



**San Juan River Basin Recovery Implementation Program  
Biology Committee Meeting  
Farmington Civic Center 5-6 November 2008**

**Attendees**

**Biology Committee Members:**

Paul Holden, Chair – Jicarilla Apache Tribe  
Bill Miller – Southern Ute Tribe  
Ron Bliesner – Bureau of Indian Affairs  
Jason Davis – U.S. Fish and Wildlife Service, Region 2  
Mark McKinstry – U.S. Bureau of Reclamation  
Chuck McAda – U.S. Fish and Wildlife Service, Region 6  
Vincent LaMarra – Navajo Nation  
David Propst – State of New Mexico  
Gregory Gustina – U.S. Bureau of Land Management  
Tom Wesche – Water Development Interests  
Absent – State of Colorado

**Peer Reviewers:**

John Pitlick – University of Colorado  
Steve Ross – University of New Mexico  
Ron Ryel – Utah State University  
Mel Warren – USDA Forest Service

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

David Campbell  
Sharon Whitmore  
Scott Durst

**Interested Parties:**

Andrea LeFevre – Jicarilla Apache Nation

Herb Becker – Jicarilla Apache Nation

Jeff Peace – Arizona Public Service Company

Oscar Simpson – New Mexico Wildlife Federation and National Wildlife Federation

Steve Lynch – Bureau of Indian Affairs

Michael Farrington – American Southwest Ichthyological Researchers

Darek Elverud – Utah Division of Wildlife Resources

W. Howard Brandenburg – American Southwest Ichthyological Researchers

Amy Kraft – Southwestern Water Conservation District

Marilyn Myers – U.S. Fish and Wildlife Service

Joel Lusk – U.S. Fish and Wildlife Service

Dale Ryden U.S. Fish and Wildlife Service

Bobby Ray Duran – U.S. Fish and Wildlife Service

Ernie Teller – U.S. Fish and Wildlife Service

D. Weston Furr – U.S. Fish and Wildlife Service

Ben Schleider – Utah Division of Wildlife Resources

Sam McKay – Utah Division of Wildlife Resources

Yvette Paroz – New Mexico Department of Game and Fish

Ryan Christianson – U.S. Bureau of Reclamation

Kevin Bestgen (via conference call)

Barb Osmundson (via conference call)

Aaron Chavez – San Juan Water Commission

Andreas Novak – Concerned Citizens for the San Juan River

**Introductions; Changes to agenda; Approval of 28 July conference call summary:**

- Jason Davis clarified that Dale Ryden developed the standardized recapture database not the non-native crew.
- Biology Committee voted to approve conference call summary with above clarification.

**Review of action log:**

- Changes to be made to the action item list include: moving items to be completed on an annual basis to top of list; marking Item #12 completed October 2008; marking Item #15 completed; Items #13 and #18 not yet completed, revised due date to 30 November 2008 from 31 July 2008; Item #14 not completed, to be discussed later; Item #22 to be discussed later; and marking item #28 completed.
- Coordination Committee is investigating the technical feasibility of a fish passage barrier in the lower portion of the river. Inundation assessment was completed. Durst was tasked with the completion of a white paper to review this issue but it is currently not a high priority.

**Program Office updates:**

- Final budget sheet and project list handout distributed to group.

- Update of Hydrology Committee Depletions Workgroup meeting – This workgroup does not replace the Hydrology Committee but is a smaller committee embarking on a two-year process to rebuild the next generation of the hydrology model. The new model will take current StateMod data out of the Operations Model (functionality) and build it entirely in Riverware. For now, StateMod will continue to be used for calculations of natural flows. Ultimately, the new model will be one of the tools used to evaluate the impact of depletions on the listed species in relation to the flow recommendations, potentially leading to revised flow recommendations.
- Scott Durst was introduced as the new Program biologist. Now that the Program Office is fully staffed, it will be stepping up efforts to serve as the clearinghouse of data as new data is received and old data is updated. Durst will be the primary contact for data management. He will also take part in upcoming monitoring workshops and data integration efforts.
- Joann Perea-Richmann will return to her previous position as Program Assistant starting 10 November.

