



**Final Summary**  
**San Juan River Basin Recovery Implementation Program**  
**Biology Committee Meeting**  
**Farmington Civic Center 18-19 February 2009**

**Attendees**

**Biology Committee Members:**

Bill Miller, Chair – Southern Ute Tribe  
Paul Holden – Jicarilla Apache 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  
Yvette Paroz – 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 Office – U.S. Fish and Wildlife Service, Region 2:**

David Campbell  
Sharon Whitmore  
Scott Durst

**Interested Parties:**

Brandon Albrecht – Bio-West  
Ernesto De la Hoz – Bio-West (1<sup>st</sup> day)  
Steve Cullinan – U.S. Fish and Wildlife Service  
Marilyn Myers – U.S. Fish and Wildlife Service

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Michael Farrington – American Southwest Ichthyological Researchers

Steven Platania – American Southwest Ichthyological Researchers

W. Howard Brandenburg – American Southwest Ichthyological Researchers

Ernest Teller – U.S. Fish and Wildlife Service

Darek Elverud – Utah Division of Wildlife Resources

Viola Willeto – Navajo Nation Department of Fish and Wildlife (1<sup>st</sup> day)

Dale Ryden – U.S. Fish and Wildlife Service

Bobby Duran – U.S. Fish and Wildlife Service (1<sup>st</sup> day)

Weston Furr – U.S. Fish and Wildlife Service (1<sup>st</sup> day)

Warren Vigil – Jicarilla Nation (1<sup>st</sup> day)

Amy Kraft – Southwestern Water Conservation District

Michael Howe – Bureau of Indian Affairs – NIIP (1<sup>st</sup> day)

Steve Lynch – Bureau of Indian Affairs – NIIP

Steve Whiteman – Southern Ute Indian Tribe (2<sup>nd</sup> day)

Michael Francis – Bureau of Reclamation (2<sup>nd</sup> day)

Kevin Bestgen – Larval Fish Laboratory – CSU (via conference call on 2<sup>nd</sup> day)

## **18 February 2009**

### **Introductions; Changes to agenda; Approval of 26 January conference call summary:**

- Update of the Program Database added to agenda on 2<sup>nd</sup> day.
- Action Item Log revised and completed dates updated.
- 26 January 2009 conference call summary approved.

### **Project Updates:**

#### **Colorado pikeminnow and razorback sucker augmentation in the San Juan River 2008 – Weston Furr:**

##### Highlights:

- Year-to-date stocking goals for Age-0 and Age-1+ CPM are under target by 1% and over target by 200%, respectively.
- ~ 270,000 Age-0 CPM were soft released in November 2008 at RM 166.6.
- 2,057 Age-1+ CPM were soft released in April 2008 at RM 134.9.
- 2,800 Age-1+ CPM were released into hard and soft releases in October 2008 at RM 133.5 and RM 134.3, respectively.
- 47,675 RBS stocked between 2002 and 2007, but only 4,444 in 2008 (39% of target). These fish were from NAPI-Hidden Pond and Dexter. If Uvalde receives a clean health inspection, stocking goals in 2009 should be met.
- No fish are being stocked above PNM (~14 miles of critical habitat for CPM) primarily due to the lack of tempering sites in that reach.

##### Discussion:

- There is some uncertainty if the 8-year stocking goals still hold for RBS and when the 8-year clock should start. 2009 is the last year of the original 8-year plan but stocking goals were not being met until the last couple years.

Approved July 20, 2009

- Uvalde will have numerous large RBS to stock in 2009. Could test hypothesis that bigger fish have higher survivability.
- Stocking goals are based on achieving total population numbers detailed in the Recovery Goals (800 CPM, 5,800 RBS). Ross suggested describing the basis for the stocking goals up front and the implications for exceeding them or not meeting them.
- Davis suggested that the Program Office provide a summary of rare fish recaptures.
- The group agreed that the scheduling for stocking is appropriate in relation to the other monitoring programs.
- Replication is needed to determine the effect of hard vs. soft releases.

