



**SAN JUAN RIVER BASIN RECOVERY  
IMPLEMENTATION PROGRAM (SJRIP)  
BIOLOGY COMMITTEE  
15-17 December 2020 MEETING SUMMARY**

**BIOLOGY COMMITTEE (BC) MEMBERS:**

Matthew Zeigler (Chair)  
Harry Crockett  
Jacob Mazzone  
William Miller  
Vince Lamarra  
Absent  
Brian Westfall  
Stephen Davenport  
Mark McKinstry  
Benjamin Schleicher  
Ryan Besser  
Tom Wesche  
Absent

**REPRESENTING:**

State of New Mexico  
State of Colorado  
Jicarilla Apache Nation  
Southern Ute Indian Tribe  
Navajo Nation  
Ute Mountain Ute Tribe  
U.S. Bureau of Indian Affairs  
U.S. Fish and Wildlife Service  
U.S. Bureau of Reclamation  
U.S. Fish and Wildlife Service  
U.S. Bureau of Land Management  
Water Development Interests  
Conservation Interests

**COORDINATION COMMITTEE (CC) MEMBERS:**

Ryan Christianson U.S. Bureau of Reclamation  
Colleen Cunningham, CC alternate State of New Mexico

**PROGRAM OFFICE (PO):**

Scott Durst, Acting Program Coordinator U.S. Fish & Wildlife Service  
Eliza Gilbert, Asst. Program Coordinator U.S. Fish & Wildlife Service

**OTHER INTERESTED PARTIES:**

Adam Barkalow, BC Alternate New Mexico Department of Game and Fish  
Jill Wick, BC Alternate New Mexico Department of Game and Fish  
Carrie Padgett, BC Alternate Water Development Interests  
Ben Zimmerman, BC Alternate Southern Ute Indian Tribe  
Mel Warren, Peer Reviewer U.S. Forest Service  
Nathan Franssen U.S. Fish and Wildlife Service  
Daniel Kaus U.S. Fish and Wildlife Service  
Tildon Jones U.S. Fish and Wildlife Service  
Brian Hines Utah Division of Wildlife Resources  
Katie Creighton Utah Division of Wildlife Resources  
Ken Sayer U.S. Bureau of Reclamation  
Rob Hilldale U.S. Bureau of Reclamation  
Steve Mussmann U.S. Fish and Wildlife Service  
Melody Saltz giver U.S. Fish and Wildlife Service

Alyssa Richmond  
Matt Bogaard  
Nate Caswell  
Kim Yazzie  
Jerrod Bowman  
Lindsey Bruckerhoff  
Steven Platania  
Stephani Clark Barkalow  
Melissa Trammell

San Juan Watershed Group  
Kansas State University  
U.S. Fish and Wildlife Service  
Navajo Nation Fish and Wildlife  
Navajo Nation Fish and Wildlife  
Utah State Universality  
American Southwest Ichthyological Researchers  
American Southwest Ichthyological Researchers  
National Park Service

**Introductions and changes to agenda**

Zeigler announced that Wesche will be retiring at the end of the year. Everyone thanked Wesche for his work with the SJRIP and he'll be missed.

Durst reported on the greenhouse hemp farm operation in Shiprock. EPA and Army Corps are investigating and gathering evidence to determine if there is regulatory action they could take. Similar operations extend from Fruitland to Mosquito Point. The operation in Shiprock has ceased and crops have been seized but it is not accessible due to the threat of booby-traps.

**Approve draft summary from 29 October 2020 BC meeting; review Action Item list**

Durst incorporated comments from Zeigler and Wesche. Wesche motioned to approve, Mazzone seconded, no objections or further discussion. Final approved summary will be posted to the San Juan website.

New action items will be discussed on agenda for this December meeting.

**Habitat workshop summary and next steps –Miller and Zeigler**

Miller and Zeigler revised PO summary of the habitat workshop to identify next steps and a methodology for ranking habitat projects. BC ranked outstanding questions from habitat workshop based on the data source, data certainty, and ability to provide benefit to multiple species. There was lots of variability in BC responses ranking projects but construction projects that provided habitat in lateral canyons, building islands, and those that “stretch” the river ranked highest. Efforts to stretch the river are also being addressed in the diversion prioritization exercise.

