team activities that pertain to Rock Creek.

AGENCY MANAGEMENT - The Department has worked in the past with all agencies who have management responsibilities within the Rock Creek drainage and the Department will continue to work with these agencies in the future. The Department, as the recreation management agency for the State of Montana, will represent the interests of recreationists in all development proposals, public or private. At such time in future management as public input and the Department's user census demonstrate the need, the Department will seek additional legislative authority to manage the recreation use of Rock Creek.

II. INTRODUCTION

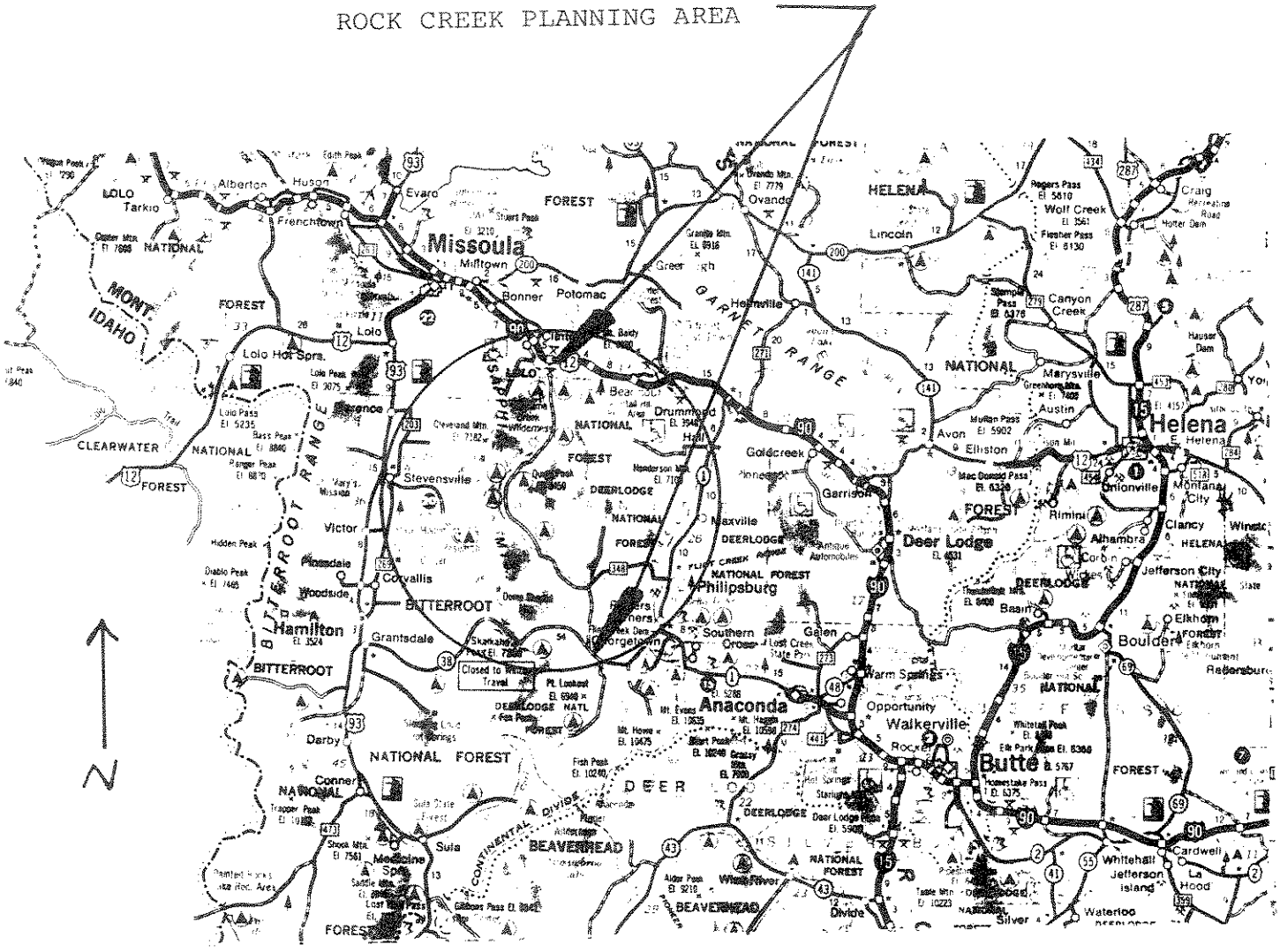
Rock Creek is commonly referred to as "Western Montana's Blue Ribbon Trout Stream", a description which it richly deserves. As Dick Konizeski says in his book "The Montanans' Fishing Guide For Waters West Of The Continental Divide", "...certainly one of the most beautiful and probably the most famous and heavily fished stream in Montana west of the Continental Divide.." In recent years it has received national recognition for it's high quality wild trout fishery. This notoriety and the resulting use and interest in the stream is the basis for the formulation of this Management Plan by the Montana Department of Fish, Wildlife and Parks, and will be used by the Department to carry out it's responsibilities as the recreation management agency for the State.

Rock Creek's southernmost headwaters lie along the Continental Divide in the Anaconda Pintlar Wilderness Area of the Deerlodge National Forest (See vicinity map on Page 6). The major headwaters tributaries flow to the north and northeast and join to form the main stem of Rock Creek some 12 or so miles southwest of the community of Philipsburg, the county seat of Granite County. The creek then flows northward through privately owned ranch lands and enters the Lolo National Forest within whose boundaries it remains until reaching it's mouth. The lower reaches of the stream pass through an ever deepening and relatively narrow valley surrounded by heavily forested mountains. Rock Creek enters the Clark Fork of the Columbia River some 21 miles above the City of Missoula.

The drainage basin of Rock Creek runs generally south to north and is approximatley 54 miles long and averages about 18 miles in width. Elevations vary from 10,456 feet at Warren Peak on the Continental Divide to roughly 3,540 feet where the creek enters the Clark Fork. All of the drainage area lies in Granite County except for the lower five miles which is in Missoula County.

Man's history of use of the Rock Creek drainage includes gold mining in the late 1800's, ranching in the middle reaches of the drainage, substantial logging of the National Forest lands, and subdivisional development along the lower seven or eight miles of the creek. Today there is renewed interest in mining with several proposals currently being evaluated. Ranching uses also continue. Logging activities have diminished significantly and current National Forest planning emphasizes the fishery, wildlife, wilderness, and recreation resources of the drainage.

In recent years there has been a great deal of public interest in preserving and protecting Rock Creek. Many individuals, conservation groups and agencies have worked very hard to achieve recognition for the unique values present within the drainage. One of the first was the Rock Creek Advisory Committee which was created in 1972 by the Secretary of Agriculture. The Committee's



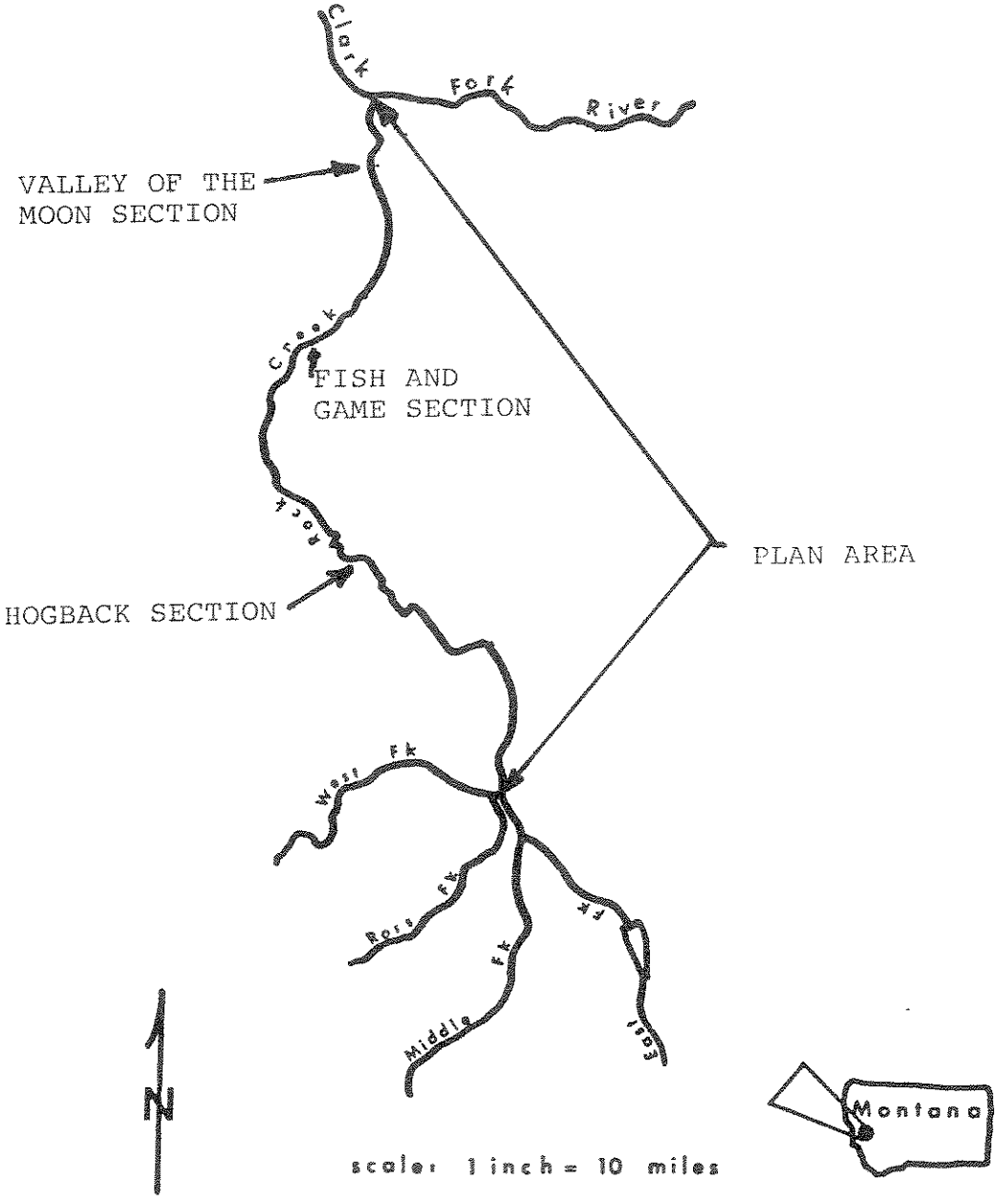
VICINITY MAP

objective was to provide advice to the Forest Service on the management of the Rock Creek drainage. One of their major accomplishments was the identification of water quality as a primary resource in the drainage which resulted in agreements with the Forest Service for a water quality monitoring program. A more recent coalition, the Rock Creek Advisory Council, secured a State held conservation trust fund of $1.65 million from a consortium of electric utilities whose transmission lines cross near the mouth of Rock Creek.

Montana's outstanding outdoor recreation opportunities have long been treasured by residents of the State. They have also been increasingly used by nonresidents to where tourism and recreation has become Montana's number two industry. Fishing of our "Blue Ribbon" trout streams is a major element in this industry. Statistics complied by the Department indicate that nonresident use of Rock Creek has increased from 10% of all anglers in 1961 to 24% in 1986 and to 28% in 1988.

In 1987 the Department released a study entitled "The Net Economic Value of Fishing in Montana" which was authored by John Duffield, University of Montana, John Loomis, University of California, Davis, and Rob Brooks of the Department. Results of this study show that the state average net economic value (net willingness to pay) for stream fishing is $113 per trip. However, the study showed that trips on Rock Creek were among the highest valued with a value of $172 per trip. Total recreational value for Rock Creek was estimated to be $3.7 million per year. The study also concludes that the annual aggregate value of Montana's stream and lake fishing is $122 million and $93 million, respectively. Angler expenditure data indicates a typical resident angler spent $48 per trip and a typical nonresident angler spent $360 per trip in Montana.

