YELLOWSTONE RIVER BASIN INSTREAM FLOW WATER RESERVATIONS

10-YEAR REVIEW REPORT

1999 -2008

Submitted to

Department of Natural Resources and Conservation
P.O. Box 201601
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By

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Introduction

Montana Fish, Wildlife and Parks (FWP) submitted 10-year Yellowstone Basin Reservation Review Reports in August 1988 and April 1999 covering the first 20 years of the implementation of FWP's instream water reservations in the basin. This report covers the next 10 years from 1999-2008. ARM 36.16.120 sets forth the report requirements for reservants. The following report is organized with respect to those requirements.

I. Summary of Amount Granted and Changes in Amount Needed

The reservation amounts granted for FWP's instream flow reservations in the Yellowstone River Basin are listed by stream, in Appendix A. The granted reservation for the Tongue River at Miles City is insufficient to protect fishery values. It is discussed later in this report and was discussed in previous reports. Also, the instream flow reservations for the lower Yellowstone River may not be sufficient to protect pallid sturgeon and to provide for the recovery of this endangered species.

The Board's method in determining water reservation allocations was largely socioeconomic and not very compatible or comparable with ecosystem-based methodologies. As was demonstrated in the 1989-1998 Report with respect to the wetted perimeter and Tenant methods and in this report with respect to the need for high flows, more sophisticated ecological-based methods would most likely result in showing a need for higher flows than were granted.

The 1989-1998 10-Year Review Report (FWP, 1999) included a discussion of advances in instream flow methodologies and the appropriateness of revisiting the instream flow reservations for the Yellowstone River Basin using alternative methodologies. Since that time methodologies continue to advance. Additionally more is known of fish populations, trends and risk, especially as they relate to sauger, shovelnose sturgeon and pallid sturgeon found in the lower Yellowstone River system.

No less than 34 instream flow assessment tools have been identified (Annear, et. al. 2004). These tools can broadly be grouped into three categories: standard setting, monitoring and diagnostic, and incremental. Standard setting methods set limits or rules to define a threshold flow regime. (Annear, et. al. 2004) The wetted perimeter method, which has been used widely in Montana in the Missouri River basin to establish instream flows is a standard setting method. Standard setting methods such as the wetted perimeter method often fail to provide for variability within any given year as well as variability between years, both of which are necessary to provide

for a healthy riverine ecosystem.

The wetted perimeter method does provide a reasonable minimum, short-term low-flow threshold but fails to provide a complete hydrologic regime necessary to protect and provide for a healthy riverine ecosystem. Despite its shortcomings the wetted perimeter method has been even more fully embraced in Montana through its recognition in the U.S. Dept. of Agriculture Forest Service Compact (§85-20-1401, MCA). In the Compact this methodology is used not only as the basis for establishing instream flows on 77 streams, but also is a method recognized for establishment of additional instream flows.

In granting the Yellowstone Reservations the Board of Natural Resources developed it's own methodology. This method while considering biological, water quality and geomorphological needs focused on limiting conflicts between irrigation and instream reservants (Clark, 1979) by limiting instream flows in the irrigation season of May through September.

While the Board did consider FWP's recommended flow regimes found in FWP's reservation application, by and large these flows were not adopted by the Board. The instream reservations adopted by the Board largely do not have a direct linkage to ecological needs while they do serve to protect some of these needs. Other ecological needs are served by the natural variability that still exists within the Yellowstone River Basin, but are not fully protected as instream flows.

The method used by the Board in the Yellowstone River Basin attempted to quantify seasonal variations in flow that are required for different life stages of the biota or necessary to maintain stream function. In this respect it is superior to the wetted perimeter method in that it does provide for annual variability. However, it largely fails to establish a direct linkage to ecological needs. The exception would be that it does provide for a dominant discharge for the upper Yellowstone River. The Board's method would be considered a standard setting method just the same as the wetted perimeter method. Neither method is necessarily superior to the other.

The 1989-1998 Report included a discussion comparing the mid to late-summer discharges granted for the Yellowstone River at Livingston with the results from both the Wetted Perimeter and Tennant Methods.

Comparison of Instream Flow Method Recommendations for Yellowstone River at Livingston

Time Period	Granted 95th %tile Discharge (cfs)	Wetted Perimeter Method (cfs)	Tennant Method (cfs)
July 21-31	2500	2600	2226
August 1-10	1600	2600	2226
August 11-31	2125	2600	2226
September	1555	2600	2226

With the exception of the July 21-31 period where the Tenant Method returned a 10% lower discharge than granted, the discharges derived using the two methods were 4 to 67 % greater than those granted.

The reservations for the Yellowstone River at Livingston and Billings included a dominant discharge component. Dominant discharge, today more commonly called bankfull discharge, is generally defined as the discharge at which channel maintenance is most effective. Channel maintenance is generally sediment movement, bar formation and removal, and changes in meanders and bends. Consistent with past and current thought a peak flow with a 1.5-year recurrence interval was used as the bankfull or dominant discharge for the Yellowstone River.

Discharges higher than bankfull are now recognized as necessary to maintain the health of the riparian ecosystem. Five to ten-year recurrence peak discharges are necessary (Potyondy, 2008) and peak flows up to the 25-year recurrence are desirable to maintain riverine ecosystems. (Schmidt & Potyondy, 2004). Compared to the dominant discharge that was granted for the Yellowstone River at Livingston of 18,200 cfs based on the 1.5-year peak discharge recurrence calculated on the period of record up to 1978, the 5 to 10-year recurrence range would be 25,760 to 27,760 cfs while the 25-year recurrence would be 30,460 cfs based on the peak flow period of record through 2007. These values are substantially higher than the high flow that was granted. This same period of record now would produce a 1.5-year peak flow recurrence of 17,900 cfs, slightly less than but comparable to that calculated 30 years ago.

Incremental techniques analyze single or multiple variables to enable assessment of different flow management alternatives over time. (Annear, et. al. 2004) Incremental techniques are used to establish targets often on regulated river systems where flow regimes can be set by dam releases or control of diversions. While the Yellowstone River Basin is largely unregulated by reservoirs with the exception of the Bighorn and Tongue rivers, incremental techniques still could provide a valid method to establish desirable flow regimes even if the ability to meet these flow regimes is limited.

Monitoring and diagnostic methods assess conditions and how they change over time. (Annear, et. al. 2004) It may be possible to establish relationships between different hydrologic attributes and biological responses. In obtaining a water reservation for the Madison River, FWP did establish such a relationship. Sufficient fisheries data may now be in place in some rivers of the Yellowstone basin to explore these relationships and FWP is considering the feasibility of this type of study.

However, such relationships are generally difficult to establish due to complex biological/ecological linkages within riverine systems. Biological data that is collected is focused on sport fish. This biological data alone when compared to hydrologic attributes may fail to show clear relationships. This would not be unexpected as a multitude of other factors such as temperature, disease, illegal species introductions and pollution can impact fisheries as well. In addition, fisheries datasets may still be of insufficient length to reflect long-term ecological processes associated with stream flow such as cottonwood recruitment and contribution of woody debris to the riverine ecosystem.

While more sophisticated instream methodologies continue to be developed, none are appropriate to replace the method used by the Board that gave great consideration to reducing conflicts between competing water uses. However, in certain circumstances such as the Tongue River

and possibly the lower Yellowstone River, the Board's methodology may need reconsideration. The Board's method is largely socioeconomic and not all that compatible or comparable with ecosystem-based methodologies. As was demonstrated in the 1989-1998 Report with respect to the wetted perimeter and Tennant methods and above in this report with respect to the need for high flows, more sophisticated ecological-based methods would most likely result in showing a need for higher flows than were granted.