Given the limited BC participation on the next steps of the habitat workshop to date, Miller and Zeigler will send a new request for the BC to submit or revise their response by 31 January 2021. The entirety of the BC responses will represent their recommendation to move forward from the habitat workshop to the CC.

The group discussed the now completed Phase III project. Westfall cautioned a need for evaluation before similar projects are constructed. McKinstry suggested stocking it with Razorback Sucker and indicated a need to access the site with an ATV given the deep sand. Platania brought up the monitoring plan in place to evaluate Phase III and an assessment of its ability to entrain fish should be conducted before stocking it with hatchery fish. McKinstry will share the GPS location of the site.

**FY2021 budget update – McKinstry**

A new CR runs through 18 December 2020. However, that CR provides no funding for SJRIP or other Colorado River environmental programs. WAPA is not providing funding for the Programs so unless there is explicit language in new funding legislation fixing this, there will not be a source of funding for the SJRIP. McKinstry indicated partners use carry-over to pay staff. The group discussed how work would be prioritized if there is a funding shortfall. Zeigler will prepare a memo asking for guidance from the CC on providing technical priority for FY2021 work if funding does not come through.

**Multi-species population models to predict fish responses to different water storage scenarios – Bruckerhoff and Charles Yackulic**

Bruckerhoff and Yackulic presented on their work looking at how reservoir management (discharge and temperature) affects native and nonnative fish and species recovery. Their work incorporates climate change and different storage scenarios on temperature. Temperature is driven more by storage levels than climate change but temperature strongly dictates species responses. Changes in future reservoir storage levels may limit the ability to use “designer flows” in these systems. A goal of this work is to link water supply with fish recovery outcomes using alternative reservoir management paradigms. The spatial extent of the work is everything upstream of Lake Mead.

At this point Bruckerhoff and Yackulic are interested in getting feedback from the SJRIP on their conceptual models that will be used to develop age-stage based matrix population models that predict species response incorporating spatial reality and management actions to the fullest extent possible. Additionally, assistance on data to populate the models and feedback on parameters in the models will be helpful. Bruckerhoff will follow up with the group to solicit volunteers to provide feedback and data. The PO will provide assistance as needed to support the project as well.

**Status of Peer Review panel – McKinstry and Durst**

Currently Mel Warren is the only consistent SJRIP Peer Reviewer due to recent retirements and Peer Reviewer availability. McKinstry and Durst were seeking input from the BC on what they wanted to see in SJRIP Peer Review. The group discussed the merits of standing Peer Review panel versus paying for Peer Review on an as needed basis. Peer Review has been included in the post-2023 planning but there has been little discussion of what that would look like. There is no standing Peer Review in the Upper Colorado River Recovery Program. Trammel thinks Peer Review in the SJRIP provides more guidance and specific details in their comments on SOWs and reports. Wesche suggested the importance of a standing panel for consistency but thought two reviewers would be adequate. Warren’s perspective is that more Peer Reviewers is good for different points of view and Peer Review has been important in advancing the SJRIP but the time commitment is less than previous due to streamlining although it would take a new Peer Reviewer (preferably from outside the Colorado River Basin) up to two years to get up to speed.

The status of the Peer Review panel will be included on the agenda for the February meeting with a goal of a BC recommendation on how best to move forward in the future.

**Update on nonnative fish stocking cooperative agreement – Zeigler**

The procedures have been completed and the agreement is awaiting signatures for finalization. So far Southern Ute Indian Tribe, New Mexico, and Fish and Wildlife Services Regions 2 and 6 have signed the agreement. Signatures are pending from Colorado, Utah, Navajo Nation, Jicarilla Apache Nation, and Ute Mountain Ute.

