

7 April 2014



**Approved Summary  
San Juan River Basin Recovery Implementation Program  
Biology Committee Meeting  
Fort Lewis College  
Durango, CO  
26-27 February 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  
Harry Crockett – 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  
John Pitlick – University of Colorado  
Steve Ross – University of New Mexico  
Wayne Hubert – Hubert Fisheries Consulting  
Mel Warren – USFS Southern Research Station

**Interested Parties:**

Robert Findling – The Nature Conservancy  
Steven Platania – American Southwest Ichthyological Researchers  
Mike Greene – PNM  
Stephen Saletta – PNM  
Carrie Lile – Southwestern Water Conservation District  
Chris Cheek – Navajo Nation Fish and Wildlife  
Henry Day – APS  
Bobby Duran – U.S. Fish and Wildlife Service  
Susan Behery – Bureau of Reclamation  
Ernie Teller – U.S. Fish and Wildlife Service  
Nate Franssen – University of New Mexico

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Ben Zimmerman – Southern Ute Tribe  
Michael Howe – Bureau of Indian Affairs NIIP  
Weston Furr – U.S. Fish and Wildlife Service  
Katie Creighton – Utah Division of Wildlife Resources  
Brian Hines – Utah Division of Wildlife Resources  
Ryan Christianson – Bureau of Reclamation  
Keith Gido – Kansas State University  
Dan Lamarra – Ecosystems Research Institute  
Judith Barkstedt – American Southwest Ichthyological Researchers  
Jen Kennedy – American Southwest Ichthyological Researchers  
Ron Bliesner – Keller Bliesner Engineering  
Michael Farrington – American Southwest Ichthyological Researchers  
Robert Dudley – American Southwest Ichthyological Researchers  
Howard Brandenburg – American Southwest Ichthyological Researchers

**Changes to agenda:**

- Brandenburg will update the group on I&E work with Lateral Lines.
- Move habitat restoration earlier in agenda to accommodate Findling's schedule.

**Approve draft summary from 19-20 November 2013 meeting; review Action Item list:**

- Durst incorporated previous edits and corrections. Wesche motioned to approve the summary as revised, Lamarra seconded. Approved unanimously.

**2013 hydrology overview and update on reduced target baseflows and shortage sharing – Behery:**

- The 2013 water year started with very low soil moisture conditions. Through the year there was limited precipitation but a heavy late monsoon in August and September provided substantial moisture to the Basin.
- Inflow to Navajo Reservoir in 2013 was 50,000 af lower than inflow in 2012.
- Due to the on-going drought, the frequency flow metrics for >5,000 cfs, >8,000, and >10,000 cfs have been exceeded or are being approached.
- Shortage Sharing was forecasted going into the 2014 water year prior to the heavy monsoon in August and September 2013.

**Water temperature – Miller:**

- Water temperature suppression from Navajo Dam extended as far downstream as Farmington but was not evident at Shiprock, Four Corners, or Mexican Hat in low flow years like 2013.
- Further investigation is needed on how sudden temperature changes and prolonged cold water releases affect native fish reproduction, larval development, and growth. Miller is working with ASIR to examine relationships between temperature and timing, size, and number of larval fishes produced. Miller will continue work synthesizing water temperature data to evaluate temperature aspect of the Flow Recommendations.
- Thermal modification of Navajo Dam may need to be revisited.
- USGS will install temperature monitors on flow gages in 2014 at Archuleta, Farmington, Animas at Farmington, and Four Corners.

**Habitat monitoring and analysis of flows meeting intended purpose of flow recommendations–  
Lamarra:**

- Habitat monitoring is based on 2012 data due to the processing time for this monitoring effort. Investigated island, backwater, and embayment count and area within total wetted area based on aerial imagery and field verified status of backwater habitats.
- Island count is a surrogate for habitat complexity on a per mile basis.
- High flow in 2008 was hypothesized to have “reset” the system; however, habitat monitoring was not conducted 2008-2010.
- Appears to be a trade-off between backwaters and islands. There is a negative relationship between total backwater area and total island perimeter. Backwater area appears to be driven by antecedent flow conditions.
- LiDAR data has been collected and is currently being processed.