The idea that nature got it wrong and fish and wildlife would thrive better with less stream flow than naturally occurs is counterintuitive. New and refined instream flow methodologies simply demonstrate that a natural flow regime or one that most closely approximates it with seasonal variability as well as variability between years best sustains fish and wildlife resources. While fish and wildlife may survive and rebound from low flow conditions, most species can persist at only reduced levels over long periods of time at sustained low flow conditions. Therefore when trying to define the needs or "beneficial use" of a water reservation for instream flow no single methodology may really define the minimum amount needed. There may be different minimum amounts needed at different life stages in different streams. As more is learned about fishery and geomorphologic conditions in the Yellowstone basin the efficacy of existing water allocation amounts may become clearer.

At this time, the reservation amounts granted remain consistent with purpose and need of the reservation with the exception of the amount granted for the Tongue River below the Tongue River Reservoir. While instream flow quantification methodologies continue to advance it is neither appropriate nor feasible to review the granted amounts for the entire basin. Review of the water reservations for the lower Yellowstone River may be appropriate to determine if they adequately protect pallid sturgeon.

II. Objectives

A. Purpose

The purpose of FWP's Yellowstone instream reservations remains the same as identified in the application and board order. The purpose of the reservations, as stated in FWP's Application for Reservation of Water in the Yellowstone River Basin is, " . . . to reserve waters, and flows thereof, for existing and future beneficial uses and to maintain a minimum flow, level and quality of water during such periods throughout the year in order to attain and serve such existing and future beneficial uses as follows:

(1) for the benefit of the public for fish and wildlife uses; and

(2) for the benefit of the public for recreational uses.

The attainment and service of such uses are to:

(1) provide fish and wildlife habitat sufficient to perpetuate the diverse species comprising this natural resource at levels comparable to current existing levels;

(2) contribute to, and maintain a clean, healthful and desirable environment;

(3) to sustain high levels of water quality; and

(4) honor and support all existing water use rights."

The purpose of the instream reservations, as stated in the Findings of Fact in the Board of Natural Resources (Board) Order Establishing Water Reservations is (paraphrased):

1) to ensure that waters are available for existing uses and to maintain a minimum flow, level, and quality of water;

2) to maintain the abundant and viable fishery and aquatic ecosystem existent in the Yellowstone River basin;

3) to provide fish and wildlife habitat sufficient to perpetuate the diverse species comprising the various natural habitats;

4) to help maintain water quality; and

5) to contribute to a clean and healthful environment.

The *Purpose* of the reservation remains the same as originally identified in the FWP application and in the Board Order.

B. Need

The *Need* for FWP's Yellowstone instream reservations still exists as identified in FWP's application and Board Order.

The *Need* for the reservation is as stated in FWP's application:

"A water right for instream beneficial use for fish and wildlife, and recreational uses may be obtained, under applicable statutes and rules, only by application for reservation and not by petition or application for permit. Without this reservation, beneficial uses provided by the Montana Constitution, and by law, cannot be met or maintained.

Existing water rights in the river basin will at all times be honored. If the reservations here requested are not granted and approved, any waters available over and above such existing rights will be vulnerable to future appropriations by permit. If these future appropriations are allowed to be executed in advance of, or without, the reservations here requested being established, the fish and wildlife resources will be permanently deprived of the waters so necessary for their healthy survival. It is readily apparent when realistically considered, that under our current laws and regulations, waters once allowed to be appropriated might well never again be available to reservation for fish and wildlife purposes. The need for an adequate reservation now is thus dictated.

> Further, this reservation is needed for the continued preservation of fish and wildlife habitat sufficient to perpetuate the diverse species comprising this natural resource at levels comparable to current existing levels, for recreational uses which those resources provide, and for the attainment and service of those other purposes of this reservation."

Further supporting statements of the *Need* for the reservation are contained in the application.

The *Need* for the instream flow reservations, as stated in the Board's Findings of Fact, is as follows (paraphrased):

a) necessary for channel flushing and the maintenance of channels;

b) to control aquatic plant growth;

c) to maintain aquatic and wildlife species and the fishery of the basin;

d) to provide fish and wildlife habitat sufficient to perpetuate the diverse species comprising the natural resources at levels comparable to currently existing levels;

e) for recreational purposes;

f) to provide for the continued preservation of fish and wildlife habitat sufficient to perpetuate the several and many species found in each stream reach at currently existing levels;

g) to provide water-based and water-related recreation for residents of this state and tourists and other transients to this state;

h) to provide Fish and Game standing to represent the public's interests in fish, wildlife and recreation when future applications for water use permits in the stream reaches are being considered.

All portions of the granted instream reservation for the various waters and stream reaches are presently being used for their intended purpose. The need for the instream reservations remains the same as stated in the FWP application and in the Board's Order.

C. Amount

In general the *Amount* of FWP's Yellowstone instream reservations is still appropriate in accordance with the application and Board Order on most streams and reaches except on the lower Tongue River and the possibly the lower Yellowstone River. The Board granted instream reservations on four (4) reaches of the mainstem Yellowstone River plus 65 tributary streams and rivers. The amounts of the granted reservations are shown in Appendix A.

The Board did not grant the reservation amounts as requested by FWP in its application. Rather, it granted various percentile flows for different periods of the year instead of the numerical flow values requested by FWP. Subsequently, FWP was required to quantify those percentile flows to arrive at flow values in cubic feet per second (cfs). The flow quantifications were determined by the USGS over a period of several years (through a contract with FWP) and are reported in certain annual reports listed in Section III of this report.

The amounts of the reservations are largely still appropriate given the context under which they were granted. However, they do not fully protect the fish, wildlife and recreation resources related to instream flow in the Yellowstone River basin. They are clearly inadequate to provide even a marginal degree of protection in the lower Tongue River and may well be inadequate for the protection and recovery of pallid sturgeon in the lower Yellowstone River.

Tongue River

The instream reservation granted on the Tongue River has proven insufficient for maintaining the fishery resource (see the second and fifth annual Yellowstone Reservation reports to the Board for further discussion). The Tongue River is important to the Yellowstone River fish populations, which spawn and rear their young in the Tongue River. Sauger and shovelnose sturgeon enter the Tongue in the spring when flows are high, spawn, then return to the Yellowstone River.

The flow reservation granted on the Tongue at its mouth is 54,289 AF/year or 75 cfs for each month of the year. While 75 cfs could be considered an acceptable absolute mimimum flow to prevent complete devastation of the fishery below the T&Y Diversion Dam during the summer when the river has historically gone dry, it cannot be considered adequate during other periods and in several successive years.

In recent years, flows in the lower Tongue River during April and May have been unseasonably low and insufficient to attract sauger and shovelnose sturgeon spawners from the Yellowstone, causing the failure of reproduction in those years. Flows were, however, in the range of those granted by the Board (75 cfs).

To maintain these migratory sauger and shovelnose spawning runs, FWP, in its original application, requested the following flows to be delivered between the T & Y Diversion Dam and the mouth of the Tongue River. These flows would trigger spawning migrations and maintain adequate spawning and rearing habitats for these species.

Period	Flow
September 1 - February 29	190
March 1 - April 30	525
May 1 - July 15	600
July 16 - August 31	225

Through a cooperative effort between FWP, other agencies and water users a fish passage channel has been completed around the T&Y Diversion. Even when only partially completed in 2007 fish were observed moving through the bypass channel during high flows, gaining access to 50 river miles of the Tongue River that had been inaccessible for over 100 years. In the fall of 2008 the SH diversion dam was also removed, opening over 30 more river miles to fish migration up to the Mobley diversion dam. Progress is being made toward removing the Mobley diversion dam, which would remove all fish migration barriers in the Tongue River below Tongue River Reservoir. With the removal of migratory fish barriers, the need for sufficient flows that provide needed environmental conditions in the Tongue River is now even greater when the reservations were granted.