The lower 51 miles of Rock Creek are classified as a Class 1 Blue Ribbon Trout Stream by the Department and is the principal area of the stream being addressed by this Management Plan (See Management Plan area map on Page 8).



MANAGEMENT PLAN AREA MAP

III. BACKGROUND

In the last several years the Department has recognized that the public is in general much more knowledgeable on resource issues and wants to be more involved in decision making regarding the management of fish and wildlife resources. The Department feels that it must get the public involved early in the planning process to help in selecting a management program rather than simply approving one after the fact. A major goal of the process is to give the public ownership in the management of the resource. As a result the Fisheries Division has prepared guideline documents to assist Regional Fisheries Managers in development of Management Plans. The Department has also identified the top ten fisheries in the State and has initiated a program to develop five year Fisheries Management Plans for these fisheries. Rock Creek falls into this catagory.

The planning process utilized by the Department involves several stages. The first of these is an in-house scoping phase to preliminarily identify the issues of concern. The next stage is the public scoping phase which results in a refined statement of issues. In the case of Rock Creek, an Ad Hoc Advisory Committee was established to work closely with the Department and the public at large was informed through the media of the planning program and of ways in which they could get involved. The next stage is the draft phase and involves the distribution to the public of a draft of the Management Plan and a series of public meetings for both informational and input purposes. The last stage is the publication of the final Management Plan. The Management Plan may require action by the Fish and Game Commission and in some cases may call for the drafting of special legislation to be presented to the Legislature.

An extremely important element in the planning process is the involvement of other public land management agencies which have an interest in the stream. In the case of Rock Creek, the Deerlodge and Lolo National Forests manage approximately 80% of the lands within the drainage. Representatives of these Forests have been involved in all stages of development of this Management Plan.

IV. U. S. FOREST SERVICE

The headwaters of Rock Creek are entirely within the Philipsburg Ranger District of the Deerlodge National Forest. The lower 35 miles of the stream are entirely within the Missoula Ranger District of the Lolo National Forest. As stated previously, about 80% of the entire Rock Creek drainage is on these two National Forests. Ownership is shown in the Table below. Logging, mining and livestock grazing land uses as well as recreation management by the Forests can and does have a major impact on the Rock Creek fishery.

ROCK CREEK DRAINAGE OWNERSHIP

Ownership	Acres	% of Total
Lolo National Forest	183,000	32.1
Deerlodge National Forest	276,000	48.4
Private	94,000	16.5
Other State/Federal	17,000	3.0
	570,000	100.0

In the early 1970's a number of individuals and groups began to actively pursue the preservation and protection of the Rock Creek drainage. Notable among these groups was the Rock Creek Committee and two of it's member organizations, the Western Montana Fish and Game Association and Trout Unlimited. As the major land manager within the drainage, the Forest Service became actively involved in discussions with these groups. These discussions lead to the identification of water quality as a primary resource within the drainage and development of a water quality monitoring program to be utilized by the Forest Service. Details of this program are contained in the Appendix on page 44. A further result was a moritorium by the Forest Service on logging in the drainage which began on June 23, 1972 and continued until March 8, 1983.

Each of the National Forests within the Rock Creek drainage have recently completed new Forest Plans; the Lolo in April 1986 and the Deerlodge in September 1987. Each of these Plans contain an updated comprehensive water quality monitoring program and has an identical chapter dealing with Rock Creek within which is contained the following statement.

"The following policy guides the management of the National Forest System lands in the Rock Creek drainage:

The Rock Creek drainage is an outstanding fishery and recreation resource, and these values will be maintained. The existing character of the drainage as well as the variety of recreation opportunities will be maintained. Forest Service management will be responsive to the following criteria. These criteria, which are similar to those used by the State of Montana to designate

Rock Creek as a Blue Ribbon Trout Stream, are:
1. Fisheries Production - Management activities and authorized uses will be designed to protect the biological and physical fisheries habitat. The Forest intends to manage the headlands to provide the quantity and quality of water necessary to maintain the total Rock Creek aquatic ecosystem.

2. Availability - The Forest Service will continue to provide public access via the Rock Creek road and specific access to the stream in areas where the Forest provides the access. Portions of the Rock Creek road are under the jurisdiction of Granite and Missoula Counties.

3. Esthetics - Management activities and authorized uses will be designed to maintain the beauty of the landscape and the stream.

4. Use - The Forest Service will continue to provide public facilities in concert with the private sector and commensurate with the values and use of the Blue Ribbon Trout Stream."

The Forest Plans identify the following "management emphases". Of the total of 459,000 acres of National Forest lands within the Rock Creek drainage, 27% are identified for timber and range management, 10% for wildlife, 3% for riparian, 21% for roadless, 10% miscellaneous (which includes administrative and recreation sites), and 28% for wilderness.

Current Forest Service timber management includes timber sales in both Forests. Although timber sale management is subject to change for a variety of reasons, each Forest's current projected sales are shown in the following tables:

PLANNED TIMBER SALES IN THE ROCK CREEK DRAINAGE
DEERLODGE NATIONAL FOREST

SALE NAME	FISCAL YEAR OF OFFERING	SALE VOLUME IN MILLION BOARD FEET
Sapphire II	89	1.3
Elk Creek	90	0.3
Upper Camp Creek	91	3.6
Duncie	91	4.2
Moose Mtn. C.I.	92	0.2
Dexter	93	2.8
E. Green Canyon	93	3.5
Carpp Ridge	93	3.5
Helm Creek OSR	94	0.3
South Ermine	95	3.0
Moose Gulch	95	3.0
Copper North	95	0.5
Lutz Creek	96	2.0
Upper Elk Creek	97	2.0

North Fork	98	3.0
Big Spring Creek	98	2.0
Beaver Creek	99	5.0
Sand Basin	99	2.0
		42.2

PLANNED TIMBER SALES WITHIN THE ROCK CREEK DRAINAGE
LOLO NATIONAL FOREST

SALE NAME	FISCAL YEAR OF OFFERING	ACRES	SALE VOLUME IN MILLION BOARD FEET
Kitchen Gillespie	90	214	1.29
Gilbert Gulch	91	273	2.87
Pat Gulch Posts	91	137	2.10
Iris Point	91	84	0.70
West Alder	94	774	6.90
Sequoia Brewster	95	550	9.20
Boundary	96	551	4.20
---	97	---	----
---	98	---	----
---	99	---	----
			27.26

Livestock grazing allotments on the National Forests are listed by name in the following tables:

GRAZING ALLOTMENTS WITHIN THE ROCK CREEK DRAINAGE
DEERLODGE NATIONAL FOREST

ALLOTMENT NAME	ANIMAL UNIT MONTHS(AUMs)
Georgetown Elk Creek	1334
Meadow Creek	639
Middle Fork	1380
Ross Fork	897
Sand Basin	660
West Fork Buttes	1056
Stoney Creek	484
Ram Mountain	80
Upper Willow Creek	594
Beaver Creek	264
Scotchman Miners	79
Buchanan Lord	132
Bauer's Land Use Area	5
Hans Luthje's Land Use Area	4
John's Luthje's Land Use Area	4
Munis' Land Use Area	26
Ann Sanders' Land Use Area	15

GRAZING ALLOTMENTS WITHIN THE ROCK CREEK DRAINAGE
LOLO NATIONAL FOREST

ALLOTMENT NAME	ANIMAL UNIT MONTHS (AUMs)
Big Hogback	277
Spring Creek	117

Recreational visitors to the National Forest lands within the Rock Creek drainage in recent years are shown in the following Table:

RECREATION VISITORS TO NATIONAL FOREST LANDS
WITHIN THE ROCK CREEK DRAINAGE

NATIONAL FOREST	RECREATION VISITORS / YEAR
Lolo	29,410
Deerlodge	145,000

The Lolo National Forest is also beginning evaluation of a major mining proposal known as the Bagdad gold mine which is located approximately 2 miles above Rock Creek in Williams Gulch, about 31 miles above the mouth of Rock Creek. The Rock Creek drainage is a historic mining district and there are currently a number of small mining operations and the potential exists for more in the future.

The Forest Service has also recently made some water quality findings which are of some concern. Over the years random sampling of the waters of Rock Creek have been made by various agencies and the water quality testing results placed in the Federal Government's Storette Data System. A recent review of these data has revealed that levels of mercury, cadmium and lead exceed EPA standards, in some cases by as much as ten times the standard. The Forest Service and other agencies plan to do work to determine what the causes are and the possible impacts on people and the fishery.

The Lolo Forest has recently established an interdisciplinary team to begin the process of implementing the Forest Plan in the Rock Creek corridor. The Department is participating as a member of this team.

V. AD HOC ADVISORY COMMITTEE

In the in-house scoping meetings at the start of the planning study for Rock Creek, the Department began the process of identifying the special interest groups and members of the public who could bring a balanced perspective to the Ad Hoc Advisory Committee. This Committee would serve during the formulation of the Management Plan and would be a source of new ideas and would critically review issues, management alternatives and draft writings. Invitations to serve on the Committee were extended and the first meeting of the Committe was held in October of 1988 to begin the issue identification process. Members of the Committee and their affiliation, if any, are as follows:

Jeff Freeman, Outfitter
Abe Abramson, Real Estate Broker
Lane Coulston, Real Estate Broker
George Sinelnik, Landowner
Dan Eckstrom, Outfitter
Mike Chandler, Rock Creek Advisory Committee
Norm Larum, Rock Creek Advisory Committee
Gary Eudaily, Landowner, Rock Creek Advisory Committee
John Adza, Outfitter
Adam Michnevich, Landowner, Rock Creek Advisory Committee
Darrell Sall, Bureau of Land Management
Warren Wiley, Fishing Shop
Robert Whalen, Trout Unlimited
Bill and Lois Hammer, Rock Creek Protective Association
Paul Roos, Outfitter
Rob Braach, Western Montana Fish & Game Association
Bruce Farling, Clark Fork Coalition
Bob Ivie, Granite County Commission
Amy Eaton, Missoula County Planning
David Ruetz, Rock Creek Advisory Council
Lorraine Gillies, Landowner, Upper Drainage
Dave Stack, District Ranger, Missoula Ranger District, Lolo National Forest
Jack Fisher, Missoula Ranger District, Lolo National Forest
Mike Paterni, District Ranger, Philipsburg Ranger District, Deerlodge National Forest
Jerry Wells, Regional Supervisor for the Department
Dennis Workman, Regional Fisheries Manager for the Department
Don Peters, Rock Creek Biologist for the Department
Joel Shouse, Planning Consultant for the Department

VI. ISSUES

The Department initially identified possible issues in the in-house scoping sessions. The Department was able to do this because of their frequent contact and communication with the public concerning Rock Creek. Recent examples include a joint mailing with the Lolo Forest to some 1,000 individuals or groups in March of 1988 on the subject of the floating issue, a joint public meeting with the Forest Service on March 23, 1988, to discuss Rock Creek issues, participation with the Forest Service in a public field trip to review proposed mining in Williams and Quartz Gulches, a fall 1988 television interview concerning this Management Plan, and a January 1989 radio talk show concerning this Plan.

