

**Colorado River Storage Project
Flaming Gorge Working Group
Meeting Minutes
August 20, 2008**

Participation

This meeting was held at Western Park, Vernal, Utah. Attendees are listed below.

Purpose of Meeting

The purpose of operation meetings (held in April, and August) is to inform the public and other interested parties of Reclamation's current and future operational plans and to gather information from the public regarding specific resources associated with Flaming Gorge Reservoir. In addition, the meetings are used to coordinate activities and exchange information among agencies, water users, and other interested parties concerning the Green River.

General

Ed Vidmar called the meeting to order at 10:00 a.m. with 18 present (See signup sheet for attendance). Ed indicated that a presentation would be from Heather Patno, followed by an open discussion. Before starting with Heather's presentation, all present introduced themselves and their affiliations.

Hydrology Presentation and Flow Proposal - Heather Patno

Heather then gave her presentation on events that lead up to the spring release, spring and summer operations, projected hydrology and operations, and the Flaming Gorge Technical Working Group (see presentation posted on web site). Heather described the current condition of the reservoir. The reservoir is 81.8 percent full with 3,067,000 acre-feet in storage. On August 17 th the reservoir elevation was 6022.45 feet with available space for 708,600 acre-feet. The average inflow is 1,540 cubic feet per second (cfs) and average release of 1,500 cfs. The reservoir is very stable and gradually filling. Inflows are slightly suppressed due to irrigation.

This year Green River flows have been below average as was last year. The reservoirs unregulated inflow is 61 percent of average this year and last year the unregulated inflow was 31 percent of average. Precipitation in the Upper Green River Basin is 97 percent of average. However, precipitation in the Yampa River Basin is above average at 105 percent of average. The Yampa flows have been much higher than last year which has pushed us into a wetter hydrology scenario. The Yampa River Basin hydrology is in the Moderately Wet category, and the spring flows achieved at the Jensen, Utah gage in Reach 2 reflect this category.

Snow depth was high in January and February. In March the snow dried up and precipitation was very low. This is what we have experienced every March since 2000. July was also dry above Flaming Gorge and August precipitation was still below average.

Heather presented a slide showing the spring hydrograph and spring operations. The graph shows three peaks. The first was 16,000 cfs in the middle of May. The second was 23,025 cfs at the end of May and the third was 23,750 cfs in the first week of June. Flaming Gorge Dam releases were

at 800 cfs during the first peak. They were increased to powerplant capacity (4,600 cfs) at the end of the second peak on May 23 rd and continued at powerplant capacity through the duration of the third peak until June 15 th. Reclamation achieved targets in the Record of Decision (2006 ROD) in the Average and Moderately Wet hydrology categories with 14 days of 18,600 cfs or greater in Reach 2 at the Jensen, Utah gage, and a one day peak of 23,750 cfs (note: the Moderately Wet target to achieve is 20,300 cfs for one day).

Following the third spring peak Reclamation began a release with a single peak daily the first of July and increased the magnitude of the single peak the first of August and has continued this operation to the present.

Heather then described the projected hydrology and operations. She displayed a graph of the reservoir elevation that fell within the May operational target elevations, where the maximum elevation is 6,032.5 feet and the minimum elevation is 6,020 feet. The reservoir is currently near the minimum elevation with the lowest level in February. The projected inflows increase to the Flaming Gorge elevation to moderate levels in August of 2009. The projected reservoir releases are to continue with average releases of 1,500 cfs through September 30, 2008, and then decrease releases to approximately 1,300 cfs from October 1, 2008, through the end of February. The transitional months of March and April will see flows decrease to 800 cfs in preparation for a peak release at powerplant capacity in May that will coincide with anticipated spring runoff.

The Flaming Gorge Technical Working Group (TWG) met and discussed the hydrology forecast for the rest of the year. The unregulated inflow volume for Flaming Gorge Reservoir for August 2008 is 74 percent exceedance which places it in the Moderately Dry category. The unregulated inflow volume for the Yampa River Basin is 17 percent exceedance which places it in the Moderately Wet category (June is the last forecast for the Yampa River Basin). The TWG proposed base flows within the average hydrology category to better match flows that occurred during the spring peak in water year 2008.

The Recovery Program submitted two research requests this year. The spring request was for 15,000 cfs for 5 days in Reach 2 at the Jensen, Utah gage. The second request was for an average base flow of 1,500 cfs in Reach 1 from the end of the spring peak through September 30, 2008. The purpose of the base flow request was to assist in collecting research related to non-native fish suppression in the Green River. Heather described the maximum, minimum and most probable reservoir elevations and dam release operations that would result from implementing these requests.