#### **Colorado pikeminnow and razorback sucker larval fish monitoring – Michael Farrington:**

##### Highlights:

- Heavy releases from Navajo Dam suppressed water temperatures and pushed spawning to later in the year.
- No larval fish were collected in April (Trip 1), first larvae were caught in May (Trip 2) primarily from McElmo Creek (RM 100.5) downstream, and numerous larvae were caught throughout the study reach (RM 141.5 - 2.9) during Trips 3 and 6 (June-September). In 2008 no CPM larvae and 126 RBS larvae were detected.
- McElmo Creek is important for larval catostomids and RBS have consistently hatched at 10°C for the last 6 years.

##### Discussion:

- How do the patterns observed in the larval fish sampling relate to habitat quantity and quality, flow, and temperature conditions?
- Given the number of adult CPM in the system, how many larval CPM should we expect to see? It is likely that there are not enough fish in the system to be able to detect them.
- Recommended that a summary slide of results be included in this and all presentations (e.g., temperature consistency for hatching, RBS numbers not increasing over time, drop off between larval stages over time)

#### **Small-bodied fish monitoring 2008 – Yvette Paroz:**

##### Highlights:

- No YOY CPM, RBS, or RTC were collected in 2008.
- Native species use a variety of habitats and are mainly found in upper reaches. Reach 6 (RM 155-180) is a stronghold for YOY native fish.
- Native species dominate primary and secondary channels but non-native fish dominate backwaters.

##### Discussion:

- Concern about lack of YOY RBS considering larval RBS are being caught.
- Are there issues with habitat sample bias or sampling efficiency? Adult suckers are numerous, so why are the small-bodied suckers not numerous in this sampling?
- During the workshops in April it will be important to compare different sampling techniques and see what is most effective.

- Suggested use “habitat association” instead of “habitat preference.”

**Sub-adult and adult large-bodied fish community monitoring – Dale Ryden:**

Highlights:

- Stocked CPM are relatively common but scaled CPUE for fish retaining for 1+ overwinter period has not changed. CPM Age-4+ are not encountered. In 2008 207 CPM were collected.
- Stocked RBS are relatively common but scaled CPUE for fish retaining for 1+ overwinter period has not changed. In 2008 78 RBS were collected.
- CPUE of flannelmouth and bluehead suckers have not changed significantly over the last 10 years. Caught first roundtail chub since 2002, YOY catfish were abundant in 2007 and 2008 after 4 years of fewer captures. Only 94 carp in 177 miles of sampling.
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Discussion:

- Are the older fish in the system? Could they avoid electrofishing at ~Age-3+.
- After high flows, channel catfish may redistribute back to upper reaches.
- How do we go about detecting older CPM?
- The objectives of this study might need to be revised during the workshop.
- Recommended that a summary/wrap-up slide is needed at end of all presentations at annual meeting. This wrap up would include Ryden’s conclusions.

**Hydrology, habitat, geomorphology, detailed reach habitat use – Ron Bliesner; Ernesto De la Hoz:**

Highlights:

- Flow Recommendations were met for all conditions except 10,000 cfs (only missed by one day) and there were fewer than 10 days where flows were less than 500 cfs in 2008.
- By 2007, backwater area had decreased by 67% from the 1993-1995 average. The area of low velocity habitats like pools and eddies has decreased by 60%. In terms of habitat complexity, there has been a 12% loss of islands and a 10% loss of total wetted area. 2007 ended the driest 10-year period on record and 2008 was slightly wetter. The loss of habitat and complexity may be related to the drought.
- In 2008, the two original detailed reaches (DR 82 and 137) were sampled and a third reach (DR 131) was added to increase the probability of capturing Colorado pikeminnow and increase sample size.
- There was a loss of 6620 m<sup>3</sup> of material in DR 82 and 7439 m<sup>3</sup> in DR 137 in 2008.
- Habitat categories were collapsed resulting in 17 wet and 8 dry categories (previously there were 33 and 9, respectively).
- Sufficient CPM were captured in March and August to show habitat selection. In March, CPM appeared to be selecting backwaters, embayments, and pools; while in August CPM selected cobble shoals, eddies, and riffles. Small CPM selected habitats more consistent with those selected in March and larger fish selected those in August.
- GPS capture locations of endangered fish from nonnative fish removal efforts were correlated with river-wide habitat mapping and movement patterns were also explored.

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- In the habitat selection study, RBS selected habitat that contained runs, riffles, and islands. CPM selected habitats with islands.