One of the apparent reasons the Board reduced the requested flows to 75 cfs was the availability of water to meet the needs of an enlarged Tongue River Dam, proposed by DNRC. DNRC was granted a water reservation of 383,000 AF/year to increase the storage capacity of the existing reservoir and provide additional irrigation and other beneficial water uses, utilizing a total of 450,000 AF/year.

The Montana Reserved Water Rights Compact Commission reached an agreement with the Northern Cheyenne Tribe to provide an additional 20,000 AF/year of storage in Tongue River Reservoir. During dam rehabilitation, the height of the dam was increased to provide this additional storage. The 1989-1998 Report incorrectly assumed that the expansion of Tongue River Reservoir by 20,0000 acre-feet to supply water reserved to the Northern Cheyenne Tribe was part of the DNRC Reservation. However, DNRC does not consider this expansion to be a use part of their reservation. (Rich Moy, Pers. Comm. 4-3-2006). Thus, the quantity of water reserved to DNRC (383,000 AF/year) remains unused. There are no known or stated plans to construct any new reservoirs or to do additional enlargements at the Tongue River Reservoir. This reservation should be reallocated to instream flow to meet the needs described above.

The lack of development of this DNRC reservation has not automatically resulted in the water being left instream for the benefit of fish and wildlife. The limited 75-cfs instream reservation granted has hampered FWP's ability to protect needed stream flow against junior water rights on the Tongue River. These junior water rights can divert up to 15 cfs of water. Diversion of 15 cfs represents a 20% reduction in flow when compared to the 75 cfs reservation and is significant during times of low flows.

Changing or reallocating of a portion of the DNRC reservoir reservation to an instream reservation would protect against future development that could impede or prevent migratory fish from using the Tongue River. This usage by migratory fish is now beginning to improve due to removal of barriers. In addition, it would provide for increased protection of the fishery during times of low flows.

Lower Yellowstone

Significant efforts are being undertaken in the lower Yellowstone River to protect and restore the

endangered pallid sturgeon. Currently, a substantial reconstruction of the Intake Diversion Dam is being considered to allow for passage of pallid sturgeon upstream. Changes to the Cartersville Diversion Dam to allow for fish passage are also being considered.

While barriers are one area of concern with respect to the survival of pallid sturgeon, an adequate flow regime may also be a limiting factor. There is a good deal of concern among scientists working with pallid sturgeon that FWP's reservation flows in the Lower Yellowstone do not adequately provide for the needs of pallid sturgeon. However, the flow regime needed is not w precisely understood. FWP presently is considering the feasibility of further investigations to establish the flow regime needed for the protection and recovery of pallid sturgeon.

D. Public Interest

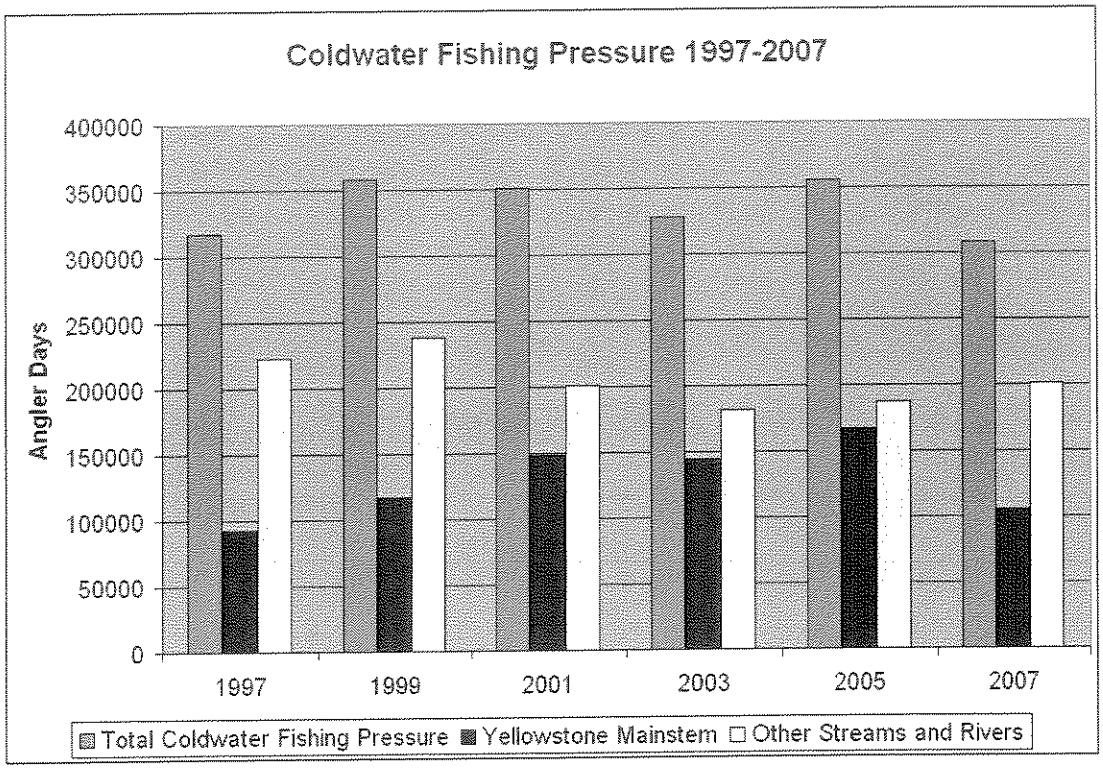
FWP's Yellowstone instream reservations remain in the public interest as identified in the application and board order. The *Public Interest* benefits, as stated in the FWP application, are as follows:

> (1) continued perpetuation of the fish and wildlife resources whose very existence is in the public interest;
>
> (2) prevention of the gradual depletion of streamflows currently enjoyed by the public for recreational uses:
>
> (3) continued perpetuation of the fish and wildlife resources for current and future utilization by the public;
>
> (4) maintenance of water quality which contributes to a clean, healthful environment for the citizens of the state and the nation; and
>
> (5) contribution to the protection of and continued utilization of existing water rights.

Further supporting statements that the reservation is in the public interest are contained in the FWP's reservation application.