The issues identified through the in-house scoping sessions were then transmitted to the Ad Hoc Advisory Committee for their review and then were thoroughly discussed in meetings of the Committee. The issues were then reviewed with the public in meetings held in Philipsburg and Missoula in mid-March 1989. From this process the following refined statement of issues was identified:

Refined Statement of Issues

ISSUES THE DEPARTMENT IS SOLELY RESPONSIBLE FOR:

Fisheries Management -
1. Fish Populations
2. Population Trends
3. Fisheries Goals
4. Fishing Regulations
5. Enforcement of Regulations
6. Public Information Needs
7. Signing

ISSUES THE DEPARTMENT AND FOREST SERVICE SHARE RESPONSIBILITY FOR:

Fish Habitat -
1. In-stream Protection and/or Improvement
2. Water Quality
3. Water Quantity
4. Bank Cover

Recreational Users -
1. Float Fishing
   a) Floating vs. Other Fishing
   b) Regulation of Floating
   c) Commercial Floating

d) Private Floating

2. Access
   a) To Stream
   b) For Handicapped

ISSUES THE FOREST SERVICE AND OTHERS HAVE RESPONSIBILITY FOR BUT FOR WHICH THE DEPARTMENT HAS COMMENT RESPONSIBILITY:

Corridor -
1. Land Use
   a) Mining
   b) Logging and Vegetation Management
   c) Road Construction, Usage & Closures
   d) Grazing
   e) Land Development
   f) Ranching in Headwaters Area
   g) Wilderness
   h) Wildlife Habitat
2. Weed Control
3. Rock Creek Road
   a) Safety
   b) Improvement
   c) Dust Control
   d) Funding

ISSUES FOR WHICH THE FOREST SERVICE HAS SOLE RESPONSIBILITY FOR:

Wild and Scenic Rivers Act Recommendations -

Recreation Plan (Lolo) -
1. Developed Site Management
2. Dispersed Site Management
3. Trailheads
4. Public Information Needs
5. Signing
6. Historic Site Maintenance

VII. PUBLIC INFORMATION AND INVOLVEMENT PROCESS

The Department utilized two different means of informing and involving the public in the development of a Management Plan for Rock Creek. The first was through the use of an Ad Hoc Advisory Committee which has been previously described. Meetings of the Committee were held as follows:

Missoula, October 18, 1988
Philipsburg, March 14, 1989
Missoula, July 19, 1989

Secondly, the general public was involved both prior to and through out the course of drafting the Management Plan. As discussed previously, the public was given a number of opportunities to provide input on the issues which enabled the Department to initially scope out the Plan. A number of press releases were made to announce the study, to provide periodic updates, to announce public informational meetings, and to detail means of providing input to the Plan.

Public Informational Meetings were held on March 14, 1989, at Philipsburg, and on March 15, 1989, at Missoula.

The Draft Management Plan was announced to the public through the media on July 27, 1989, and copies were made available on request. Copies were also sent to members of the Ad Hoc Advisory Committee. Open house meetings on the draft were held as follows:

Missoula, August 8, 1989
Anaconda, August 9, 1989
Ovando, August 15, 1989

Final Management Plan - The final plan was adopted by the Montana Fish and Game Commission on September 15, 1989, and copies are available through the Region 2 Headquarters office in Missoula. Copies of the Plan were sent to all members of the Ad Hoc Advisory Committee.

VIII. FISHERIES MANAGEMENT

The fishery resource of Rock Creek has been greatly influenced by the elimination of catchable rainbow trout stocking in the early 1970's and the imposition of special fishing regulations in 1979. As many as 25,000 fish were stocked per year in the years previous to 1961. Stocking numbers varied but generally declined until totally eliminated in the early 70's. This action resulted in a decreased catch rate, decreased catch per angler, and a decline in the size of fish. The decline in the fishery did not go unnoticed by anglers and their numbers decreased from 12,268 in 1959 to 5,816 in 1978, a 52% decline.

Special regulations were introduced in 1979 which reduced the limit to three trout, only one of which could be larger than 14 inches. Adults were also restricted from using bait and one section of the creek was restricted to catch and release fishing only. In 1986 the special regulations were changed to three trout, two less than 12 inches and one over 20 inches, or three fish less than 12 inches. Adults were still restricted from using bait. The special regulations have resulted in wild trout populations rising to the levels of the hatchery planter populations of the early 70's. In addition, the numbers of fish over 14 inches have increased substantially. Figures 1 and 2 on Pages 19 and 20 illustrate these increases in the Valley of the Moon fish management section. Also, the numbers of anglers have corresponingly increased with 8,247 counted in 1981 and 7,954 in 1986. Figure 3 on Page 21 shows total fishing pressure between 1958 and 1986.

The 1988 angler census performed by the Department showed slight decreases in numbers of anglers, total catch, and catch rate from values in previous surveys in 1981 and 1986. The most likely explanation for this decline are the drought conditions which affected Montana during the 1988 season which contributed to abnormally low streamflows and high daily water temperatures. The Department reacted to this situation by enacting mid-season restrictive regulations on all streams in the Clark Fork drainage such that only two trout under 14 inches could be taken. It appears that anglers responded to the poor weather, stressful conditions for the trout, and the new restrictive regulations by curtailing their fishing activity to some degree. An additional contributing factor to these declines was the partial closure of the National Forests to certain recreational uses from August 4th through the end of September due to the extreme fire danger associated with the drought. The Governor of Montana also closed the Forests to all recreational use for several weeks in September.

The angler use pattern for Rock Creek has changed as a result of present fishery management. As Department Biologist Don Peters puts it "Rock Creek has changed from a fish for the freezer factory to a fish for fun resource". The number of fish put in the creel has declined from 48,000 in 1958 to 4,000 in 1986.

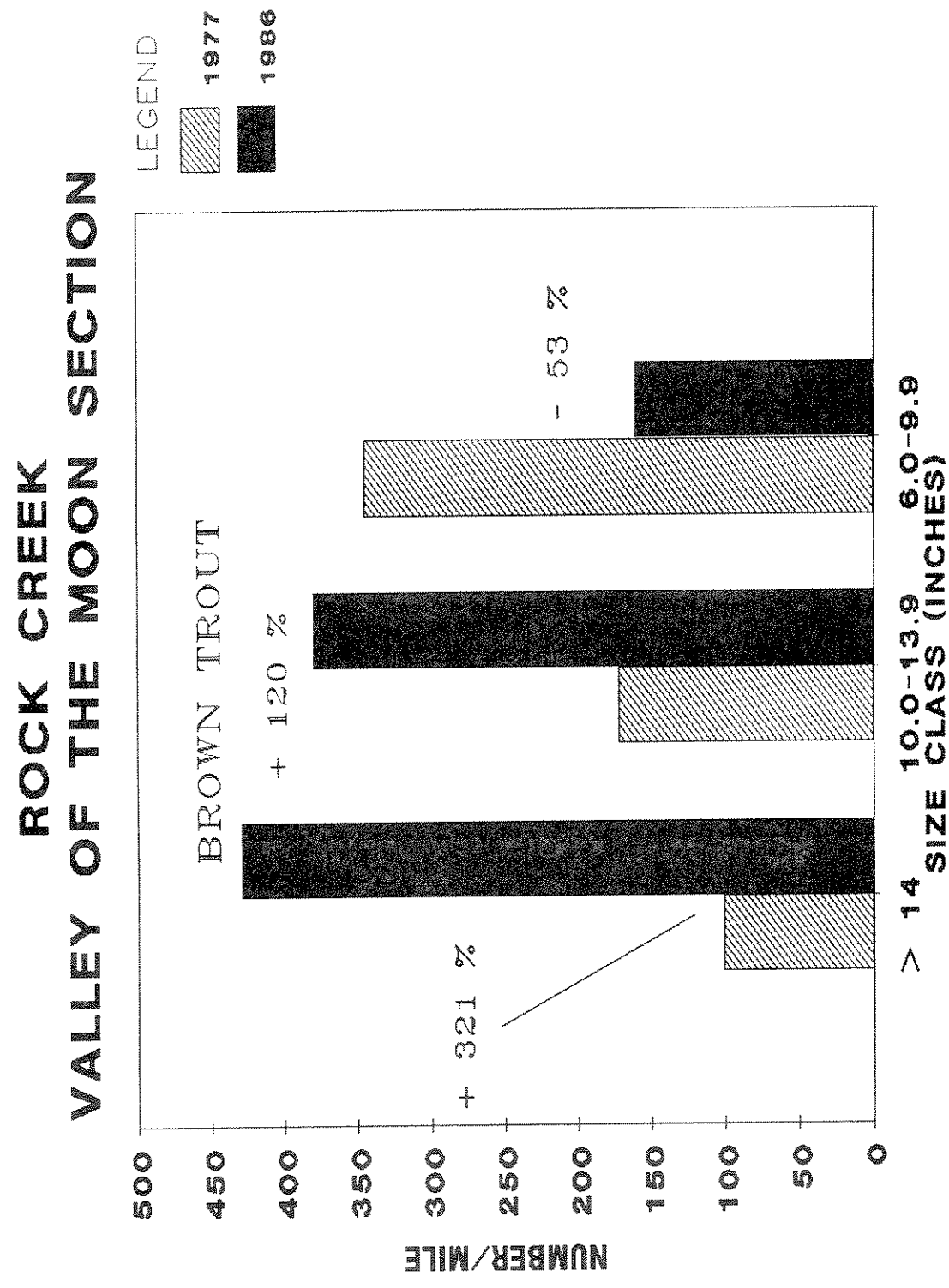

ROCK CREEK
VALLEY OF THE MOON SECTION
LEGEND
1977
1986
BROWN TROUT
+ 321 %
+ 120 %
- 53 %
NUMBER/MILE
500
450
400
350
300
250
200
150
100
50
0
< 6.0
6.0-9.9
10.0-13.9
> 14
SIZE CLASS (INCHES)

