

EXPERIMENTAL FLOWS AD HOC GROUP PROGRESS REPORT

Colorado River and Glen Canyon Dam Adaptive Management Program
Adaptive Management Work Group
September 6, 1999

At our meeting on July 20, 1999 we agreed to proceed with the following steps:

- 1. Screen the 33 experiments based on the guidance document, use conference call to do screening.
- Send to group by July 30 with responses and comments due back August 13, 1999.
- 2. Organize possible experiments by High, Medium, Low water years
- 3. Prioritize 2-3 options for each (High, Medium, Low) water years and clarify to forward to programmatic compliance group

I did a preliminary screening and Emailed to group for comments on August 2, 1999 (see attached). I received substantive responses from 4 people (Debra Bills, Gary Burton Rick Johnson, Mindy Schlimgen-Wilson). I took Debra and Gary's comments and incorporated them into a revised screening table, which represents an array of experiments. We would like to suggest that the full TWG work from this to complete our task to

Develop an array of flow experiments and draft proposed actions for future water years so that a programmatic compliance approach can proceed.

- I would like to request further guidance from the TWG on the next steps to be taken in order to proceed.

Bill Persons
September 7, 1999

attachments

Table 1. (REVISED) List of proposed experimental flows, whether they are within the guidance document, whether compliance is necessary, and whether Hydrologic Triggering Criteria need to be met.

Within guidance document	Compliance Necessary? A/	Type of Compliance B/	High-Med-Low	Experiment
Y	N	C	HML	1.1 Sunday flows : every day's hydrologic pattern is the same
Y	Y		H	1.2 Load foll. up to powerplant capacity during high flow months
Y	Y	7,N	HML	1.3 Increase daily fluctuations.
Y	N	C	HML	1.4 Minimum evening and weekend flows at 8,000 cfs
Y	Y	7,N	HML	1.5 Transfer peaking power to Hoover Dam.
Y	Y-N	C	HML	1.6 Transfer 50% of ACE to other CRSP facilities.
Y	Y	M		2.1 Powerplant capacity coincident with high tributary inflows.
Y	Y	M		2.2 Lower flows when tributary releases sediment.
Y	Y-N	C		3.1 - 20,000 cfs maximum release (short period)
Y	Y-N	C	H-M-L	3.2 Replicate 1986 - 1990 Operations. e.g. No Action.
Y	Y-N	C		4.1 - 20,000 cfs steady flow. (short period)
Y	Y-N	C		4.2 - 15,000 cfs steady. (short period)
Y	Y-N	C		4.3 - 8,000 constant release for 6 months
Y	Y	M	M-L	5.1 Low steady flows in the summer and fall with and without a high spring spike.
Y	Y	C	H-M-L	5.2 Assess flows which provide max nearshore HBC habitat
Y	Y	M	L	5.3 Flows recommended in the May 1997 SWCA SASF Report:
Y	Y	M	H	5.4 High spring experimental flows: 42K May through Jun
Y	Y		L	5.5 Assess Qs that can optimize conditions for HBC recruitment
Y	Y-N	M	H	6.10 Replicate 1996 BHBF without 8K flows before and after
Y	Y-N	M	H	6.11 Replicate 1996 BHBF.
Y	Y	M	H	6.12 The 3-yr Melis prop in response to the Cook-Moody prop.
Y	Y	M	H	6.13 - 45K for 2-4 days followed. by load following flows up to powerplant capacity
Y	Y	M	H	6.5 BHBF of 45,000 cfs for 2 days
Y	Y	M	H-M	6.6 Fall BHBF.
Y	Y		H	6.7 Back to back BHBF's. Ann. or more test spill, 2 in a row
Y	Y	M	H-M	6.8 BHBF following tributary inflow of sediment.
Y	N		C	4.4 - Baseline monitoring flows.
N	Y			3.3 Inflow = outflow in 1 out of 10 years
N	Y			6.0 Maximum releases for 2 days. (>200,000 cfs).
N-Y	Y			6.2 - 125,000 cfs for 2 days.
N	Y			6.3 Replicate 1983-87.
N-Y	Y			6.4 - 75,000 cfs for 2 days.
N-Y	Y			6.9 - 60,000 cfs for 2-4 days followed by load-following flows up to powerplant capacity

A/ TYPE OF COMPLIANCE: C: Already completed Section 7, M = Modify previous determination, 7 = Full Section 7 necessary, N = Full NEPA required.

B/ HIGH-MED-LOW WATER YEAR: H = Hydrologic triggering criteria need to be met.