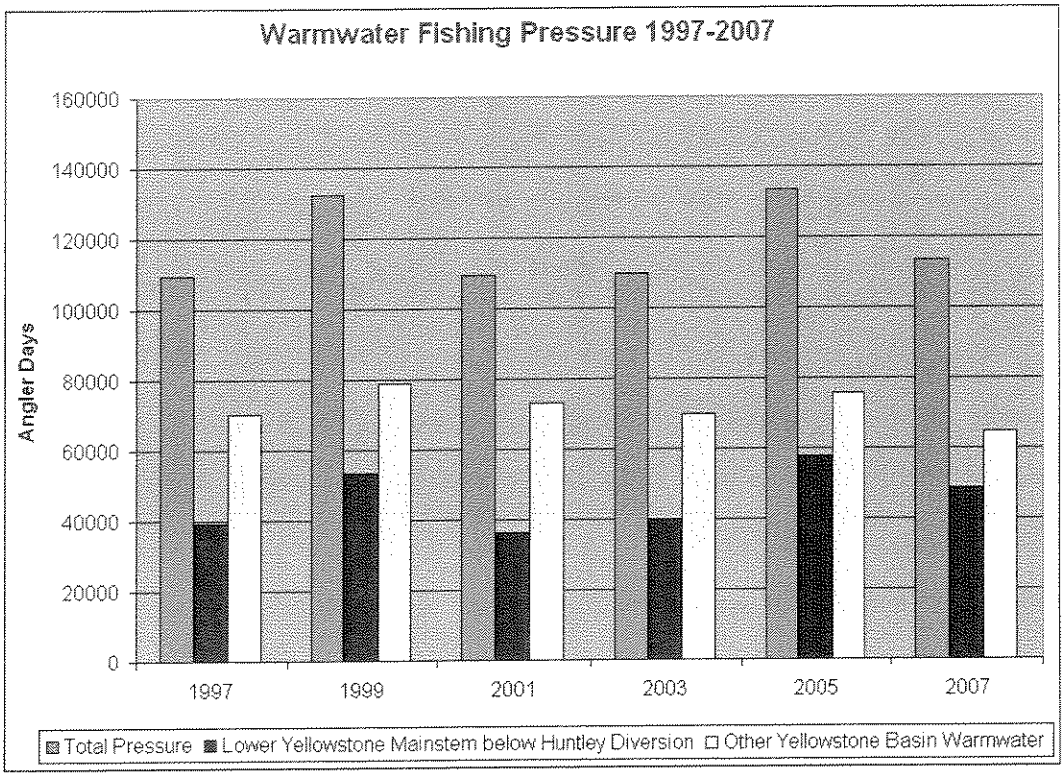
The economic values of the instream flow reservations remain high and have increased since 1998. Montana's scenic and fish-filled rivers and streams greatly contribute to the influx of tourists and to the health and continued growth of the tourism industry.

FWP prepares fishing pressure estimates every two years. Total fishing pressure on the coldwater trout streams and rivers of the Yellowstone River Basin remained relatively constant between 1997 and 2007 ranging between 308,000 and 358,000 angler days.



Both 1997 and 2007 exhibit noticeably lower fishing pressure on the coldwater portions of the Yellowstone River mainstem. The low numbers in 1997 can most likely be attributed to very high flows that persisted throughout the summer. The low angling pressure in 2007 can most likely be attributed to fishing restrictions due to low flows and high water temperatures that closed angling between 2pm and midnight. While fishing was still open part of the day, many anglers and in particular resident anglers seemed to choose not to fish at all during fishing restrictions. Also, fires burned persistently in the mountains of the Paradise Valley south of Livingston during the summer creating substantial amounts of smoke in the valley that likely caused anglers to stay home.

Warmwater fishing pressure on streams and rivers also remained quite constant between 1997 and 2007 ranging from 109,000 to 134,000 angler days.



As fishing pressure estimates vary between years, the average fishing pressure for the past 10 years provides a fairer idea of the number of anglers fishing rivers and streams in the Yellowstone River Basin during the period. The 1997 coldwater pressure estimates, used in the last 10-year report, and the 2007 coldwater pressure estimates are the lowest in the last 6 estimate years. Using 2007 estimates would not be representative of the fishing pressure over the past 10 years. For this reason average fishing pressure estimates for the 1999-2007 period are used in the following economic analysis.

In 1985 FWP initiated a study to determine the value of fishing in Montana and to conduct a preference and attitude survey (Duffield, et al. 1987). A regional Travel Cost Model was used to statistically derive a demand equation from the survey data collected from anglers. This methodology is recommended by the Water Resources Council (1979 and 1983) as one of two preferred methods for estimating recreational benefits. The resulting demand equation was then used to calculate the net economic value for fishing at many sites across Montana. The net economic value is the amount anglers said fishing activity was actually worth, over and above their actual expenditures.

Economic data for 1985 was presented in FWP's Yellowstone Basin Reservation first 10-year report in 1988. For the second 10-year report in 1999 the same economic data was updated to reflect 1997 dollars and 1997 fishing pressure estimates. For this third 10-year report the same economic data is again updated to reflect 2008 dollars, while the analysis uses the average fishing

pressure estimates for 1999-2007 on coldwater trout streams in the Yellowstone River basin instead of single year pressure estimates for 2007 only.

Table 1 reflects the 1985 net economic value by water body or site reported in the first 10-year report as well as those values adjusted to 2008 dollars using the U.S. Bureau of Labor Statistics consumer price index inflation calculator.

Table 1 Economic Value by Water Body per Day

Water body	1985 Net Economic Value	2008 Net Economic Value
Upper Yellowstone Mainstem	$209.65	$426.28
Middle Yellowstone Mainstem	$62.53	$127.14
Lower Yellowstone	$110.56	$224.80
Upper Yellowstone Tribs all	$189.66	$385.64
Middle Yellowstone Tribs all	$54.42	$110.65
Bighorn River	$93.94	$191.01
Stillwater	$67.78	$137.82
Stillwater Tribs	$70.97	$144.30
Boulder River	$134.88	$274.25

Table 2 shows the total economic value associated with coldwater trout streams in the Yellowstone River basin based on the adjusted 2008 economic water body values in Table 1 and average 1999-2007 fishing pressure for those water bodies.

Table 2 Total Annual Economic Value – Coldwater Streams and Rivers

Water Body	1999-2007 Ave. Pressure	Value Per day	Site Value
Upper Yellowstone Mainstem	83,382	$426.28	$35,544,191
Middle Yellowstone Mainstem	50,665	$127.14	$6,441,704
Lower Yellowstone	No data	$224.80	
Upper Yellowstone Tribs all	16,828	$385.64	$6,489,631
Middle Yellowstone Tribs all	26,669	$110.65	$2,951,027
Bighorn River	103,748	$191.01	$19,816,681
Stillwater	32,445	$137.82	$4,471,503
Stillwater Tribs	6,743	$144.30	$973,008
Boulder River	15,535	$274.25	$4,260,387
	336,016	**Total**	**$80,948,133**

Estimates of direct expenditures by resident and nonresident anglers were provided in the previous 10-year reports. Table 3 adjusts the 1985 expenditures to 2008 values.

Table 3 Estimated Expenditures by Anglers – Coldwater Streams and Rivers

	Resident		Nonresident	
Year	1985	2008	1985	2008
Expenditures				
Transportation	$13.05	$26.53	$166.51	$338.56
Lodging	$1.13	$2.30	$112.81	$229.38
Food	$16.23	$33.00	$175.49	$356.82
Tackle	$2.72	$5.53	$48.23	$98.07
Guide	$2.20	$4.47	$12.66	$25.74
Misc.	$0.82	$1.67	$20.77	$42.23
Total (per trip)	$36.15	$73.50	$536.47	$1090.80
Total (per day)	**$22.31**	**$45.36**	**$116.37**	**$236.62**

Multiplying the 2008 adjusted expenditures by the 1999-2007 average coldwater fishing pressure results in estimated expenditures by 219,499 residents of $9,957,134 and estimated expenditures by 136,979 nonresidents of $32,411,208. Together the estimated direct expenditures for coldwater fishing sum to **$44,922,357**.

A similar economic analysis was completed in 1991 for Montana's warmwater fisheries including the lower Yellowstone River (Brooks 1991). While warmwater fishing pressure data is available for several streams in the Yellowstone River Basin, the economic analysis looked only at the Lower Yellowstone River mainstem and many lakes, but no other streams or rivers.

The net economic value of fishing the Lower Yellowstone River in 1991 was $108 per angler day. This translates to $171.38 per angler day in 2008 dollars. Table 4 shows the total economic value associated with warmwater angling on the Lower Yellowstone River based on the adjusted 2008 economic water body values and average 1999-2007 fishing pressure for those water bodies.