FIGURE 1

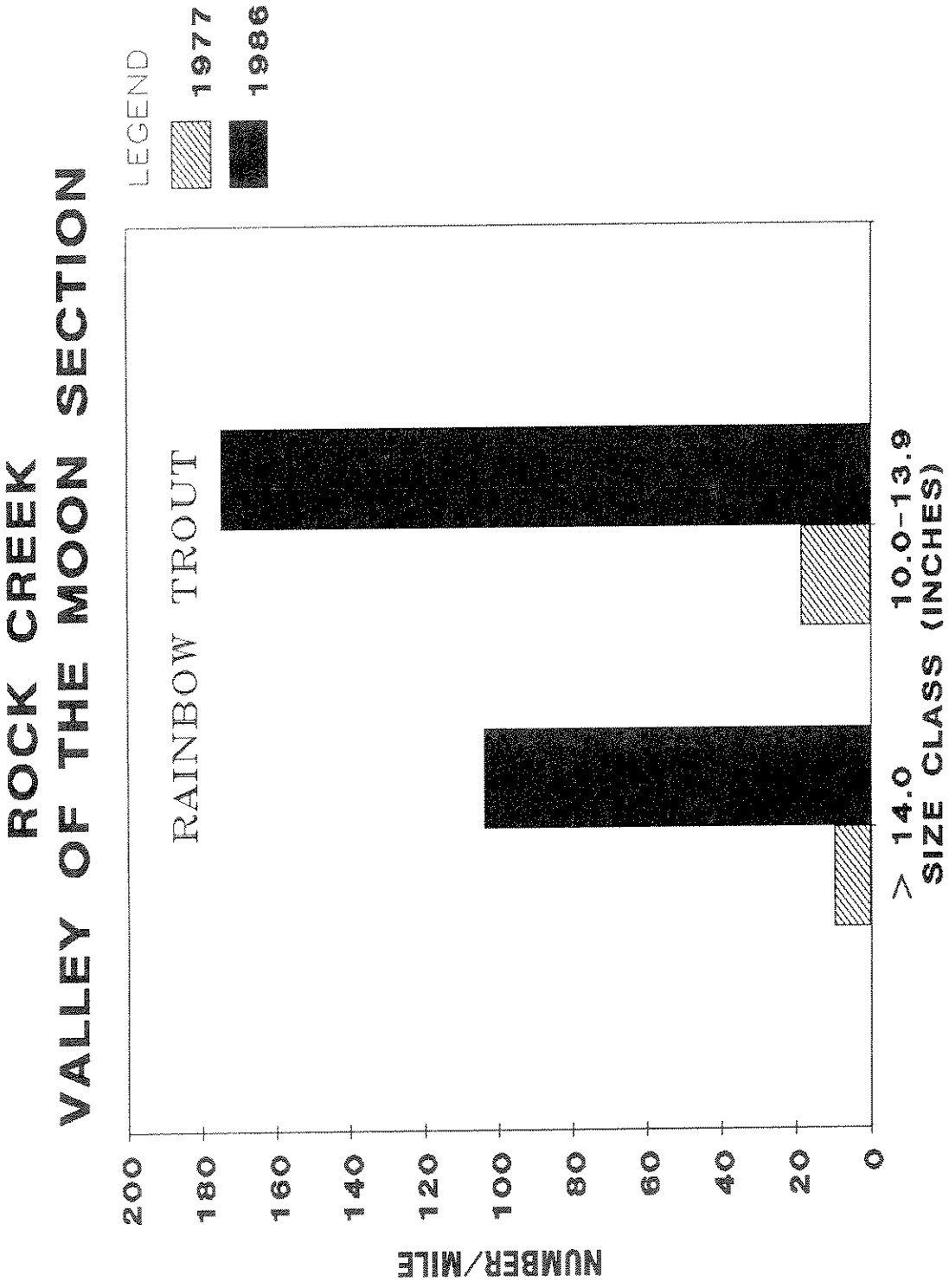

ROCK CREEK
VALLEY OF THE MOON SECTION
LEGEND
1977
1986
RAINBOW TROUT
NUMBER/MILE
0
20
40
60
80
100
120
140
160
180
200
10.0-13.9
> 14.0
SIZE CLASS (INCHES)

FIGURE 2

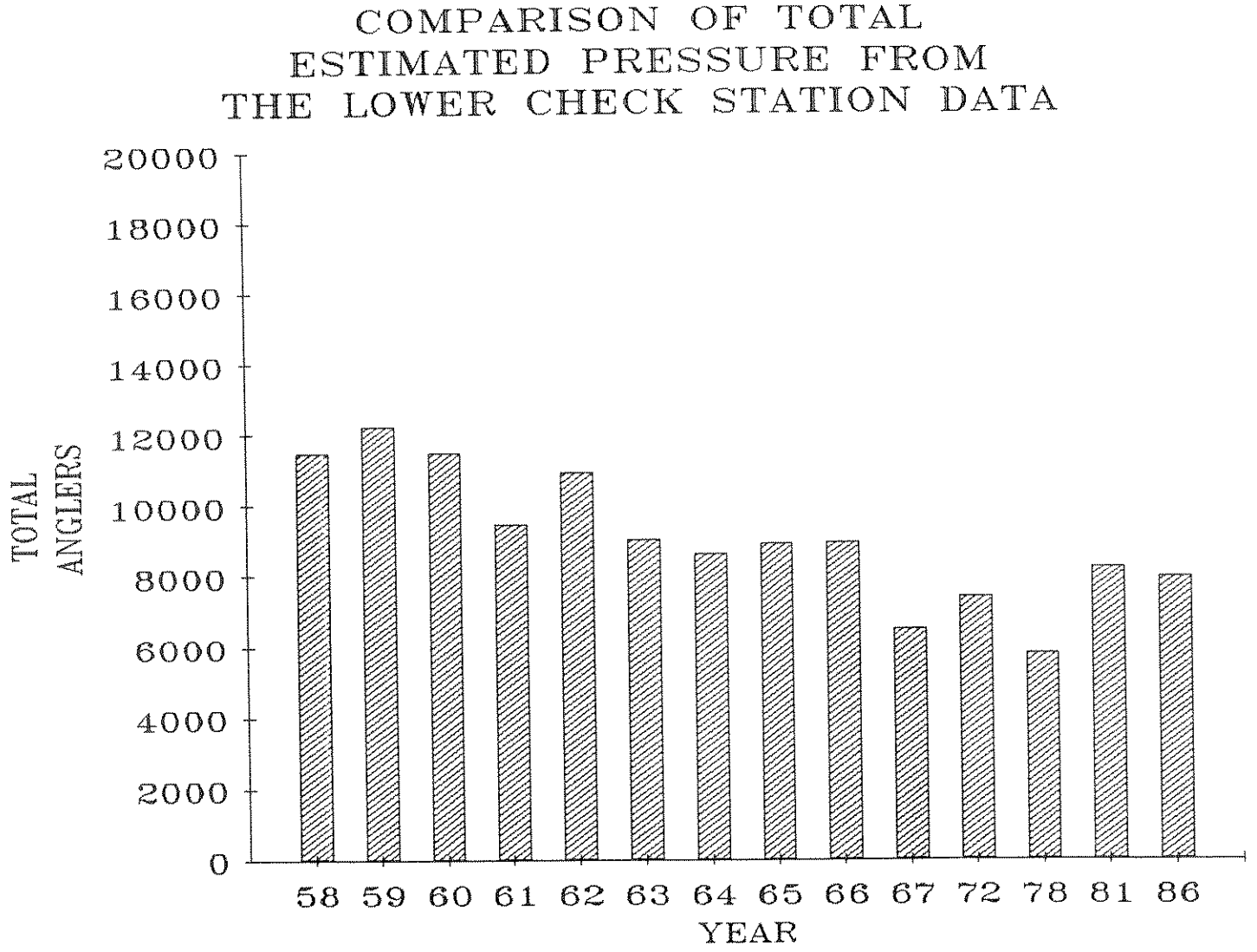

COMPARISON OF TOTAL
ESTIMATED PRESSURE FROM
THE LOWER CHECK STATION DATA
TOTAL ANGLERS
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
58 59 60 61 62 63 64 65 66 67 72 78 81 86
YEAR

FIGURE 3

However, the number of caught and released trout reached nearly 34,000 in 1986. Figure 4 on Page 23 shows trout caught per hour from 1958 to 1986. Note that present catch rates are almost double those that existed prior to the establishment of special regulations.

In addition to monitoring the angler catch, the Department has monitored fish populations on three long term study sections of Rock Creek. This provides the Department with a good tool to evaluate the fish population changes resulting from management changes. Each of these study sections are discussed below.

The Valley of the Moon Section is located approximately 3 miles above the mouth of the creek and is 7,900 feet in length. The trout population in 1986 was 40 percent rainbow, 60 percent browns, and a few brook, cutthroat and bull trout. Population estimates for browns and rainbows increased dramatically comparing 1977 to 1986. The increase in fish larger than 14 inches in length exceeded 300 percent for both rainbows and browns. Estimates indicate an even greater increase in rainbows in the 10 to 14 inch class.

The Fish and Game Section is located approximately 14 miles above the mouth of the creek and is 6,700 feet long. The sampled population of fish is dominated by rainbows with a few bull, cutthroat, and browns comprising less than 10 percent of the sampled fish. The 1986 estimates show a dramatic comeback in numbers of rainbows larger than 14 inches from 10 to about 200 per mile of creek. Likewise, rainbows in the 11 to 14 inch class show an increase of near 800 percent. However, there does not seem to be any trend in the population estimates for rainbows less than 11 inches in size associated with regulation changes.

The Hogback Section is located about 30 miles upstream from the mouth of the creek and is 7,200 feet in length. Population estimates in 1986 show that rainbows make up 87 percent of the population, cutthroats 8 percent, and the balance are bull, brook and browns. Rainbows larger than 12 inches have increased 107 percent since the change in fishing regulations. Cutthroat greater than 8 inches in size have also increased significantly.

Rock Creek was sampled again in the Spring of 1989 in the Fish and Game and Hogback sections. Figures 5 and 6 on pages 24 and 25 show the results of this sampling. Generally the larger size classes of rainbows in both sections fared well through the 1988 drought. Estimated numbers of rainbow trout larger than 14 inches in the Fish and Game section declined 12 percent. Estimated numbers of rainbow trout larger than 12 inches in the Hogback section increased 50 percent. More significant declines were noticeable in the estimated populations of juvenile rainbows in both of the sampled sections. The largest decline occurred in the Hogback section where the rainbow population per mile declined from 679 to 54 from 1986 to 1989. The Department really doesn't know the reasons for these declines. Drought related

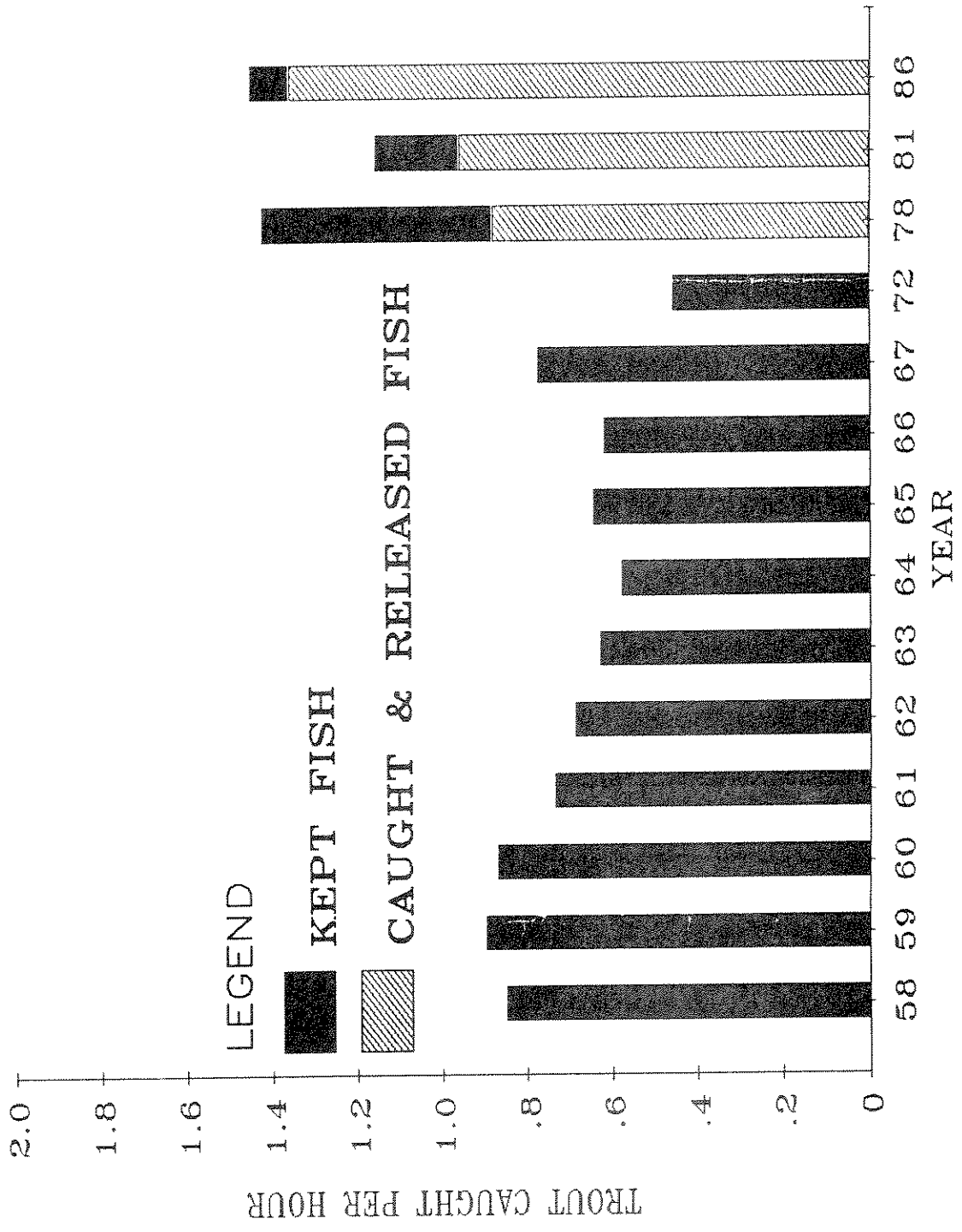

TROUT CAUGHT PER HOUR
2.0
1.8
1.6
1.4
1.2
1.0
.8
.6
.4
.2
0
LEGEND
KEPT FISH
CAUGHT & RELEASED FISH
58 59 60 61 62 63 64 65 66 67 72 78 81 86
YEAR

