

4 August 2014



**Draft Summary**  
**San Juan River Basin Recovery Implementation Program**  
**Biology Committee Meeting**  
**Fort Lewis College**  
**Durango, CO**  
**21 May 2014**

**Attendees:**

**Biology Committee Members:**

Bill Miller, Chair – Southern Ute Indian Tribe  
Jacob Mazzone – Jicarilla Apache Nation  
Brian Westfall – Bureau of Indian Affairs  
Jason Davis – U.S. Fish and Wildlife Service, Region 2  
Mark McKinstry – U.S. Bureau of Reclamation  
Benjamin Schleicher – U.S. Fish and Wildlife Service, Region 6  
Vincent Lamarra – Navajo Nation  
John Alves – State of Colorado  
Eliza Gilbert – State of New Mexico  
U.S. Bureau of Land Management – absent  
Tom Wesche – Water Development Interests  
Dave Gori – Conservation Interests

**Program Office – U.S. Fish and Wildlife Service, Region 2:**

David Campbell  
Sharon Whitmore  
Scott Durst

**Peer Reviewers:**

Brian Bledsoe – Colorado State University  
Steve Ross – Eco-Consulting Services and University of New Mexico  
Wayne Hubert – Hubert Fisheries Consulting

**Interested Parties:**

Mike Ruhl – New Mexico Department of Game and Fish  
Steven Platania – American Southwest Ichthyological Researchers  
Carrie Lile – Southwestern Water Conservation District  
Chris Cheek – Navajo Nation Fish and Wildlife  
Bobby Duran – U.S. Fish and Wildlife Service  
Susan Behery – Bureau of Reclamation  
Nate Franssen – University of New Mexico  
Weston Furr – U.S. Fish and Wildlife Service  
Brian Hines – Utah Division of Wildlife Resources  
Ryan Christianson – Bureau of Reclamation  
Dan Lamarra – Ecosystems Research Institute  
Steve Harris – Southwestern Water Conservation District  
Dale Ryden – U.S. Fish and Wildlife Service  
Jim Brooks

Bruce Whitehead – Southwestern Water Conservation District  
Nate Cathcart – Kansas State University  
Steve Whiteman – Southern Ute Indian Tribe

**Changes to agenda:**

- McKinstry asked to add discussion of (1) issues obtaining aerial videography and (2) direction for the Peer Reviewers.

**Approve draft summary from 9 April 2014 conference call; review Action Item list:**

- Wesche submitted comments that were previously incorporated. Wesche motioned to approve the summary as revised, Gilbert seconded, and unanimously approved.
- Miller indicated that tasks in the Action Item list were being completed as scheduled.

**Discussion and questions on Reclamation/Service proposal to modify San Juan River Navajo Reservoir Flow Recommendations – Reclamation and Program Office:**

- Campbell summarized the proposal Reclamation distributed via email. An end of year water storage target would guide operations while baseflows continue to be achieved. The Program would determine what to do with that available volume of water. Reclamation prefers a reservoir elevation of 6,065 feet to minimize the risk of shortage sharing but the elevation target is open to future discussion. Apparently the proposal did not go out to the entire BC and Peer Reviewers should weigh in as well. Once BC has made comments and a recommendation to the CC, the proposal can move through Reclamation's chain-of-command. Reclamation acknowledged the preliminary nature of the proposal and the need to sort out additional logistical detail.
- TNC previously distributed comments to the group. They support the proposal conceptually. However, they do not feel that the proposal adequately describes the high level of organization and commitment of time and funds that a revision to the flow recommendations would require and that the end of year water storage targets could constrain scheduled flow releases from Navajo Reservoir. Also, how would studies like those conducted on the Green River to support operation of Flaming Gorge Reservoir be conducted to set the framework for adaptive management on the San Juan River? Miller echoed the need for more analysis to establish appropriate flow targets. Additional or revised monitoring may be necessary if flows targets are established for specific results.
- Westfall supports the flexibility of the proposal with several concerns. Since many Section 7 consultations rely on meeting flow recommendations as part of compliance, how will this proposal be compatible with past consultations? How will year-to-year flow release decisions be integrated with past flow releases? How will the extensive analysis that needs inform this process be carried out?
- Campbell indicated that revised flows will be in compliance with past Biological Opinions as long as flows are being used in a way to benefit recovery of the fish.
- Wesche said Water Development interests are generally supportive of the proposal, conceptually, and the comments made by Gori and Westfall were useful. It will be important to review the next, more detailed draft developed by Reclamation and Service.
- This proposal is separate from the analysis of past flow recommendations and the development of new flow recommendations. The proposal only changes the way the available water for a release is determined. Everyone acknowledged the need to evaluate past flows and for a retrospective analysis. Lamarra said we need to understand what past flow targets did (e.g., the 10,000 cfs or baseflow targets) in order to move forward with new flow targets. Many flow targets have a biological basis but have not been reviewed in terms of biology. This will be difficult because multiple confounding management actions have occurred within the San Juan River. There needs to be some basis for any proposed change to flow targets.