Discussion:

- For the habitat selection study, using total number of fish captured instead of total number of seine hauls (i.e., not counting multiple fish caught in the same haul) could skew results. It is important to define the appropriate sampling unit to obtain meaningful results.
- Small and large-scale habitat mapping need to be comparable and conducted at the appropriate spatial and temporal scale. Need to find an indicator that can be quickly and easily used to evaluate habitat conditions.
- Flows above 6,000-8,000 cfs do not affect the main channel but provide for clearing in the secondary channels.

**Non-native species monitoring and control in the upper San Juan River, New Mexico: 2008 – Jason Davis:**

Highlights:

- Reduced abundance of catfish overall and reduction in the highest priority removal reach from Shiprock to Mexican Hat. Carp are uncommon riverwide.
- Response of native fish to non-native removal effort is difficult to determine.
- Rare fish are detected near stocking areas.

Discussion:

- Discussed shifting effort from earlier trips to later trips in July-August when catch rate is higher to remove more non-native from the system.
- Since there does not appear to be a large-bodied native fish response to non-native removal, would it be better to examine the response of another fish like dace since small fish may be more important drivers of the system?
- Because stocked RBS seem to have site fidelity, may need to spread out stocking locations to avoid overcrowding.

**Nonnative control in the lower San Juan River – Darek Everud:**

Highlights:

- Increased mean length and adult CPUE for catfish and continued reduction of mean length and CPUE for carp.
- Increased CPUE for CPM.

Discussion:

- Would more trips below the waterfall be beneficial? The BC thought that this would not be productive.

**Operation of the Nenahnezad fish passage structure – Albert Lapahie:**

Highlights:

- Small numbers of CPM and RBS have been documented using the passage from June to October.
- Flannelmouth and bluehead suckers account for about 90% of all fish using the passage while catfish and carp make up about 5% of the total.

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- Some records of white sucker and flannelmouth or bluehead sucker hybrids. These hybrids have not been detected in other projects, so the passage could be an important location to monitor for potential white sucker and RBS hybrids.

Discussion:

- How to deal with sedimentation issues that close the passage?

## **19 February 2009**

### **General Comments from Presentations:**

- Ross summarized the Peer Reviewers comments from the previous day's presentations: overall the presentations were good and much improved over last year; the take home messages were clear and this allowed the Peer Reviewers to integrate across talks.
- Ross cautioned against over interpretation of data and the importance of keeping the audience in mind for the May meeting.
- Consider doing a peer-reviewed document/wrap-up on value of habitat complexity since this is well documented and then move on other questions.

### **Operation of Navajo Dam – John Pitlick:**

- Need to understand the hydrology of the system to allow dam operations to mesh with the Animas flow to achieve flow recommendations. Modeling tools are available to plan for dam releases to coincide with Animas flows: USGS Precipitation-Runoff Modeling System (PRMS) has been used by George Leavesley on the Animas for the last 10 years and NOHRSC Snow Model Physics can be used to calculate daily snow water equivalent.
- The Recovery Program should promote Reclamation to use these new tools to predict snowpack/Animas River peak for more flexible operation Navajo Dam. These new models would be an improvement over the outdated methods, like multiple linear regression and Ensemble Streamflow Prediction, currently being used for dam operations. Program Office will contact Katrina Grantz and Pat Page to inform them of these tools.

### **Preliminary analysis of hatchery-reared razorback sucker in the San Juan River – Kevin Bestgen (via conference call):**

Highlights:

- Bestgen updated length data to include more fish in the analysis with this covariate. First year survival was 13-15% and post-first-year survival was 77-80%.
- These are just preliminary estimates that will be revised with the new analysis that will be completed by the April workshops.

Discussion:

- Higher first year survival compared with the Upper Basin might be due to stocking larger fish in the San Juan River. Large fish from Uvalde could provide survival information for larger fish based on their eventual recapture histories.
- Is there a way to account for effort in the detection probability parameter? Davis, Ryden, and Everud will coordinate to come up with this metric.

- Stocking source might be confounded with season or other variables. Season and year should be analogues for other variables such as flow and turbidity. More effort needs to determine the scale of importance of stocking source, e.g. NAPI Ponds as a whole or each pond as a stocking source?
- For the April workshops, Bestgen asked for specific questions/direction of interest from the BC so he can be responsive to the BC's data needs.