FIGURE 4

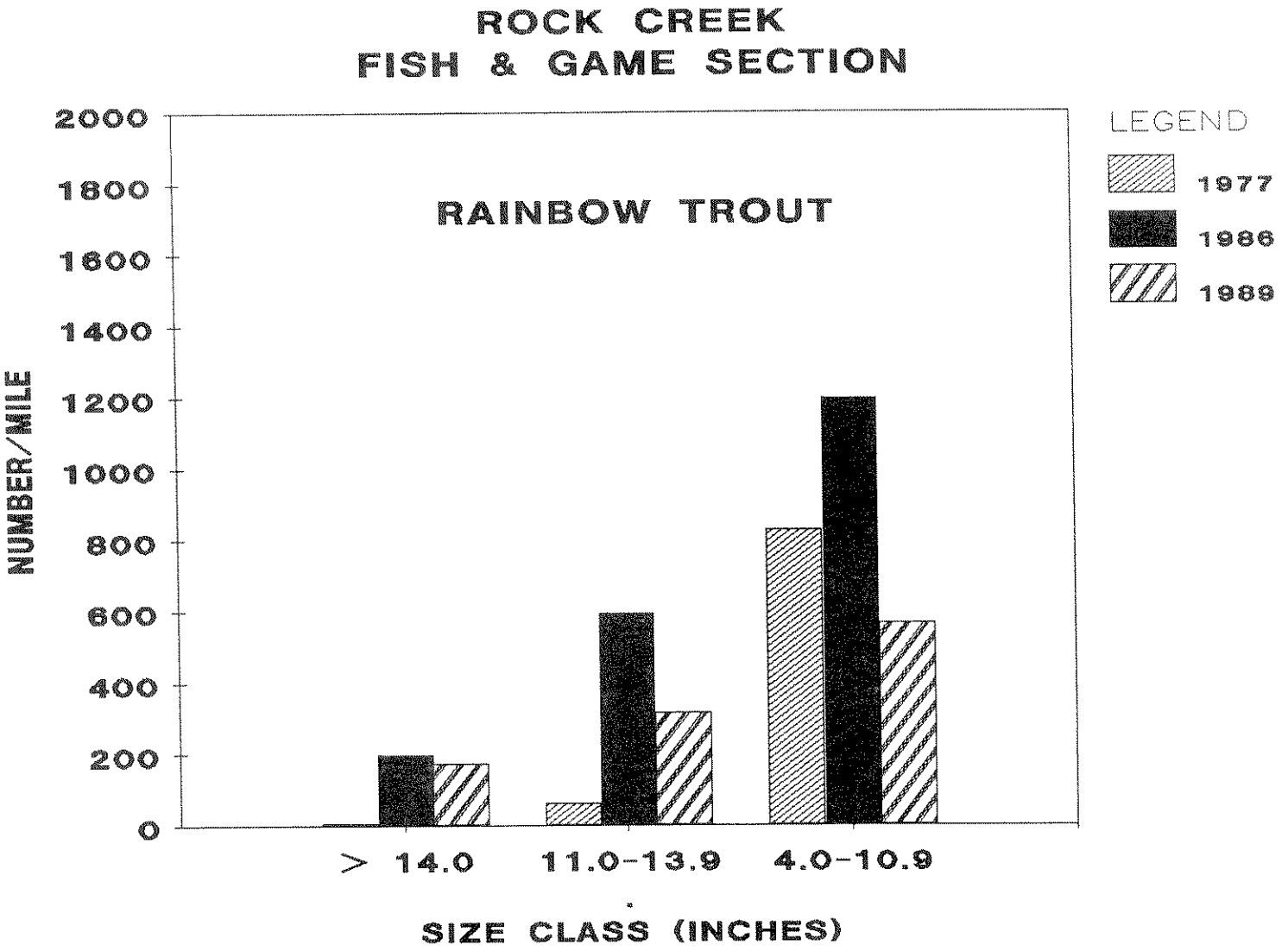

ROCK CREEK
FISH & GAME SECTION
RAINBOW TROUT
LEGEND
1977
1986
1989
NUMBER/MILE
2000
1800
1600
1400
1200
1000
800
600
400
200
0
> 14.0
11.0-13.9
4.0-10.9
SIZE CLASS (INCHES)

FIGURE 5

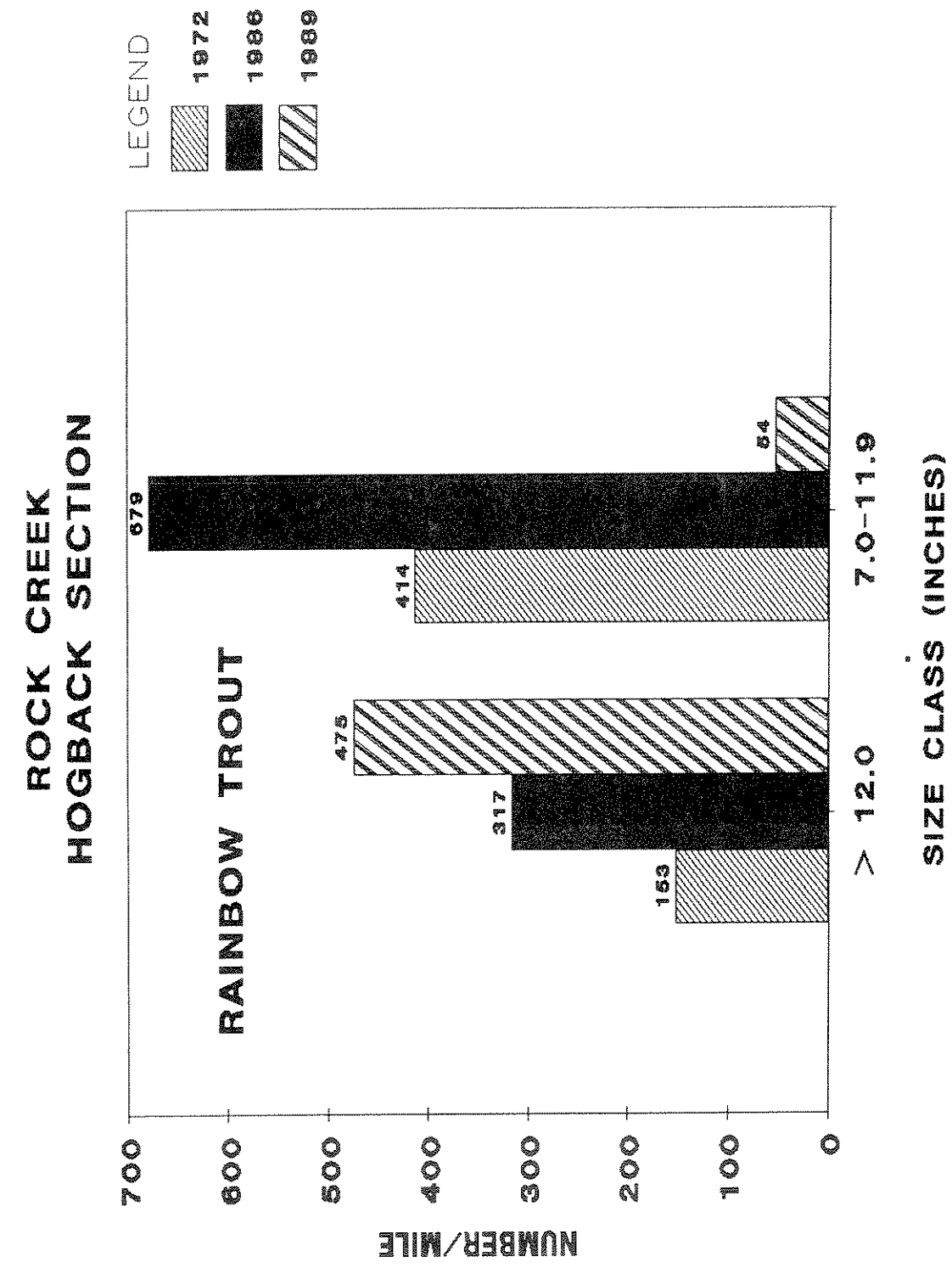

ROCK CREEK
HOGBACK SECTION
LEGEND
1972
1986
1989
RAINBOW TROUT
NUMBER/MILE
700
600
500
400
300
200
100
0
679
414
84
475
317
153
> 12.0
7.0-11.9
SIZE CLASS (INCHES)

FIGURE 6

impacts to the habitat, either through sedimentation of rearing space or loss of summer rearing space, or both, may have contributed. Lower than normal spring flushing flows in recent years may also be a factor as well as severe ice problems during the winter of 1988/89.

The Department feels that the present fishery in Rock Creek can be described as the best it has looked in the past 30 years and that it should continue to improve in the future. Improvement is expected in the maximum size of fish caught and a better average size fish caught as older age classes begin to dominate the population structure. The improvements in the fishery are expected to significantly increase angler use of Rock Creek through the next decade. The challenge for the future of the Rock Creek fishery will continue to be the protection of the habitat from land use activities and will need to include better understanding of the interaction between various user groups of Rock Creek and their effects on the resource.

Public input received concerning fisheries management on Rock Creek during the course of development of this Management Plan has been in general in support of the Department's present management program.

Management Statement - The Department will continue the present fisheries management program which has a goal of maximizing the opportunities for catching fish over 14 inches in size. Fish populations and angler catch data will continue to be monitored. Current drought fishing regulations which restrict catch to two fish under 14 inches will remain in effect until the end of March 1990. At that time the special regulations of two fish under 12 inches and one over 20 inches, or three fish under 12 inches, will be reinstated. When and if significant changes are noted in the fishery and/or the desires of anglers, the Department will propose management plan changes and bring them before the public for thorough consideration prior to any action being taken.

IX. FISHERIES HABITAT

The elements which make up fisheries habitat include the water of the stream (specifically it's quality and quantity), the stream bed, and the stream banks. The quality of a fishery can be directly related to the quality of the habitat. In the case of Rock Creek, the excellant quality of the present fishery indicates that habitat is in very good condition and that the thrust of habitat management must be directed towards preservation and protection.

