2300 Lake Elmo Drive
Billings MT 59105

October 25, 2006

Stephanie Jordan
US Bureau of Reclamation
PO Box 30137
Billings MT 59107-0137

RE: Proposed Fall/Winter Operating Plan for Yellowtail Dam

Dear Stephanie:

We support the US Bureau of Reclamation's (USBR) proposed operating plan despite the known impacts downstream to the internationally renowned Bighorn River. By way of background, we offer the following:

> We have long considered Bighorn River flows as the single greatest factor impacting trout numbers in the river, and effects of low flows were very evident during the recent extended drought. Despite the large number of anglers using the river, angler impacts on the trout populations are minimal.
>
> Natural mortality in Bighorn River trout averages about 40% from year to year, with higher mortality rates for fish more than 3 years old. These fish are lost from the river each year regardless of angling pressure. Until angler-caused mortality exceeds these natural mortality levels, it has little effect on trout numbers in the river. An in-depth, mail-back anglers survey distributed by a river ranger on the Bighorn River in 1992-93 found that of 72,136 trout reported caught during the year, anglers only kept 1,350 fish for a total harvest rate of only 1.9%. Eighty-one percent of the angers reported they did not keep any fish, while only 2.1% reported they kept a limit of 5 trout during their trip. Even allowing for a catch-and-release mortality of 10 %, which is probably high for the Bighorn with its cold water temperatures, total angler-caused mortality is still well below the natural mortality rate.
>
> The USBR releases flows intended to maintain side channels along the Bighorn River. Side-channel habitat is important not only for spawning, but also as rearing area for small trout. At the target minimum flow of 2,500 cfs, most key side-channel habitat in the Bighorn is available to both adult and younger trout. Once flows drop below our standard minimum flow of 2,000 cfs, side-channel

habitat is lost at an accelerated rate. At 1,500 cfs, most important side-channel habitat is unavailable to all trout.

Predation of large trout on smaller trout appears to be a major factor controlling trout numbers in the Bighorn River during low flow years. Young-of-year (YOY) and age-1 trout are the first impacted by low flows. Once side-channel habitat is lost, smaller trout are forced into the main river channel with the larger trout, and they become food for these larger fish. The result is evident in both a decreased recruitment of smaller trout into the population, and an improvement in size and condition of the remaining larger trout in the system.

Following several good water years in the early 1980s, populations in the Bighorn River reached a record high of almost 11,000 trout per mile in 1987. A short-term drought in 1987 and 1988 greatly impacted younger trout populations, causing weak year-classes of older fish during the early 1990s. Flow conditions on the Bighorn were generally very good during most of the 1990s, and trout populations averaged around 5,000 to 6,000 trout per mile. Populations in the upper river reached a new high of about 2,300 rainbow trout per mile in 1997, and over 8,800 brown trout per mile in 1998. Current drought conditions first started impacting the Bighorn system in 1999. Due to conservative operations by the USBR, however, Bighorn River flows did not drop below the target minimum flow of 2,500 cfs until the spring of 2000. Flows dropped to 2,000 cfs by September 2000 and to the absolute minimum flow of 1,500 cfs by September 2001. River flows remained at or below 1,500 cfs until June of 2005. Flows were actually reduced to 1,300 cfs during parts of 2003 and 2004.

Impacts on young rainbow and brown trout documented in the upper Bighorn River beginning in 1999 continued to compound as the drought progressed. Both rainbow and brown trout continued to successfully spawn, but few young fish were recruited into the river population, resulting in several lost year classes. Brown trout numbers set new record lows of 805 per mile in 2002 and only 492 per mile in 2003. In 2000 and 2001, it was only possible to get estimates for rainbow 15 inches and longer due to lack of smaller rainbows; in 2003 and 2004, too few were recaptured to allow for any valid population estimates. Trout populations during this period consisted of older trout recruited at the start of the drought, and these were ageing out of the system. By the spring of 2004, numbers of larger trout had dropped low enough that predation on younger trout was reduced, and strong age-one year-classes of both rainbow and brown trout were documented. These strong year classes, along with YOY trout from 2004, were available to take advantage of better water conditions in the spring of 2005. The combination of flows at or above 2,500 cfs, and good survival of young trout, allowed the Bighorn fishery to rebound rapidly in 2005. No estimates have yet been calculated for 2006, but trout numbers are definitely up, and angler success was very good through the spring and early summer. Now flows in the Bighorn River have been dropped back to 1,500 cfs, and this cycle will likely be repeated.

We recognize that your proposed plan is based upon anticipated inflows equivalent to 80% of those experienced during the very dry period (with five of the six lowest inflows on record) from 2000 to 2006. Raising flows to 2,000 cfs in mid-April will allow spawning rainbow trout to use some of the side-channel habitat, and will provide a conservative base flow to keep redds wetted until fry emerge in mid-July.

We support your plan in the spirit of compromise, and would emphasize that our preferred minimum flow is 2,500 cfs. If snow packs and reservoir levels allow, we would ask that river flows be adjusted upward to reflect the improved conditions and forecasts.

Sincerely,

Gary Hammond, Regional Supervisor
Jim Darling, Regional Fisheries Manager
Ken Frazer, Bighorn Fisheries Biologist

C: Commissioner Shane Colton
Larry Peterman
Chris Hunter
Andy Brummond
Doug Haacke
Mike Whittington