#### **Habitat monitoring at RERI sites – Lamarra:**

- While restored channels were not wetted under all flow conditions, some channels were flowing below designed channel capacity.
- Design of the new restoration sites should take this information under consideration. Maybe restored channels should be designed to function at flows as low as 500 cfs. There is a trade-off between flowing secondary channels and low velocity backwater habitat.

#### **Update on Phase 2 of habitat restoration – Findling and Westfall:**

- Many potential restoration sites were identified during a GIS exercise but after on-the-ground visits, only one site (at RM 136.5) was deemed appropriate to move forward with restoration planning.
- Costs could be reduced substantially if heavy equipment can be permitted to cross the river. Coordination will continue with Army Corps of Engineers.
- Site maintenance has been and will continue to be an issue with substantial vegetation regrowth and down-cutting caused by widespread bank armoring.

#### **BC discussion of hydrology, habitat, and temperature:**

- Temperature suppression is dependent on the relative flow between the Animas River and San Juan River. However, high flow from both systems results in widespread temperature suppression. Historically the San Juan was cooled by the Animas River but with Navajo Dam, Animas River flows are typically cooled by the San Juan River.
- The group discussed the importance of using existing and persisting secondary channels to inform the restoration of new secondary channels. Natural channels should be paired with restored channels to serve as an experimental control.

#### **2013 Rare fish stocking summary – Furr:**

- 439,264 age-0 Colorado pikeminnow were stocked in 2013 at the PNM Sluiceway and Boyd Park on the Animas River. Program efforts are underway to evaluate the success of these stocking events. Soft releases appear to be beneficial for post-stocking survival.
- A total 15,362 razorback suckers were stocked in 2013. Uvalde accounted for approximately half of razorback suckers stocked during the 8-year augmentation period; these fish experienced very low recapture rates so how should these stocked fish count towards the augmentation goals?
- Need to continue to evaluate the success of the augmentation program based on the recapture of stocked fish. Since it is difficult to sample the Animas River, it is difficult to evaluate stockings there.
- The population model could be used to inform the augmentation program but needs population estimates of endangered fish to be calibrated. The effects of density dependence on the stocking program remain an outstanding question.

- The original survival assumptions that were used to calculate stocking goals should be re-evaluated to determine their validity.

**NAPI grow-out ponds and PNM Fish passage – Cheek:**

- All three grow-out ponds were operated in 2013. A total of 6,243 razorback suckers were harvested between passive and active techniques (out of 10,500 stocked into the ponds). Passive harvest was delayed due to a bacterial disease (*Flavobacterium columnare*) that resulted in 885 observed mortalities. The disease was successfully treated with two cycles of oxytetracycline. Protocols are in place to limit cross-pond contamination but there is only one boat that is used at all three NAPI Ponds.
- Cheek detailed experimental vegetation control methods that would hopefully limit disease outbreaks. In the future, passively harvested fish will be soft released to the San Juan River on an experimental basis.
- The PNM Fish Passage was operated 7-days a week from April to October in 2013. A total of 14,418 fish were collected and only 131 were non-native. Few pikeminnow used the passage in 2013 compared to 2011.
- In order to coincide with native fish movements, opening the passage in March is under consideration.
- Few non-native fish were captured in the passage in 2013 was possibly due to debris clogging the screens that limited flow through the passage.
- A remote PIT tag reader has been installed at the downstream end of the fish passage to determine the efficiency of the passage. This PIT tag reader could also guide when the passage should be operated to allow endangered fish to move upstream.
- Repairs are needed for the fish passage to operate correctly. Navajo Nation is working with Reclamation and PNM to have these repair made.

**Native fishes of the San Juan River poster – Brandenburg:**

- Lateral Lines produced posters and brochures to fulfill the Program's I&E needs. These posters and brochures can be distributed by researchers on the river and made available at the Sand Island and Mexican Hat boat launches.
- A similar poster was developed for NMGF.
- Posters and brochures include GIS, Recovery Program, and native fish species information.

