

**Colorado River Storage Project  
Flaming Gorge Working Group  
Meeting Minutes  
April 27, 2010**

### **Participation**

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

### **Purpose of Meeting**

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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**

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Beverley Heffernan called the meeting to order at 7:00 p.m. with 27 present (see list of attendees below). Beverley introduced herself and indicated that this year's Technical Working Group (FGTWG) 2010 hydrology analysis and forecast would be presented by Heather Patno and after that, this year's Technical Working Group (FGTWG) 2010 spring, base flow, and temperature releases would be presented by David Speas. The United States Fish and Wildlife Service (Service) base flow proposal was also to be presented by Dave Speas, as was the peak flow request submitted by the Upper Colorado River Endangered Fish Recovery Program (Recovery Program). Western Area Power Administration (Western) base flow proposal would then be presented by Clayton Palmer. Before starting, all present introduced themselves and their affiliations.

### **Flaming Gorge Hydrology Analysis and Forecasted Operations**

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Heather Patno began her presentation with a summary of where we are now and then the forecast. She started with a table of live storage capacity, reservoir elevation and average inflow and release. She then presented a graph of the unregulated inflow for the entire water year for both 2008 and 2009 with 60 percent of average and 91 percent of average, respectively. Flaming Gorge increased 13 feet over June and July 2009 during which time total precipitation received was around 240 percent of average. Storage is expected to decrease over the base flow period, but still reach 6027 feet by May 1, 2011. The elevation level of 6027 feet is the upper level draw down limit for dam safety in case of unexpected flood events. This is the reservoir elevation that is targeted on May 1st. May 1st is also the forecast for the official hydrologic classification to implement the flow recommendations we are working on today.

Snow levels for both the Green and Yampa River Basins are extremely dry this year compared to the last two years. The snowpack for the Upper Green River Basin is 55 percent of average on April 23, 2010. Warm temperatures in the Upper Green River and Yampa River Basins during the later part of April started the runoff for low and mid-elevation snow. However, the Tower Snotel site, which is a high elevation site for the Yampa River Basin and has historically indicated peak runoff once the snow melts, has not started melting. The average date of the

Yampa River Basin spring peak is between May 23 and June 5. Based on the state of the snowpack, there is a possibility that spring runoff in the Yampa River Basin may occur earlier than usual, as early as the second or third week in May. This is dependent upon warm temperatures seen in the Basin. There is uncertainty in the weather forecast. There is also the possibility that continued cool temperatures and increased snowpack could delay the runoff into late May.

Heather showed a graph of the late-April spike occurring on the Green River at Jensen, Utah from the low and mid-elevation snowmelt. She then compared this year's hydrology to similar years in the past (2001, 1955, 1977, and 1969). Similar years to the most probable forecast are 1955 and 2001. If the 2001 year repeated itself, Flaming Gorge ramp up to powerplant capacity would begin on May 13 and the peak flow would be close to 14,550 cfs. If the 1955 year repeated itself, Flaming Gorge ramp up to powerplant capacity would begin on May 10 and the peak flow would be close to 13,150 cfs. A similar year to the minimum forecast is 1977. If flows this year were to mimic 1977, there would be a low spring peak and the Recovery Program research request would not be accommodated. A similar year to the maximum forecast is 1969. If flows this year were to mimic 1969, the upramp would begin May 2 and the spring peak would be approximately 15,280 cfs. These historic years started with the same forecast as this year and have a wide range of results. She showed historic graphs illustrating that peak releases and efficiency of runoff is dependent upon temperatures in the Yampa River Basin. If May temperatures fluctuate the spring peak will be lower with many peaks.

Heather then discussed the forecasted reservoir elevation under minimum, maximum and most probable inflow forecasts. Under all scenarios, Flaming Gorge will reach 6027 feet by May 1, 2011. She then showed a graph illustrating the variability of base flows for each inflow scenario. The ROD allows for  $\pm 40\%$  summer and  $\pm 25\%$  winter variation around the average daily base flow. In all cases, the minimum base flows are 800 cfs. Based on the April final forecast, base flows out of Flaming Gorge could range from a maximum of 1,120 cfs to 1,855 cfs during the summer period and 1,000 cfs to 1,650 cfs during the winter period. The most probable maximum daily release would be 1,400 cfs. Heather provided an hourly graph showing fluctuations of 800 cfs to approximately 2,300 cfs based on the average daily release of 1,400 cfs and Yampa River flows of 8,000 cfs.