**Including PI responses to reviewer comments on SJRIP reports and BC responsibility to review SJRIP reports – Zeigler**

During its February 2017 meeting, the BC made a decision that all final SOWs and reports that receive comments need an appendix where PIs address those comments. Currently only a few BC members provide comments to reports/SOWs that PIs put lots of effort into writing. Miller suggested at least confirmation to PIs that BC members read a report even if they don't have comments. Franssen noted that since reports and SOWs are posted to the SJRIP website, PIs should take that into consideration in responding to comments publicly.

Mazzone thought comments and response to comments should not be included in final posted version of reports. This is not part of the normal scientific journal process. The PO could be a repository for report/SOW peer review comments and PI response to those comments. The group discussed a path forward that would ensure PI's considered Peer Review comments without having those posted to the website. Unanimous decision was made to strip peer review comments and PI response to comments from the final version of documents before posting. A separate document of these comments and response to comments will be archived on the password protected website.

**Technical Service Center fish passage report on APS and Piute Farms Waterfall – Rob Hildale and Ken Sayer, Bureau of Reclamation**

McKinstry provided some background on TSC's analysis of fish passage at these two barriers and the use of capital funds for this effort. BC members and SJRIP partners can provide comments on the presentation and forthcoming draft report that will be incorporated into a final report after February. Before any options at the APS Weir are finalized, APS will need to be consulted since we would need their approval. Franssen will keep Pam Norris from APS in the loop on these designs at their facility.

Two alternative designs were presented for APS: A Hogback style rock ramp with integral riffle/pool fishway located downstream of the APS weir and a downstream rocky ramp with Price-Stubb style fishway extending upstream of the APS weir with baffle cylinder drops. Neither of these designs would provide boat passage so rafts would have to be portaged as they are now but the ramp would be designed to not create symmetrical holes or large drops. These designs were informed by guidance from Bill Rice, a fish passage engineer with the U.S. Fish and Wildlife Service on fish swimming ability. Miller expressed concern of local movements outside of spawning migration but since Razorback Sucker is a poor performer in swimming tests the velocities under consideration covers juvenile life stages of the large-bodied fishes in the San Juan River. The group discussed the importance of a substrate with a "natural" design. Operations at APS will be important to consider to evaluate the two designs but the basis for any recommendation or decision should be what is best for the endangered fish.

Two alternatives were also presented for the Piute Farms Waterfall. Alternative 1 was a selective fish passage at Clay Hills with the river be re-routed to its original channel so the waterfall would be by-passed and allow fish passage. Additional sediment modelling and a channel survey would need to be conducted to inform this alternative. McKinstry highlighted the possibility of creating some backwater wetlands in the area fed by Piute Farms Wash. Alternative 2 was a structure like PNM fish passage/trap constructed at the waterfall. This alternative would have a shorter channel and would also require road improvement to the waterfall.

Following completion of the final report after the February meeting, the BC will make a recommendation on these fish passage alternative to be approved by the CC (likely by the May meeting). Hilldale and Sayer will provide a draft report by mid to late January that the BC will discuss at their February meeting and provide comments back to TSC for report finalization in March.

**Diversion prioritization in the San Juan River to minimize entrainment and provide passage – PO, Davenport, Mazzone, Miller, Zeigler**

Miller provided a recap of how the primary evaluation was based on a diversion's spatial characteristics (including presence of endangered fish). Additionally, a justification for the temperature regime was provided. The secondary evaluation was based on the qualitative characteristics of the diversion structure. The BC will be tasked with prioritizing the diversion structures based on these evaluations to implement actions to minimize entrainment or provide passage. The small group will take the first stab at filling in the spreadsheet by early January before getting input from the BC. These rankings will be further discussed at the February BC meeting.

Mazzone detailed the path forward once diversions are prioritized that would need to be part of the project implementation process. The path forward includes completing a check-list that provides more details to address potential concerns related to project implementation.

**Discussion of capital projects to prioritize prior to 2023 – BC**

The group discussed a variety of projects that could be implemented prior to 2023. Fruitland is a priority to complete because it has been delayed for multiple winters. The information provided during this meeting on providing fish passage at APS will be used to prioritize implementation of a project there. The operation of the sluice at Hogback has long been known to dry the non-selective fish passage there. Improvements in that operation may result in better fish passage at Hogback.

