F-W-8

ANNUAL PROGRESS REPORT
WATER LEASING PROGRAM

November 30, 1994

Submitted to:

Montana Water Policy Committee
Montana Board of Natural Resources and Conservation
and
Montana Fish, Wildlife and Parks Commission

Submitted by:

Montana Fish, Wildlife and Parks
Fisheries Division

TABLE OF CONTENTS

I. INTRODUCTION

This is the fifth annual report prepared by FWP in response to the reporting requirement under 85-2-436(3)(a) MCA. One new lease (Blanchard Creek) was approved and implemented in 1995, bringing the total to three (3) water leases implemented since the Water Leasing Study was authorized by the 1989 legislature.

II. MAJOR ACCOMPLISHMENTS

Major water leasing accomplishments for 1994 include the following:

1. Completed the second year of implementation of two water leases of existing water rights on Mill Creek, an important cutthroat trout spawning tributary to the Yellowstone River. Began investigation of an additional water lease on Mill Creek to add to the 6.13 cfs already under lease.

2. Completed and implemented a water lease for existing water rights on Blanchard Creek, a spawning tributary of the Blackfoot River.

3. Nearly completed a lease for existing water rights on Cedar Creek, an important cutthroat trout spawning tributary to the Yellowstone River. FWP is presently attempting to negotiate a settlement with two Cedar Creek water users who filed objections to the change of appropriation water right application.

4. Continued work on a water conservation project and lease on Hell's Canyon Creek, a spawning tributary to the Jefferson River; submitted a change of appropriation water right application to the DNRC and continue to work with the users on a final leasing agreement.

5. Nearly completed a lease for existing water rights on Tin Cup Creek, a spawning tributary to the Bitterroot River. FWP is presently attempting to negotiate a settlement with two objectors to the "change" application.

6. Continued to participate in a proposed water conservation and leasing project on Big Creek, a spawning tributary to the Yellowstone River.

III. 1994 EFFORTS

ACTIVELY PURSUED

1. Big Creek

Big Creek is a tributary to the upper Yellowstone River entering near Emigrant, Montana. The stream reach studied for leasing extends from the mouth upstream for about one mile. Six irrigation diversions are within this reach and serve nine water users, who irrigate about 1,200 acres.

The water users and the Soil Conservation Service (SCS) are examining the potential for a gravity sprinkler irrigation system to replace the existing earthen ditch system. The increased efficiency of the pipeline system will salvage 11 to 14 cfs of water. This salvaged water could be available for lease to provide instream flows for the spawning of Yellowstone cutthroat trout. The cutthroat hatching success is greatly reduced because the lower one mile of Big Creek is usually dry in August and September.

Prior to 1993, studies by the SCS and FWP to determine project feasibility and to assess the economic benefits to the fishery were prepared with FWP's financial support and resulted in a Preliminary Feasibility Report issued by SCS in May 1992. In 1993, the Big Creek water users hired a project coordinator to assist with their efforts. FWP is proposing to contribute a one-time payment towards project construction and, in return, receive a lease for all water salvaged by the project. FWP continues to work with the users. The users are still in the process of forming an irrigation district, the legal entity needed to secure funds and grants, and working with the SCS in project development.

2. Blanchard Creek

Blanchard Creek joins the Clearwater River 2.9 miles above the river's confluence with the Blackfoot River near Ovando, Montana. The creek is a prime rainbow trout spawning tributary for the Blackfoot River but its reproductive contribution is limited due to loss of habitat from severe dewatering in the lower stretch.

The stream reach proposed for leasing extends about 1.1 miles upstream from the mouth. Within this reach are two irrigation diversions serving one user. This user, who irrigates 100 acres of pasture, diverts water at both diversions, causing the lower 0.1 mile of stream below the first diversion to go totally dry each summer.

With improved fish passage and increased streamflows, Blanchard Creek could provide significant recruitment of rainbow and cutthroat trout to a recruitment-limited section of the Blackfoot River. Fall spawning trout (brown and bull trout) could also benefit from flow augmentation.

