



Final Summary
San Juan River Basin Recovery Implementation Program
Biology Committee Meeting – Farmington, NM
4-5 November 2009

Attendees

Biology Committee Members:

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

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

David Campbell
Sharon Whitmore
Scott Durst

Interested Parties:

Edward Bullach – San Juan Soil Conservation District and San Juan Watershed Woody Invasives Initiative
Darek Elverud – Utah Division of Wildlife Resources
Mike Farrington – American Southwest Ichthyological Researchers
Amy Kraft – Southwest Water Conservation District
Steven Platania – American Southwest Ichthyological Researchers
Steve Lynch – Bureau of Indians Affairs, Farmington, NM (only 4 November)

Introductions; Changes to agenda:

- PIT tag antenna project funding (McKinstry)

- Desert Rock Energy Project update (Campbell)
- Annual cycle of Program activities (Whitmore)

Approve 8 September 2009 conference call summary:

- In the Action Item log, the Non-native Fish Stocking Procedure is beyond the level of the Biology Committee and was removed from the list. The IDIQ contract and award was removed from the list. The specifics of the selenium sampling and the case history manuscript are both “on hold.”
- The summary from the 8 September conference call was unanimously approved with these edits.

Coordination Committee revision to Program Document:

- Changes to the Program Document will be reviewed during a Coordination Committee conference call on 10 November.
- Notable changes include the elimination of the Hydrology Committee but retain a mechanism to call for hydrology related meetings once or twice a year to address specific issues. The Service and Reclamation will work together to ensure important work related to hydrology is being accomplished.
- The role of the Biology Committee in reviewing and recommending Annual Work Plans that was used in 2009 will be implemented into the Program Document.
- Wording will also be included that membership on the Coordination Committee and technical committees will be mutually exclusive.

Desert Rock Energy Project update:

- The draft Biological Opinion for the 2 year consultation for the Desert Rock Energy Project is on hold. Results of the recent contaminants analysis by FWS will be presented to the Biology Committee during the January meeting.
- The mercury contaminant level in Colorado pikeminnow is considered 60-80% reproductive impairment. At full NIIP build-out, selenium contamination in razorback sucker will be considered 60-80% reproductive impairment. Note that the reproductive impairment is hypothetical impairment that errs on the side of caution for the species. A reinitiation of the NIIP consultation will occur because the RPAs are not being implemented. The discrepancy between a direct link in water quality and selenium contamination will need to be sorted out.
- The Biology Committee formally requested the data from the FWS contaminants analysis along with the relevant literature review for their review. This will be provided to the Biology Committee on CD or DVD by the end of November.

Monitoring workshop discussion – Research and Information Needs document:

- The group reviewed “SJRIIP Information and Research Needs 10-23-2009.doc” that was developed by Mckinstry, Ryden, Brandenburg, and Durst. The sub-group broadly categorized outstanding research questions from the workshop into a logical/organized format with link questions and comments under the same heading. The document was organized under “Lake,” “River,” “Water quality,” and “Intractable” headings.

- Within the major headings of the document there was a large degree of cross-over among the questions that could allow for multiple questions to be addressed under a single SOW. The importance of highlighting the questions that are critical for recovery was reiterated. We need to separate the “need to know” questions from the “nice to know” questions.
- Other issues were discussed prior to examining each question: the risk of oversampling fish on spawning bars; doing work in Lake Powell if it’s not part of recovery; the difficulty of sampling fish in Lake Powell; the need for sufficient numbers of wild adults in the system to be able to answer some of these questions; how will the group prioritize these questions given limited funding; and the possibility of looking for other sources of funding to explore some of these questions.