**Larval fish monitoring – Farrington:**

- A total of 12 larval Colorado pikeminnow were detected during the July and August sampling trips. The back-calculated spawn date covered 6 weeks. Larval Colorado pikeminnow were detected in Reach 4 for only the second time.
- Razorback sucker have spawned for 16 consecutive years. From 1999-2013, spawning occurs on average 6.7 weeks, and highest catch rates occur during May in Reach 1. From 2010 to 2013, there has been no difference in larval razorback sucker catch rate by Reach indicating their continued upstream expansion.
- The group discussed calculating a San Juan specific hatch date. This is possible but it would be a substantial effort requiring ootoliths to age larval razorback suckers.

**Larval fish CPUE: what do the CPUE values really tell us – Robert Dudley:**

- Endangered species pose sampling and analysis problems because of the high number of samples with zero specimens. Increased sample size can improve statistical precision at the risk of collecting more "zero" samples.

- Mixed models that accounted for occurrence and abundance were most appropriate to describe spatial and temporal variation in data. These models could have application in other San Juan related datasets.

**Small-bodied monitoring – Gilbert:**

- There was high discharge during the entirety of the small-bodied monitoring but this did not seem to affect sampling efficiency.
- Colorado pikeminnow were similarly abundant in primary and secondary channels. Colorado pikeminnow captures in small-bodied monitoring appear to be driven by the effects of recent stocking events (i.e. captures of Colorado pikeminnow in small-bodied monitoring in year t+1 were correlated with Colorado pikeminnow stocking in year t).
- The block-net seine experiment did not capture more T&E fish or large bodied species compared to drag-seine technique but did capture larger fish on average. Continued use of the block-net seine is at the discretion of the BC.
- Restored RERI site functioned similarly to natural secondary channels in terms of fish assemblage and abundance.
- Pairing the 14 RM of the San Juan River above and below the Animas River confluence revealed similar fish assemblages and abundances.

**Adult monitoring – Schleicher:**

- There has been an increased distribution of Colorado pikeminnow over time that currently covers the entire study area. Also there has been an increased scaled catch rate of Colorado pikeminnow over time. More large Colorado pikeminnow have been captured in recent years and the 7 adults captured in 2013 are the most ever collected during adult monitoring.
- The group discussed if Colorado pikeminnow behavior influenced their detection probability in electrofishing samples. Remote PIT tag readers will be able to address this.
- There were 175 razorback suckers detected during adult monitoring that were present in the San Juan River at least 1-overwinter period. Most of these razorback suckers were from NAPI. While recruiting juveniles are yet to be observed, the scaled catch rate of razorback suckers has increased over time indicating more stocked fish are persisting in the system.
- Flannelmouth sucker and bluehead sucker populations appear to have been widespread and abundant over the course of this study suggesting that they have not been negatively impacted by the T&E augmentation program or long-term river-wide electrofishing.

**Non-native species monitoring and control, upper river – Duran:**

- In the PNM Weir to Hogback Diversion reach, channel catfish CPUE declined during non-native removal trips but channel catfish CPUE in adult monitoring was similar between 2012 and 2013. No juvenile channel catfish were captured in this reach in 2013.
- In the Hogback Diversion to Shiprock Bridge reach, adult channel catfish CPUE was similar between 2012 and 2013 during adult monitoring but juvenile channel catfish declined in 2013 in both adult monitoring and non-native fish sampling CPUE.
- In the Shiprock Bridge to Mexican Hat reach, the 2013 CPUE values for adult and juvenile channel catfish were the lowest observed for 1996-2013. It is unclear if this represents a population decline or poor sampling conditions.
- Common carp remain uncommon in all sampling collections river-wide.
- There were 573 Colorado pikeminnow captured in 2013 that included 19 adult individuals. A possible spawning aggregation was detected at RM 118 (the second year this aggregation was detected in this location).

- There were a total of 2,041 razorback suckers captured in 2013. Over 100 razorback suckers were captured that have been in the river for more than five years.
- The group discussed the value of shifting non-native removal effort from the upper reaches to the Shiprock to Mexican Hat reach in the summer. There is some risk of disrupting Colorado pikeminnow spawning but it seems beneficial to remove more channel catfish in the middle reach.

**Update on non-native fish weighing and measuring protocols – Davis and McKinstry:**

- Currently only 25 channel catfish per sample are measured for TL, SL, and weight.
- Davis and McKinstry suggested measuring TL for all channel catfish in only one sample per day and simply classify the remaining fish by life-stage. This discussion should continue at future meetings and the protocol should be consistent between all non-native fish removal efforts.