- Reclamation indicated that this proposal is a loose framework that will be strengthened and solidified over the next year with input from the BC.
- A flow workshop is included in the FY2015 budget to address these and other concerns. The original flow recommendations were based on the mimicry of a natural hydrograph. Perhaps temperature should be an important consideration in revised recommendations? A retrospective analysis will help us determine the flow “tools” available for management. Endangered fish data should be analyzed to drive future flow management.
- Behery conducted an analysis of the probability of shortage, spring peak releases, and operational spill at various reservoir elevation targets. Reclamation supports a target of 6,065 feet because it minimizes the risk of entering into shortage sharing even in the face of long-term drought. Any changes to calculate available water for release is within the current ROD for Navajo Dam.

**Determination of past flows meeting the intended purposes of the Flow Recommendations – Lamarra:**

- An integration and retrospective analysis will be important to conduct as the Program moves forward with revision to flow recommendations.
- The intent of the original flow recommendations was to mimic the magnitude, duration, and frequency of a natural hydrograph based on observed changes to habitat, geomorphology, and fish community. Hypotheses to test the flow recommendations can be derived from flow, habitat, and fish monitoring results. Any analysis is complicated by confounding management actions, correlated parameters, and a zero inflated dataset.
- Geomorphic effects and temperature should be evaluated as flow recommendations are evaluated and revised. Because secondary channels flow intermittently, incision does not seem to be occurring. However, how can decreases in total wetted area at moderate flows through time be explained? Although it has not been monitored, it will be important to understand areas of aggradation and degradation within the San Juan River.
- The site selected for the next round of habitat restoration appears to be a good choice since it flows intermittently at different flows.
- Years with high flow appear to “reset the system” from a habitat perspective.

**Demonstration and discussion of San Juan River Population Model – Miller:**

- Miller provided an overview of the development of the Population Model. The current version of the model includes additional reaches in Lake Powell, the lower Animas River, and the San Juan River upstream of the Animas River. Low velocity habitat has been included in addition to riffles and runs to calculate benthic invertebrate productivity. New datasets and revised parameter estimates have also been included as they have become available but estimates for survivorship, population estimates, fecundity, habitat quality, population response to habitat, and information on lower trophic levels could be improved.
- Key assumptions of the model are that predation by different fish species is based on size (gape) limits and prey density, there are no temporal changes in diet, there are no ontogenetic changes in prey energy density, and that different predator species have no competitive advantage.
- The model can be used to evaluate management actions like stocking and non-native removal in addition to the carrying capacity that is the basis for the Recovery Goals.
- Model calibration is being conducted with monitoring results. Parameters are revised so model results “match” monitoring results. This should be completed this summer.
- Ross asked about the utility of the model. Miller responded that long-term prediction of management actions is the use of the model. Some asked how the model would inform short-term management actions and how the model would be validated and tested to ensure confidence in model results.

- There have been difficulties in getting a version of the model on-line but the model runs could be completed during future meeting to evaluate the effects of different management actions.

#### **Update on result of scale microchemistry study – Platania:**

- Currently using strontium isotope analysis compared to elemental analysis that was done previously.
- Currently moving ahead with analysis of fin rays rather than scales. It will be critical to read the core of fin ray cross-sections to be able to determine fish natal origin.
- An additional SOW is being prepared to continue with this work.