Table 4 Total Annual Economic Value – Warmwater

Water Body	1999-2007 Ave. Pressure	Value Per day	Site Value
Lower Yellowstone	47,252	$171.73	$8,114,623

Estimates were also made of direct expenditures by resident and nonresident anglers. Like the coldwater economic data for this report the economic data has been updated in Table 5 to reflect 2008 dollars.

Table 5 Estimated Expenditures by Anglers – Warmwater

	Resident		Nonresident	
Year	1991	2008	1991	2008
Expenditures				
Transportation	$24.67	$39.23	$86.28	$137.19
Lodging/Food	$22.73	$36.14	$74.63	$118.67
Guide Fee/Equip for trip	$12.00	$19.08	$36.67	$58.31
Total (per trip)	$59.40	$94.45	$197.58	$314.17
Total (per day)	**$29.70**	**$47.23**	**$79.03**	**$125.67**

Multiplying the 2008 adjusted expenditures by the 1999-2007 average fishing pressure on the Lower Yellowstone River results in estimated expenditures by 43,140 residents of $2,037,502 and estimated expenditures by 4,112 nonresidents of $516,755. Together the estimated direct expenditures for Lower Yellowstone River warmwater angling sums to **$2,554,257**. This estimate excludes an estimated 1999-2007 average of 98,567 residents and 21,177 nonresidents that fished other warmwater streams and rivers in the Yellowstone River Basin.

Total estimated expenditures by anglers for coldwater streams in the Yellowstone River Basin and warmwater fishing on the Lower Yellowstone River main stem total $47,476,614 based on per day expenditures adjusted to 2008 dollars and 1999-2007 average fishing pressure estimates totaling a combined resident and nonresident 403,730 angler-days. The estimated expenditures of $47.5 million compares favorably with estimated expenditures calculated using data from the American Sportfish Association (ASA, 2006). This data estimates the per-day expenditure for fishing in Montana at $102 or $109.58 adjusted to 2008 dollars. Multiplied by the combined fishing pressure of 403,730 angler-days yields estimated expenditures of $44,240,733.

Table 6 – Summary of Economic Value and Expenditures

1999-2007 Ave. Total Fishing Pressure (Angler-Days)	Net Economic Value (2008 dollars)	Estimated Expenditures Resident & Nonresident (2008 dollars)
403,730*	**$89,062,756**	**$47,467,614**

*Excluding warmwater fishing pressure on streams and rivers other than Lower Yellowstone River.

For 1999 through 2007 anglers on average expended an estimated 404,000 angler-days per year of effort fishing the rivers and streams of the Yellowstone basin compared to about 353,000 reported in the last 10-year report. This translates to a total net economic value in 2008 dollars of $89.1 million. This compares to a total value of $47.6 million reported in the last 10-year report. Estimated direct expenditures are $47.5 million compared to $27.8 million in the last 10-year report. The economic value of angling on the streams and rivers of the Yellowstone River Basin continues to increase.

While the economic value of fishing is very important to Montana's economy, the public interest should consider much more than just economic issues. Public interest as viewed by ARM

36.16.105(c), adopted 8 years after the Yellowstone reservations, takes a narrow view in focusing solely on economics. Social values, which are difficult to monetarily quantify, deserve consideration as well. Notably the Board did not explicitly include economic issues in it findings with regard to the Yellowstone instream reservations. The excerpt from the Order below shows these findings:

Findings Related to the Public Interest of Instream Reservations for the Waters in the Streams of the Yellowstone River Basin (89-890(3)(d)).

20. The Fish and Game's application for reservations of water in the Yellowstone River Basin represents the public interest in preserving, protecting and enhancing the environment (Fish and Game Proposed Finding 75).

21. The application of the Fish and Game is in the public interest in that it provides aesthetically pleasing surroundings, and that it preserves fishing waters in their natural existing state (Fish and Game Proposed Finding 75).

22. The instream reservation is in the public interest in that it protects and preserves fish habitat, preserves recreational sites and ensures perpetuation of non-game wildlife in the existing ecosystem (Fish and Game Proposed Finding 75).

23. The instream reservation is in the public interest in that it will:

a) continue the perpetuation of the fish and wildlife resources;

b) continue perpetuation of the fish and wildlife resources for current and future utilization by the public;

c) maintain water quality

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24. It is established to the satisfaction of the Board that the public interest for instream reservations of the waters in the streams of the Yellowstone River Basin has been shown.

While the economic analysis presented previously demonstrates a clear economic value, more than only economics should be considered when evaluating the public interest given the stance of the Board in 1978 and no statutory direction to consider public interest to be only an economic consideration. The findings of the Board above are still applicable today.

III. Related Considerations to Indicate That the Objectives Are Being Met

AMR 36.16.120(7) provides that the Board shall consider the following when determining whether the objectives are being met:

(a) all information above and as ordered, by the board,

(b) the period of time which has elapsed since the date of the order granting the reservations and whether the reservant's actions reflect reasonable diligence in the perfection of the water reservation,

(c) new or changed circumstances, information or values, and

(d) any other considerations set out in the board order granting the reservation.

A. Compliance with Conditions in the Board's 1978 Order – Flow Quantification

The Order of the Board Establishing Water Reservations, paragraph 117 (page 49), required FWP to quantify the percentile flows granted by the Board and submit to the Board an annual progress report by December 15 of each year until all work required under paragraph 116 was completed. All of the work required under paragraph 116, except for flow quantifications for the Shields River, was completed prior to FWP's first 10-year review report, submitted to the Board in August, 1988. However, the tenth annual report covering the period December 16, 1987 through December 15, 1988, includes the flow quantifications for the Shields River. By adopting this report as well as all the previous annual reports containing flow quantifications, the Board adopted the flow quantifications on all the streams where quantifications were required.

Listed below are compliance and related documents submitted to the Board for the first 10-year review in 1988. There have been no further requests for compliance information or documents regarding any of the conditions in the Board's order from either the Board or DNRC since the 1988 10-year review.

The Yellowstone River Instream Reservation,
First Annual Report.
Dec. 15, 1978 - Dec. 15, 1979. 29 pp.

The Yellowstone River Instream Reservation,
Second Annual Report.
Dec. 15, 1979 - Dec. 15, 1980. 31 pp.

The Yellowstone River Instream Reservation,
Third Annual Report.
Dec. 16, 1980 - Dec. 15, 1981. 33 pp.

The Yellowstone River Instream Reservation,
Fourth Annual Report.
Dec. 16, 1981 - Dec. 15, 1982. 58 pp.

The Yellowstone River Instream Reservation,
Fifth Annual Report and 5-year Summary.
Dec. 16, 1982 - Dec. 15, 1983. 51 pp.

The Yellowstone River Instream Reservation,
Sixth Annual Report.
Dec. 16, 1983 - Dec. 15, 198. 18 pp.

The Yellowstone River Instream Reservation,
Seventh Annual Report.
Dec. 16, 1984 - Dec. 15, 1985. 55 pp.

The Yellowstone River Instream Reservation,
Eighth Annual Report.
Dec. 16, 1985 - Dec. 15, 1986. 57 pp.

The Yellowstone River Instream Reservation,
Ninth Annual Report.
Dec. 16, 1986 - Dec. 15, 1987. 77 pp.

The Yellowstone River Instream Reservation,
Tenth Annual Report.
Dec. 16, 1987 - Dec. 15, 1988. 33 pp.

Estimated Monthly Percentile Discharges at Ungaged Sites in the Upper Yellowstone River Basin in Montana.
U.S. Geological Survey Water Resources Investigations Report 86-4009. April, 1986. 34 pp.