In 1993, a lease agreement was signed and approved by the Fish, Wildlife and Parks Commission. A change of appropriation water right application was prepared by FWP and submitted to the DNRC in August, 1993. The "change" was noticed and approved in 1994, completing this pilot lease. The lease was implemented in 1994.

As a part of the lease agreement, FWP, in 1994, installed "fish friendly" diversion structures at the two existing diversions. These contain fishways to pass migrating trout and, next year, will also be screened to prevent trout, including fry, from entering the ditches. Monitoring of the creek's fish populations, using electrofishing techniques before and after lease implementation showed a three-fold increase in numbers of young trout. The lease is already producing dividends.

3. Tin Cup Creek

Tin Cup Creek originates in the Bitterroot Mountains and flows 19 miles before discharging into the upper Bitterroot River near Darby, Montana. Once Tin Cup Creek reaches the Bitterroot Valley, irrigation diversions claim much of the summer flow. By stream mile 2, summer flow is commonly reduced to a trickle (less than 1 cfs).

The Bitterroot River is one of Montana's high quality wild trout fisheries. Maintenance of the wild trout populations requires high quality spawning and rearing tributaries.

The senior decreed right on Tin Cup Creek is being investigated for leasing. This right, which totals 4.7 cfs, is split among six owners who irrigate about 199 acres. Water associated with this right has been historically diverted at the creek's lower-most ditch at stream mile 1. This diversion is immediately upstream from the prime rainbow trout spawning area on Tin Cup Creek. These users have been thwarted in recent years from using their water due to condemnation of their conveyance ditch by the Town of Darby and by numerous objectors to other feasible conveyance alternatives. Consequently, these users now view water leasing as the most viable short-term option for protecting their senior right.

In 1993, leasing terms were negotiated with the six water users. FWP also funded a study to provide data to assist in the preparation of a correct and complete "change" application. The study, which was completed in September, 1993, also provided information showing that the proposed lease would not injure other water users on Tin Cup Creek.

In 1994, the six users signed a lease agreement with FWP. FWP submitted a change of appropriation water right application to DNRC, which was noticed in September, 1994. Two water users on Tin Cup Creek filed objections to the "change". FWP is presently attempting to negotiate a settlement with the objectors.

4. Hells Canyon Creek

Hells Canyon Creek arises in southwest Montana's Highland Mountains and flows for 10.5 miles before discharging into the Jefferson River near Twin Bridges, Montana. The study reach is between the mouth and the only active irrigation diversion on the creek at mile 0.3.

Hells Canyon Creek is a critical rainbow trout spawning and rearing tributary for the Jefferson River for three reasons: (1) rainbow trout have poor spawning success in the river, (2) Hells Canyon Creek is one of only two river tributaries which successfully spawn and rear rainbow trout, and (3) Hells Canyon Creek can potentially produce and deliver high levels of rainbow trout fry to the river.

The creek's summer flows are as low as 1/2 cfs. Dewatering to this level reduces rearing space for trout fry and causes a premature movement of fry into the river. Also, fish trapping studies show a substantial loss of trout fry to the existing ditch.

The three water right holders on the creek irrigate, primarily by flooding, about 100 acres of pasture and 20 acres of crops. The three users will participate in an ASCS-sponsored project to replace the present inefficient ditch system with a gravity pipeline and will convert to sprinkler irrigation. FWP will also participate, contributing a one-time payment to assist with project construction. In return, FWP will receive a lease for all salvaged water, and a "fish friendly" diversion structure will be constructed for the new pipeline.

FWP continues its efforts to negotiate a lease agreement, now in its sixth draft. To facilitate its completion, FWP and its attorney met with the three users and their attorneys on September 7, 1994 to try and resolve our differences. The agreement has yet to be finalized.

During the summer of 1994, FWP measured ditch and stream flows within the Hells Canyon Creek drainage to be used in the preparation of a change in appropriation water right application. The "change" application, which was completed and submitted to DNRC in October, 1994, awaits their review and approval before being noticed for public comment.

5. Cedar Creek

Cedar Creek, a 7.9 mile-long tributary to the upper Yellowstone River, enters the river near Gardiner, Montana. The creek arises in the Absarokee-Beartooth Wilderness area. Despite severe dewatering in the lower portion of the creek, a spawning run of Yellowstone cutthroat trout occurs.