TO: TWG Experimental Flows Ad-hoc
FROM: Bill Persons
DATE: August 2, 1999
RE: Screening of proposed experimental flows

At our last ad-hoc meeting (July 20, 1999) I agreed to attempt to screen the proposed experimental flows using the guidance document Scott Loveless developed. The table that follows is my first attempt at that exercise. I also categorized each flow as to whether or not I thought compliance was necessary, and also attempted to categorize experiments into High, Medium, or Low water year options. Please look over the table, and give some thought to whether you think I am correct in my initial screening. Based on my interpretation of Scott's document, I eliminated flows > 45,000 cfs, but that may not be accurate. His document suggests that NEPA compliance needs to be done on any flows over 45,000 cfs, but that may not necessarily mean that those high flows are eliminated from consideration.

Please let me know via Email if you agree (or disagree) with my interpretations by August 13, 1999. I'll attempt to arrange a conference call after that date with those of you who take the time to respond. Please feel free to forward this to others that did not "sign" up at the last ad-hoc.

Bill

Cc: Barb Ralston
John Shields
Debra Bills
Andre Potochnik
Dave Cohen
Randy Petersen
Gary Burton
Mindy Schlimgen-Wilson
Tony Morton
Rick Johnson
Cliff Barrett

Table 1. (ORIGINAL)List of proposed experimental flows, whether they are within the guidance document, whether compliance is necessary, and whether Hydrologic Triggering Criteria need to be met.

Within guidance document	Compliance Necessary?	High-Med-Low	Experiment
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Y	Y		2.1 Powerplant capacity coincident with high tributary inflows.
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Y	Y		5.1 Low steady flows in the summer and fall with and without high spring spike.
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N	Y		6.9 - 60,000 cfs for 2-4 days followed by load-following flows up to powerplant capacity
N	Y		7.1 Bill Persons Secry of Interior Option

Bill Persons

From: Gary Burton [BURTON@wapa.gov]
Sent: Friday, August 13, 1999 10:06 AM
To: BPersons@gf.state.az.us
Subject: Re: Experimental Flows screening.

Message Flag: Follow up
Due By: Monday, August 16, 1999 5:00 PM
Flag Status: Flagged

Bill,

Thanks for putting this together. I generally agree, but have a few questions or comments.

Does the designation of H,M, or L serve as the indicator that hydrologic triggering criteria need to be met? It is not clear, but I could assume that an "H" designation means the HTC would have to be met for the particular flow to occur.

I agree with Debra's comments regarding existing ESA and NEPA compliance for flows. We understand that all proposed flows need some level of compliance. But some require full Section 7 treatment; some require additional NEPA.

Perhaps we could indicate with a "C" those flows for which compliance is already completed under previous Sect. 7 compliance efforts (96, 98, 99 letter of concurrence) , ROD, etc.! For closely related flows that would require only modification to previous determinations, maybe an "M" or "P" (for Pending) to indicate that a completely new compliance effort is not required. Two other categories would be "7" for full Section 7 and "N" for additional NEPA required. This would help us sort out what has to be done for each flow to occur.

For example Sunday flows (as we discussed: low flow of the week = low Sunday flow) would get a "C" since it does not go outside what is authorized in the ROD.

Talk to you soon.

GLB

Bill Persons

From: Debra_Bills@fws.gov
Sent: Wednesday, August 04, 1999 7:37 AM
To: Bill Persons
Cc: 'Barb Ralston'; John W. Shields (E-mail); 'Andre Potochnik'; 'Dave Cohen'; 'Randy Peterson'; 'Gary Burton WAPA'; 'Mindy Schlimgen-Wilson'; 'Tony Morton'; 'Rick Johnson'; 'Cliff Barrett'; Don_Metz@fws.gov
Subject: Re:Experimental Flows screening.

Hi Bill

Thanks for keeping us on track with this. You give me hope that one day we'll have a Flood Program.

A few recommendations for you and the group to consider...

Floods over 45,000 cfs do not necessarily need to be eliminated. Some flows may not be practical at this time, for example flows >200,000 cfs for 2 days. But even that should not be totally dismissed. I could see some sort of a staged approach to evaluating floods, as described in the 3 year Melis report, where we gain a better understanding of 45,000 cfs and then move up to 60,000. The Melis proposal does not recommend going above 60,000 but the results of that 3 year approach may warrant testing something above 60,000 cfs.