DNRC Database Record Issues

For many years DNRC did not include records of the individual reservations for each stream or stream reach in its centralized database. DNRC's water right listings did not include instream flow reservations, leading to confusion among existing and prospective water users. During the past 10 years DNRC rectified this situation to a large extent. DNRC developed records in the centralized water rights database for FWP's water reservations. This improvement helps to make known to other existing or prospective water users that the reservations exist. However, the information regarding instream water reservations still contains several errors and lacks adequate representations of FWP's instream water reservations in the Yellowstone River Basin.

The DNRC database reflects the purpose of use as being "fishery". However, this purpose fails to adequately describe the multi-faceted nature of FWP's instream reservations. As previously outlined in this report the purpose of the reservation went well beyond a fishery use. The Board had specific findings (see findings 7-13, pp 297-298, Order of the Board of Natural Resources Establishing Water Reservations) related to the purpose. These various uses should be incorporated in the DNRC database to accurately reflect the many purposes of FWP's instream reservations in the Yellowstone River basin.

The DNRC database fails to reflect the changing temporal flow rates granted by the Board and instead reflects a single annual volume for the water reservation granted. This lack of detailed information leads to a confusing situation for other existing and prospective water users attempting to understand the existing water demands on a water source. In addition, water reservations that cross hydrologic basin boundaries fail to have unique records within the different basin in which the reservation exists, leading to further confusion.

The process used by DNRC to generate the individual records resulted in some errors in the Yellowstone River Basin. The "Bridger Creek" identified in the DNRC database is the wrong stream. The stream identified in the database is that which is tributary to the Clarks Fork Yellowstone River southeast of the Town of Bridger. The stream for which FWP was granted a reservation is that which is tributary to the Yellowstone River between Greycliff and Reed Point whose confluence is the boundary between basins 43B and 43QJ.

The database records for Butcher Creek tributary to Rosebud Creek in the Stillwater River basin are not consistent with FWP's reservation application. The Board did not modify the requested stream reach although the Order incorrectly places Butcher Creek in the adjacent Clark Fork Yellowstone River Basin. The reservation application identified "Upper Butcher Creek" and "Lower Butcher Creek" with the dividing line being the confluence with "West Butcher Creek" located in the SE Sec. 1, T6S, R18E. This does not match the confluence of what is shown on the USGS Roscoe Quadrangle as being the confluence of the West and East Forks of Butcher Creek. It does seem to match the confluence of Butcher Creek with a tributary that is not named on the Quadrangle. It would seem this tributary was considered to be "West Butcher Creek" in the Reservation Application. In researching DNRC's database one Statement of Claim, 43C 106058 00, seems to indicate this tributary is known as "West Fork Butcher Creek". This source name is not consistent with other water rights that are consistent with the names found on the USGS Quadrangle.

The reservation application lists the headwaters of "Butcher Creek" as being in the SW Sec. 8, T7S, R18E. This would seem to correspond to what is an unnamed tributary of West Fork Butcher Creek according to the USGS Quadrangle. However, the USGS Quadrangle does not seem to agree with the source names found on the 1966 Carbon County Water Resources Survey which indicates that the legal description in Sec. 8 would be the headwaters of West Fork Butcher Creek instead of a unnamed tributary thereof. Clearly, there are considerable discrepancies regarding the source names in this area. Some of this confusion results from

FWP's application, which seems to have requested a reservation in mass on "Upper Butcher Creek" that included all of the tributaries to their headwaters. The Board's Order did not eliminate this confusion.

For the purposes of discerning exactly where FWP's instream flow reservation applies one must defer to the legal descriptions provided in the Reservation Application that support the following interpretation. "Butcher Creek- Headwaters to West Butcher Creek" would be that stream beginning at approx. 45.2281, -109.5445, NAD 83 at the north end of "Red Lodge Crest" to the confluence with a certain tributary located at 45.3350, -109.4519, NAD 83. This interpretation does not attempt to establish flows for the various tributaries asserted in the reservation application, but provides a workable interpretation based on the application and the Board's Order. "Butcher Creek- West Butcher Creek to Mouth" would be from 45.3350, -109.4519, NAD 83 to the mouth.

B. Level of Development of Water Reservations

Not applicable

C. Actions Reflecting Reasonable Diligence

Not applicable

D. Inadequacy of the Reservation Facilities Needed to Put Reserved Water to Use

Not applicable

E. Non-compliance with Montana or Federal Statutes for Environment Standards

Not applicable

F. Incompatibility with Local or Regional Planning Efforts

No conflicts have occurred.

G. Use of Reserved Water for other than Beneficial use as Defined in Montana Law

Not applicable

H. Protecting the Instream Reservation

ARM 36.16.120 (6) provides instream reservants shall include information showing how they are protecting the reservation from adverse affect by junior water users and where appropriate, that they are in compliance with their management plan under ARM 36.12.106 and any other conditions required by the board.

FWP protects its instream water reservations through monitoring stream flow and making call on junior water rights when necessary, through participating in enforcement projects, and through participating in the DNRC permitting process and the Water Court adjudication process.

Calling Junior Water Rights

FWP's first need to protect the Yellowstone reservations occurred in 1985. However, the procedure was used previously in protecting FWP's Murphy Rights in years prior to 1985. The complete procedure is contained in Montana Fish, Wildlife & Parks' Fisheries Division Drought Contingency Plan, originally published in 1988 and revised in 1992 and as found in Appendix A of the State Drought Plan. The FWP Plan is briefly outlined below.

1. Water Supply Forecasts

The Natural Resource Conservation Service (NRCS) and its cooperators develop Montana's yearly water supply outlook. Current snowpack and forecasts of runoff are issued each month from January through May. From these forecasts, estimates of streamflow conditions expected to occur during the summer are made, enabling us to determine if we will need to notify junior water users about our Yellowstone reservations and the possibility that they may have to cease their diversions upon our request.

2. List of Junior Water Users

A current list of all junior water users in the Yellowstone basin is obtained from the DNRC by May 31 or earlier. FWP updates the list as new water use permits are issued and ownerships change.

3. First Notification Letter

If the water supply outlook is poor, an initial (first) letter, signed by the FWP Director, is sent to each water user whose water use priority date is junior to the priority date established for the Yellowstone reservations (December 15, 1978). This letter simply informs junior users of FWP's senior rights and indicates that we may notify them at a later date to cease their diversions. FWP attempts to send the letter by June 15 so junior users have time to plan alternatives to the use of their water.

4. Streamflow Monitoring

After sending the first letter, FWP monitors streamflows at appropriate USGS gauging stations. Protection of the reservations depends upon having sufficient streamflow monitoring stations to provide real time data at appropriate sites. The Yellowstone basin has several U.S. Geological Survey (USGS) real time gauging stations, but there are not enough to enable precise monitoring on all the streams where FWP has reservations. Where gauges are not available, the closest downstream gauge is used to determine if reservations are met. In certain circumstances FWP may measure stream flows on un-gauged streams to determine if reservations are being met.

5. Second Notification Letter

When the flow at any gauging station drops to the level of the granted instream reservation for the given time of year and forecasts indicate flows will remain below the reservation, a second letter, also signed by the Director, is sent to junior water users. The letter requests that they cease their diversions and provides information about our

instream rights, including a phone number to call for more information. This letter constitutes FWP's "call" for the water. The mailing of this letter depends on flow conditions in any given year.

6. Enforcement Activities

FWP enforcement procedures currently rely largely upon voluntary compliance by junior users. FWP does not have the time or personnel to monitor all junior users who are asked to cease their diversions. As the general adjudication allows water commissioners to be appointed who can administer all water rights on a stream, including the instream reservations, enforcement of FWP's reservations will become more precise.

