



**Approved Summary**  
**San Juan River Basin Recovery Implementation Program**  
**Biology Committee Meeting**  
**Fort Lewis College**  
**Durango, Colorado**  
**12 May 2015**

**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  
Mike Ruhl – 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:**

Sharon Whitmore  
Scott Durst

**Peer Reviewers:**

Mel Warren– Forest Service Southern Research Station  
Steve Ross – Eco-Consulting Services and University of New Mexico  
Wayne Hubert – Hubert Fisheries Consulting and University of Wyoming  
John Pitlick – University of Colorado  
Brian Bledsoe – Colorado State University

**Interested Parties:**

Steven Platania – American Southwest Ichthyological Researchers  
Chris Cheek – Navajo Nation Department of Fish and Wildlife  
Susan Behery – U.S. Bureau of Reclamation  
Henry Day – Arizona Public Service  
Tom Sinclair – U.S. Fish and Wildlife Service, Region 2  
Nate Cathcart – Kansas State University  
Brian Hines – Utah Division of Wildlife Resources  
Stephani Clark Barkalow – American Southwest Ichthyological Researchers  
Bobby Duran – U.S. Fish and Wildlife Service, Region 2  
Michael Farrington – American Southwest Ichthyological Researchers  
Nate Franssen – University of New Mexico

Carrie Lile – Southwestern Water Conservation District  
 Dan Lamarra – Ecosystem Research Institute  
 Jamie Shockley – Public Service Company of New Mexico  
 Stephen Saletta – Public Service Company of New Mexico  
 Weston Furr – U.S. Fish and Wildlife Service, Region 2  
 Todd Vandegrift – U.S. Bureau of Reclamation  
 Kim Yazzie – Navajo Nation Department of Fish and Wildlife  
 Brent Uilenberg – U.S. Bureau of Reclamation  
 Mike Greene – Public Service Company of New Mexico

**Approve 20 April 2015 draft conference call summary and review Action Item list:**

- Durst received comments. Davis motioned to approve the revised summary, Wesche seconded, and summary was approved unanimously.

**PIT tag antenna update and developments below waterfall – McKinstry:**

- McKinstry provided overview of the PIT tag readers operating in the San Juan River Basin. There have been 85,000 detections at four antennas mounted on the PNM Weir. An additional reader has been added further upstream in the PNM Fish Passage. Readers were installed at the Hogback Fish Weir to evaluate its effectiveness. Also readers have been placed in the Phase 2 Restoration site and below the waterfall to determine tagged fish use of these areas. McKinstry emphasized that although these systems produce large amounts of data, additional effort will be necessary to turn this into information. These data should be included within the joint database being developed for the San Juan and Upper Colorado Recovery Programs; however, a dedicated person should analyze these data to answer key questions. However, it will be important to first identify the key questions these systems can address. Remote antennas have been the only detections for many fish after their initial tagging event.
- A total of 719 individuals were detected at PNM, mostly razorback sucker. There have been logistical issues at Hogback that have limited the utility of the PIT tag readers. These issues include power outages and the operation of pumps that interfere with the readers. Nevertheless, there have been a total of 644 detections at Hogback but these have primarily been fish stocked at Hogback as part of an effort to test the effectiveness of the Fish Weir.
- Cheek also reported that he will be leaving in August so his responsibilities may need to be covered during an interim period. Kim Yazzie has been hired as a technician by the Navajo Nation.
- At the Phase 2 Restoration site there have been 22 unique detections primarily of razorback sucker. These detections appear to be flow dependent.
- Antennas and other techniques were used to sample fish below the waterfall. At a downstream site there were 22 unique fish detected. In an eddy near the base of the waterfall there were 414 unique detections. All downstream fish were also detected at the eddy site. These locations were approximately 0.75 miles apart. Additional overnight antennas detected up to 124 of the 414 fish detected in the eddy but concurrent fyke nets yielded no captures. Almost all detections (400) were razorback sucker but 10 were assigned to Colorado pikeminnow.
- Razorback sucker detected included fish previous tagged in Lake Powell, stocked into the Colorado and Green Rivers, but most were stocked in the San Juan River. Most remote detection occur at night.
- During cast-net sampling four untagged razorback sucker were collected, suggesting many razorback sucker below the waterfall maybe untagged.