Recent proposals on infrastructure improvements to improve operation at NAPI were discussed. The kettle and drain improvements at West Avocet would bring that pond up to speed with improvements that have already been completed at East Avocet and Hidden Pond. Cla-val valves that regulate water levels in the ponds need to be replaced. Bowman is working with NTUA to upgrade power at the ponds that should be at no cost to the SJRIP. The BC recommended that these infrastructure improvements at NAPI be completed.

McKinstry detailed how the VFD pumps at Hogback continue to interfere with the PIT tag antennas at that facility. Various fixes have been proposed but have failed for a variety of reasons. Navajo Nation plans to replace these pumps in the future and that will fix the issue but the timeline to do this is unknown. Westfall reported that there is no funding to rehabilitate the pumps and pipes at Hogback. Similar issues have apparently delayed completion of the Fruitland project.

Zeigler highlighted that the habitat workshop and diversion prioritization exercises will provide some direction on the projects that should be completed prior to 2023. Additionally, results from Phase III will inform the possible implementation of similar projects. There seems to be agreement among the BC that “lengthening” the river and available habitat for endangered fish is important. Once the BC rankings from the habitat workshop exercise are completed, this topic will be discussed again at the February meeting. Wesche suggested engineered log-jams could add habitat complexity in simplified stretches of the river. Lamarra indicated that since sandbars show up at the same places over time, these locations could be good places to build islands. Westfall expressed concern with the SJRIP’s ability to implement habitat projects in a timely fashion.

Franssen asked if there were other opportunities to improve passage at PNM. The 2020 data needs to be explored to understand what happened at the facility. Continued small scale improvements at PNM could be undertaken depending on these results. Some options that have been discussed include increasing the width of spacing in the upstream trash rack and adding more substrate to the trap like has been done at the trap’s skirt.

Changes in PNM’s operation may create opportunities for improvements in fish passage/entrainment at this facility that can be addressed with capital funds. However, the nature of how that facility will change is unclear at this time.

#### **Update on stocking NAPI Razorback Sucker at Piute Farms Waterfall – Bowman**

About 2,000 fish were < 300 mm TL during the NAPI active harvest. The BC recommended stocking them at the waterfall and this was approved by the CC. On 30 October 2020 these fish were “re-harvested” and 1,704 fish < 300 mm were transported to and stocked at the Piute Farms Waterfall. There were 138 fish that grew above 300 mm and they were stocked at PNM. A total of 8,681 Razorback Sucker were stocked from NAPI in 2020 and there was high survival of the fish received from SNARRC.

#### **Disposition of stocked Razorback Sucker < 300 mm TL – PO**

The BC previously decided to not stock fish < 300 mm to allow for definitive identification of wild recruitment in the San Juan River (i.e., untagged fish < 300 mm could be confidently identified as wild). Because of tag loss, the origin (hatchery versus wild) of untagged fish > 300 mm captured in the river is ambiguous. Stocking smaller fish at the waterfall will confound the identification of wild fish in Lake Powell but to date there’s been limited evidence of wild recruitment there so the safe assumption of untagged fish captured in the lake is that they are from the hatchery. McKinstry and Crockett suggested if there are fewer than 1,000 fish < 300 mm, then hold them over at NAPI but stock these smaller fish at the waterfall if there are more than 1,000. Further discussion of this subject will occur at the February meeting.

### **Recommend trap-and-transport SOW for CC approval – Gilbert**

The previous CC approval of this concept resulted in the SOW that needs to be recommended by the BC for CC approval of funding. The SOW details implementing the seining corral and fyke net options in March while KSU is working at the waterfall so these two options can be tested with their existing effort. The group discussed how to compare the results of the two trapping options with electrofishing. The group supported protocol 4 that was recommended in the SOW. Trapping will occur during 2 weeks in March while KSU is working at the waterfall and all captured native fish will be moved upstream of the waterfall. The BC unanimously recommended moving this SOW to the CC for their approval for funding.