San Juan River Questions:

- Spawning locations and habitat? The BC largely has data to answer this question. There is adequate spawning habitat for both species. Spawning habitat should be periodically assessed but tracking fish is not currently a priority.
- Nursery and backwater habitats? Colorado pikeminnow nursery habitat has been well documented and is in low abundance. Data documenting razorback sucker nursery habitat is limited but it is also thought to be in low abundance. The persistence of backwater habitats appears to be an issue for razorbacks; fish are not being retained in backwaters so they can reach sizes to avoid being displaced from the system. There are not enough backwaters to retain fish. Backwater habitat data should be available to investigate these questions. Nursery and backwater habitat questions can be addressed by integrating existing data and by continuing to collect monitoring data. There could be some changes to the larval monitoring protocol to better track habitat availability and persistence. Once these questions are addressed are there management actions that could rectify the lack of these habitats?
- Juvenile fish habitat needs? Many pikeminnow are captured in this size range but razorbacks are not captured in the San Juan or any other system in this size class. Data exists to address this question for pikeminnow. For razorback, need to determine if habitat is limited or if number of adult fish reproducing in system is limited. Option of stocking many fish in the 150-200 mm size class to track habitat use.
- Role of constructed backwaters? We currently do not know enough to be able to answer this, although the process could be started with a feasibility or white paper study. Capital funds could be used for construction. The issue of maintaining these kinds of facilities and non-native fish moving into these backwaters remains a question. The Upper Basin should have information to inform backwater construction in the San Juan.
- Improve stocked fish survival? The Program is already addressing this through the augmentation program.
- Number of stocked adult fish in the system? The data to address this is already being generated. Addressing this question could be part of the integration effort.

- Are rare fish recruiting into the adult population? This question is addressed with current monitoring efforts.
- Are flow recommendations appropriate for recovery? Some data exists to address this. This analysis could be part of an integration effort. All the hypotheses for a biological response to flow recommendations could be gathered from monitoring protocols to address this. Could water be managed for different life stages of fish? Since flow is a surrogate for many covariates, it could be used to evaluate a biologic response.
- Non-native fish removal effort in capturing rare fish? Since non-native removal effort contributes to monitoring data, if there is any change to the non-native removal effort the monitoring protocol should be assessed to determine if a revision is necessary to account for any river-wide change in rare fish sampling effort.

Lake Powell:

- Does Lake Powell provide suitable habitat for the endangered fish? Razorback sucker have been detected in Lake Powell. In Lake Mead there is a self sustaining population of razorback suckers. Could this also be the case in Lake Powell? Research in Lake Powell would likely need outside resources. A study in Lake Powell could address loss over waterfall, the age-structure of the rare fish population, and determine if these fish are reproducing. If there is any work done in Lake Powell it should happen in an integrated fashion that allows for as many questions to be answered as possible and also use past studies to inform any effort in the future in the San Juan arm of Lake Powell.
- What is the loss of fish over the waterfall? This could be incorporated in an SOW addressing the first Lake Powell question. After determining the degree of loss over the waterfall, are there management actions that would be relevant for recovery? Could any work at the waterfall be tied to fish passage money? Any work in Lake Powell should be done in a step-wise fashion first determining loss over waterfall and then determining the habitat, population, and reproduction in the lake.

Water Quality:

- Is water quality a limiting factor for the endangered fish? Address this with a lab/field study in conjunction with other Colorado River Recovery and Conservation Programs. FWS will distribute data and literature review from recent contaminants study to BC. BIA has not conducted biological monitoring related to water quality issues so NIIP needs to go through reconsultation to deal with the contaminant sampling. Current BIA water quality reports are submitted to FWS but are not distributed to the BC. The questions and methodologies to address contaminant monitoring need to be further developed.

Other Questions:

- Effect of sampling on endangered fish? This has been evaluated by Landye in the San Juan and Darrell Synder in the Upper Basin.

- Rare fish sex ratio? Use Crowl's model from the Upper Basin and apply it to the San Juan. This is not a priority.
- Predation on rare fish? The target catch rate for non-native fish in different size classes and the target of non-native fish to remove from the system can be addressed in the next workshop.
- Larval protocols that link fish and habitat data? This should be addressed through current monitoring.
- Monitoring habitats necessary for all life stages? This is already being addressed in current monitoring.
- Rare fish natural reproduction? The larval monitoring protocol documents rare fish reproduction in the San Juan River so additional studies are not needed at this time.
- Define the fish/habitat relationship? This can be addressed with existing data. Does the San Juan have the habitats to sustain the number of fish needed for recovery? No new study is needed to address this.
- Conduct population estimation workshop? We need more fish in the system to be able to do this in the future when monitoring indicates that there are enough fish in the system to make the effort productive.