#### **Water quality and contaminants:**

- Campbell said recent consultations will require water quality sampling primarily to assess the effects of selenium contamination on listed fish species, primarily razorback sucker. He said this is something that needs to be addressed in a more proactive fashion. Campbell said that for the Program to serve as the RPM for future water projects in the San Juan Basin, contaminants will need to be actively monitored. More studies are needed to determine the effects of contaminants on the rare fish and the native fish community.
- Joel Lusk provided a review of water quality and environmental contaminant studies that have occurred within the San Juan River Basin. Because of flaws in some of these previous studies, more research is needed into this issue.
- Barb Osmundson (via conference call) provided details of mercury and selenium studies on Colorado pikeminnow in the Upper Basin. Mercury may be a concern in these fish because they are long-lived and there are 11 coal-fired power plants within the Basin that emit mercury. She found that selenium contamination is a concern for razorback suckers but that differences in contaminant levels in different species of fish may be due to differences in their habitat use and life history characteristics. Osmundson is planning to conduct a mercury study of pikeminnow (n = 20) in the San Juan Basin and asked for assistance from field crews to obtain samples. The BC voiced concern that the muscle plug samples would be too large for small pikeminnow. It is possible that “piggy-backing” this sampling effort on a biopsy sampling technique for a selenium study (lead by Bliesner) would likely have less impact on the fish.

#### **Selenium sampling:**

- Bliesner discussed his plan to sample selenium in the San Juan River as part of the NIIP Section 7 Consultation. Proposed sampling locations are Horn Canyon, Ojo Amarillo, and the Mixer to have an indication of selenium levels above, in the middle, and below the project. Sampled species would include whole body analysis of indicator species, speckled dace and red shiner, and biopsy samples from razorback suckers and Colorado pikeminnow. Indicator species would

be sampled because they are abundant at all locations. Endangered fish sampling would be conducted in conjunction with non-native fish removal activities.

- Osmundson's mercury analysis could come from these same efforts (using biopsy rather than muscle plugs to obtain samples).
- The group discussed the need to look at baseline selenium levels in hatchery fish and also the role of Type I and Type II Errors with the different hypotheses to determine the effect of the NIIP projects or for determining accurate selenium concentrations. There was some concern about obtaining a sufficient number of endangered fish that are large enough to collect a biopsy sample. It is possible that whole-bodied hatchery fish that died before they were stocked could be used but there would be potential biases involved with sampling these fish. In addition to selenium, copper, arsenic, mercury, lead, and zinc will also be measured. Bliesner will get details of specific sampling procedures to the group.

#### **Population estimation:**

- Kevin Bestgen (via conference call) provided details of razorback sucker stocking and recapture data for the San Juan River. Some records were deleted because of errors (0.2% of total). Of 43,475 remaining records, nearly 21% did not have length data. Missing length data for stocked fish were from stressed fish that were not measured when they were stocked. Ninety percent of measured stocked fish were between 150-400 mm. A method for assigning a length to these fish, possibly mean batch length, should be considered. Most fish were stocked at Hogback during the summer season. The survival, detection probability, and possible abundance estimates will be completed by the February meeting.
- Bestgen provided a summary of results for survival from mark-recapture analyses for 153,000 razorback sucker from the Upper Colorado River Basin. The most-supported model for survival included the effect of first-year-in-river (the so-called "freshman" effect), season of stocking, and total length. Detection probability was best explained by stocking location, year stocked, first-year-in-river, and total length.
  - First year survival of the average length stocked fish (260 mm) was 6% regardless of season of stocking and increased logistically with increasing size of stocked fish. Note that relatively few fish were stocked in the larger size classes that have higher first year survival.
  - After the first year in the river, the survival of stocked fish of any length was ~ 75%. The first year survival of average length fish stocked in summer was about 2%, while the survival of these same fish stocked during other seasons was 8-10%.
  - Hatchery source was confounded with the reach where fish were stocked so was not included in the analysis.
  - These models and parameter estimates will be a useful comparison and starting point for work on data from fish stocked in the San Juan River. A cost-benefit analysis on fish that are stocked in the San Juan River should be done to determine the optimal size to stock compared with the cost of growing fish bigger in the hatcheries.