**Update on shifting non-native fish removal effort from lower to middle San Juan River – Davis and Hines:**

- Due to the low channel catfish catch rates in the lower canyon in July and August, three trips that normally occur there will be shifted to the reach between Montezuma Creek and Mexican Hat. This proposal will be budget neutral but the 2014 SOW should be revised to accurately reflect the work that will be done. Hines will do an addendum to UDWR's 2014 SOW.
- Adult monitoring data will continue to be used to evaluate the effects of the non-native removal program.
- The BC is also supportive of shifting non-native removal in the PNM to Hogback reach to the Shiprock to Mexican Hat reach. Davis will update the 2014 SOW to reflect this.

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

- Colorado made changes to the document that will need New Mexico's approval following minor revisions. Since approval will be at a high level it will take some time to complete.
- Gilbert indicated that these procedures could be a useful tool to look at upstream sources of non-native fish in the San Juan River, particularly off-channel ponds near the river. The State has little authority over these ponds but does control the non-native fish importation permitting process.

**Colorado pikeminnow recovery team update – Campbell:**

- The Recovery Team should have a draft prepared for FWS review by April. The Program would review the document following the incorporation of FWS suggested revisions. Campbell indicated that the Recovery Team's April deadline would likely be delayed.

**Non-native species monitoring and control, lower river – Hines:**

- The overall channel catfish CPUE has been stable over time. While there has been an increase in adult channel catfish CPUE, the population is dominated by young-of-year and juvenile channel catfish.
- The channel catfish abundance estimate has been stable over time. Exploitation rates are low for juvenile catfish but increase with increasing size. Exploitation rates are influenced by the sampling conditions of the mark and capture passes.
- Common carp continue to have stable but very low catch rates.
- Colorado pikeminnow catch rates have increased over time but razorback suckers have declined.
- The group discussed the benefits of analyzing all channel catfish data together since it appears the San Juan River has a single channel catfish population. Adult monitoring is a useful tool to evaluate the effect of non-native removal but does not typically sample downstream of Sand Island.
- The non-native fish program has been responsive in shifting removal effort to areas with higher channel catfish catch rates.

- The group discussed the need for exploitation rates to exceed 60% to have any effect on the channel catfish population. The effect of non-native fish removal on non-native or native fish has not been easy to evaluate. The impact of non-native fish on native fish is also unclear. It appears that environmental variation can have as much influence on non-native fish as the removal effort.
- The Population Model can be a useful tool to evaluate some of these effects and interactions. During the May meeting some hypothetical scenarios could be run to determine the effect of various management actions and also provide an opportunity to examine the Population Model. Better population estimates for all species would be useful to calibrate the model. Miller asked for questions in advance to examine some of these scenarios during the May meeting.
- Campbell suggested some kind of peer review to vet the model. Miller detailed the flow-habitat relationship from habitat monitoring and productivity by habitat information has been incorporated and calibrated.

#### **Opercular deformities in San Juan River Catostomids – Judith Barkstedt:**

- Over 55,000 native sucker specimens were rated for opercular deformities. Most deformities were detected in larval fishes and deformities were observed in almost 25% of razorback sucker specimens. Deformities were observed in 6.3% and 4.3% of larval bluehead sucker and flannelmouth sucker, respectively. Deformities were randomly distributed between uni- and bi-lateral and varied by year although a null model was ranked similarly. These deformities were observed river-wide.
- Group discussed exploring possible razorback sucker larval deformities in other locations like Lake Havasu and SNARCC. While it will be difficult to tease apart genetic and environmental causes of these deformities, the prevalence of these deformities in larval razorback sucker suggests there is likely a problem. The results of toxicological work does not indicate a contaminant problem. Temperature suppression or abrupt changes could trigger these deformities.
- Rating opercular deformities in larval razorback sucker will continue as part of ASIR laboratory protocol.