**Logistics for May Annual Meeting:**

- BC meeting on 13 May, annual meeting with presentations on 14 May, CC meeting on 15 May. Peer reviewers should be available on 13-14 May. Individual presentations should be 15 minutes followed by 5 minutes for questions with longer, periodic 30 minute sections for questions and discussion. Handouts should be provided for each talk (submit talks to Program Office in week prior to meeting).

**Monitoring Workshops Planning:**

- Discussions of the monitoring workshops brought up numerous questions that should be addressed prior to and during the workshop: (1) what are the goals and objectives of the current monitoring protocols? Are the goals and objectives established in the past still applicable? What do we want to accomplish with the monitoring? (2) How can current and revised monitoring protocols be evaluated to determine their effectiveness? (3) What data does the Program need to be collecting and what needs to be changed to collect this data? (4) Where is the Program relative to Recovery? Do we have the data to address progress toward Recovery? What is this data? (5) What are the habitat requirements for each life stage? Are we picking up rare species in these habitats? (6) Are there bottlenecks at some life stages limiting rare fish populations? (7) What kind of habitats are expected to be impacted by flows? Are these habitats limiting, and if not what factors besides physical habitat are limiting? Are there flow or habitat actions that would help maintain fish in the system that are lost to drift? (8) Does integration need to happen before the workshop occurs? (9) Is it possible to track the different life stages of a common species like flannelmouth sucker to follow cohorts forward and backward in time? If this cannot be done with a common species, how likely is it that it would be possible for a rare species? Could there be other factors that limit our ability to track cohorts through time?
- Important recommendations for the workshops include: (1) the need for all fish monitoring efforts to be integrated, from larval, to small bodied, to adult monitoring; (2) habitat and fish populations need to be correlated; (3) the importance of determining other research elements that influence rare fish, like non-native removal; (4) the need to focus on a handful of questions related to rare fish and their habitats; (5) the goals and objectives of the monitoring program may need to be reconciled with the fact that rare fish are difficult to detect in the San Juan River; (6) annual integration of data and flow recommendation revision should drive the analyses that need to be addressed during the workshop; and, (7) the need to get all the available reports and data on the website so it can be reviewed by workshop participants.

- Two-day workshops will be scheduled 6-8 April and 27-29 April. For the first April workshops each researcher should present what they know about RBS from their study, the objectives of the study, and what is missing in their knowledge base. This can be done in the context of a life history framework where the critical life history elements of each species are presented with each researcher filling in specific details of their project. Experts will be brought in along with facilitators to direct the workshop. Some suggested experts included Lew Coggins, Kevin Bestgen, Rich Valdez, and Gordon Mueller. The second workshop will focus on CPM.
- The Program Office will update the San Juan website to include annual reports to provide background for the workshops

#### **ALP “Bass-o-matic” draft study design – Michael Francis:**

##### Highlights:

- The sleeve valve is intended to cause mortality on fish (of all life stages) that pass through it. The sleeve will be tested by injecting fish above and below the sleeve as a control and treatment. Mortality and injury will be characterized for treatment and control fish.

##### Discussion:

- The critical issue to test is that the sleeve causes 100% mortality of fish, embryos, larvae, and eggs that pass through it. Any non-native fish passing through the sleeve and invading downstream constitutes a failure of the sleeve.
- The species of non-native fish that will be stocked into the reservoir needs to be clarified.

#### **Non-native Fish Stocking:**

- McAda discussed the draft San Juan Basin non-native stocking procedures he provided. The procedure for the San Juan Basin would be the same as the Upper Basin non-native stocking procedures. Non-salmonid stocking will occur with other measures in place to prevent escapement. Non-native stocking procedures in the San Juan Basin would involve the States, Fish and Wildlife Service, and Tribes. Morgan Lake appears to be the only reservoir in the Basin where non-salmonid stocking is occurring and the Program may want to consider funding fish screens. Nighthorse Reservoir could potentially be the second non-salmonid fishery. There was question that there would be no non-native fish stocking in Navajo Reservoir.