If FWP observes a violation of the call DNRC has a water rights enforcement policy which we can use to obtain compliance. In these circumstances FWP follows DNRC's enforcement policy, which is contained in the FWP Drought Contingency Plan.

Since 1998 FWP has been active in making calls on junior water rights in the Yellowstone River Basin. To facilitate this process FWP has developed a database to track water reservations, stream flow at USGS gauging stations, and junior water rights. While not yet fully functional this database is intended to also generate warning letters and call letters. Currently FWP is working to make the letter function workable and is also using GIS to better identify those junior water rights, which may be called in a given basin. Following are a few screens showing the FWP Water Right Database:

Montana FWP Water Rights database

Stream List from FWP rights: Clarks Fork Yellowstone River

Check flows report | Stream: Clarks Fork Yellowstone River | View Call Letters | View Call Labels

FWP Water Rights | Junior Water Rights | USGS Gauge stations | CheckFlows

MinFlow	Lowbound	Upbound	PriorityDate	FLOW	BEG	END
Water Reservation Granted	MOUTH	BLUEWATER CR	12/15/1978	300	01/01	01/31
Water Reservation Granted	MOUTH	BLUEWATER CR	12/15/1978	299	02/01	02/28
Water Reservation Granted	MOUTH	BLUEWATER CR	12/15/1978	308	03/01	03/31
Water Reservation Granted	MOUTH	BLUEWATER CR	12/15/1978	357	04/01	04/30
Water Reservation Granted	MOUTH	BLUEWATER CR	12/15/1978	1051	05/01	05/31
Water Reservation Granted	MOUTH	BLUEWATER CR	12/15/1978	3569	06/01	06/30
Water Reservation Granted	MOUTH	BLUEWATER CR	12/15/1978	1537	07/01	07/31
Water Reservation Granted	MOUTH	BLUEWATER CR	12/15/1978	399	08/01	08/31
Water Reservation Granted	MOUTH	BLUEWATER CR	12/15/1978	393	09/01	09/30
Water Reservation Granted	MOUTH	BLUEWATER CR	12/15/1978	332	10/01	10/30
Water Reservation Granted	MOUTH	BLUEWATER CR	12/15/1978	401	11/01	11/30
Water Reservation Granted	MOUTH	BLUEWATER CR	12/15/1978	330	12/01	12/31
Water Reservation Granted	BLUEWATER CR	STATELINE	12/15/1978	186	01/01	01/31
Water Reservation Granted	BLUEWATER CR	STATELINE	12/15/1978	194	02/01	02/28
Water Reservation Granted	BLUEWATER CR	STATELINE	12/15/1978	189	03/01	03/31

Record: 1 of 24

Database screen showing water reservations on Clarks Fork Yellowstone River.

Montana FWP Water Rights database

Stream List from FWP rights: Clarks Fork Yellowstone River

Check flows report | Stream: Clarks Fork Yellowstone River | View Call Letters | View Call Labels

FWP Water Rights | Junior Water Rights | USGS Gauge stations | CheckFlows

PRIORITYDT	OWNER	OWNADD1	CITY	STA	ZI
1/7/1981	Tillotson Claude L	***deceased***	Billings	MT	0
1/16/1981	Larsen Pachy D	Po Box 85	Edgar	MT	59026
7/1/1981	Dykes Jeanne A	Rt 1	Silesia	MT	59041
2/4/1982	Nygaard Troy L	Hc 46 Box 19	Belfry	MT	59008
5/19/1983	Wolfe Ronald A	Po Box 450	Red Lodge	MT	59068
8/3/1995	Pector Andrew	Po Box 305	Laurel	MT	59044
4/1/1950	Sidwell Katherine A	Po Box 80752	Billings	MT	59108
7/15/1981	Arneson Lyle M	Rt 1 Box 56a	Bridger	MT	59014
5/12/1983	Randall Ray W	Rt 1 Box 1199	Bridger	MT	59014
5/12/1983	Randall Ray W	Rt 1 Box 1199	Bridger	MT	59014
9/22/1987	Nash Gerald M	14 Jardine Rd	Gardiner	MT	59030
11/3/1988	Ross John W	2104 Elm St	Billings	MT	59101
2/15/1991	Usa (dept Of Interior Fish & Wildlife	Denver Federal Center	Denver	CO	80225
12/28/1992	Ferguson Don	Rt 1 Box 1067	Bridger	MT	59014
6/25/1993	Sharbono Ervin	Rr 1 Box 100	Silesia	MT	59041

Record: 1 of 17

Database screen showing junior water users on Clarks Fork Yellowstone River.

Check water flows for: 08/23/02

Stream	*Lowbound*	*Upbound*	*STANAME*	*StaDate*	*StaFlow*	*FWPFLOW*
Beaver Creek	BEAVER CR RES LK	BEARPAW L	Beaver Cr at Res Bndry nr Rocky Bo	08/23/02	0	7
Big Dry Creek	FORT PECK RES	FRAZER CR	Big Dry Creek near Van Norman MT	08/27/02	3.6	6.5
Big Hole River	MOUTH	DIVIDE CR	Big Hole River near Melrose MT	08/27/02	259	573
Big Hole River	DIVIDE CR	PINTLAR CR	Big Hole River bl Mudd Cr nr Wisdo	08/27/02	123	800
Big Hole River	PINTLAR CR	WARM SPRINGS	Big Hole River bl Big Lake Cr at Wis	08/27/02	28	160
Bighorn River	MOUTH	BIGHORN L	Bighorn River near St. Xavier, MT	08/27/02	1480	2800
Blackfoot River	MOUTH	CLEARWATER R	Blackfoot River near Bonner MT	08/27/02	674	700
Boulder River	MOUTH	HAWLEY CR	Boulder River at Big Timber MT	08/27/02	113	259
Boulder River	MOUTH	COLD SPRINGS CR	Boulder River near Boulder MT	08/27/02	24	47
Clarks Fork Yellowstone R	BLUEWATER CR	STATELINE	Clarks Fork Yellowstone River nr Belf	08/27/02	109	423
Clarks Fork Yellowstone R	MOUTH	BLUEWATER CR	Clarks Fork Yellowstone River at Edg	08/27/02	145	399
Clear Creek	MOUTH	UNNAMED	Clear Creek near Chinook MT	08/27/02	0.87	5
Cut Bank Creek	MOUTH	BIG ROCK COULEE	Cut Bank Creek near Browning MT	08/27/02	41	75
Dearborn River	MOUTH	HEADWATERS	Dearborn River near Craig MT	08/27/02	66	110
East Fork Poplar River	MOUTH	STATE LINE	East Poplar River at International Bn	08/27/02	2.9	4
East Gallatin River	THOMPSON CR	BRIDGER CR	East Gallatin R bl Bridger C nr Boze	08/27/02	31	90
East Gallatin River	BRIDGER CR	ROCKY CR	East Gallatin R bl Bridger C nr Boze	08/27/02	31	42.4
East Gallatin River	MOUTH	THOMPSON CR	East Gallatin R bl Bridger C nr Boze	08/27/02	31	170
Gallatin River	MOUTH	E GALLATIN R	Gallatin River at Logan MT	08/27/02	296	533.5

Monday, October 27, 2008 *Page 1 of 3*

Report to determine in which stream reaches reservation is not being met.