Monitoring workshop discussion – Develop integrated monitoring plan and protocol:

- These documents use the format of the Souchon et al. 2008 paper that was previously distributed.

Larval:

- Monitoring larval razorback sucker habitat availability has been added as an objective to this protocol. Determining available larval habitat is difficult because not all backwaters are sampled due to time constraints. The persistence of these habitats is related to flow and should be evaluated within and between years. Shore runs might be underused habitats for larval fish.
- The data to address larval monitoring habitat questions are being collected in the current effort. The habitat needs, habitat quality, quantity, and persistence can be answered with current monitoring effort.
- The loss of larvae from the San Juan can be estimated using older studies like the bead study and with current data. The number of larvae retained in the system and number of fish needed for successful recruitment can be addressed with more data analysis.

Small-bodied and juvenile:

- Regression analysis can be used to evaluate the response of native and non-native fish to different flow regimes and other management actions.
- Outstanding questions include: Can more age-0 razorback be collected by shifting the timing of sampling? Are the numbers of samples collected in small-bodied monitoring appropriate (400)? Colorado pikeminnow "hunting" is an effective way to pick more fish although this would deviate from the existing protocol. Should sampling occur with

respect to habitat availability or in those habitats with the greatest likelihood of detecting fish? The methods used in this protocol are appropriate for detecting common species in this size class. No changes in method would improve this protocol.

- Shortening the sampled area to focus on key reaches is most efficient way to conduct small-bodied monitoring.

Large-bodied:

- Options to change the protocol include shortening the reach sampled, sampling alternate years, or some other sub-sampling technique. With less temporal effort catfish and rare fish data would be lost. It's possible to replace data with changes to spatial monitoring but not changes to temporal monitoring. Sample areas of the river that are the most productive and are contiguous with other productive sections of river.
- Changes to any monitoring protocol should not impact any other monitoring protocol. Similar metrics need to be used across protocols to be able to track year-classes.
- Need to look at existing data to determine how changes to spatial or temporal monitoring would impact the conclusion that have been reached in the past.

Habitat:

- Biological contaminant monitoring needs to be included as an objective for habitat monitoring. It will be important to determine the degree of impairment for different contaminant loads. Documenting razorback sucker nursery habitat available during spring runoff could be done with either habitat or larval monitoring programs. The pros and cons of the making this assessment with either of the two protocols needs to be determined. The relationship between habitat availability and antecedent flows needs to be done for key habitats every year.
- Need to use existing data examined at different temporal frequencies to see if conclusions reached in monitoring would change if sampling was conducted at some other frequency. Sampling habitat less frequently should not change the conclusion of the monitoring because habitat changes relatively slowly.
- Data integration effort can examine the GPS data collected from large-bodied and non-native fish removal projects and habitat data to address some habitat use questions. How do changes in wet versus dry years influence the speed of habitat change and non-native vegetation? Need to ensure that simplified mapping terms are being uniformly applied since post-processed data does not yield the same results.

Recovery Science Biologist:

- This position was posted on 4 November and will be open for three weeks. Miller, Propst, and Wesche volunteered to sit on a committee to assist with interviewing candidates for this position.

Monitoring workshop discussion – Integration analysis:

- Many of the questions brought up in this document have been covered in earlier monitoring workshop discussions. These questions can be addressed through the data integration effort and the new position that will be hired out of the Program Office. The BC will assign data integration and technical support tasks to this new position.
- In order to develop a better picture of what is happening on the San Juan, the Program needs to integrate better with outside groups like the watershed water quality groups, non-native vegetation groups, Upper Basin Program, Lower Basin MSCP, and Glen Canyon. Now that the Program Office has more staff, meetings and interactions with some of the watershed groups are starting to happen.
- A review of literature from the Upper Basin would be important to find answers to outstanding questions on the San Juan and avoid possible duplication of efforts. Habitat is not limiting in the Upper Basin so it has not been investigated there. It is possible that the San Juan functions like the Yampa River in the Upper Basin, an “adult” river where nursery habitat occurs elsewhere.
- Long-term monitoring should be let go if it does not benefit recovery of the endangered fishes. Any changes to SOWs need to occur soon in order for activities to be ready for FY2011.
- When does the Program make the transition from CPUE to population estimates? Ryden came up with adult monitoring targets to start population estimation based on recovery goals. Should detecting regular recruitment be a trigger to start population estimates?
- Durst was assigned the task of developing a draft of what triggers are necessary to shift from CPUE sampling to sampling needed for population estimates.
- Many of the questions in this document can be incorporated into integration and the Program is already making progress on many of these questions. Priority question will need to be developed once the Recovery Science Biologist position is filled.