About 0.5 miles upstream from the mouth of Cedar Creek, four irrigation diversions take the majority of summer flow. During 1989, for instance, 97 percent of the flow was diverted at this location. Leakage at the lower-most diversion provides about 0.5 cfs in the downstream channel, thereby preventing the total dewatering of lower Cedar Creek.

About seven Yellowstone River tributaries upstream from Springdale, including Cedar Creek, support spawning runs of Yellowstone cutthroat trout, a "Species of Special Concern" in Montana. Summer dewatering impacts the lower reaches of most of these tributaries. This adversely affects the reproductive success of cutthroat trout and, consequently, limits the production of recruits for the river fishery.

Cedar Creek is one of the better cutthroat spawning tributaries to the Yellowstone River. However, the lower creek is dewatered when cutthroat eggs are incubating and when fry are emerging from the gravel and out-migrating to the Yellowstone River. This critical period extends through July and August. Stream dewatering presently limits the capacity of Cedar Creek to produce cutthroat trout recruits for the Yellowstone River sport fishery.

The U.S. Forest Service, with the purchase of the OTO Ranch, acquired water rights on Cedar Creek and two of its tributaries. These rights, which include the 2nd, 3rd, 5th, and 8th oldest rights in the drainage, are used in combination to irrigate 179 acres of hay meadows on public lands. These rights, which total 19.28 cfs, are more than adequate to provide the 1.3 cfs minimum that is needed to protect critical spawning habitat.

A hydrologic study of Cedar Creek was conducted in the Summer of 1992 and a final report submitted to FWP in February, 1993. The study provided information showing that the proposed lease would not injure other water users on Cedar Creek.

A lease agreement, which was finalized and signed by the U.S. Forest Service, was approved by the Fish, Wildlife and Parks Commission in December, 1993. In July, 1994, FWP prepared an EA for the Cedar Creek lease and sent it out for comments. A change of appropriation water right application, which was submitted to the DNRC in November, 1993, was noticed for public comment in June, 1994. Two water users on Cedar Creek filed objections to the "change". FWP is presently attempting to negotiate a settlement with the objectors. If negotiations are unsuccessful, a formal hearing is set for January 20, 1995.

6. Mill Creek

Mill Creek is a major tributary of the upper Yellowstone River entering approximately 20 miles south of Livingston, Montana. The stream reach studied for leasing extends upstream about 6.4 miles to the diversion point for the new Mill Creek Water and Sewer District pipeline.

August is a critical month for both irrigation and for the hatching of Yellowstone cutthroat trout. During August, Mill Creek water diversions remove an average of 90 percent of the mean August flow, resulting in little or no water at the mouth.

A gravity-fed pipeline system completed in the fall of 1991 replaces earthen ditches used for flood irrigation. The project creates salvaged water that is available for leasing. This salvaged water can provide added streamflow to the lower six miles of Mill Creek and

subsequently benefit trout spawning, hatching, and the out-migration of young fry. Two water lease agreements were signed in 1992. In 1993, and again in 1994, the two leases were implemented. The particulars of the two leases are as follows:

Individual Water Right Holder - FWP in 1990 began discussing leasing opportunities with John and Donna Gray, irrigators on Mill Creek. The Grays have, as a result of more efficient delivery of water from the new pipeline, 6.13 cfs available for leasing.

A lease agreement was signed in October 1992. FWP will annually pay $7,500 for the lease. FWP will pay all costs associated with the installation of measuring devices or for personnel to measure streamflow in accordance with the FWP-provided measurement plan.

In November 1992, FWP submitted a "change" application to DNRC. The "change" was subsequently approved and the lease implemented in Summer, 1993.