Since 1998, FWP sent warning letters and placed calls on at least some streams or rivers in the Yellowstone basin nearly every year. Following is a chronology of this activity:

2000	
Warning Letters Sent:	Powder River, Rosebud Creek (basin 42A), Bighorn River, Clarks Fork Yellowstone River, Stillwater River, Sweet Grass Creek, Boulder River, Shields River and the entire Yellowstone River.
Call Letters Sent:	Yellowstone River above Billings
2001	
Warning Letters Sent:	Unable to locate documentation.
Call Letters Sent:	Clark Fork Yellowstone River and Yellowstone River above Billings
2002	
Warning Letters Sent:	Throughout entire Yellowstone River basin
Call Letters Sent:	None
2003	
Warning Letters Sent:	Powder River, Yellowstone River below Bighorn, Bighorn River, Clarks Fork Yellowstone River, Rock Creek (basin 43D), Stillwater River, West Fork Stillwater River, East Rosebud Creek, West Rosebud Creek, Fishtail Creek, Boulder River, Shields River.
Call Letters Sent:	Bighorn River, Rock Creek (basin 43D), Boulder River and Shields River
2005	
Warning Letters Sent:	Rosebud Creek (basin 42A) Clarks Fork Yellowstone River, Bluewater Creek, Sweet Grass Creek, Boulder River, East Boulder River, West Boulder River, Shields River, Rock Creek (basin 43A), Fleshman Creek, Billman Creek, Mill Creek, Bear Creek, Rock Creek (basin 43B), Tom Miner Creek, Cinabar Creek, and the entire Yellowstone River.
Call Letters Sent:	Shields River and Rock Creek (basin 43A)
2006	
Warning Letters Sent:	Tongue River, Clarks Fork Yellowstone River and Stillwater River
Call Letters Sent:	Tongue River and Clarks Fork Yellowstone River
2007	
Warning Letters Sent:	Yellowstone River above Bighorn, Bighorn River, Clarks Fork Yellowstone River, Stillwater River, West Rosebud Creek, Boulder River, and Shields River.
Call Letters Sent:	Yellowstone River above Bighorn, Bighorn River, Clarks Fork Yellowstone River, Stillwater River, and Shields River.

FWP sent no warning letters nor placed any calls placed in the Yellowstone River basin 1999, 2004 or 2008.

A chronology of FWP's previous enforcement activities on its Yellowstone instream reservations from 1989 - 1998 was included in Appendix D of the 1989-1998 10-Year Report.

Participation in New Appropriations and Water Court Adjudication Proceedings
In addition to placing call on junior water rights when necessary to protect instream flow reservations, FWP actively participates in the DNRC water right permitting and change proceedings as well as in Water Court Proceedings. FWP receives and reviews every water right permit or change public notice to determine if the request would negatively impact FWP instream flow reservations.

As severe drought conditions persisted during much of the last 10 years, FWP stepped up its activity in the DNRC water right permitting and change process. FWP began maintaining a centralized record of this actively in March 2002. Since that time in the Yellowstone Basin FWP has objected to 14 Beneficial Water Use Permit applications and 4 Changes In Appropriation Right applications. By and large these applications have either been withdrawn or FWP has reached a settlement with the applicant designed to protect FWP's instream flow rights. In addition to filing objections FWP sent written letters to DNRC raising concerns or contacted the applicant directly in three other cases in an effort to protect instream reservations without taking the formal action of objecting.

In order to protect instream reservations and other rights, FWP also participates in the ongoing statewide Water Court General Adjudication through objecting to certain water rights in the temporary or preliminary decree stage or by objecting to post-decree amendments. FWP routinely objects to mining water right Statements of Claim that are often speculative and over-stated. FWP makes a substantial effort to make sure these claims are reasonable and reflect actual historic use and are withdrawn if they have been abandoned or never perfected.

On both Mill Creek and Sweet Grass Creek FWP through participation in adjudication activities has negotiated agreements with local water user groups that require flows to bypass their diversion. When water conditions warrant, FWP confers with these groups and assists with monitoring to make sure the bypass agreements are honored.

FWP also participates in the administration of Water Court Decrees by water commissioners. FWP consistently pays over $1000 for its share of water commissioner expenses on the Musselshell River. While the Musselshell is not in the Yellowstone basin, it is evidence of FWP's ongoing commitment to takes is place in the prior appropriation system and protect its instream water rights.

According to the DNRC Adjudication Status Map (dated: 9-8-2008) Water Court Decrees have

been tabulated and are available for use by water commissioners in the Yellowstone Basin on Mill Creek, Big Timber Creek, Sweet Grass Creek and Rock/Willow Creeks(basin 43D). Since being tabulated the water users on Mill Creek have not petitioned for a water commissioner. In the case of Big Timber and Sweet Grass Creeks the water commissioner is not appointed until flow drops significantly and FWP's 1978 priority date is far from being senior enough to receive an allocation of water. FWP does not attempt to petition for a water commissioner earlier in the irrigation season as few if any junior water rights exist on these sources.

Failure of the water commissioner and District Court to communicate with FWP as a water user has greatly hampered an understanding of the enforcement situation on Rock and Willow Creeks in the Clarks Fork of the Yellowstone drainage. Most likely a scenario similar to Big Timber and Sweet Grass Creeks exist where enforcement does not begin until such time FWP's instream reservations are not in priority.

FWP's instream reservation on Rock Creek has been negatively impacted by the expansion of DNRC's Cooney Reservoir and the associated sale of contracts on Rock Creek upstream of Red Lodge Creek. These contracts cannot be directly delivered and instead provide for replacement water downstream on Rock Creek to senior appropriators to make up for additional water being diverted by upstream junior appropriators. This results in additional dewatering on Rock Creek upstream of Red Lodge Creek as a result of DNRC action after the 1978 reservations.

FWP continues to protect its instream reservations through the various means available under Montana's prior appropriation system of water allocation.

References

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Montana Fish, Wildlife & Parks

March 23, 2009

John Tubbs, Division Administrator
DNRC Water Resources Division
PO Box 201601
Helena, MT 59620-1601

RE: Yellowstone Reservations 10-Year Report

Dear Mr. Tubbs:

Enclosed is Montana Fish, Wildlife and Park's *YELLOWSTONE RIVER BASIN INSTREAM FLOW WATER RESERVATIONS 10-YEAR REVIEW REPORT* for the period covering 1999-2008. This report is provided in compliance with paragraph 121 of the Order of the Board of Natural Resources Establishing Water Reservations and §85-2-316(10), MCA. While DNRC has not yet ordered a report be provided under the provisions of ARM 36.16.120, Montana Fish, Wildlife and Parks (FWP) is providing this report in anticipation of that order. This affords FWP staff time to prepare the report prior to the busy field season to come.

FWP continues to assert and defend the instream flow reservations granted by the Board of Natural Resources on December 15, 1978. The enclosed report details FWP's activities with regard to these reservations. Please note issues regarding DNRC's database records representation of FWP's reservations found in Section III A beginning on page 17. These issues relate to the representation of all FWP reservations and to specific source locations with regard to Bridger and Butcher Creeks.

FWP still emphasizes that the instream reservation granted for the Tongue River below Tongue River Reservoir is inadequate to provide for the fishery of the river. This is particularly true as efforts continue to remove barriers and open the river to use by migratory fish. Also, instream reservations on the lower Yellowstone River may not be adequate to protect and provide for the recovery of pallid sturgeon. Both topics are addressed in more detail in the report.

If clarification or additional information regarding the enclosed report is needed, please contact me at 406-538-4658 ext. 224, at the address below or at abrummond@mt.gov .

Sincerely,

Andy Brummond
FWP Water Resources Specialist

Enclosures

Cc: Chris Hunter, Chief of Fisheries
Jim Darling, Habitat Protection Bureau Chief

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