Monitoring workshop discussion – Preparation for 13-14 January meeting:

- Miller and McKinstry volunteered to work to bring the monitoring documents together from this meeting for the BC to review for the January meeting.
- The January meeting will include a contaminants analysis presentation by FWS so any needed workplan additions could be addressed at the February BC meeting.
- Any changes to the monitoring protocol should be finished so the Peer Reviewers can review documents coming out of the January meeting in time for the February Biology Committee meeting.

Non-native fish workshop in 2010:

- We should model the San Juan non-native fish workshop after the Upper Basin’s workshop and conduct a review of non-native fish literature from the Upper Basin.
- Topics and objectives of the workshop include developing removal objectives, review of removal techniques (including piscicides and channel catfish virus), how do we look for effects of non-native removal, influence of flow regime on non-native fish, determining the level of predation on rare fishes.

- The workshop should include outside reviewers but not an outside moderator. Suggestions for reviewers included Pat Martinez, Wayne Hubert, and John Pitlo. The Program Office will take the lead in contacting possible reviewers.
- Propst brought up David Ward's paper in Freshwater Biology as something for the BC to review.
- What are the public relation benefits of putting non-native fish in recreational ponds versus banking them? Are there things we can learn from catfish commercial fisheries? Non-native fish as source of fertilizer?
- The San Juan Program should be proactive in considering the threat of small mouth bass, northern pike, and white suckers.
- The workshop will be 26-27 May 2010 in Albuquerque with anticipated outcomes of non-native fish targets, response of native fish, information sharing, public perception, and historical review of non-native fish removal in the San Juan.

Long Range Plan discussion:

- The Program Office will revise the document including separating completed tasks and removing redundancy. The Program Office will distribute a revised draft to the BC by 15 January.

Review draft annual SJRIP cycle:

- The group review a draft distributed by Whitmore. The intent of the document is to codify regular actions conducted by the Program on an annual basis. Whitmore will incorporate revisions and distribute a new draft for comment.

Augmentation goals:

- Durst presented some analysis on returns of age-0 versus age-1+ Colorado pikeminnow. It appears that the return rates of age-0 pikeminnow are greater than older fish stocked into the San Juan. Durst was assigned the task of presenting a more formal analysis and rationale of this along with hatchery costs and distributing to the BC.
- Can we figure out why some years are good for pikeminnow recruitment? Clear water and high productivity. There does not appear to be a way to stock fish when environmental conditions are appropriate for better recruitment.
- The group discussed when the clock should start for the razorback sucker augmentation plan. The group suggested that the stocking effort be separated in Phase 1 covering action up to now and Phase 2 for future stocking.

Hogback Diversion Weir:

- Efforts to construct the diversion weir are currently stalled because the Hogback Diversion and Weir have been rolled into a single consultation that brings up issues with selenium that would have to be addressed.

Uvalde razorback sucker stocking dates:

- The winter season stocking effort will include tagging the fish in mid-January and stocking in mid-February. Because of the effort involved in tagging the hatchery will issue a call for help with this effort.
- Additional stocking news reported by the States of Colorado and New Mexico include stocking round-tail chub in the La Plata, Animas, and San Juan Rivers. There were recently 3,000 unmarked 2-3 inch fish stocked into the San Juan.

CPI:

- Revised budgets should have 0% CPI. Out-year budgets should reflect current funding levels.

Programmatic permit:

- The Program Office is pursuing a permit that would cover all activities that occur under the Program under a single Federal permit. The Program Office will continue to work on this and also explore if a similar State and Tribal permit could cover activities as well.