#### **Survival of stocked razorback sucker and increasing first-year survival of stocked fish – Franssen:**

- Conducted survival analysis on only fish stocked from NAPI 2000-2013. Because the stocking design was not balanced by season and location these factors are confounded.
- While this work is on-going, the overwhelmingly best supported model includes the effects of first year in river by time, location, season, and size on survival, and first year in the river by time and size for detection probability.
- The higher detection probability for first year compared to post-first year fish possibly indicates avoidance of electrofishing efforts.
- The low apparent survival upstream of PNM is likely due to the limited sampling in that area. If the effects of season and stocking location are important to tease apart, a more balanced design would need to be implemented.
- Because larger fish have higher first year and post first year survival, it would be important to determine if there are cost-effective means of increasing size-at-stocking.
- Evaluating condition of stocked fish and comparing passive versus active harvest will be important factors to examine.
- If fish are stocked into NAPI at lower densities will resulting fish be larger and in better condition? Discussion of reducing stocking densities at NAPI will continue during the BC meeting or call.

#### **Discussion of entrainment issues**

##### **Review of previous work – Platania**

##### **Test of Hogback Fish Weir – McKinstry:**

- There were 5 antennas installed in association with the Hogback Fish Weir. Hogback Canal operation has prevented the fish weir from functioning as intended and pumps within the canal have variable frequency drives that prevent the readers from being able to detect a PIT tag. Three razorback suckers have been detected entrained in the canal but plans to test the effectiveness of the weir are on hold until the issues with the variable frequency drives can be remedied. There is lots of interest in this fish weir since it may be a low maintenance solution to minimize entrainment.
- Platania will review and distribute the original SOW that covered the investigation of fish entrainment in these canals so the BC can evaluate redoing that work now that there are more endangered fish in the river.

#### **Update on preliminary results of remote PIT tag reader at PNM Fish Passage – McKinstry and Cheek:**

- The PNM fish passage opened 1 April and has collected 2,371 fish. This total is much lower than past years. A smaller PIT tag reader was put into the downstream end of the PNM Fish Passage. There have been 154 PIT tagged fish detected at the reader but only 3 fish captured in the passage. Unclear if fish are escaping or if they are just entering the lower end of the passage.
- As the upstream portion of the passage is clogged by debris, little to no water moves through the passage. It's possible that fish escape when water velocity decreases through the passage. Also,

when flows in the passage decline sufficient attractant flows to entice fish to move into and through the structure may be lacking.

- The group discussed means of keeping water flowing through the passage. An automated screen cleaning system could cost ~\$60,000. The group should continue to discuss means of keeping the passage operational at a future meeting.

**Budget update – McKinstry:**

- All agreements should have been processed. There are no more limits imposed by sequestration. An expected CPI increase of 3% is expected for 2015 and there are no anticipated road-blocks for FY2015.
- Reclamation is searching for additional funds to continue Lake Powell work.

**Discussion of draft 2015 Annual Work Plan:**

- A workshop (likely focusing on flow recommendation revision) is included in the FY2015 work plan, but a scope-of-work needs to be developed.
- Based on the Sufficient Progress Report there is work the Program should carry out such as evaluating the need to remedy passage and entrainment issues. The group discussed repeating past efforts or reviewing the outcome of those previous efforts. Platania will provide the SOW from ASIR's past work examining entrainment.
- Gori discussed the need to conduct monitoring at Phase 2 habitat restoration sites. It will be important to examine how restored channels function at different flows, if they have suitable habitat for larval or small-bodied fish, understand why those that do not persist fail to function, how flow releases affect restored sites, and what habitat changes occur as a result of restoration.
- In the future restoration funding would ideally include a component for monitoring because at some point it will be difficult for current monitoring protocols to carry out work at additional sites; however, given the complexity of channel restoration projects, the short duration of private and public grants normally do not permit one or more years of monitoring. The fish monitoring at the Phase 2 site would likely take an entire day. The group discussed the need for additional SOWs from larval and small-bodied monitoring but also discussed that maybe only additional habitat monitoring is necessary at these sites. Perhaps habitat persistence can be addressed with pressure transducers or time lapse photography. It also could be important to seasonally monitor these habitats. Additional discussion should occur to determine the critical questions to be addressed by additional monitoring at restored sites and how that monitoring will occur.
- The group discussed the need for a travelling screen at PNM to keep the upstream screen clear of debris so water can flow through the passage to keep it operating. The group discussed if this proposal was O&M or capital in nature and the merits of using base funds, capital funds, or NFWF funds to pay for this proposal. Since it seems there are extra monies in base funds in 2015, that could be the best option. Some kind of evaluation should be conducted to ensure the appropriate solution is devised for the problem at PNM.
- The Reclamation helicopter used for aerial videography is no longer available. The LiDAR data could be a reasonable short-term substitute. FWS and Jicarilla may have alternatives as well. The Program will need to come up with an alternative for obtaining aerial videography.
- ASIR will submit a SOW to continue the natal origin work that was presented today.
- Database management RFP will likely include future costs to the Recovery Programs after the database is developed. It is not clear what these costs will be and how they will be paid for.
- Wesche motioned to forward the Annual Work Plan to the Program Office and subsequently forward it to the CC. Gilbert seconded, unanimously approved.