- Examining antenna data across different seasons may allow various temporal use questions to be addressed. Also many razorback sucker detected below the waterfall were stocked at Montezuma Creek so it will be interesting to see if there is an issue with that stocking location. The Program may need to consider translocating fish upstream of the waterfall.
- It will be important to maintain these antenna systems and develop questions based on remote detections to inform management. The group discussed how this data will be managed and analyzed in the future.
- McKinstry is looking to have a graduate student work on the multiple pass floating antenna system.
- The group discussed the usefulness of a workshop to sort out the relevant questions that can be addressed with this data. More antennas will result in additional data but the group was supportive of having more antennas deployed throughout the San Juan River Basin.

#### **Discuss draft FY 2016 Annual Work Plan – Whitmore:**

- Whitmore sent the draft workplan out for review.
- The draft workplan includes a SOW to maintain existing antenna systems. The McElmo antenna was meant to be temporary. It is possible to replace the McElmo antenna with a permanent system or make modifications to extend its use. Additional antenna installations can be funded with capital monies. It will be important to identify questions the antennas can answer to guide this effort. Data analysis has not been identified as part of this SOW.
- Miller asked how the priorities identified during the December BC meeting were addressed in the AWP. The Program needs to address specific integration needs identified during that December meeting. Franssen's SOW can be expanded to address any integration necessary for the evaluation of existing flow recommendation as part of the process to revise those recommendations. Any outstanding flow related integration questions can be addressed with the workshop SOW. The specific questions that need to be addressed in this integration effort are yet to be identified. The Program Office will develop integration questions and analyses to inform the evaluation and revision of the flow recommendations.
- McKinstry explained that USGS costs increased by almost \$10,000 to monitor temperature at gage stations. Also the habitat monitoring SOW expires after 2016 and it is not clear how this work will proceed in the future given the current lack of contracting flexibility. Also there are Department of Interior restrictions on flights to collect videography so it is unclear how this work will get done in the future. The BC needs to prioritize Program activities and consider how habitat monitoring will occur in the future. Perhaps other sources of imagery data could be used for habitat monitoring?
- It is possible to remove two UDWR non-native removal trip and replace it with the UDWR waterfall work and remain budget neutral. The group was supportive of this option. Also the UDWR removal work in the middle San Juan River should be included in the NMFWCO's scope of work within the same section of river so all that sampling effort in that reach can be accounted for.
- The BC supported the AWP in concept. There was disagreement about the level or amount of non-native fish removal that should be included in the 2016 AWP. Revised SOWs should be submitted by 15 June 2016 so they can be discussed during the scheduled 8 July 2016 conference call.

#### **Options for potential changes to non-native fish removal program – Davis and Hines:**

- Based on discussions at the February BC meeting, NMFWCO and UDWR submitted revised plans for non-native removal. Since the Service is not willing to abandon non-

native removal, there was no option presented where non-native removal effort was replaced with mark-recapture population monitoring. The revised non-native removal proposal intends to remove non-native species more effectively while allowing for more means to measure the non-native and native fish response to removal. The preferred NMFWCO and UDWR option to move forward focuses increased non-native removal effort over a shorter reach in order to mimic the effort that lead to reductions in channel catfish in the PNM-Hogback reach.

- The group discussed the limited native fish response to non-native removal in the San Juan River and compared removal efforts in the Upper Colorado River where channel catfish are not targeted for removal. Concerns remain on the potential effect of electrofishing to spawning endangered fish.
- Duran, Hines, Franssen, and Durst are working to examine channel catfish movement data to determine more effective management options.
- Lamarra asked about the Service position and Whitmore explained the Service views non-native species as a continued threat to recovery and past removal has not been as effective as necessary to show a response. The Upper Colorado Program does not remove channel catfish because other fish have been identified as more severe predators. The degree of threat channel catfish pose in the San Juan River is unknown.
- Ross detailed a draft literature review developed with Hubert and Warren examining the predatory threat channel catfish pose in the San Juan River, the competitive effect of channel catfish on native fish, the risk of Colorado pikeminnow choking on channel catfish, and the effectiveness of using raft-mounted electrofishing to remove channel catfish. Ross will finalize this review and distribute but the Peer Reviewers do not see evidence for channel catfish as a threat in the San Juan River and little evidence that channel catfish can be effectively removed based on past removal efforts. Competition and predation may in fact be a large threat, but if channel catfish cannot be effectively removed perhaps the money can be better spent elsewhere.
- Davis asked the BC and Peer Reviewers to provide input on the revised plan for non-native removal, specifically will its design allow for evaluating the response of channel catfish and native fish to removal efforts.
- McKinstry mentioned that the proposed changes to non-native removal program (increased effort in a limited reach) may have low power to detect changes since increased immigration to removal reaches would lead to decreased exploitation rates.