Non-native fish stocking procedure:

- The document Ryden previously circulated is currently at the state level.
- Nesler indicated that he had editorial changes to the document that he would submit to New Mexico and Tribes.

Outreach opportunities on the San Juan:

- McKinstry informed the group that there is an experiential learning program at Northern Arizona University that does work on the San Juan River between Sand Island and Mexican Hat that could work with PIs in the Program on citizen science projects. The contact is with NAU's Ecological Monitoring Program, Shawn Newell (928-523-8285). They currently do 15-20 trips per year from Sand Island to Mexican Hat and 2-4 trips from Mexican Hat to Clay Hills. Many of the trips are in the spring. They would be interested in assisting the SJRIP in whatever monitoring activities we could have them do and this would not cost the program anything. We would likely have to provide them with any equipment if the work required it.
- Wild River Expeditions also seeks to educate people recreationally using the San Juan and is looking for opportunities to work with PIs in the Program.

PIT tag antenna:

- McKinstry received \$50,000 in funding from the BoR Science and Technology Program to continue to work with the floating antenna setup on the San Juan. This will fund a second test of passively detecting PIT tagged fish with an antenna mounted in a raft. This could also possibly be used to detect fish going over the waterfall by parking the raft in the lower river above the waterfall.
- The RERI money is currently frozen due to State of New Mexico budget issues.

Other issues:

Final 1 February 2010

- Miller will look into holding the January meeting in Ignacio, CO.
- January meeting dates are 13th and 14th.
- February meeting is 23rd and 24th.
- Annual meeting will be week of 10 May.
- Non-native fish workshop will be in Albuquerque 26-27 May 2010.

BIOLOGY COMMITTEE ACTION ITEM LOG

(Updated May 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		PIs 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 May 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	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	
14	Revise CPM and RBS Augmentation Goals	5/7/08	FWS Fisheries/Program Office	11/30/08	Nov 2009	
15	Provide specifics of selenium sampling procedures and analysis	1/26/09	Bliesner/Osmundson	2/18/2009		On hold
16	Develop a detailed outline for San Juan River Recovery Program case history manuscript	11-5-08	Propst/Miller			On hold

BIOLOGY COMMITTEE ACTION ITEM LOG

(Updated May 18, 2009)

Item No.*	Action Item	Meeting/Origination Date	Responsible Party(s)	Due Date	Revised Date	Date Completed
17	Remote PIT tag reader white-paper	BC 13 may 2009	McKinstry			
18	Review Research and Information Needs and other documents from monitoring workshop	11/5/09	BC to Miller and McKinstry	11/20/09		
19	Description of simplified habitat categories for habitat mapping	11/5/09	Bliesner to BC	11/20/09		
20	Interview panel for recovery science biologist	11/5/09	Miller, Propst, Wesche	Dec or early Jan		
21	Develop triggers to switch from CPUE to population estimate approach	11/5/09	Durst	1/13/10		
22	Compare past data analysis under different temporal and spatial regimes to help determine what kinds of changes are appropriate in future protocols	11/5/09	PIs	1/6/10		
23	Assimilate monitoring workshop documents	11/5/09	Miller and McKinstry	1/1/10		
24	Revised LRP for discussion at Feb meeting	11/5/09	PO to BC	1/15/10		

BIOLOGY COMMITTEE ACTION ITEM LOG						
(Updated May 18, 2009)						
Item No.*	Action Item	Meeting/Origination Date	Responsible Party(s)	Due Date	Revised Date	Date Completed
25	SJRIP annual cycle	11/5/09	Whitmore to BC	11/30/09		
26	Revised SOWs with 0% CPI	11/5/09	PIs to PO	11/25/09		
27	FWS contaminants data and literature review and presentation at January meeting	11/5/09	FWS/PO	11/30/09		
28	Non-native fish stocking procedure to States and Tribes	11/5/09	Nesler	12/1/09		
29	Reevaluate stocking goals	11/5/09	Davis, Furr, Durst			
30	Non-native fish workshop planning	11/5/09	PO			
31	Framework for Lake Powell sampling	11/5/09	Ryden and Elverud	1/6/10		

* Items were re-numbered after changes were made