Mill Creek Water and Sewer District - During 1992, a water lease contract was signed with the Mill Creek Water and Sewer District to provide an annual, one-time, 48-60 hour water release of 41.4 cfs each August to flush cutthroat trout fry to the Yellowstone River. This 41.4 cfs represents portions of 95 separate rights. Not later than July 1 of each year, the District will petition the District Court to appoint a water commissioner for Mill Creek. The District shall install, operate, maintain and pay all costs for measuring devices necessary to measure the water diverted by the District. In return, FWP will pay the District an annual sum of $12,750. The FWP will pay all costs associated with the installation of measuring devices or for personnel to measure streamflows in accordance with the streamflow measuring plan required in 85-2-436 (2) (c).

The summer of 1994, which was a period of severe drought, marked the second year the Mill Creek leases were in effect. Lease-related efforts of FWP on Mill Creek in 1994 included:

1) assisting the USGS in measuring stream flows to better define the rating curves for the two gaging stations on Mill Creek;

2) planting cutthroat trout eggs and fry in Mill Creek to enhance future cutthroat spawning runs;

3) providing technical assistance to the water commissioner who administered the leases and the Mill Creek water rights;

4) monitoring stream flows at the two Mill Creek gage sites; and

5) operating fry traps to assess the effectiveness of the August flush of cutthroat trout.

The 1994 drought provided a test of the leases' effectiveness. Mill Creek to its confluence with the Yellowstone River remained watered until August 19, after the flush was completed (see Appendix A). Fry trapping revealed that the flush was successful in moving young cutthroat to the river. The egg plants were the one disappointment. Rapidly falling flows during the course of the summer led to the dewatering of the sites where FWP personnel planted cutthroat eggs in the stream gravel. Future imprint plants will likely be limited to fry only.

The 6.13 cfs presently leased for the maintenance of summer flow in Mill Creek is, by itself, insufficient to maintain the creek's full reproductive potential. This 6.13 cfs is far short of the estimated 48 cfs that might be needed to fully satisfy the needs of cutthroat trout.

Over the past two irrigation seasons, the current lease proved to be workable in terms of water delivery and administration. Consequently, FWP is seeking additional water leases to add to the current 6.13 cfs. FWP is presently negotiating terms with another water user on Mill Creek. If negotiations are successful, an additional 3.9 cfs of early priority water could become available for instream use. Since Mill Creek has already been approved by the Board of Natural Resources and Conservation as a leasing stream, no further approval by the Board is necessary for this potential lease.

IV. REPORTING REQUIREMENTS FOR COMPLETED LEASES

Section 85-2-436 (3)(a) requires that an annual leasing progress report contain specific information on each pilot lease entered into during the report period. The required information, listed under 85-2-436(1), is provided below for Blanchard Creek, the single lease implemented in 1994.

(i) the length of the stream reach and how it is determined;
(ii) technical methods and data used to determine critical stream flow or volume needed to preserve fisheries;
(iii) legal standards and technical data used to determine and substantiate the amount of water available for instream flows through leasing of existing rights;
(iv) contractual parameters, conditions, and other steps taken to ensure that each lease in no way harms other appropriators, particularly if the stream is one that experiences natural dewatering; and
(v) methods and technical means used to monitor use of water under each lease;
(b) based on the data provided under subsection (1)(a), develops a complete model of a water lease and lease authorization that includes a step-by-step explanation of the process from initiation to completion.

(i) Length of stream reach - The affected reach extends from the creek's upper-most active diversion to the creek's mouth. This 1.1-mile-long reach encompasses the stretch of Blanchard Creek that is severely dewatered each summer.

(ii) Technical methods to determine critical streamflow - The 3 cfs being leased is the base flow of Blanchard Creek. It is also the approximate flow that will wet much of the creek's riffles, the stream area where rainbow, cutthroat and bull trout spawn and where young trout rear.

(iii) Legal standards - For the Blanchard Creek lease, an extensive package of information was assembled and used to determine the amount of water available for instream flows. This included:

1. The amounts of the rights claimed for Blanchard Creek under SB76;

2. Evaluation of historic irrigation practices on Blanchard Creek and use of the rights under investigation on the affected lands;

3. An analysis of irrigation return flows;

4. An evaluation of other uses on Blanchard Creek, including diversion locations and the amounts and priority dates of their claimed rights; and

5. An evaluation of in-channel water losses.

This information is discussed in FWP's "change" application for the lease.