**BC recommendation to Program Office on supporting Population Model:**

- Before the MOU on the Population Model between the Program and Southern Ute Indian Tribe can be signed the BC needs to make a recommendation to the CC through the Program Office. The MOU deals with monetary support for future use of the model.
- Miller is working to address comments he received on the Population Model report.
- The group supported keeping the Population Model in the work plan as a \$10,000 line item for model runs conducted outside of BC meetings that require substantial effort to set-up and run.
- Davis asked if the Population Model could determine the exploitation rates in those reaches where declines in channel catfish were observed. The model is calibrated with those data. Also Mazzone asked how additional data will be input into the model.
- Several BC members mentioned that the model may not have been used effectively to date because of its complexity and perhaps the BC has not formulated the proper questions to address with the model.

**Update on recovery action to be implemented by SJRIP via the Four Corners Power Plant and Navajo Mine Biological Opinion – Whitmore:**

- As part of this consultation there will be one-time and annual funding available to the Program to conduct specific recovery actions.
- These recovery actions include investigating the impact of cold-water releases from Navajo Dam, conducting studies to resolve the impact of mercury on Colorado pikeminnow, contributing to fish passage at APS Weir, conducting mercury and selenium monitoring, implementing habitat restoration and habitat monitoring, contributing to endangered fish augmentation program and non-native removal programs. Additionally, funding of a position within the Program Office to oversee these activities is included as part of the biological opinion.

**Determining larval razorback sucker daily growth rates in the San Juan River – Platania:**

- The work can be conducted under ASIR's existing agreement.
- Whitmore indicated that this scope should go forward since it will be an important integration effort informing the revision and evaluation of the flow recommendations.

**Endangered fish investigations below waterfall – Cathcart and Hines:**

- Cathcart and the UDWR proposal are two separate efforts.
- Cathcart's SOW could be incorporated under the PIT tag reader O&M SOW.
- The UDWR SOW includes moving fish upstream of the waterfall. The UDWR waterfall SOW can be funded without an increase in the overall budget if two of their non-native removal trips is dropped.

**Experimental razorback sucker stocking in McElmo Creek – Cathcart:**

- The group considered this project a low priority and SNARCC would need as much as two years lead-time to be able to provide fish for this effort.

**Razorback sucker natal origins – Platania and Clark-Barkalow:**

- The microchemistry work has proved effective and has identified a small razorback sucker captured in the lower canyon as a wild juvenile.
- There are two options as this work moves forward: (1) continue to run some number of samples collected from the San Juan River and/or (2) run samples collected from Lake Powell. A reference library has been created for the San Juan River but a reference library including Lake Powell and the Colorado and Green Rivers would need to be created for untagged razorback sucker in Lake Powell given their variable origins.
- These efforts confirm that recruitment is occurring but the degree of recruitment remains an outstanding question. Capturing small razorback sucker without PIT tags can also likely be used to identify wild recruitment within the San Juan River.
- The group questioned if this same process could be done for Colorado pikeminnow. Yes, but it is not clear if now is the time to conduct such an effort. When more larval fish are detected then it may be the appropriate time to investigate wild recruitment.
- Platania will provide separate SOWs for San Juan River natal origin and Lake Powell natal origin.