**Update on Phase 2 Habitat Restoration – Gori and Westfall:**

- The goal of this next round of habitat restoration will be reconnecting abandoned secondary channels and removing non-native vegetation.
- In previous restoration efforts there has been substantial regrowth of non-native vegetation likely because plants were treated after the growing season.
- Initially 12 sites were identified for possible restoration; this was narrowed to 6 and finally a single site at RM 136. At RM 136 the goal is to restore 4 miles of channel and remove 6 acres of vegetation. This site flows at 1,500 cfs but does not flow under base conditions. Removal of non-native vegetation and accumulated sediment will allow the site to function at baseflow. Habitat data should be used to inform what can be expected to occur at this site following restoration.
- Bledsoe provided comments on where cutting and removal should occur to increase likelihood of success. The wetland delineation and intraservice consultation should be completed in July and the on-the-ground restoration activities should be by done by 3 October.

**Update on non-native fish stocking procedures – Crockett and Gilbert:**

- Mike Ruhl reported there are no updates but the document is currently with New Mexico and is moving forward.

**Discussion of BC chair position – Miller:**

- There are no term limits on serving as BC chair and Miller is happy to continue in this role. The group commended the work Miller has done and the support from the Southern Ute Tribe.
- Wesche motioned that Miller continue as BC chair, Lamarra seconded, and the group approved unanimously.

**Update on installation of additional remote PIT tag readers – McKinstry:**

- McKinstry presented work installing PIT tag readers. The installation at Mexican Hat was unsuccessful and the planned installation at PNM did not move forward because of issues with the bladder dam.
- McKinstry informed the group that the lower Animas River can be considered as another site for antenna installation.

**Direction for Peer Review Committee:**

- The new Peer Reviewers asked for more direction on their responsibilities.
- Peer Reviewers should review reports according to their expertise. Also there will be periodic requests from the Program Office or others to review proposals or documents (such as the proposal for flow revision discussed today).
- Peer Reviewers should respond directly to PIs for reviewed reports and copy the BC email list.
- Meeting attendance will be directed from McKinstry or the Program Office but Peer Reviewers should feel free to attend other meeting or calls as budget allows.

Wesche provided an update that Ron Ryel is continuing treatment, he is in good spirits, and is moving back to Seattle.

**BIOLOGY COMMITTEE ACTION ITEM LOG**

(Updated 29 May 2014)

Item No. *	Action Item	Meeting/O rigination Date	Responsible Party(s)	Due Date	Revised Date	Date Completed
1	Provide RBS/CPM stocking/capture/recapture data		P.I.'s to the Program Office	Annually before Jan. 1		
2	Provide Preliminary Draft Report Presentations		Project Leads (authors)	Annually at Feb. meeting		
3	Review LRP		BC	Annually at fall meeting		
4	Review Peer Review Comments from the February and May meetings		BC	Annually at fall meeting		
5	Provide Draft Reports		Project Leads (authors) to Program Office	Annually by end of March		
6	Scopes of Work		Project Leads to Program Office	Annually by end of March		
7	Provide Final Reports		Project Leads (authors) to Program Office	Annually by end of June		

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(Updated 29 May 2014)

Item No. *	Action Item	Meeting/O rigination Date	Responsible Party(s)	Due Date	Revised Date	Date Completed
8	Annual Data Delivery		Pls to Program Office	Annually by June 30		
9	T&E Species Data		BC to Program Office	Annually by Dec. 31		
10	Annually compile T&E data and Program progress into summary to address overall Program recovery goals/objectives for presentation at annual meeting		Program Office/BC	By Annual Meeting in May		
11	Distribute Consolidated Data and list of annual data collected and available in the Program's database		Program Office to BC	Annually by Jan. 31		
12	Recapture analysis on PIT tagged fish		Durst	Annually by March		
13	Coordinate CPM stocking closely with Reclamation to avoid negative impact due to high flows/releases		Project Leads	Annually		
14	Waterfall Inundation Whitepaper – review past meeting summaries, determine what is needed, and provide report at the next meeting.	05/18/07	Program Office	12/07/07	Not a current priority	