(iv) Steps to ensure non-injury to other users -

Various steps incorporated in the leasing process ensure non-injury to other water users. These include:

1. Water users who could be potentially injured have the opportunity to voice their concerns when a lease agreement is brought before the Fish, Wildlife and Parks Commission for approval. No objectors appeared before the Commission or filed letters of objection to the lease.

2. FWP conducted a hydrologic analysis to determine the lease's effects on other users. The analysis showed that these effects would be negligible.

3. Through public notice, the "change" process provides an opportunity for individuals potentially injured by a proposed lease to object and resolve their concerns before a "change" is granted. No objections to the Blanchard Creek change application were received.

(v) Means used to monitor water - The monitoring plan for the Blanchard Creek lease is discussed in Appendix B.

b. Water leasing model - The leasing process for each water lease under consideration by FWP will vary greatly in complexity. Blanchard Creek represented a relatively simple situation in which to acquire and implement a lease. The following provides a chronological documentation of all the events that led up to its implementation. Despite the simplicity, much effort was expended in securing this lease.

August, 1991 - FWP begins investigation of leasing potential on Blanchard Creek.

April 10, 1992 - FWP meets with Frank Vannoy, potential lessor on Blanchard Creek.

April 22, 1992 - FWP completes a report describing the fishery and flows of Blanchard Creek and potential lessor's water rights.

June, 1992 - FWP Commission approves Blanchard Creek as a study stream for leasing.

Sept. 25, 1992 - BNRC approves Blanchard Creek as a study stream for leasing as required in 85-2-437, MCA.

Nov. 23, 1992 - FWP meets with Frank Vannoy to discuss leasing details and to finalize terms.

Nov. 30, 1992 - FWP's legal staff is requested to prepare a draft lease agreement.

Jan. 6, 1993 - FWP requests water right information from Frank Vannoy to be used in preparing a "change" application.

Jan. 21, 1993 - FWP sends draft "change" application to DNRC for review.

March 23, 1993 - DNRC sends a letter to FWP identifying their concerns with FWP's draft "change" application and requesting additional information.

May 6, 1993 - FWP's legal staff completes a draft lease agreement and sends it out for review.

May 28, 1993 - FWP personnel submit additional flow and irrigation information, as requested by DNRC, to be incorporated into the Blanchard Creek "change" application.

August 18, 1993 - Final lease agreement is signed by FWP and the Vannoys.

August 30, 1993 - Final "change" application, which incorporates the additions requested by DNRC in their letter of March 23, 1993, is re-submitted to DNRC.

Oct. 28, 1993 - An EA is prepared by FWP and sent out for review.

April 15, 1994 - DNRC sends a letter to FWP requesting additional information for the Blanchard Creek "change" application.

May 3, 1994 - FWP meets with DNRC in Helena to discuss Blanchard Creek "change" and resolve our differences.

May 9, 1994 - FWP submits requested additional "change" information to DNRC.

May 18, 1994 - DNRC notifies FWP that the "change" application is correct and complete.

May 25, 1994 - Blanchard Creek "change" is noticed by DNRC.

June 10, 1994 - Deadline for objections to "change" application passes with no objections.

July 5, 1994 - DNRC authorization to Change Appropriation Water Right is received by FWP, completing approval of this pilot lease.

OTHER INVESTIGATIONS IN 1994

1. Jefferson River

A water user on the Jefferson River, who is subdividing his holdings, contacted FWP to discuss the conversion of his rights to instream use. The user, however, was only interested in selling his rights to FWP. Leasing was not an option.

2. Tieshute Creek

A user on this small stream in the Bitterroot drainage wanted to lease his rights to FWP at no cost to maintain an instream flow for fishery benefits. Because the creek supports brook trout, a species of low priority in the leasing program, and because the creek is already embroiled in a water right controversy, FWP declined the offer.

3. Grant Creek

A user offered to lease water on Grant Creek, a small tributary to the Clark Fork River at Missoula. Based on an FWP analysis, potential fishery benefits were insufficient to justify the cost of leasing.