#### **Fish movement and tributary use – Gido:**

- Tributary sampling of McElmo Creek and Chaco River revealed species composition and abundance gradients with distance from the San Juan River confluence. Some fish like razorback suckers are specialist in the mainstem confluence; others like flannelmouth sucker disperse throughout the entire tributary, while others like roundtail chub are specialist in the upper portion of tributaries.
- McElmo Creek is a true stream network with species turnover moving upstream. In the Chaco River discharge and species richness decreases upstream and the community in this system is driven by colonization from the mainstem San Juan River.
- Remote PIT tag readers detected large numbers of Colorado pikeminnow and razorback sucker at tributary confluences. During high spring flows and monsoon peak flows these readers detect spikes in native suckers and channel catfish. Colorado pikeminnow spikes are detected in fall.
- On-going analysis will examine relationships between PIT tag detection and environmental drivers (temperature and flow). Data between PIT tag readers upstream in the McElmo Creek drainage (including Yellow Jacket Canyon) will be integrated. Finally, movement of fish tagged during tributary work and recaptured during non-native removal or adult monitoring efforts in the mainstem San Juan River will be studied.

#### **PIT tag summary – Durst:**

- Captures of individual Colorado pikeminnow have declined over the last few years. An exploratory abundance estimate revealed similar trends but these estimates should be recalculated using larger fish to minimize the effect of recent stockings.

- Colorado pikeminnow growth varied by size class and year. Due to the limited dataset there were no significant relationships between growth and prey, temperature, or flow.
- Razorback sucker captures and abundance estimates show a growing population indicating that many stocked fish are retaining in the San Juan River. However, abundance estimates should be recalculated to minimize the effect of recent stocking events.
- Razorback suckers from Uvalde continue to have low recapture rates and analysis is on-going to determine the effect of different management actions on fish stocked from NAPI. Hopefully this can inform the augmentation program in the future.
- The proportion of razorback suckers encountered without PIT tags declined in 2013 as fewer fish were available from the release of untagged NAPI fish in 2006 and 2007 and as fish were PIT tagged at SNARCC prior to delivery to NAPI likely improving PIT tag retention.

#### **Integration and synthesis of long-term monitoring data – Franssen:**

- Survival and detection of stocked razorback sucker. Limited the analysis to just fish stocked from NAPI for a more robust analysis. Large effect of first-year-in-river on survival. Yearly variation in survival for first-year and post-first-year razorback sucker tracks similarly, suggesting some yearly environmental effects. On-going analysis to tease apart the effect of season and stocking location.
- Age-specific survival rates cannot be calculated for Colorado pikeminnow because there are too few recaptures. Unclear if this is because survival or detection is low for these fish. Hopefully remote PIT tag reader will be able to address this.
- Spatial and temporal variation of small-bodied fishes. Reach-scale variation reveals highest densities of age-0 native suckers in upstream reaches and upstream of PNM Weir. Red shiner density declined over time and declined most in lower reaches. Age-0 channel catfish density increased in 2002 and remained high since then. Density of age-0 channel catfish seems related to low flows. Variation in native fish density is most strongly driven by reach variation but yearly variation drives densities of non-native fish. Native fish have similar density between primary and secondary channels but non-native fish have higher density in secondary channels.
- The group discussed the implications of secondary channel restoration and the density of native and non-native fish in this habitat. Since native fish use primary and secondary channels similarly, these habitats are important to them. Also secondary channels could be more important to native fish in other seasons but sampling only occurs in the fall.
- Spatial and temporal variation of large-bodied fishes. Principle components axis (PC) 1 was driven by longitudinal variation, bluehead suckers were more abundant upstream and juvenile channel catfish most abundant downstream. PC 2 was driven by temporal variation and more Colorado pikeminnow and razorback suckers through time but fewer common carp. PC 2 was driven by the spatial effect of the PNM Weir and lower channel catfish abundances upstream of the weir. The longitudinal distribution of bluehead and flannelmouth sucker adults appears to be disrupted by the PNM Weir. The distribution of channel catfish appears to be temperature driven. Cold temperatures suppress growth of young channel catfish.
- The group discussed presenting this complex dataset to the CC during the May meeting and suggested focusing on take-home conclusions.

#### **General discussion of 2013 project reports, results, and data; overall assessment of what was accomplished; progress toward recovery; questions to be addressed for annual meeting; additional data integration priorities:**

- The group discussed moving the deadline to submit PIT tag data to the Program Office so it could be integrated and re-distributed earlier.
- The group discussed using electronic data recorders to reduce the amount of time and number of errors in data entry.