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(Updated 29 May 2014)

Item No. *	Action Item	Meeting/O rigination Date	Responsible Party(s)	Due Date	Revised Date	Date Completed
15	Revise RBS Augmentation Goals (based on the outcome of experimental stocking)	5/10/10	FWS Fisheries/Program Office	5/2011 – provide update and extend as needed	ongoing	
16	Develop a detailed outline for San Juan River Recovery Program case history manuscript	11-5-08	Propst/Miller			On hold
17	Pursue Non-native fish stocking procedures	11/5/09	Crockett and Gilbert	12/1/09	1/2/14	
18	Pursue effects study on Hg/pikeminnow with other groups/programs	1/14/10	Program Office lead	ongoing		
19	Discussion of what is the appropriate number of fish to stock	3/23/10	BC	ongoing		
20	Southern Ute funding of Population Model	5/10/10	Miller	11/2010	ongoing	
21	Work with I&E Coordinator to determine feasibility of brochures and signs	11/10/10	PO	2/24/11	Ongoing	
22	Prepare memo to CC conveying BC recommendation to conduct a feasibility study on removing fish barriers in the lower Animas River	7/9/12	PO	8/20/12	3/31/14	

**BIOLOGY COMMITTEE ACTION ITEM LOG**

(Updated 29 May 2014)

Item No. *	Action Item	Meeting/O rigination Date	Responsible Party(s)	Due Date	Revised Date	Date Completed
23	NNF workshop recommendations to Davis	2/21/13	BC	3/18/13		
24	Complete Threats Assessment draft	5/7/13	TNC	6/28/13		
25	Determine if past flows met intended purposes of the flow recommendations	11/19/13	Lamarra	2/26/14		5/21/14
26	Review of Environmental Flow Recommendations for the San Juan River SOW	11/19/13	BC and Peer Reviewers to PO	1/13/14	5/21/14	5/21/14

\* Items were re-numbered after changes were made

Yellow highlight indicates annual action items

Green highlight indicates new action items

Red highlight indicates completed action items that will be removed from the next iteration of the Action Item Log

**Annual SJRRIP Cycle (Oct. 1 –Sept. 30)**

**January 2011 version**

Date	Annual Tasks	PO	CC	BC	P.I.
Oct.	Reclamation administers contracts	X			
Nov.	BC Meeting <ul style="list-style-type: none"> <li>• Identify questions for annual data integration</li> <li>• Review data integration results from previous year</li> <li>• Discuss Program priorities</li> <li>• LRP review and provide recommendations (pros and cons) to Program Office</li> </ul>	X		X	
Dec. 31	RBS/CPM stocking/capture/recapture data to Program Office				X
January	Notification/update of Program rosters/ mailing lists	X			
January	Executive meeting (Program Office; Reclamation Fund Manager; CC and BC Chairs) to do preliminary planning for upcoming year	X	X	X	
January	Updated LRP to BC and CC for review	X	X		
Jan. 31	Distribute consolidated PIT tag data and post other data	X			
February	BC Meeting <ul style="list-style-type: none"> <li>• Prepare for Annual Meeting</li> <li>• Provide preliminary results; draft report presentations</li> <li>• Review updated LRP</li> <li>• Review annual data integration priorities</li> </ul>	X		X	X
February	Final updated LRP to CC (with explanation of input included/not included)	X			
Feb/Mar	Approval of yearly LRP		X		
March	Annual guidance/solicitation for SOWs based on LRP/list of prioritized projects	X			
March 31	Draft reports due/SOWs to Program Office			X	X
April	Preliminary draft Annual Workplan and Budget	X			
May	Annual Meeting <ul style="list-style-type: none"> <li>• Program overview</li> <li>• P.I. presentations</li> <li>• Review preliminary draft AWP</li> <li>• Committee reports</li> </ul>	X	X	X	X
June/July	Draft Annual Workplan and Budget	X			
June 30	Provide final reports and data sets				X
August	Tech review of draft AWP; recommendations with pros and cons to Program Office			X	
August	Revise AWP based on input and transmit final draft to CC with documentation of all input	X			
Sept.	Review and approve final AWP		X		
Sept.	Post final AWP to website	X			