- The recapture histories of San Juan River razorback suckers may not be sufficient to calculate population estimates. In addition, there is not likely sufficient data to calculate the demographic parameters for Colorado pikeminnow.
- Once this data analysis is completed, it should be used to inform stocking plans that expire this year.
- Bestgen discussed the data for pikeminnow, but noted that there was substantially less data for pikeminnow, especially recapture data. His contract covers the examination of the pikeminnow data but he cautioned that this examination may be data limited.

#### **Monitoring workshops and Integration Report RFP:**

- The fish and habitat monitoring workshops could be considered as part of the Integration Report. The Standardized Monitoring Protocols reporting requirements and potential changes in the flow recommendations drove the initial proposal for an Integration Report but the Integration Report now is not specifically defined. However, the focus of the Integration Report should be the recovery of the endangered fish and to ultimately make flow recommendations. Miller suggested the focus of the Integration Report should be changes to the flow recommendations based mainly on monitoring data rather than a review of all program activities. A summary/trend type analysis using all available data, especially information from monitoring and the complex reach study, should be used to determine if previous recommendations and current recovery elements are indeed making progress towards recovery. The report should include to the fullest extent possible the relation between habitat-flow-fish relationships.
- Other aspects of the Program such as augmentation, non-native removal, or potential ways to achieve habitat modification apart from flow recommendations will be dealt with through a future Integration Report or future workshops.
- Bliesner suggested the BC review the proposed changes to the 2500 and 5000 cfs flow recommendation before the Integration Report is finalized.
- Addressing a few questions or objectives would help focus the workshops. The key elements to consider for the fish and habitat monitoring workshops and the Integration Report are: what is the data being collected for, how is the data going to be used, and how does it contribute to recovery of the species. Monitoring efforts need to be tied to recovery goals. Because the biological or habitat response is slow, the appropriate scale of monitoring needs to be determined. Ultimately, the outcome of the workshops should be a determination of if the appropriate factors are being monitored in the best way to be able to detect progress toward recovery.
- The habitat monitoring workshop should determine what habitat changes are needed to affect recovery and how those changes should be monitored.
- The results of Bestgen's analyses could be a key factor for the fish monitoring workshops so the study should be completed before it is held. Fish monitoring efforts need to have more fish in the system and to have more recaptures in order to obtain reliable population estimates. The fish monitoring workshop should focus on stocked fish since we do not have a wild population.
- Several people cautioned against bringing in outside experts to the monitoring workshops because the amount of time that would be required to bring those experts up-to-speed. Some suggested using the existing Peer Review Panel to come up with an outline to direct the monitoring workshops.

- There was some discussion of using the RFP versus IDIQ process for the integration report and the trade-offs between using these to define the products in advance or as part of the process. The Coordination Committee is directing that this go through an RFP. This will be a two-year process and the specifics of how it will work still need to be sorted out. It could involve an editor that compiles others work or one person taking the lead in producing the report.
- Before going into the monitoring workshops, the reason for and purposes of the workshops need to be clearly defined. Workshops need to focus on significant biological information needs such as recovery of the listed species, how to increase habitat and geomorphic complexity, or population estimates and viability. It was generally decided there needs to be further discussions prior to any workshop to define workshops purposes and desired outcomes. As a start, Bliesner will take the lead in putting together a list of questions from the LRP and monitoring program to help determine what the specific focus of the habitat workshop should be, workshops it might also be useful to use the hypotheses in Miller's Integration Report for this effort.