- LiDAR data is currently being processed. Is it possible to use this data to inform habitat monitoring?
- The Peer Reviewers suggested that PIs gear their presentations to the audience at the May meeting. Presentations should be as consistent as possible across projects. PIs should be careful mixing parametric and non-parametric methods. Estimates of measurement and sampling errors should be included in habitat data. The Program should use channel restorations as an opportunity to conduct experiments to guide future management. Non-native fish exploitation needs to be increased to effectively reduce channel catfish populations. The effect of temperature suppression from Navajo Dam needs to be revisited. The Peer Reviewers will provide written comments to the environmental flows SOW. Evaluating progress toward recovery using constant detection probability can be misleading. In general caution should be exercised when extrapolating results outside the data. The combination of density and occurrence models could be pursued in other datasets. The use of survival and abundance estimates could be incorporated into the Program's standard annual analyses. Paired natural secondary channels should be incorporated into site section for habitat restoration to better evaluate the effects of restoration efforts.

**Clarification on juvenile razorback sucker captures – Platania:**

- The UDWR captures of juvenile razorback sucker in 2013 were consistent with ASIR captures of age-0 fish of similar size. There should be no confusion about the age of these fish; they are undoubtedly age-0 fish.
- In the Upper Colorado Basin young-of-year razorback sucker range between 80-150 mm TL in November.

**2014 budget update – McKinstry:**

- Funding agreements to UNM, TNC, and ASIR are either completed or nearly completed. Interagency agreements should be completed in the next few weeks.
- The two-year budget will hopefully resolve past issues with continuing resolutions and sequestration.
- The group discussed using capital funds for large-scale habitat work. This is possible but needs to get on the capital funds priority list to proceed.

**Discussion of Environmental Flows Recommendation SOW – Program Office:**

- During the recent CC conference call, the CC tried to come to agreement about the process to conduct the flow recommendation evaluation and review. How this process will proceed needs to be resolved. The BC should provide their CC representatives with a technical review of the SOW. Also the Peer Reviewers should weigh in on the technical merits of the SOW.
- The flow recommendation evaluation and review should rely on previous work that has been done to avoid “re-inventing the wheel.”
- The role of the technical team in the SOW needs to be sorted out so those budgets can be developed and fit in with overall Program priorities.
- The Hydrology Model needs to be completed to inform this effort.
- The BC and Peer Reviewers should provide comments to the Program Office by 15 March.

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

- Planned PIT tag reader installation at Mexican Hat was not successful due to problems with a bladder dam used to divert flow and anchoring the PIT tag reader to the substrate.
- The installation at PNM Weir has not been attempted but the weir will need to be dewatered for this installation to proceed.
- A portable PIT tag reader was installed at the downstream end of the PNM Fish Passage. This reader will allow the efficiency of the fish passage to be evaluated.

- Plans are set to install a PIT tag reader at Hogback to evaluate the fish weir that has been constructed there. McKinstry plans to use PIT tagged endangered fish to test the efficiency of this PIT tag reader system once it is installed. This proposal received the support of the BC and Program Office.

**LRP update and benchmarks for recovery – Whitmore:**

- A number of goals, actions, and tasks were moved and revised primarily to make Elements 1-3 the recovery actions and Elements 4 and 5 the monitoring and evaluation of those actions. This should help minimize redundancy between Elements 2 and 4.
- Miller asked for more time to review. The BC and Peer Reviewers should send their comments to Whitmore by the end of March.

**Discussion of need to evaluate fish entrainment and passage issues:**

- There are fish passage issues at APS, Fruitland, and the lower Animas River.
- Since Reclamation has not moved forward to address these issues, Miller will draft a memo to the Program Office.

**Update on testing remote meeting technology – Gori and Westfall:**

- TNC has a WebEx system that can accommodate 1000 users. KB has access to similar technology.
- This system should be tested in conjunction with a call to discuss pre-field season protocols and data collection.
- It is not clear if there would be a cost to the Program for the use of this technology. Gori will investigate.

**Update on pre-field season meeting to ensure consistent data and sampling protocols:**

- A date needs to be set for this. This should occur in conjunction with the test of remote meeting technology. Davis, Miller, and Gori will coordinate. UDWR starts their field season on 3 March.
- Protocols for scale collection should be discussed, along with returning floy tagged non-native fish from KSU to the river, consistent data formats, and electronic data collection.