### **Flaming Gorge Technical Working Group Proposal**

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David Speas presented the FGTWG proposal for 2010. He provided some background on the Flaming Gorge EIS process and FGTWG establishment and also reviewed the 3 reaches of the Green River. He described the Action alternative of the EIS as the 2000 Flow and Temperature Recommendations published by the Recovery Program, and the 5 hydrologic classifications and the current hydrologic classification. Dave reviewed the Hydrologic Classification for the Green River and Yampa River Basins since the EIS Record of Decision (EIS ROD) was implemented in the spring of 2006. Since the EIS ROD was implemented the Green River Basin hydrology has always been much dryer than the Yampa River Basin. The same is true for this year. Since 2006 the Yampa River has provided the majority of the flows in Reach 2 of the river. This year both basins are dry.

Dave then presented the Recovery Program Research Request that an ongoing research request for the Stirrup wetland experiment. The Recovery Program has requested releases from Flaming Gorge to achieve a minimum flow of 15,000 cfs for a minimum of five days in Reach 2. If five days are not possible, then maintain peak flows at 15,000 cfs for as long as possible in Reach 2. Dave then presented a series of pictures of the Stirrup wetland and research associated with the wetland. The endangered species are being marked with PIT tags that are read by a series of instruments set up in the wetland and passable by the fish when water levels reach 15,000 cfs. Dave then showed the results of the 2008-2009 experimentation at Stirrup.

Dave discussed the FGTWG proposal for the different forecast scenarios. The hydrologic classification for the year is based on the unregulated inflow forecast for Flaming Gorge Reservoir. He indicated that the FGTWG proposal had to be in compliance of the EIS ROD prescription in order to be within ESA compliance. The proposal covers a range of flows for one hydrologic classification drier, the current classification and one hydrologic classification higher. This year, so far the forecast falls within the moderately dry hydrologic classification of 460 KAF (thousand acre-feet). Under the moderately dry hydrologic classification the proposal is to achieve flows in Reach 1 in order to achieve at least 4,300 cfs or greater for a spring peak duration necessary to achieve 8,300 cfs for one week in Reach 2 and attempt to accommodate the Recovery Program research request of at least 15,000 cfs for a minimum of five consecutive days. Once the spring peak flows have been achieved in Reach 2, Reach 1 flows would be gradually reduced at a rate of 350 cfs/day to base flow levels.

If the Flaming Gorge unregulated inflow forecast falls below 427 KAF the hydrologic classification would be dry. The dry hydrologic classification is for Reach 1 flows to achieve the Reach 2 target of at least 8,300 cfs for two days with a downramp rate of 350 cfs/day. It is unlikely the Recovery Program request could be met in the dry hydrologic classification. If the Flaming Gorge Reservoir inflow forecast increases above 788 KAF the hydrologic classification would be average. The average hydrologic classification proposal is to achieve flows in Reach 1 in order to achieve at least one week at 8,300 cfs in Reach 2, attempt to meet the Recovery Program research request and then downramp at a rate of 500 cfs/day to base flow levels.

After the spring flow objectives in Reach 1 and Reach 2 have been achieved, flows would be gradually reduced to achieve base flow levels by no later than July 1, 2010. Base flows in Reaches 1 and 2 would be managed to fall within the prescribed base flow ranges described in the 2000 Flow and Temperature Recommendations depending on the hydrologic designation for 2009. At this time we are not sure what classification we will be this year. The FG ROD says that from August through November daily flows would be within plus or minus 40 percent of the mean base flow. From December through February daily flows would be within plus or minus 25 percent of the mean base flow. Also, mean daily flows would not exceed 3 percent variation between consecutive days and daily fluctuations at Flaming Gorge would produce no more than 0.1 meter stage change at Jensen, Utah.