#### **PIT tag antenna:**

- McKinstry reported on his investigation into stationary and floating PIT tag detectors that could increase detection efforts while decreasing the use of electrofishing, the number of times that fish are handled, and costs. McKinstry will provide BIOMARK's report to the committee when he receives it.
- A trial run was made using a multi-plexer antenna setup that was pulled behind a raft during an electrofishing trip. This system detected at least one fish and another tag that were not detected by the accompanying electrofishing rafts. The system could be used to passively detect fish just floating on the river or in conjunction with electrofishing to detect fish that are not netted during these efforts. Plans are in the works for another spring trip to further test the technique with a larger antenna. A method is needed to experimentally determine the capabilities of this setup.
- A fixed antenna setup was also discussed. This system has not yet been tested but would consist of fixed antenna that would passively detect fish. These systems are expensive to deploy and maintain but could increase the number of detections of tagged fish. Capital funds could be used to pay for these systems. Further details about the feasibility will come after further tests are conducted this coming spring.

#### **Biology Committee unanimously elected Bill Miller the new chair.**

#### **Long-range plan:**

- There was agreement that the LRP is a working document and will remain a "work in progress." The LRP will be reviewed and revised by the Program Office and committees on an annual basis as part of the Annual Workplan development process.
- There was recognition that the prioritization process (Appendix A) needs revision. The process of establishing priorities needs to be defensible. Campbell said the Program Office plans to develop a decision making matrix to assist in this process.

- The Program Office will address editorial discrepancies and synch the text and appendices for review by the committees via the Annual Workplan development cycle.
  - Wesche asked why Tasks 5.3.1.4 and 5.3.1.5 indicate work will be done on the ecosystem model when it is a completed task. It was clarified that the ecosystem model has not been thrown out, just put on the shelf until sufficient data is available. Dates will be omitted and the tasks labeled “as necessary.”
  - The dates on Task 3.2.3.3 on evaluating large-scale nonnative vegetation control will also be omitted and labeled, “as necessary.”
  - It was agreed that the LRP adequately recognizes the Program’s native fish community emphasis.

**Peer review comments:**

- The comments of the Peer Reviewers from the May 2008 annual meeting were reviewed and discussed. Emphasis was on the peer reviewers’ assessment of the Program’s stocking numbers and the need to review and revise the augmentation plan as appropriate. This topic should be the focus of a future workshop.

**Case history manuscript:**

- Propst presented plans to publish a case history of the Program as a 7-8 page manuscript in Regulated Rivers. The idea to publish such a case history came from a meeting/conference on restoring natural function of river systems held in San Antonio. This paper is envisioned as a policy paper that addresses the biological and ecological data that has been collected with a goal of sharing the experiences of the Program with others conducting similar work.
- There was discussion about who would need to approve the manuscript. At a minimum, Coordination Committee approval would be required. There was also some discussion about how to deal with authorship. Propst and Miller will come up with a detailed outline of the proposed publication for review by the BC.

**Habitat manipulation project and RERI grant:**

- McKinstry distributed the proposal for mechanical manipulation to improve and/or create habitat suitable for endangered fish. This proposal was funded for \$398,000 and needs to be spent over 5 years. The work for this project will be awarded through the IDIQ process. The focus of the project will be creating backwater and secondary channels at sites that are to be determined.
- Specific sites need to be identified and a process for selecting appropriate sites needs to be developed.
- Anticipated start date for on-the-ground work will be winter of 2009-2010; initial environmental compliance will be needed before work starts.
- The Program will contribute funding for monitoring following the habitat manipulation; the \$398,000 is specifically for project implementation.

- This project is separate from the \$20,000 set aside for feasibility/pre-planning to improve flow effectiveness using mechanical manipulation. That project will be headed up by TNC and will likely involve additional TNC funds to make it part of a CAP.