Limited water quality and quantity data is available for Rock Creek. The U. S. Geological Survey (USGS) has a gauging station near the mouth of the creek and some water quality data is available from this station. Both the Deerlodge and Lolo National Forests have done monitoring as a result of agreements with the Rock Creek Advisory Committee and as called for in the recently adopted Forest Plans. The Deerlodge National Forest has done a fair amount of monitoring in the headwaters area with their lowest station being located on main Rock Creek just below the mouth of the West Fork. Interpretation of this data seems to suggest that suspended sediment levels are somewhat higher than anticipated "natural" levels as a result of distrubance in the drainage, which must presumably be logging, roading, mining, and other land use activities.

Monitoring stations are permanently located upstream at the Lolo Forest boundary and at the mouth of the creek were it enters the Clark Fork. In 1982, to evaluate potential bed load movement, 10 pairs of channel cross sections were surveyed on the mainstem of Rock Creek and two tributaries, Kitchen Gulch and Wahlquist Creek. The two tributaries have timber sales scheduled in the near future and temporary monitoring stations were established to isolate possible effects of these activities. Water quality parameters being monitored include stream discharge, suspended sediment, temperature and conductivity. Sediment is the most likely to impact the fishery and habitat. Methods being used to analyze sediment accumulations include embeddedness and invertebrate sampling.

Most recently the Forest Service began examining the various water quality data collected over the years on Rock Creek which had been placed in the Federal Government's Storette Data System. This review disclosed the presence of high levels of metals as shown in the following Table:

Metal	Actual Levels (PPB)*	EPA Standard (PPB)*
Mercury	0.12	0.012
Cadmium	1.7	1.0
Lead	12.8	3.2

*PPB = Parts Per Billion

It is presumed that these levels are caused by high levels of mineralization within the Rock Creek drainage and/or by runoff from old mined areas. Due to the magnitude by which standards are exceeded (the mercury level is ten times the EPA standard), the Forest Service intends to attempt to determine the specific causes. The Department is also studing fish to determine to what extent the metals have been absorbed. Both agencies will collectively try to determine what effects these minerals may have on the fishery and/or people.

Future mining operations in the Rock Creek drainage will be classified as point sources by the Water Quality Bureau of the Montana Department of Health and Environmental Sciences. As such their waste discharge permits will contain a non-degradation clause for all water quality parameters.

Overall assessment of the water quality of Rock Creek leads to the conclusion that in general quality is high with the only significant pollutants being sediment carried by the stream during periods of high runoff and the high metal levels.

Water quantity in Rock Creek is not viewed as a problem for the fishery. Data from the USGS station near the mouth shows that for the period of record (October 1972 to present) the maximum discharge was 5,520 cfs and the minimum was 45 cfs. For 1987 the maximum was 1,580 cfs and the minimum 80 cfs. For 1988 the maximum was 1870 cfs and the minimum 60 cfs. There are few consumptive uses of water within the drainage and resulting stream flows are therefore a function of climatic conditions (precipitation, snowmelt, etc).

In 1971, under provisions of an act passed by the 1969 Legislature, the Department filed for instream water rights for purposes of preserving fish and wildlife habitat in the 42 mile reach of Rock Creek between the confluence of Ranch Creek and the junction of the East and West Forks. A temporary preliminary decree was issued in March of 1984 which granted the Department the following listed rights. It should be emphasized that these rights are junior to all water rights filed previous to 1971.

Time Period	Amount (cfs)
July 16-April 30	150
May 1-May 15	454
May 16-May 31	975
June 1-June 15	926
June 16-June 30	766
July 1-July 15	382

The stream bed and banks of Rock Creek are for the most part in an undisturbed or "natural" state. A certain amount of natural instability is reflected by the meandering and braiding of the stream channel which has occured in the lower or downstream reaches of the creek. Some minor encroachments on the riparian

zone by road, bridges, etc., have occurred in the past, but these activities are now fully monitored through the Stream Protection Act and the Natural Streambed and Land Preservation Act ("310").

Public input received by the Department on fisheries habitat throughout the course of development of this management plan has generally supported the conclusion that the habitat from an overall perspective is good. The public has some concerns about sediment and water quantity, but a great deal of concern about the recent findings concerning high levels of metals. However, until additional work is done to quantify the real impacts of the metals the public is unable to take a position. The public feels that the stream banks and bed are for the most part in good condition except for some areas in the headwaters.

Management Statement - The Department will continue to monitor activities within the Rock Creek drainage which have the potential to impact the present excellent fisheries habitat. More specifically the Department will:

1. Protect water quality by;
   - insuring that monitoring is done in accordance with the agreement with the Rock Creek Advisory Committee and the subsequent Forest Plans,
   - being involved in the planning process for mining, timber sales, grazing allotments, etc.,
   - participating in interdisciplinary team activities with the Forest Service and the Bureau of Land Management, and
   - monitoring activities on private lands.
2. Protect water quantity by;
   - enforcing the Department's instream flow rights, and
   - monitoring water use permit applications.
3. Protect the stream banks and bed by;
   - insuring that the provisions of the Stream Protection Act are enforced,
   - insuring that the provisions of the Natural Streambed and Land Preservation Act (310) are enforced, and
   - working with the Conservation Districts on private land problems.

X. RECREATIONAL USERS

Since 1958 the Department has performed creel census surveys on Rock Creek for portions of the fishing season and then through statistical analysis expanded the results to estimate total fishing pressure for the year. These projections are available for the years 1958 to 1967, 1972, 1978, 1981, 1986 and 1988. The highest use was 12,268 in 1959 and declined to a low of 5,816 in 1978. Use has increased since 1978 with 8,247 recorded in 1981 and 7,954 in 1986. The estimated use for 1988 is 7,185. However, this figure should not be used for purposes of establishing trends due to the previously discussed drought conditions in 1988, the resulting lowered creel limits, and the National Forests use restrictions during August and September. Figure 3 on Page 21 illustrates total fisherman for these years.

The appearance of float anglers on Rock Creek first became noticeable in 1978. In 1981 the Department began receiving public comments of dissatisfaction with the floating traffic. In 1986 the Department started recording float anglers at the check station and estimated that 5% of anglers floated in that year. Float fishing peaked in June and coincided with high water and the "salmonfly" hatch. The 1988 census data shows that the percentage of users who float fished has more than doubled since 1986 with 10.4% of all users being float anglers.

The traditional bank/wade angler has increasingly expressed concern over the increase in floating use on Rock Creek. The Department and the Forest Service have been concerned due to the perception that a relatively low level of use by one user group (floaters) is impacting a significantly larger group (bank/wader anglers). It is believed that this is strictly a social issue and that the biological and physical aspects of the creek and fishing resource are not in jeopardy or being harmed by float fishing. The issue stems from perceptions that (1) floaters disturb the fish to the extent that they stop biting, (2) the quality of the fishing experience is lowered by interruptions and the breaking of serenity and concentration from floaters, (3) floaters have an unfair advantage of accessing the entire stream, (4) floaters will fish the same holes being fished by waders as they go by, and (5) Rock Creek is too small to accomodate both types of fishing.

In 1985 the Forest Service, under their authority to regulate commercial uses of Forest lands, initiated a Federal permit for commercial floating on the creek. A permit was issued to one association, the Clark Fork Float Fishing Outfitters Association (CFFFOA), which is composed of four outfitters selected by the Forest Service. They were the only outfitters authorized to use Rock Creek. The permit established a maximum number of annual trips, identified campsites that could be used, established a fee schedule, set forth operating rules (sections of the stream that could be used, frequency and number of launches, hours and days of operation, etc.), and established boat identification and

record keeping requirements. This permit had an expiration date of December 31, 1988.

The CFFFOA outfitters believe that they have conducted their guide services in a professional and courteous manner and that the conflicts are probably generated by inexperienced recreational floaters. The CFFFOA have maintained that they provide a service that is in demand by the public. Some other users point out that during the highest stream flows wading is practically impossible and that floating is reasonable during this period.

In March of 1988 the Forest Service and the Department initiated a review of the floating issue by the mailing of an issues scoping letter to a sampling of the public. From the responses to this letter an interdisciplinary team was able to develop three issues and a set of management objectives to aid in resolving the three issues. The team then drafted a range of alternatives for managing floating. These alternatives included:

(1) No fishing from boats on Rock Creek.

(2) No regulation of floating.

(3) Maintain the current situation; no regulation on public floaters, outfitters limited to four with a combined maximum of 300 floaters.

(4) No fishing from boats on Friday, Saturday or Sunday, with a total cutoff of fishing from boats after July 1st, no outfitter/guides on Sundays or holidays.

(5) No fishing from boats on Thursday, Friday or Saturday, with total cutoff of fishing from boats after July 1st, no outfitter/guides on Sundays or holidays.

(6) No fishing from boats below Welcome Creek with total cutoff to fishing from boats on July 1st, no outfitter/guides on weekends or holidays.

(7) No fishing from boats above Welcome Creek with total cutoff to fishing from boats on July 1st, no outfitter/guides on weekends or holidays.

In September of 1988 the Forest Service requested public comment and recommendations on the seven management alternatives. By early November some 44 responses had been received and tabulated. Over half of the respondents favored Alternative 1, no fishing from boats. A small number recommended Alternative 3, maintain the current situation, and another small number favored Alternative 6, no fishing from boats below Welcome Creek with total cutoff to fishing from boats on July 1st, no outfitter/guide on weekends or holidays. No one recommended any of the other four alternatives.

After further discussion by the Department and the Forest Service a decision was made in December 1988 to issue a new temporary permit for one year to the CFFFOA with some modifications from the previous permit. This action was justified on the grounds that total elimination of floating was too drastic an action when untried options were available that would minimize the conflict. Therefore new conditions were established which relate to high water flows along with seasonal constraints.

Some highlights of the temporary permit for the 1989 season included:

(1) A maximum of 300 float trips per season.

(2) The float season will end when flows reach approximatley 700 cfs, or June 30th, whichever comes first.

(3) Operating rules for stretches of the creek such as:

Irrigation Ditch below Valley of the Moon Bridge to Clark Fork
a) Limit of two boats per launch.
b) Maintain at least one hour interval between launches.
c) No launches after 12:00 noon.

Elk Horn Landing to Irrigation Ditch below Valley of the Moon Bridge
a) No outfitting permitted.

Welcome Creek to Elk Horn Landing
a) Limit of two boats per launch.
b) Maintain at least one hour interval between launches.
c) No operations on weekends or holidays.
d) Operations will terminate by 4:00 p.m.

Harrys Flat to Welcome Creek
a) No outfitting permitted.

Missoula Ranger District Boundary to Harrys Flat
a) Limit of two boats per launch.
b) Maintain at least one hour interval between launch.

In addition, the agencies also asked recreation or private floaters to voluntarily stop floating at the same time that the season ended for the outfitters (June 30th or 700 cfs).

The Department and the Forest Service also determined that the data and analysis provided from this Management Plan study will allow a better determination of a longer-term management strategy relative to float fishing on Rock Creek. Another benefit of the Plan will be consideration of the respective authorities of the two agencies to manage this use. Presently, authority for the Department to manage floating use has been entrusted to the Fish and Game Commission and is limited to the regulating of fishing

from boats. The Forest Service has the authority to manage the commercial use of Forest lands, hence the commercial use of the creek, and to some extent private floating use of Rock Creek by the controlling of access to the stream.

The Department conducted in-depth Rock Creek user interviews during the 1988 general fishing season. A single check station near the mouth of the creek was used to check anglers as they left the creek having completed their fishing for the day. The station was operated from mid-morning to darkness in order to sample anglers using the creek during the day. The estimate of total presssure is viewed as conservative as the sample did not account for: 1) anglers exiting Rock Creek at the upper end traveling toward the Flint Creek drainage or the Rock Creek/Bitterroot divide, 2) anglers camping overnight and residents of Rock Creek that would not pass through the check station, 3) anglers completing their fishing very early in the morning or very late in the evening outside the hours of check station operation, and, 4) anglers not stopping at the check station.