One thing that I've been trying to figure out is the level of the 100 year flood in the presence of the dam. I think the EIS says 45,000 cfs but I think I once heard Randy Peterson say that it was around 60,000 cfs. If it is 60,000, then a comprehensive flood plan, at a minimum, should evaluate it.

It's also useful to know which flows can be accomplished probably without any additional compliance work. I say probably because Reclamation always has to evaluate the status quo and determine if conditions have been changed. Assuming no significant changes, I think the following flows could be accomplished next year. These are all flows that, in line with Loveless' document, are already covered under the existing ESA and NEPA compliance.

1.1 Sunday flows - every day's hydrologic pattern is the same. We've already seen this to some degree because the minimum daily change is not specified in the EIS, only the maximum.

1.4 Minimum evening and weekend flows at 8,000 cfs. Similar to previous description, minimum flows do not have to drop to 5,000 cfs, they can stay at 8,000.

3.1 20,000 cfs maximum release.

4.1 20,000 cfs steady

Both of these could be probably be accomplished for short periods. We've already seen some of this and should know something about it from interim flows, also the 3 days before and after the previous BHBF. Some evaluation would need to be done to determine if NHWZ vegetation began to die or tributary access is impeded or other concerns.

6.11 Replicate 1996 BHBF - This could probably be accomplished in March April with little to no additional compliance.

In terms of water years, I think several of the alternatives could be accomplished in several water years.

3.2 Replicate 1986-1990, No Action occurred in high, medium, and low water years

5.1 Low steady flows in the summer and fall with and without a spike could

occur in medium or low water year, I think. I suspect we've already lost the argument to release the spike in a low water year. The question would be how low could the flows go in a moderate water year with a spike? How about 45,000 cfs followed by 12,000 cfs steady?

5.2 Assess flows which provide maximum nearshore humpback chub habitat could be done in a high, medium, or low water year.

6.5 BHBF of 45,000 cfs for 2 days could be done in a high or medium water year.

6.6 Fall BHBF could be done in a high, medium or low water year.

6.8 BHBF following tributary inflow of sediment could also be done in a high or medium water year.

So what is the goal? What do we want the Flood Program to accomplish? This needs to be balanced with the upcoming SASF, low flow test, and any necessary tests to evaluate the temperature control device.

Thanks

Debra Bills

Bill Persons

From: Rick Johnson [johnsonr@grandcanyontrust.org]
Sent: Monday, August 16, 1999 7:28 AM
To: 'Bill Persons'
Subject: RE: Experimental Flows screening.

Hi Bill;

I'm sorry that I haven't had the time to provide input in the past, and I still am struggling to juggle all that's happening right now. Hopefully, I'll be able to engage more in the near future. Until then, please keep me on the list.

Thanks!

Bill Persons

From: Rick Johnson [johnsonr@grandcanyontrust.org]
Sent: Tuesday, August 31, 1999 3:29 PM
To: 'Bill Persons'
Cc: 'Barry Gold'; 'Randy Peterson'
Subject: FW: Experimental Flows screening.

Message Flag: Follow up
Due By: Thursday, September 02, 1999 5:00 PM
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This isn't what you asked for for the flow ad hoc, but here are a few thoughts.

The major problems with getting experimental flows seem to be:

1. Compliance
2. Hydrologic triggering criteria
3. Biological triggering criteria?

If this is true, does it make sense to bundle a series of flows, do compliance on the group, and then run them as a series of experiments (presuming these experiments do not need to meet the HTC)? If this approach works, will the next weak link be the biological triggering criteria, and do we need to insure that these criteria are appropriate given the goals and our current understanding of the system?

If we do bundle a series of flows, how are the priorities set? I suggest we consider the following criteria:

1. Achieve priority management objectives.
2. Fill gaps in the conceptual model.
3. Test the monitoring protocols (once they are established).
4. Meet the RPA for SASF in the EIS.

Make sense?

Bill Persons

From: Mswarsw@aol.com
Sent: Friday, August 13, 1999 3:55 PM
To: bpersons@gf.state.az.us
Cc: Ortonarsw@aol.com
Subject: Screening of proposed experimental flows

Hi Bill,

I have reviewed your assessment, and frankly, I do not feel that have an adequate grasp on these issues to either agree or disagree with you. I have been pouring over old documents and downloading them off the website to further my knowledge of this experimental flow process, yet I have many questions for you. I could reach you today so I will try reach you next week.

I do know that I want to be kept in the loop and be a participant in the conference call with others that responded to discuss this screening process.

Thanks.

Mindy Schlimgen-Wilson
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