**Implication of first-year survival on razorback sucker stocking – Franssen:**

- Based on the earlier manuscript, Franssen described how stocked razorback sucker survival estimates could be used to guide management.
- The majority of razorback sucker stocked from 2000-2012 were used in a survival estimate study. Major findings of this study were that first-year survival of razorback sucker was typically low and varied by stocking source and year while post-first-year survival estimates were higher compared to first-year survival and only varied by source. Franssen used these estimates to conduct a variety of “back-of-the-envelope” calculations.
- Estimates of how many razorback sucker are in the San Juan River based on the open model survival estimates are similar to Durst’s closed model estimates and Schleicher’s estimates based on a 4% detection probability. Razorback sucker abundance has increased over time and there are many fish present in the San Juan River. These estimates do not include fish outside of the main San Juan River sampling area.
- Using mean survival estimates from NAPI, if no natural recruitment is occurring, approximately 6,000 razorback sucker need to be stocked every year to maintain a population of 5,800 (recovery demographic criteria). Using the mean overall survival (including fish stocked from Uvalde), approximately 20,000 razorback sucker need to be stocked annually to maintain a population of 5,800. Fish stocked from Horsethief Canyon have not been included in the previous survival analysis but it is expected that future overall mean survival will be closer to NAPI estimates rather than previous overall estimates that included Uvalde.
- Using mean survival estimates from NAPI, there needs to be approximately 1,000 razorback sucker recruiting into adult life stages annually to maintain a population of 5,800. While natural recruitment appears to be rarely occurring, there was general agreement that it is not to the degree for the population to be self-sustaining.
- Using the FY2015 budget for razorback sucker stocking and mean survival estimates from NAPI, a fish in the river 2-years post-stocking is “worth” \$325. This value could be used to guide cost-effective management. For example, translocating 400 razorback sucker from below the waterfall back to the San Juan River would provide the same “value” in terms of fish in the river as half the augmentation program.
- What can the SJRIP do to increase the efficiency of the razorback sucker augmentation program? An experimental design was implemented in 2014 to disentangle the effect of stocking source and location over time. Franssen recommended that the Program estimate survival each year in order to give an early warning of potential issues in the augmentation program. Experiments were implemented in 2014 to quantify the trade-off between hard versus soft-releases. Soft-release sites are spatially limited and more labor intensive but their benefit is not currently understood. Because razorback sucker from NAPI ponds have relatively high post-stocking survival, efforts like improving the water quality of NAPI ponds or prophylactic measures to minimize disease issues could be implemented to improve the return rate of fish stocked into the ponds. Because first-year survival has the biggest impact of the abundance of razorback sucker, efforts to increase first-year survival should be implemented. Franssen described a planned controlled experiment to condition fish to flow at SNARCC prior to stocking in 2015 or 2016. Habitat restoration could be another means to improve first-year survival. Also it will be important to maintain consistent sampling effort through time to make year-to-year comparisons.
- These razorback sucker survival estimates are higher than those from Upper Basin studies.

#### **Comparison of ETS versus Smith-Root electrofishing units – Schleicher:**

- Schleicher previously distributed a comparison of ETS and Smith-Root units used concurrently on an Adult Monitoring trip in 2013. There appeared to be no statistical differences in catch rates

between the two units. Schleicher also distributed the Martinez and Kolz (2013) paper on boat electrofisher performance.

- Smith-Root units take twice the power to achieve taxis compared to ETS units. The Upper Basin has shifted to ETS units fleet-wide. Davis will investigate costs to convert remaining San Juan electrofishing fleet to ETS units.
- McKinstry noticed more spinal deformities in native suckers during recent tests at Hogback and wondered if those injuries may be related to electrofishing. Davis referred PIs to the Landye study to implement best practices for safely conducting electrofishing to minimize fish injury. Any injuries are tracked in the notes section of PIT tag database for tagged fish. However, summary and analysis of injuries would be simplified if it were tracked in a specific field.
- ETS units require understanding of electrofishing theory while Smith-Root units are “dummy-proof.” Operators should be educated to effectively and safely use ETS units to sample fish in the San Juan River.