Dave then presented the base flow request for the U.S. Fish & Wildlife Service (Service). The Service request was prepared by the Utah field office in cooperation with the Recovery Program. Reclamation will set the average daily base flow target according to the ROD

parameters. The request from the Service would then augment the base flow target by as much as 40% through September 30, 2010. The Service requested higher base flows and a shorter duration of spring peak releases. The Service believes “that maintaining adequate base flows in the forecasted dry year should be the primary goal in order to a) maintain quality Colorado pikeminnow habitat and b) disadvantage/research smallmouth bass.”

Dave showed some pictures of Colorado pikeminnow and its habitat near Jensen/Ouray, Utah. The Service’s request is partially based on young-of-year Colorado pikeminnow collection rate in relation to flows in the Green River. Green River base flows below 1,000 cfs were associated with lower Colorado pikeminnow catches. Pictures of smallmouth bass predation and distribution in the Green River and its tributaries illustrated the second goal of the Service’s request. The requested flows are designed to disadvantage spawning, hatching and slow growth rates of smallmouth bass.

The Temperature targets under the FG ROD would be managed to be at least 18 degrees Celsius for 2 to 5 weeks in Upper Lodore Canyon during the beginning of the base flow period. Water temperatures in the Green River would also be managed to be no more than 5 degrees Celsius colder than those of the Yampa River at the confluence of the Green and Yampa rivers for the summer of 2010 (June through August).

#### **Western Area Power Administration (Western) Base Flow Proposal**

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Clayton Palmer described their proposal in parts (1) daily operations and (2) base flow request. Clayton described their daily operations and gave background of Western’s purpose, how they generate and contract power, and how the different reservoirs network together in the delivery of power. They are a non profit organization. They remain efficient to benefit the consumer. It is an efficient way to do business if Western can operate in a way to increase power production to meet increases in consumer peaks within a day. Consumers have peak use times during the day and Western is trying to meet that demand. The base flow requirements in the EIS ROD have flexibility around the mean daily average. After the requirements of the EIS ROD are met and ESA compliance is satisfied another authorized purpose of the dam is to generate power. We can go a long way to meet customer’s demands and generate power within the flexibility in the EIS ROD.

Western would like the base flow to be at a minimum of 800 cfs immediately following the spring peak and remain low during the summer with a single peak in the summer during the day. Western would like higher fluctuating base flows during the winter when consumers demand is a double peak each day. Western would prefer to shape the water release to meet these demands and to help deliver on contracts. It started with 800 cfs and increased to 1,400 cfs from 7 to 11 in the morning, down again to 800 cfs at noon and back up again to 1,800 cfs from 5 to 7 in the evening and down again to 800 cfs.

Clayton Palmer provided his email and phone if anyone has questions: [cspalmer@wapa.gov](mailto:cspalmer@wapa.gov) and 801-524-3522.

Roger Schneidervin from UDWR asked if Western is requesting two shapes, single summer peak and a double winter peak. Clayton replied that they are, while realizing it is subject to water

availability and Reclamation monthly requirements, with a preference for the winter double peak.

Clayton was asked to explain Western's relationship to marketing power. Clayton replied that while Reclamation operates the dam, Western takes the water on the high side of the transformer (as electricity) and markets it on a firm basis to its non-profit customers.

GROGA asked if the double peak is to save money. Clayton replied that Western is a nonprofit organization so we are just trying to meet customer demand. We are under contract to provide power to our customers and that is our objective. Flaming Gorge is not the only dam in the system we use. We use other dams to meet the peaks as well but that has become a lot harder since Glen Canyon dam releases are less flexible due to environmental restrictions. The whole premise of this base flow request is a matter of service to our customers.

Heather Patno indicated that this year there is a high probability that Glen Canyon Dam will release greater than 8.23 million acre-feet and that water would most likely be released during the winter period. The extra Glen Canyon winter releases would be available to supplement Western's hydropower contracts.

### **Green River Outfitters Guide Association Survey**

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Kevin Clegg with Green River Outfitter Guide Association (GROGA) presented results of a survey. The survey is done online through Survey Monkey and has been available to fishermen and guides from the beginning of April. GROGA plans to continue the survey for an entire year and will present updated information when available. The survey questions and results were discussed in detail. GROGA asked UDWR, Reclamation and WAPA for input on the initial survey questions. UDWR provided feedback from a State of Utah employee with experience in surveying. The final survey was greatly influenced by the comments received from UDWR. Dave Speas suggested that UDWR conduct a survey similar to the one done for the EIS. UDWR indicated that an official survey on fishing in the Green River was done every five years. Ryan Mosley indicated that UDWR is very interested in GROGA's survey because it provides feedback from people fishing that they don't normally get. The information on preferred fish in the river is helpful. Additionally, Ryan will get complaints from fishermen and will only have that information in making future decisions. This allows additional information to be considered as UDWR stocks fish in the future.