**Lower river fish barrier:**

- McKinstry explained that the CC's interest in a lower river fish barrier came when he reported on an electrofishing trip he took with Darek Elverud below the waterfall in Lake Powell. They found numerous non-native fish, seven razorback suckers, and one Colorado pikeminnow. The CC is concerned that these non-native fish could move upstream into the San Juan River, and asked Brent Uilenberg to find out if a fish barrier might be appropriate. Reclamation is doing an initial feasibility study that will be a cost analysis of placing such a barrier at various locations in the lower river. McKinstry will forward the groups' concern of habitat fragmentation along with the following input to Bob Norman to determine the cost analysis: any potential barrier would need to have upstream passage that would select for all fish, velocity alone would not be a sufficient barrier, any structure needs to be a barrier at 99% of flows, any barrier should be as far downstream in the river as possible, and passable to floaters.

**Reclamation update:**

- Modification to current contracts will be completed by the end of the week.
- McKinstry said development of the IDIQ contract has taken some additional work to incorporate the RERI grant but he still expects to get an announcement out at the start of 2009. Work to be conducted under this process includes the complex reach fish data and habitat evaluation, and possibly habitat restoration.
- The COLA for 2009 was 4.5%, higher than the estimated 4%, which gives the Program a \$20,000 cushion instead of the estimated \$1,469.
- There is a data mining effort related to the non-native removal project underway with a graduate student at NMSU associated with McKinstry and Davis.

**Field issues – maps:**

- Need to get about 20 new sets of matching field maps for use by all researchers. UNM completed the most recent set of field maps; Bliesner did it earlier. The 2005 photography should be the basis of these new map sets. The Program Office will coordinate with staff GIS specialist to produce these maps.

**Additional issues:**

- Details of reducing the number of habitat categories to 14 will come out during the February meeting.

**Next meetings:**

- A conference call to prepare for monitoring workshops will occur on 6 January 2009 at 0900.
- Draft reports will be presented in Farmington 18-19 February 2009.

- Final reports and annual meeting will be in Durango over 2 days sometime in the weeks of 11 or 18 May 2009.
- Draft written reports are due at the end of March 2009.
- Final written reports are due at the end of June 2009.
- The Western Division of AFS will hold a meeting in Albuquerque starting 4 May 2009.

**Public input – trout fishery:**

- Andy Novak from Concerned Citizens for San Juan Trout Fishery and Oscar Simpson from the Game Commission brought up concerns of sedimentation in the trout fishery and the low level of flows. The Biology Committee suggested that their concerns would be better addressed at a meeting of the Coordination Committee. Both Propst and McKinstry indicated that they might be able to assist in a project to identify impacts to trout and invertebrates resulting from the implementation of the flow recommendations at Navajo Dam. It will be up to Novak and Simpson to pursue this project with their constituency and build support.

**BIOLOGY COMMITTEE ACTION ITEM LOG**

(Updated January 27, 2009)

Item No.*	Action Item	Meeting/Origination 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		1/15/2009
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 Final 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		
8	Annual Data Delivery		BC to Program Office	Annually by June 30		
9	T&E Species Data		BC to Program Office	Annually by Dec. 31		

**BIOLOGY COMMITTEE ACTION ITEM LOG**

(Updated January 27, 2009)

Item No.*	Action Item	Meeting/Origination Date	Responsible Party(s)	Due Date	Revised Date	Date Completed
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	Coordinate CPM stocking closely with Reclamation to avoid negative impact due to high flows/releases		Project Leads	Annually		
13	Provide LRP Draft	05/08/07	SWCA to Program Office, BC, CC	07/09/07	4/15/08	Done
14	Comment on Draft LRP	06/25/07	BC to Program Office	07/23/07	5/16/08	Done
15	Provide Final LRP	07/23/07	SWCA to Program Office	08/06/07	5/23/08	Oct 2008
16	Develop razorback sucker production and stocking plan for NAPI ponds	06/25/07	Davis/Program Office	09/15/07	11/30/08	1/22/2009
17	Develop Colorado pikeminnow production and stocking Plan	5-7-08	Davis/Program Office	11/30/08	2/15/2009	