#### **Update on KB design for Fruitland Diversion and BC input on fish entrainment – Isaacson:**

- Fruitland Diversion was originally constructed in 1955 to provide water for 3,335 acres of farmland on the Navajo Nation. The diversion has deteriorated and is currently a barrier to fish and rafts and is also a source of fish entrainment.
- Navajo Nation obtained funding to rehabilitate the facility and it is considering Berg Park on the Animas River as a model. McKinstry indicated that the results of Hogback Fish Weir tests could lead to a fish weir structure at Fruitland. Since Fruitland is upstream of PNM a non-selective fish passage would be appropriate. Miller suggested swimming speeds of native fish be incorporated into designs and to ensure appropriate water velocities. McKinstry highlighted the importance of including PIT tag antennas at any structure. Additionally, it would be possible to incorporate a soft release stocking site into the design.
- This project is still in the planning stage but KB is developing this conceptual approach of the project to move forward to the benefit of all parties, including Navajo Nation, Reclamation, and the SJRIP.
- Questions were asked about funding for the project. This project is a top priority for the Navajo Nation and costs were mostly covered, but the Navajo Nation would appreciate any cost sharing to improve the overall project (for PIT antennas or a whitewater park).

#### **Discuss maintaining target baseflows > 500 cfs so field crews can navigate the San Juan River and complete SOWs – Behery:**

- Behery is currently maintaining target baseflows of 500 cfs but the Bluff gage typically drops below this flow. The target baseflow is based on the average of multiple gages.
- If target baseflows were increased to 650 cfs, flows at Bluff would remain > 500 cfs but this would release an additional foot of reservoir elevation each month.
- Sampling cannot occur at low flows in the lower canyon and trips have been cancelled due to low flow.
- The BC recommends the Program Office prepare a letter to request an increase in summer flows downstream of Mexican Hat so scheduled work can continue as planned.
- Behery also reported that a problem at the Archuleta gage resulted in higher flow readings than were actually being released from Navajo Dam. USGS has resolved these issues so flow readings are accurate.

#### **Discuss passage barriers in the Animas River that need to be addressed via capital funding – Program Office:**

- Whitmore talked with Uilenberg about addressing potential barriers in the Animas River based on the Francis (2007) report.
- The BC indicated that addressing these barriers may be necessary for species recovery.
- Uilenberg will need CC approval to get these barriers on the priority capital projects table.
- While there were no T&E fish captured during a recent sampling effort led by Schleicher, when fish are present in these upstream reaches once barriers are removed, screening may be necessary to minimize entrainment.

#### **Update on entrainment RFP – McKinstry:**

- McKinstry worked with the Program Office to develop a SOW for this RFP.
- There have been delays in the awarding of this contract. McKinstry hoped to have it awarded by February. Proposals have been reviewed and there was a large difference in cost between proposals. Reclamation may need to go into negotiations between offerors to resolve cost issues.
- The RFP was only available to contractors on the GSA schedule and no Program partners were able to compete for the RFP.
- It is unknown when this contract will be awarded.

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

- Ruhl reported that there has been no progress since the last meeting.
- Gilbert has left NMGF and Ruhl is hoping to make a selection for that position soon to be able to move forward with the non-native fish stocking procedures and other NM commitments to the SJRIP.
- Non-native fish stocking procedures are included as a threat in the endangered fish recovery plans so finalizing these plans will be requisite to remove the “threat” for downlisting and delisting to occur.

#### **Update on the Status of maintenance work at PNM Fish Passage – Cheek:**

- The screens have been delivered after an earlier delay. Hopefully the contractor will install the screens by the end of the month.
- McKinstry described a design flaw preventing the gates from closing. Uilenberg will work with Cheek to address this issue once the screens are installed.
- Uilenberg discussed the lack of an O&M contract with PNM. He will work with Mike Greene (PNM) to resolve outstanding legal issues in the contract so funds can be transferred. PNM has provided support to the SJRIP and will continue to do so while this contracting issue is being resolved.

#### **Discuss SJRIP conventions for report formatting and addressing review comments:**

- Miller reported that there were past formatting guidelines in his files, possibly SWAN or another journal. Previously there were different conventions on species abbreviations and during the research period a formal response to reviewers was included in reports.
- Hubert suggested AFS guidelines for journal articles be used for reports and the BC appeared to be in favor of this. Executive summaries can be bulleted or narrative but should be no longer than an extended abstract.
- Also draft reports should be submitted as Word documents so reviews can be done in track changes. Files too large to email can be posted to SJRIP working documents site. The Program Office will have this in place for next year’s draft reports.