Heather ended her presentation by laying out the operation under the 2006 ROD with the four step process for decision making. The process includes; Recovery Program request for research flows; meeting of the Flaming Gorge Technical Working Group; meeting of the Flaming Gorge Working Group (today); and Reclamation making the final decision of how to operate Flaming Gorge Dam.

General Discussion - Ed Vidmar

Burt Hawkes with Western Area Power Administration (Western) presented a request to double peak each day to accommodate the electrical demands in the winter. He handed out graphs

describing the load following patterns (double peaking during a 24 hour period). Burt stated that Western had to spend \$400,000 last year in purchasing power in order to meet their prior commitments (contracts). In the past Glen Canyon Dam was able to be more flexible in meeting this demand but current constraints on Glen Canyon Dam leave Western with only Aspinall and Flaming Gorge Dam for peaking operations. Burt said that 1 to 1.5 million dollars is saved every year by double peaking in the winter. If Western can not operate Flaming Gorge with a double peak operation, they will have to buy power on the market which is generated primarily by coal burning plants.

Lowell Marthe with Utah Division of Wildlife Resources (DWR) asked Western if double peaking occurred before the year 2000. Burt said Western had full flexibility. Ed Vidmar with Reclamation said that full flexibility occurred prior to 1992, before the Biological Opinion was in place for the Green River. Ed said that was when Western had much more flexibility to double peak dam releases.

Heather responded to Western's double peak request by saying that Reclamation has not had an opportunity to model the double peak numbers presented today and Reclamation does not know at this time if the request falls within the requirements of the 2006 ROD. She will run the numbers Western provided through the SARR (Streamflow Syntheses and Reservoir Regulation) model that has been calibrated for the Green River system.

Dennis Breer with Green River Outfitter and Guides Association (GROGA) asked Western if a single hump during the day that covered both high demand times would use too much water. He asked how much extra water would be used to fill the trough between the two humps. Western said that you could use two different powerplants to accommodate both humps but again Glen Canyon Dam operations are very restricted.

Heather said this request by Western or one that was reviewed earlier, actually took about two additional feet of storage out of the reservoir. Dennis said that Brown trout are impacted by the double peak scenario. He asked why Western couldn't plug the middle of the day hole with additional water and reduce the dramatic fluctuation by releasing a single peak.

Lowell with DWR read the following comment in response to Western's double peak request:

"Wildlife Resources would like to express our continued opposition to the proposed double-peaking load following flows that Western has requested. Our opposition is based on the following reasons:

Due to the limited amount of water that will enter the reservoir during this winter, there is a high likelihood that allowing double peaking flows would cause a significant drop in the water level of the reservoir, compared to little or no drop if flows are held constant at lower levels. In a study partially funded by the Bureau of Reclamation, researchers discovered that reservoir spawning kokanee salmon showed no preference for water depth when spawning and kokanee spawned in depths as shallow as 0.1 m. Therefore, lowering reservoir water levels during the November to mid-May timeframe will cause a loss of kokanee embryos to desiccation and freezing. The loss of embryos is likely to be

proportional to the magnitude of the winter/spring draw down. Additionally, results from 2007 hydroacoustic kokanee population monitoring showed the lowest number of YOY through age 2+ salmon since estimates were started in the late 80's. Being that 93 percent of the naturally reproducing kokanee population in the reservoir is from shore spawning, we can ill afford to loose embryos due to draw down of the reservoir. Kokanee are the cornerstone species in Flaming Gorge reservoir. They support 25 percent of the angler harvest each year and are the major forage species for a world-class lake trout fishery. Impacts to recruitment from any source could result in an accelerated decline in this extremely valuable fishery.

Secondly, the research plan to evaluate the effects on trout of over winter double-peaking operations at Flaming Gorge dam calls for several research topics to be explored to assist with strengthening the individual based model developed by EPRI and Argonne National Laboratory and commissioned by Western. Several portions of the plan have been undertaken such as trout population and condition monitoring, invertebrate food base standing crop monitoring, and habitat availability measurements. However, no work has been completed on effects on the composition and density of the invertebrate drift, trout diets relative to food available in the drift, and feeding responses of fish to flow fluctuations. These three research topics were listed as primary components of the plan. The opportunity to look at these topics slipped by during the 2006-07 winter double peaking period due to lack of funding. With Western's request to double peak during the upcoming winter, we once again have the same situation as two years ago with an opportunity to do some valuable research but no commitment to fund these aspects of the study plan. DWR feels that since Western has proposed the impact, they ultimately should be responsible to fund these parts of the study plan and until they formally commit to doing so, double peaking should not be allowed."

Brad with Western responded to DWR's letter stating that they have worked with DWR in the past and will continue to work with them in the future. Lowell asked about the status of pit tags for the electrofishing work this fall and Lyle Johnson with Western said that the pit tags have been ordered.