Katrina Grantz made the suggestion to clarify what "steady" flows meant, whether it was year-round or same-day releases. Clayton Palmer made a comment about the average annual income of the fishermen along with the catch rate and overall positive feedback from the survey. Reclamation thanked Kevin for presenting the survey results and is looking forward to seeing the results with more data next year.

### **General Comments**

UDWR is interested in seeing high flushing flows of 10,000 cfs in Reach 1. UDWR supports the Service's request for higher base flows during the summer period as researched by Jack Schmidt at Utah State University.

GROGA said they favor the proposal by the Service. They also support high flushing flows during the summer.

Melissa Trammel from the National Park Service supports the Service's proposal. She also indicated NPS support for a 10,000 cfs flushing flow through Reach 1.

Clayton Palmer indicated that Western, Reclamation, Recovery Program and FWS would be participating in a meeting/conference call in Denver on the Monday following this meeting, and that perhaps some refinement of Western's request and/or the Service's request might be modified if some compromise is achievable, and presented at the next FGTWG meeting.

Beverley thanked everyone for their comments. She said that if they didn't make comments today there is another opportunity for them to send comments on both the FGTWG proposal and base flow proposals by Friday, May 7, 2010.

### **Next Meeting**

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Beverley announced the tentative date for the next Flaming Gorge Working Group meeting will be Thursday, August 26, 2010, at 11 a.m. at Western Park in Vernal.

### **Presentations**

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#### **[Hydrology Presentation April 2010](#)**

[http://www.usbr.gov/uc/water/crsp/wg/fg/pdfs/FlamingGorgeWorkGroup\\_Apr10.pdf](http://www.usbr.gov/uc/water/crsp/wg/fg/pdfs/FlamingGorgeWorkGroup_Apr10.pdf)

#### **[FGTWG Flow Recommendations April 2010](#)**

[http://www.usbr.gov/uc/water/crsp/wg/fg/pdfs/FGEIS work group April 27 2010.pdf](http://www.usbr.gov/uc/water/crsp/wg/fg/pdfs/FGEIS%20work%20group%20April%2027%202010.pdf)

Western Base Flow Proposal

#### **[GROGA Survey Presentation](#)**

<http://www.usbr.gov/uc/water/crsp/wg/fg/pdfs/GRsurvey.pdf>

### **Previous Meeting Minutes**

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Flaming Gorge Working Group Meeting Minutes:

August 26, 2009

April 15, 2009

August 20, 2008

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

<b>Name</b>	<b>Representing</b>
Beverly Heffernan	Reclamation
Heather Patno	Reclamation
Katrina Grantz	Reclamation
Kristine Blickenstaff	Reclamation
Dave Speas	Reclamation
Steve Hulet	Reclamation
David Klein	Reclamation
Ashley Nielson	Colorado Basin River Forecast Center
Woody Bear	Flaming Gorge Resort
Tanner Davis	Flaming Gorge Resort
Kevin Clegg	Flaming Gorge Resort/GROGA
Doug Burton	GROGA
Charles L. Card	GROGA
Ryan Mosley	UDWR
Roger Schneidervin	UDWR
Melissa Trammell	National Park Service
Alan Haslem	Moon Lake Electric
Ken Winder	Moon Lake Electric
Burt Hawkes	Western Area Power Administration (WAPA)
Rachelle Fellin	WAPA
Jeffrey Ackerman	WAPA
Clayton Palmer	WAPA
Ted Rampton	UAMPS
Kathy Lynch	Trout Unlimited
Dave Glenn	Trout Unlimited
Steven Brutger	Trout Unlimited
Philip Jensen	Trout Unlimited
Jeff Taniguchi	Blue Ribbon Fishes/Trout Unlimited
Warren Blanchard	Public