**BC response to Speas database RFP and general database discussion:**

- Miller previously prepared a memo and the BC was supportive of this effort in general.
- The long-term costs to the Program are unclear.
- This RFP has already flown on grants.gov.

**Recap decision points and review assigned action items:**

- BC conference call scheduled for Monday 7 April from 2-4pm to discuss the LRP and entrainment and passage issues.
- The BC should submit questions for Population Model runs to Miller and Lamarra.
- Davis announced Brooks' retirement party on Saturday 8 March in Albuquerque.
- The next BC meeting will be in Durango on 21 May in conjunction with the Program's Annual Meeting.

**BIOLOGY COMMITTEE ACTION ITEM LOG**

(Updated 4 March 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 4 March 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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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	

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(Updated 4 March 2014)

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23	NNF workshop recommendations to Davis	2/21/13	BC	3/18/13		
24	Pros and cons of moving non-native removal trips from lower to middle sections of river	5/7/13	Davis	6/28/13		2/27/14
25	Complete Threats Assessment draft	5/7/13	TNC	6/28/13		
26	Determine if past flows met intended purposes of the flow recommendations	11/19/13	Lamarra	2/26/14		
27	Review of Environmental Flow Recommendations for the San Juan River SOW	11/19/13	BC and Peer Reviewers	1/13/14	3/15/14	
28	Review and status update of LRP	11/19/13	BC and Pls	12/31/13	3/31/14	
29	Check availability of Wayne Hubert to serve as SJRIP peer reviewer	11/19/13	McKinstry and PO	1/13/14		1/13/14
30	Draft protocol for measuring non-native fish during removal passes	11/19/13	McKinstry and Davis	2/26/14		2/27/14
31	Memo voicing concerns of joint database SOW prepared by Speas	11/19/13	BC to PO	2/26/14		2/27/14

**BIOLOGY COMMITTEE ACTION ITEM LOG**

(Updated 4 March 2014)

Item No. *	Action Item	Meeting/O rigination Date	Responsible Party(s)	Due Date	Revised Date	Date Completed
32	Memo on fish passage and fish entrainment issues	2/27/14	Miller to PO to Reclamation	4/7/14		
33	Testing remote meeting technology in conjunction with pre-field season protocol and data meeting	2/27/14	Miller, Davis, Gori will coordinate	4/7/14		
34	Review of LRP	2/27/14	BC and Peer Reviewers to Whitmore	3/15/14		
35	Review of Environmental Flows SOW	2/27/14	BC and Peer Reviewers to PO	3/31/14		

\* 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

Date	Annual Tasks	PO	CC	BC	P.I.
Oct.	Reclamation administers contracts	X			
Nov.	BC Meeting (peer reviews typically do not attend this meeting) <ul style="list-style-type: none"> <li>• Review data integration results from previous year</li> <li>• Identify questions for annual data integration</li> <li>• Discuss Program priorities</li> <li>• LRP review and provide recommendations (with pros and cons) to PO</li> <li>• Appoint new BC Chair (every two years)</li> </ul>	X		X	
Dec. 31	RBS/CPM stocking/capture/recapture data to Program Office				X
January	Notification/update of Program rosters/mailling 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		
January	Reclamation provides a determination of perturbation for BC Review.	X			
Jan. 31	Distribute consolidated PIT tag data and post other data	X			
February	BC Meeting (peer reviewers are expected to attend this meeting) <ul style="list-style-type: none"> <li>• Prepare for Annual Meeting</li> <li>• Provide preliminary results; draft report presentations</li> <li>• Final review of updated LRP</li> <li>• Review annual data integration priorities</li> </ul>	X		X	X
Feb/Mar	Final updated LRP to CC (with explanation of input included/not included)	X			
March	CC approval of LRP				
March	Annual guidance/solicitation for SOWs based on LRP/list of prioritized projects	X			
March 31	Draft final reports and SOWs due 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
May	Annual hydrology meeting to review and solicit information regarding the San Juan River Basin Hydrology Model	X			
June/July	Draft Annual Workplan and Budget	X			
June 30	Provide final reports and data sets to Program Office				X
July	Final reports posted on website	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			