#### **Program Office Update:**

- The PIT tag database for CPM and RBS has been completed. Program data will need to be up-to-date and accessible for the workshop effort. Data that has been previously sent to the Program Office may need to be sent again. The Program Office will inventory the state of the current data and send a request for past and additional data as necessary.
- The Program Office is creating an annual tick-list of workflow tasks that regularly occur for the SJRRIP Program. This workflow list is a work in progress.
- The Long Range Plan is at the same status as the last time it was viewed by the BC. The Program Office is incorporating comments from the water users and the BC. An updated, revised LRP will be reviewed by the committees annually.

*Approved July 20, 2009*

- The 2010 SOWs are due by the end of March. They should be submitted as usual but expect change after the workshops in April.
- The IDIQ contract is in review and will go out as RFP.

**Capital Projects:**

- PIT tag antenna and antenna at waterfall (McKinstry will send an update after the field trip).
- The CC will decide if a lower river fish barrier should be investigated further. Liesa Monroe for Utah Department of Natural Resources is scheduled to present on a floating weir as a possible means for non-native fish removal at the May annual meeting.
- Follow-up is needed on the status of APS and Fruitland fish passages. The final design for Hogback weir wall is done and the O&M contract is being negotiated. Reclamation expects construction will begin in 2009.

**Schedule of Meetings for 2009:**

- CC meeting in Ignacio, CO; 26 February.
- Fish and habitat monitoring workshops at NMESFO in Albuquerque, NM; 7-8 April and 28-29 April.
- American Fisheries Society – Western Division meeting in Albuquerque, NM; 3-7 May. SJRRIP participants are encouraged to attend and present.
- SJRRIP Annual meeting in Durango, CO; 13-15 May.
- Conference call or possible 3<sup>rd</sup> workshop, 29-30 June.
- Fall meeting in Farmington, NM; 4-5 November.

BIOLOGY COMMITTEE ACTION ITEM LOG						
(Updated February 18, 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		
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 February 18, 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	Develop Colorado pikeminnow production and stocking Plan	5-7-08	Davis/Program Office	11/30/08	2/15/2009	3/2/2009
14	Review RBS production and stocking plan for NAPI ponds and CPM production and stocking plan	1/26/2009	BC	2/18/2009	RBS – 2/28/09; CPM – 4/3/29	
15	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	
16	Pursue NNF Stocking Procedures for SJR Basin	2/20-21/08	McAda lead	11/5/08	2/18/09	

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Item No.*	Action Item	Meeting/Origination Date	Responsible Party(s)	Due Date	Revised Date	Date Completed
17	Revise CPM and RBS Augmentation Plans	5/7/08	FWS Fisheries/Program Office	11/30/08	5/13/2009	
18	Complete IDIQ contract and award	5/7/08	McKinstry	Nov. 2008	May 2009	
19	Standardize habitat categories	7/28/08	Paroz/Habitat Mappers	11/5/08	Feb 2009	2/18/09
20	Develop RFP for Data Integration and send to BC for review/input	7/28/08	Program Office/McKinstry	11/5/08	5/13/09	
21	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	2/18/09
22	Develop preliminary fish/habitat monitoring workshop proposals	7/28/08	Program Office/McKinstry	11/5/08	2/18/09	2/18/09
23	Provide specifics of selenium sampling procedures and analysis	1/26/09	Bliesner/Osmundson	2/18/2009	5/13/09	
24	Produce list of questions based on LRP and monitoring plans to guide monitoring workshops	1/26/09	Program Office/Miller	2/18/09		2/18/09

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BIOLOGY COMMITTEE ACTION ITEM LOG						
(Updated February 18, 2009)						
Item No.*	Action Item	Meeting/Origination Date	Responsible Party(s)	Due Date	Revised Date	Date Completed
25	Provide report on Bestgen's results of population estimate study	1/26/09	Bestgen	2/18/09	4/6/09	
26	Update on investigations into floating/stationary PIT tag detectors	11/5/08	McKinstry	2/18/09		2/18/09
27	Develop a detailed outline for San Juan River Recovery Program case history manuscript	11-5-08	Propst/Miller			
28	Coordinate with staff GIS specialist to produce updated field maps (20 sets)	11-05-08	Program Office	March 2009		
29	Update on feasibility of a fish passage barrier in the lower portion of the river/floating weir.	11-05-08	McKinstry			2/18/09
30	Update on NMED RERI project	11-05-08	McKinstry		5/13/09	
31	Update annual reports to San Juan website	2-19-2009	Program Office	4/7/2009		

\* Items were re-numbered after changes were made