Dennis said that with all the studies that have been proposed and some implemented there has been no attempt to monitor the trout population. The Brown trout population has been self sustaining in the Green River from 1967 to 1991. Dennis said they should be monitored during double peaking to really see if there is an adverse effect. Ed responded that from 1967 to 1992 the operations at Flaming Gorge were very dramatic with huge fluctuations. Reclamation would operate from 800 cfs to 4600 cfs without ramping up slowly. Brown trout were able to survive those dramatic fluctuations okay. Since 1992 the ramp rate has been 800 cfs with much milder changes to the flow releases. Lowell stated that that is true and now the trout population is doing much better under these current conditions. Burt said that he is an avid fisherman and has seen Brown trout doing really well all over and not just in the Green River.

Melissa Trammell with the National Park Service asked Reclamation what the proposed operation would be like without a double peak request from Western. Ed said it would be a

single peak with an average daily release of 1,000 cfs. The 1,300 cfs modeled by Heather actually came from a prior request from Western.

Larry Crist with FWS said that if we are to implement a double peak release scenario we need to study it to determine what the impacts are. Lowell said that we were unable to study the impacts because of insufficient funds. DWR looks at trout condition and Argonne National Laboratory is looking at habitat but no one has looked at young-of-the-year Brown trout and other studies.

Dennis said that last year he put in a request to Reclamation to allow higher flows in Reach 1 to flush out silt that has been building up for many years. The 2002 fires deposited the silt and we have not had a high enough flow event in Reach 1 to flush it out. He believes the river is at a critical time. The silt has become hard on the bottom of the river. Dennis said his request which was ignored by Reclamation, fits in well with the Threatened and Endangered Species plan. At Glen Canyon it was determined that a 72 hour flush did the job well. Ed said it is hard to get a 23,000 cfs through Jensen without a lot of complaints and concerns by the residents. It is a big deal to the people of Jensen. Peter Crookston with Reclamation said a big release needs to be driven by the hydrology of the year. Boyd Kitchen with Utah State University Extension said it is bad for the people of Jensen to flood that area. Ed said he could see how we could make a big release for Reach 1 if the hydrologic category was flipped and the Green River Basin was very wet and the Yampa River Basin was very dry. Then you could make a big release for Reach 1 and have less impact on the Jensen area.

Dennis said that Clayton Palmer with Western in the last meeting said that he did not think Reclamation could legally do a big release for trout. Dennis thought a big release would be good for Threatened and Endangered Species as well.

Tom Chart thanked Reclamation for providing flows that met their request and also met the requirements of the 2006 ROD. Heather said the hydrologic conditions are driving our releases and we were fortunate to achieve the 2006 ROD targets (note: wet year hydrologic categories allow for higher dam releases and dry year hydrologic categories allow for lower dam releases).

Steve Hulet with Reclamation said new turbine runners have been installed at Flaming Gorge and they have reduced the flows needed to achieve powerplant capacity (<4,600 cfs) because the new turbines are more efficient. Larry said that powerplant capacity is identified as 4,600 cfs. Heather noted that the 4,600 cfs number is stated in the Operation of Flaming Gorge Dam Environmental Impact Statement (FGEIS) but the 2006 ROD only says powerplant capacity.

Ed said the minutes will be posted on the internet and Peter will provide an opportunity to review your comments before they are posted.

Next Meeting

The tentative date for the next Flaming Gorge Working Group meeting will be Thursday, April 15th, 2009, at 10 a.m. at Western Park in Vernal.

Presentations

Hydrology Presentation and Flow Proposal - August 2008

http://www.usbr.gov/uc/water/crsp/wg/fp/pdfs/FlamingGorgeWorkGroup_Aug08.pdf

Previous Meeting Minutes

Flaming Gorge Working Group Meeting Minutes:

April 16, 2008

August 23, 2007

April 19, 2007

August 22, 2006

April 13, 2006

November 2, 2005

October 28, 2005

August 25, 2005

April 20, 2005

August 19, 2004

April 15, 2004

Attendees:

Name	Organization
Ed Vidmar	Reclamation
Kevin Clegg	Flaming Gorge Resort
Dennis Breer	GROGA
Peter Crookston	Reclamation
Tom Chart	FWS
Melissa Trammell	NPS
Larry Crist	FWS
Paul Abate	FWS
Ryan Mosley	DWR
Steve Hulet	Reclamation
Boyd Kitchen	USU Extension
Wayne Prokopetz	Dinosaur NM
Lyle Johnson	Western
Burt Hawkes	Western
Brad Warren	Western
Lowell Marthe	DWR
David Speas	Reclamation
Heather Patno	Reclamation