4. Rattlesnake Creek

FWP is attempting to secure instream water in Rattlesnake Creek, a tributary to the Clark Fork River at Missoula. To date, FWP's efforts have been unsuccessful. One user still has leasing potential. FWP will continue to investigate leasing opportunities on this important spawning tributary.

5. Cottonwood Creek

Cottonwood Creek is an important bull trout spawning and rearing tributary to the Blackfoot River near Ovando. Stream dewatering presently limits its capacity to sustain bull trout, a species of "special concern" in Montana. In 1994, FWP applied for a River Restoration Fund grant to line a 1½-mile-length of leaky ditch on the Blackfoot-Clearwater Wildlife Management Area. If funding is obtained and the ditch is lined, up to 10 cfs of water is expected to be salvaged. Following approval for leasing by the Board and if the change

application is approved by DNRC, this water will be leased and used instream to enhance flows in Cottonwood Creek.

6. Cedar Creek

Two additional water users on Cedar Creek, a stream where FWP is already in the process of finalizing a water lease, offered to lease their Cedar Creek rights for instream use. At this time, FWP is reluctant to secure added water leases on Cedar Creek until the current lease has been implemented and tested and the need for additional water has been evaluated. FWP will reconsider their offers if the current lease proves to be workable and if additional water is required to meet the spawning and rearing needs of Yellowstone cutthroat trout.

APPENDIX A

MILL CREEK FLOWS
1994
EAST RIVER ROAD GAGE NEAR MOUTH

DATE	TIME	GAGE (ft)	FLOW (cfs)
7-5	--	1.3	24.0
7-15	--	1.16	17.0[a]
7-16	8:00 A.M.	1.10	13.2
7-19	4:00 P.M.	0.98	8.0
7-20	11:40 A.M.	1.00	8.7
7-21	3:15 P.M.	0.90	5.5
7-22	9:20 A.M.	0.78	--[b]
7-23	--	0.73	--
7-25	2:00 P.M.	0.90	5.5
7-26	9:15 A.M.	1.28	22.8
7-27	2:30 P.M.	1.06	11.2
7-29	1:00 P.M.	1.05	10.8
	2:40 P.M.	0.85	4.3
	2:50 P.M.	0.81	--
	4:55 P.M.	0.72	--
8-1	8:30 P.M.	0.66	--
8-3	3:00 P.M.	0.67	--
8-4	12:30 P.M.	0.80	--
8-5	10:30 A.M.	0.88	4.95[a]
	11:30 A.M.	0.87	4.8
8-8	2:45 P.M.	0.66	--
8-9	11:45 A.M.	0.64	--
8-12	1:00 P.M.	0.62	--
8-15	9:00 A.M.	0.32	--
	4:00 P.M.	1.00	8.7
8-16	2:30 P.M.	1.18	17.5
8-17	9:30 A.M	1.18	17.5
8-19	3:30 P.M.	0.50	--
8-19	--	--	channel dry[c]

[a] Flow measured using a current meter

[b] Gage presently unrated below 0.85 ft.

[c] Reported by Randy Nesmith, Water Commissioner

Appendix B

MONITORING PLAN - BLANCHARD CREEK WATER LEASE

Two components comprise the instream flow monitoring plan for the Blanchard Creek lease: (A) A stream gage to monitor flows in Blanchard Creek and (B) an administration program to ensure that the leased instream flow is maintained.

(A) Stream Gage

FWP will establish a flow gage immediately below the Vannoy's lower ditch to monitor the 3.0 cfs minimum instream flow. A metal staff gage will be installed by FWP at the proposed monitoring site. FWP will develop the rating curve for the gage and establish the 3.0 cfs mark. Once the rating is determined, FWP will periodically measure flows in Blanchard Creek to verify the gage's accuracy.

(B) Administration

FWP will rely on Frank Vannoy, the lessor, to administer the 3.0 cfs minimum flow. All irrigation will cease when flows at the monitoring site fall to 3.0 cfs. Personnel of FWP will be available to periodically check the gage.

Source: Application for Change in Appropriation Water Right on Blanchard Creek submitted by FWP to DNRC in January 1993.