**BIOLOGY COMMITTEE ACTION ITEM LOG**

(Updated January 27, 2009)

Item No.*	Action Item	Meeting/Origination Date	Responsible Party(s)	Due Date	Revised Date	Date Completed
18	Review RBS production and stocking plan for NAPI ponds and CPM production and stocking plan	1/26/2009	BC	2/18/2009		
19	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	
20	Distribute Standard format for recording fish capture data	2/20-21/08	Program Office	5/15/08	5/15/08	5/15/08
21	Pursue NNF Stocking Procedures for SJR Basin	2/20-21/08	McAda lead	11/5/08		
22	Provide verbal report on Bestgen’s population estimate work at fall meeting. Re-send scope of work to BC.	2/20-21/08	Bestgen/McKinstry	11/5/08		11-5-08
23	Develop CPM Augmentation plan and revised RBS Augmentation plan	5-7-08	FRO/Program Office	11/30/08	5/13/2009	
24	Complete IDIQ contract and award	5-7-08	McKinstry	11-08	May 2009	
25	Develop proposal for new study - Mechanical Augmentation of Flow Effectiveness	5-7-08	Program Office/TNC	11/5/08		1/1/2009

**BIOLOGY COMMITTEE ACTION ITEM LOG**

(Updated January 27, 2009)

Item No.*	Action Item	Meeting/Origination Date	Responsible Party(s)	Due Date	Revised Date	Date Completed
26	Standardize habitat categories	7-28-08	Paroz/Habitat Mappers	11/5/08	Feb 2009	
27	Submit proposal on backwater/secondary channel construction to NMDEQ	7-28-08	McKinstry	6/12/08		6/12/08
28	Develop RFP for Data Integration and send to BC for review/input	7-28-08	Program Office/McKinstry	11/5/08	2-18-09	
29	Send objectives identified in San Juan River Monitoring Plan and Protocols to BC for review. BC identify important questions that need to be answered by the monitoring program	7-28-08	Program Office/BC	11/5/08	2-18-09	
30	Develop preliminary fish/habitat monitoring workshop proposals	7-28-08	Program Office/McKinstry	11/5/08	2-18-09	
31	BC provide comments on RBS and CPM Recovery Goal Revisions. Holden will compile and resend to BC for review by August 29 to meet FWS submission deadline of Sept. 2	7-28-08	Holden/BC	8/22/08	8/22/08	8/22/08
32	Provide specifics of selenium sampling procedures and analysis	11-5-08	Bliesner	2/18/2009		

## BIOLOGY COMMITTEE ACTION ITEM LOG

(Updated January 27, 2009)

Item No.*	Action Item	Meeting/Origination Date	Responsible Party(s)	Due Date	Revised Date	Date Completed
33	Produce a list of questions based on LRP and monitoring plans to guide monitoring workshops	11-5-08	Bliesner			
34	Provide report on Bestgen's results of population estimate study	11-5-08	Bestgen	2-18-09		11-5-08
35	Update on investigations into floating/stationary PIT tag detectors	11-5-08	McKinstry	2-18-09		
36	Develop a detailed outline for San Juan River Recovery Program case history manuscript	11-5-08	Propst and Miller			
37	Coordinate with staff GIS specialist to produce updated field maps (20 sets)	11-05-08	Program Office	March 2009		
38	Update on feasibility of a fish passage barrier in the lower portion of the river	11-05-08	McKinstry			
39	Update on NMED RERI project	11-05-08	McKinstry			

\* Items were re-numbered after changes were made