A total of 2,450 anglers were interviewed between May 26th and October 19th. A sample of the interview form is contained in the Appendix. Results of this survey were tabulated and became available in early 1989. Some of the highlights of the 1988 survey include:

(1) Total floaters for the census period (May 26-Oct. 19) was 10.4% of the total recreational users of the creek which represents a doubling of the floating percentage observed in the 1986 season.

(2) For the float season, 41.5% of floaters were outfitted and 58.5% were private. These percentages are almost exactly reversed compared to what they were in 1986, suggesting that the increase floater use is almost entirely in the private sector.

(3) Floater use by stream section:

Hogback to Welcome	43.6%
Gillies to Hogback	28.0%
Welcome to Mouth	22.0%
Forks to Gillies	6.4%.

Note that 78% of the float fishing took place above Welcome Creek.

(4) Walking angler use by stream section:

	During Float Season	After Float Season
Welcome to Mouth	61.5%	67.3%
Hogback to Welcome	28.7%	25.5%
Gillies to Hogback	7.7%	5.9%
Forks to Gillies	2.1%	1.3%

Note that most of the wade fishing, 61.5% or more, took place

below Welcome Creek. The apparent preference by bank anglers for the Mouth to Welcome section is an especially noteworthy consideration for the continued management of Rock Creek. More than half, 56.4%, of all users of Rock Creek over the course of the entire season were bank or wade anglers fishing the Mouth to Welcome section making this group the largest component of users for any section of the creek.

(5) The typical floater encountered from 8 to 12 bank anglers during their float, the maximum occuring in the Hogback to Welcome section.

(6) Of all bank anglers surveyed, one out of five, or 20%, encountered boats. During the float season only, encounters were 30%.

(7) 80.5% of the total bank anglers reported that encounters with boats did not interfered with their fishing. Interference was greatest in the upper stream sections, where the stream is the smallest. Over 40% of anglers in the Forks to Gillies and Gillies to Hogback sections reported interference. This compares with approximately 15% of anglers in the Hogback to Welcome and Welcome to Mouth sections.

(8) User opinions regarding continued float fishing on Rock Creek indicate substantial tolerance for float fishing with 67% or more either preferring some level of float fishing activity or having no opinion.

(9) A water flow level restriction appears to be the most favored alternative for further limits on float fishing.

Access to Rock Creek for recreational users is not considered to be a problem. From Ranch Creek to the mouth, approximately 10 miles, about 75% of the access to the creek is private. However, there is one improved campground and three fishing access points within this reach. Anglers also have access to the stream below it's high water marks from public roads, bridges, etc., under the provisions of the Montana Stream Access Act. From Ranch Creek to Williams Gulch, approximately 21 miles, the creek flows almost entirely through Lolo National Forest lands. There are four developed campgrounds and one fishing access site within this reach. There are also numerous undeveloped camp sites and access points on these public lands. From Williams Gulch to Gillies Bridge, about 10 miles, the creek is mostly on private land. However, there is one developed campground and one improved fishing access site and the creek is accessable to anglers at a number of bridges and the county road runs adjacent to the creek in a number of areas. From Gillies Bridge to the Forks, approximately 10 miles, the creek is entirely on private land with access from bridges at either end or through permission from the landowners. The Department feels that there is no need for it to provide additional access at this time.

Public input received by the Department throughout the development of this Management Plan regarding recreational users has primarily addressed the floating issue. Some would like to see all floating banned while others feel that it can continue if it is managed to some degree. Numerous comments were made about the need for educational programs for floaters and perhaps the publication of a floater's guide addressing ethical rules for encounters with bank or wade anglers, etc. Others suggested some form of commercial floater identification so that they don't take the blame for private floater wrong-doings.

Management Statement - In the Fisheries Management Section the following statement was made; "The improvements in the fishery are expected to significantly increase angler use of Rock Creek through the next decade. The challenge for the future of the Rock Creek fishery will continue to be the protection of the habitat from land use activities and will need to include better understanding of the interaction between various user groups of Rock Creek and their effects on the resource". The Department intends to do just this.

Implicit in the management of public use is the measurement or monitoring of public use. This is also necessary in order to gain an understanding of the degree of satisfaction, or dissatisfaction, of users of the creek. This will be accomplished by utilizing one or more of the following techniques:

1. Operation of census/interview station(s) similar to what was done during the 1988 fishing season.
2. Periodic spot surveys similar to what has been done in years previous to 1988.
3. Voluntary completion of user census forms at unmanned self dispensing check stations at the upper and lower exits from the creek.

The Department's authority to deal with floating use is generally limited to prohibiting fishing from boats. The Department feels that in order to properly manage the future recreational use of Rock Creek this authority needs to be strengthened and broadened to allow the control or limiting of floating use. At such time as public input identifies the need, the Department will seek such authority from the Legislature for the management of Rock Creek.

The Department views the management program for users as being applied incrementaly. As use increases and corresponding conflicts increase, additional management will be applied. The Department will conduct evaluations annually, and if changes in management appear to be warranted, the Department will conduct public hearings to seek public input on the proposed changes. The following paragraphs describe the specific measures included in the Department's management program.

1989 Season - The program of outfitter regulation by the Forest Service was continued with the Department participating with the Forest Service by means of an interdisciplinary team. This program featured an ending of commmercial floating on June 30th or when a flow level of 700 cfs was reached, whichever occurred first, and certain area use restrictions. It also required that outfitted craft be marked so as to be clearly identifiable to bank or wade fisherman as to the outfitter and craft number. In addition, private floaters were asked to voluntarily conform with the same restrictions as outfitters on ending of the float season.

1990 Season - The Fish and Game Commission will utilize its authority to regulate fishing from boats and will prohibit all fishing from boats on Rock Creek after June 30th, annually.

1991 Season - The Department in conjunction with the Forest Service will develop and make available to users an educational floaters guide of do's and don'ts for use in teaching floaters how to handle encounters with wade or bank anglers. The floaters guide will also address various areas of the creek where floater landowner conflicts have occurred to insure that floaters are aware of streamside ownership.

1992-1993 Census of Recreational Users - In either 1992 or 1993 the Department will operate a census/interview station for the entire season as was done during the 1988 season. Results will be compliled as well as options for future management and be taken to the public for review and input.

Future Management - The Department anticipates that the management measures described above will be sufficient for the current 5-year management program which ends in 1994. However, the 1992-1993 census will determine whether additional measures will have to be taken in the current program or if they will be needed in the next 5-year program. Future management will consider:

1. The prohibiting of fishing from boats in specific sections of the stream. Current analysis of census data and input received by the Department through this Management Plan process suggests that the next management step should be the prohibiting of all fishing from boats downstream of Welcome Creek.
2. The seeking of additional authority from the Legislature to manage the recreational use of Rock Creek which may involve limits on amount of use, permit systems, and regulation of specific user groups.

XI. DRAINAGE AREA AND STREAM CORRIDOR

Land uses within the Rock Creek drainage play an important role in influencing the quality of the fishery, the fishery habitat, and opportunities and experiences available to the recreation user. This is even more true as it pertains to land uses in the areas immediately adjacent to the stream, or as it is known, the stream corridor.

Water quality is probably the most obvious element of fish habitat to be affected by land use, with sediment normally being the parameter most affected. Activites which (1) remove vegetation (logging, concentration of livestock, etc.), (2) alter the natural landscape (road construction, farming, etc.), and/or (3) concentrate runoff (culverts,etc.), can increase erosion and result in deposition of sediments in waterways which over time are transported to Rock Creek itself. Sediment has the negative effects of reducing the fishing opportunities (fish cannot see the fly), reducing the overall asthetics of the stream (muddy water is not as pleasing to look at as clear), and most importantly, it can severely impact fish reproduction. Sediment clogs spawning gravels and cuts off the oxygen supply to eggs which have been deposited in the gravels.

A number of other water quality parameters can be impacted by land use. Water chemistry is influenced by leachates from mine waste. The high metals levels found in the waters of Rock Creek, which were discussed under Fisheries Habitat, are probably related either to the high levels of mineralization within the drainage and/or to past mining activities. Water temperatures can be increased by removal of vegetation which furnishes shade to water. Nutrients and bacteria levels can be increased by livestock or human wastes. These are but a few examples of how land use can affect water quality.

Water yield from a drainage basin is also influenced by land uses within the basin. An area covered with trees produces an entirely different yield than an area covered with grass. Likewise, the timing of runoff can be similarly impacted. An area with heavy tree cover will generally produce a longer sustained runoff during the spring melt, whereas an area with little vegetation will have earlier and higher flows but of shorter duration.

There are many ramifications of land uses within the stream corridor. Vegetation removal on the banks can affect shelter and shade for fish, cause stable stream banks to become unstable, and affect the general asthetics of the riparian zone. Heavy livestock concentrations along streams normally results in vegetation removal, the breaking down of stream banks, and a widening and flatening of the stream channel itself. Typically this eliminates holding water for trout. Roadways alongside streams can have some of these same results. Irrigation diversion structures, bridges, and culverts that are located

within the stream also can impact water quality and the fishery. Obviously the divertion of water from the stream for irrigation can severely impact a fishery if the stream is seriously dewatered.

One hundred years ago there was a significant amount of mining within the Rock Creek drainage but, except for an active sapphire mine on the West Fork of Rock Creek, these uses have been dormant for many years. Today there are several proposals for new mines which have the potential to affect water quality within the creek. These proposals will have to be closely evaluated and commented on during the permitting process and, if approved, closely monitored during their operation.

Logging within the Rock Creek drainage has been substantial in the past but has in essence been in a moritorium from 1973 through the period of the development of the National Forest Plans. These plans have recognized that the drainage is an outstanding fishery and recreation resource and acknowledged that these values will be maintained. However, the plans have identified 27% of the National Forests lands for timber and range management. Specific logging proposals will have to be evaluated, commented on, and monitored for impacts on water quality, water yield, and fishery habitat.

It is often said that the most long term impact from land uses such as logging and mining are caused by roads constructed to remove the commodity from its' source. Roads denude significant amounts of land, oversteepen slopes, and disrupt and concentrate natural drainage, all of which can lead to erosion and deposition of sediments in waterways. Best Management Practices have been identified by water quality management agencies and must be utilized in new road construction. Efforts must really be made to keep roads out of the riparian zones or stream corridor whereever possible.

Livestock grazing is done through a permitting system on National Forest lands and on private lands in middle reaches of Rock Creek. The most important consideration in managing this use is the control of livestock within the riparian zone. The most effective technique involves fencing or otherwise restricting livestock use of the riparian zone with provision for designated watering locations.

Land development on Rock Creek has mostly been confined to lands within the lower seven or eight miles of the drainage. There is the potential for some further development of these lands as well as the private lands in the middle reach of the drainage. Possible water quality impacts associated with this land use includes leaching of sewage disposal effluent into the stream, erosion due to land disturbance, and runoff of fertilizers, herbicides and pesticides into the creek. Further development likewise can have an impact on the general asthetics of the Rock Creek basin.

Wilderness and wilderness type land uses obviously create as natural a setting as possible for Rock Creek. The Forest Plans designate 49% of the National Forest lands for either wilderness or roadless land use. As the Forest lands represent 80% of the lands in the drainage this means that about 40% of the total drainage area will remain as wilderness or roadless for this planning cycle.