- The Peer Reviewers did not see any need for a formal response to comments but would appreciate a brief response from PIs if they have time. Also the Peer Reviewers encouraged questions on any of their comments.

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

- Annual Program prioritization could be included under recurring Action Items.
- Waterfall inundation whitepaper (#14) is considered complete. McKinstry previously provided information on the probability of inundation.
- The SJRIP case history manuscript (#16) has not been completed but should be removed from list.
- SOWs should be revised by 15 June 2016 and discussed at the 8 July 2016 BC conference call.
- The Program Office will prepare a letter to Reclamation requesting increased flows downstream of Mexican Hat when work is scheduled in that reach.
- Davis will investigate costs of converting the remaining San Juan electrofishing fleet to ETS units.
- The next BC meeting will be a conference call on 8 July 2016 from 9am-12pm.

## BIOLOGY COMMITTEE ACTION ITEM LOG

(Updated 20 May 2015)

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		
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 20 May 2015)

Item No. *	Action Item	Meeting/O rigination 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	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		5/12/15
15	Revise RBS Augmentation Goals (based on the outcome of experimental stocking and analysis by Franssen and Durst)	5/10/10	FWS Fisheries/Program Office	5/2011 – provide update and extend as needed	12/1/15	
16	Develop a detailed outline for San Juan River Recovery Program case history manuscript	11-5-08	Propst/Miller			Remove from list – no plans to complete
17	Pursue Non-native fish stocking procedures	11/5/09	Crockett and Ruhl	12/1/09	12/1/15	

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(Updated 20 May 2015)

Item No. *	Action Item	Meeting/O rigination Date	Responsible Party(s)	Due Date	Revised Date	Date Completed
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 – combine with #15	3/23/10	BC	ongoing		
20	Schedule maintenance work at PNM	8/5/14	BR, NN, PO	12/31/14	7/8/15	
21	Plan workshops to determine an end of season reservoir elevation for revised available water calculation and develop a protocol to implement replacement for “decision tree” to make releases from Navajo Dam	9/15/14	Program Office	ongoing		5/12/15
22	Follow up with CC regarding memo on feasibility study to remove barriers in the lower Animas River	12/5/14	PO	2/20/15	5/12/15	5/14/15
23	Include benchmarks for recovery in LRP	12/5/14	Whitmore	1/5/15	12/1/2015	
24	SOW to conduct population estimates for Colorado pikeminnow and razorback sucker	2/20/15	PO	5/12/15	12/1/15	
25	Position paper summarizing the effects of the non-native fish removal program	2/20/15	PO	5/12/15	12/1/15	
26	Possible alternatives to current non-native removal program	2/20/15	PIs	5/12/15		5/12/15
27	Written proposal to BC for feedback on McElmo Creek spawning study, fish sampling below waterfall, and remote PIT tag antennas	2/20/15	Cathcart	3/25/15	5/12/15	5/12/15

## BIOLOGY COMMITTEE ACTION ITEM LOG

(Updated 20 May 2015)

Item No. *	Action Item	Meeting/O rigination Date	Responsible Party(s)	Due Date	Revised Date	Date Completed
28	Finalize environmental flow workshop notes and summary	3/25/15	Whitmore	5/12/15	9/30/15	
29	Comparison of ETS and Smith-Root electrofishing units	3/25/15	Schleicher	5/12/15		5/12/15
30	Finalize e-flow workshop summary – combined with #28	4/20/15	Whitmore	5/12/15		
31	Memo to PO on recommended flow releases for 2015	4/20/15	Miller	5/12/15		5/12/15
32	Plan workshop to evaluate and revise flow recommendations	5/12/15	PO	9/30/15		
33	Revise SOWs	5/12/15	PIs	6/15/15		
34	Comments on proposed alternative to non-native fish removal	5/12/15	BC	6/15/15		
35	Investigate costs of converting San Juan electrofishing fleet to ETS units	5/12/15	Davis	9/30/15		
36	Letter to BR requesting increased summer flows downstream of Mexican Hat so scheduled work can be completed	5/12/15	PO	7/8/15		

\* 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			