Noxious weeds have been a problem within the Rock Creek drainage for some time. Various herbicides are used to attempt to control or eradicate these weeds. Use of these chemicals near the creek can be harmful or fatal to the fishery and to the aquatic life and vegetation which make up the fish habitat. Great care must be taken with these herbicides and users should be instructed in their use.

Rock Creek road runs adjacent to the creek for a major share of the reach from the mouth to Gillies Bridge. The lower 5 miles of the road is in Missoula County and the County considers it to be a county road. The balance of the road lies in Granite County and is considered to be a public road by both the County and the Forest Service, although the question of jurisdiction has never been determined. Granite County and the Lolo National Forest have entered into an agreement whereby they have administratively divided the road for purposes of maintenance with the Forest responsible for the area from Ranch Creek to the southern Forest boundary. Average Daily Traffic on the road near the mouth of Rock Creek has ranged between 300 and 500 vehicles per day during the spring to fall season in recent years. This contrasts with about 70 vehicles per day above the Ranch Creek Road intersection which is approximately ten miles above the mouth.

The quality of the Rock Creek road serves as a deterant to more traffic (and thereby more recreation users) in the middle reaches of the canyon and probably eliminates certain of the larger recreational vehicles. A major complaint by users and by residents in the lower reaches is the dust problem during the summer and fall months. Improvements to the road should be geared to the recreational capacity of the stream and facilities on the Forest lands. Improvements to the road should not further encroach on Rock Creek and care must be taken with the handling of drainage and runoff from the roadway. Dust control measures must also consider the water quality impacts on the creek.

The majority of the public input received by the Department throughout the development of this Management Plan has been very supportive of protection and preservation of the drainage area and stream corridor of Rock Creek. However, Granite County has expressed their concerns that the loss or reduction of logging and mining in the Rock Creek drainage has had serious economic ramifications on the County and that revenues derived from recreation do not replace these losses.

Management Statement - The Department intends to take an active role in the review, discussion, and permitting (where required) of land use activities within the Rock Creek drainage to insure that they do not negatively influence the quality of the fishery, the fishery habitat, and opportunities and experiences available to the recreational user. Particular attention will be paid to the area adjacent to the stream; the stream corridor. The Department will work closely with both the Deerlodge and Lolo Forests and will participate in interdisciplinary team activities that pertain to Rock Creek.

XII. AGENCY MANAGEMENT

A variety of agencies have management responsibilites in the Rock Creek drainage. The Department, as the recreation management agency for the State of Montana and as trustee for the water which flows in Rock Creek on behalf of the citizens of the State of Montana, must play a key role in future management of the creek. This includes the fishery, the fish habitat, the recreation use, and the stream corridor.

The Lolo and Deerlodge National Forests who manage 80% of the drainage basin of Rock Creek must also play a major role in future management. Most of the stream frontage within the confines of this Management Plan are lands within the Lolo Forest. Almost all of these lands have been withdrawn to mineral entry. Congress has mandated a review of all mineral withdrawls and this review is planned for completion by 1991. The Department and the Lolo Forest have worked together through an interdisciplinary team to review and coordinate the analysis of float fishing of the creek as both agencies have authorities and responsibililties. In addition, the Forest has created another interdisciplinary team to work on implementation of the Forest Plan on Rock Creek and has invited the Department to participate as a member of this team.

The Rock Creek Advisory Council administers a conservation trust fund for Rock Creek. The Department as a member of the Council will actively participate in decisions relating to use of the trust fund for the maximum benefit of the recreational use of Rock Creek.

The Montana Department of State Lands also has certain responsibilites as regards the evaluation and permitting of mining in Rock Creek.

The Montana Department of Health and Environmental Sciences, Water Quality Bureau, enforces water quality regulations of the State and is particularly involved in matters relating to the permitting of new mining operations in the Rock Creek drainage.

The Bureau of Land Management manages some public lands in the middle reaches of the drainage. These lands have been and are, in some cases, being logged, mined, and grazed at the present time.

Granite County controls subdivisional development on the private lands in the middle reaches of the drainage. Missoula County likewise controls subdivisional development in the lower five miles of the drainage.

The Granite Conservation District and the Missoula Conservation District administer the Natural Streambed and Land Preservation Act ("310") with assistance from the Department in their respective jurisdictions. This law relates to construction work

on private property within the high water limits of perennial streams.

Missoula and Granite Counties and the Forest Service operate and maintain county or otherwise public roads within their jurisdictions, including the Rock Creek road.

Public input received by the Department throughout the development of this Management Plan has been very supportive of the Department's involvement with the various agencies who have management responsibilities within the Rock Creek drainage to insure the protection and preservation of the drainage. Some people also feel that it is the Department's responsibility to regulate and manage the floating use of the creek and that the Department should move toward gaining the necessary authority to be the lead agency in this regard.

Management Statement - The Department has worked in the past with all agencies who have management responsibilities within the Rock Creek drainage and the Department will continue to work with these agencies in the future. The Department, as the recreation management agency for State of Montana, will represent the interests of recreationist in all development proposals, public or private. At such time in future management as public input and the Department's user census demonstrate the need, the Department will seek additional legislative authority to manage the recreation use of Rock Creek.

A P P E N D I X

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
Lolo National Forest
2801 Russell Street
Missoula, Montana 59801

Reply to: 2150 Multiple Use Coordination

May 31, 1973

Subject: Project Work Aquatic Resource Monitoring Procedures, Rock Creek Drainage

To: Rock Creek Advisory Committee

We concur with the project work aquatic resource monitoring procedures for the Rock Creek drainage as recommended to the Rock Creek Advisory Committee by the Rock Creek Aquatic Resource Sub-Committee.

To establish a common understanding as to when monitoring will occur, we must mutually agree on the procedure the Forest Service will use to determine when monitoring will be required We interpret sentence one in the objects of the proposed outline to mean, (1) Monitoring will occur when land use activities are prescribed within or directly adjacent to the flood plain of perennial streams, and (2) The decision to monitor or not monitor perennial streams when prescribed land use activities are scheduled outside and not directly adjacent to the flood plain will be based on the merits of each activity and its likelihood of causing aquatic resource degradation. The decision as when to monitor perennial streams where land use activities are outside and not directly adjacent to the flood plain will be made by the Aquatic Resource Manager.

Drainage monitoring for prescribed land activities will be coordinated with appropriate Federal and State Agencies.

Jack Large

JACK LARGE
Forest Supervisor
Lolo National Forest

George M. Smith

GEORGE M. SMITH
Forest Supervisor
Deerlodge National Forest

PROPOSAL
PROJECT WORK AQUATIC RESOURCE MONITORING PROCEDURES
ROCK CREEK DRAINAGE
April 11, 1973

OBJECTIVE:

To monitor selected water quality parameters in the streams flowing through significant Forest Service land use activities. Data will be used to guide Forest Service land use practices. This information will be disseminated to other agencies and landowners who have interest in the drainage.

PURPOSE:

To secure selected water quality data, when possible, two years prior to, during and after project work. Data secured will be used to detect change, if any, created by project work. Change is determined by comparing baseline data secured prior to project work and data secured above the project work area with data secured below project work area. Pre-project data will be used by the project administrator to protect the aquatic resource.

METHODS:

Four major Forest Service initiated land use activities (logging, grazing, roading, recreational use) are recognized as having a potential to degrade the quality of the Rock Creek Drainage Aquatic Resource. Mining is also a major land use activity, however, not initiated by the Forest Service and monitoring the effects of this activity must be a coordinated responsibility of developer, State and Forest Service.

1. Minimum Water Quality Parameters/Project to be Monitored

ROAD CONSTRUCTION	LOGGING	RECREATIONAL DEV.
A. Suspended Bedload	A. Suspended Bedload	A. Coliform
B. Turbidity	B. Turbidity	B. Conductance
	C. Temperature	C. Turbidity
	D. Conductance	
	E. pH	

MINING	GRAZING
A. pH	A. Temperature
B. Conductance	B. Turbidity
C. Turbidity	C. Coliform
D. Temperature	
E. Suspended Bedload	
F. Heavy Metals	

Monitoring will commence when possible, two years prior to project development. Frequency of monitoring and other parameters to be monitored, will be determined by Forest Service aquatic resource managers. For an example, if thirty day temperature recorders were used, continuous data would be available, or in the case of suspended bedload monitoring, it also would be continuous, whereas pH would be a point in time measurement.

ACTION PLAN

Data secured from the streams below the project will be compared against baseline and water quality data secured from above the project work areas. If increases are in excess of Rock Creek Water Quality Guidelines and/or State standards, field inspection will be made to identify the problem and corrective measures will be taken.

RESPONSIBILITY AND I & E

1. Forest Service aquatic resource managers will be responsible for coordinating, monitoring and the interpretation of the data.

2. Data will be available for public and inter-agency review.

ROCK CREEK AQUATIC RESOURCE SUB-COMMITTEE

ROCK CREEK USER INTERVIEW

DATE_____ NAME_____ STATE OF RESIDENCE_____

Have you participated in the 1988 census before?_____ times____

1. Did you float Rock Creek today 1. yes 2. no (if "no" go to question 12.)

2. Did you hire a commercial outfitter for your float?
   1. yes
   2. no
3. What section?
   1. Welcome Creek to mouth
   2. Hogback Cr. to Welcome Cr.
   3. Gillis Br. to Hogback Cr.
   4. Forks to Gillis Br.
4. How many times have you floated Rock Cr. this year?_____

5. How many people in your boat? _____

6. How many of them fished? _____

7. Did you fish
   1. only from the boat while floating
   2. always stopped to fish
   3. some of both
   4. did not fish
8. How many walking anglers did you pass? _____

9. Did you:
   1. float by the angler next to the bank nearest the angler
   2. move to side of stream opposite the walking angler
10. Did you:
   1. continue fishing through area of walking angler
   2. stop fishing until your boat passed the angler
   3. stop floating and fish in same area of the angler
11. How did the walking angler respond?
   1. no response
   2. friendly response
   3. stopped fishing
   4. moved out of the water
   5. displayed anger
   6. I didn't notice

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12. How many boats did you encounter on the water today?_____
13. Did boat traffic interfere with your fishing? 1. yes 2. no

PLEASE TURN THE PAGE AND CONTINUE

14. How did it interfere?
    1. fish quit biting
    2. had to stop fishing
    3. forced to move out of water
    4. boaters fished through my area
    5. boaters stopped and fished in my area
    6. too many boats
15. How would you describe the floaters behavior?
    1. courteous, friendly
    2. discourteous, unfriendly
    3. neutral
16. How did you react to the floaters?
    1. no response
    2. friendly response
    3. nonverbal angry response
    4. verbal angry response
17. Should floating be:
    1. allowed under current rules
    2. limited
    3. eliminated
18. If you answered "limited" how would you like that done?
    1. based on flow level
    2. by designated stream section
    3. limit number of boats per day per section
    4. establish float season dates (i.e. May 31 to July 31)
    5. other (explain)

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19. Which section(s) did you fish today?
    1. Welcome Cr to Mouth
    2. Hogback to Welcome Cr.
    3. Gillis Br. to Hogback Cr.
    4. Forks to Gillis Br.
20. type of fishing
    1. flies
    2. hardware
    3. bait
    4. combination
21. hours fished (to nearest .5 hrs.) _____

22. number of RAINBOW TROUT kept____ released____ tag # _____
23. number of BROWN TROUT kept____ released____ tag # ____
24. number of CUTTHROAT TROUT kept____ released____ tag # _____
25. number of BULL TROUT kept____ released____ tag # _____
26. number of BROOK TROUT kept____ released____ tag # _____
27. number of WHITEFISH kept____ released____ tag # ____