### **Hatchery enrichment options at NAPI**

Enrichment options to improve the post-stocking survival of Razorback Sucker include flow-conditioning raceways and netting to split ponds for treatment-control designs (such as predator exposure). The group debated the issue of predation on ~300 mm Razorback Sucker in the river but even if predation is unlikely there could be behavioral benefits. There are no plans to repeat the flow-conditioning experiment at SNARRC. The group discussed numerous questions and details to resolve related to conducting flow-conditioning at NAPI. Navajo Nation will have a SOW that sorts out these issues ready for BC review in January but the group was supportive of these ideas in concept.

### **Rearing Colorado Pikeminnow at NAPI**

There have been previous discussion on rearing Colorado Pikeminnow at NAPI to supplement the number stocked from SNARRC. Rearing pikeminnow at NAPI would come at the cost of reducing number of Razorback Sucker stocked from NAPI. The group agreed that not enough information is known at this time related to the number of age-1 pikeminnow that will be produced at SNARRC and the appropriate number of Razorback Sucker to stock into the San Juan River Basin to make a decision on this. This discussion should continue once there is more information available.

### **Future of nonnative removal. What would the BC like to see from this work in post-2023 – PO, BC, NMFWCO**

What are the most important questions to address to determine what nonnative fish management looks like post-2023? What outstanding data/analysis needs are there to address these questions? How will the SJRIP measure the success of nonnative fish management? If nonnative fish management is conducted in proportion to the level of the threat, how will the magnitude of the threat and management be determined? Is maintaining the current size structure of Channel Catfish an acceptable goal? The group discussed the need for a symposium to include Channel Catfish experts and experts from outside of the Colorado River Basin.

Given the science and evidence that has been conducted to date, the group discussed if nonnative fish are a problem for recovery in the San Juan River. In general, the group agreed that large Channel Catfish posed some threat to recovery and cause a population level effect on Colorado Pikeminnow. Some were previously skeptical of the predatory threat but were convinced by the KSU diet study. What removal techniques can be used to increase exploitation rates? Some in the group expressed concern about the potential for harm to the native/endangered fish with

widespread electrofishing. Some suggested more work needs to be done to identify aspect of Channel Catfish biology that allow them to be exploited more efficiently (especially movement) and the group was open to other removal techniques (like temporary weirs). The group debated potential endpoints for nonnative removal like elimination of Channel Catfish from the system, minimizing catfish impact to some unidentified level, or just continuing the management in perpetuity. There is one season of nonnative removal in the winter when it was thought that exploitation rates would be high. Those data need to be evaluated to assess the effectiveness of these winter removal efforts. Are Channel Catfish a threat for Flannelmouth and Bluehead Sucker? If not is it simply because those native suckers have large populations? Thus, increasing the size of the endangered fish populations may allow them to have the reproductive capacity for catfish to no longer be a threat. It would be helpful for the SJRIP to develop of structured plan to guide nonnative management into the future.

### **Temperature control device on Navajo Reservoir**

McKinstry sent out a Reclamation report on this subject as a notice to the BC that Reclamation was still pursuing this issue. The group discussed the need for more information before making any decision. Reclamation's TSC could provide an analysis. Kim Dibble et al. from the USGS has been doing temperature modelling work to assess effects on native and nonnative species in the Colorado River Basin. Results from a larval temperature study at SNARRC will be available soon. Larmarra indicated that range expansion in the mainstem San Juan and Animas Rivers should not be mutually exclusive and the SJRIP should consider the best means to expand range for the endangered fish. This agenda item should be revisited once more data to inform the discussion is available.

### **SJRIP post-2023 action to provide and protect flows and irrigation improvements**

The SJRIP recommended this action be pursued in post-2023 recovery planning however there are no specific activities associated with it. Some ideas suggested were protected in-stream flows and securing the water right associated with PNM. Because this is a big topic, a separate meeting should be devoted to it or it should be on the agenda in February.

### **SJRIP post-2023 action to create habitat**

This topic has been previously discussed during the meeting and a path forward is identified.

### **SJRIP post-2023 action for hatchery enrichment**

The PO has an action item to reach out to existing facilities to see what kinds of hatchery enrichment then can currently conduct or what would be needed to be able to conduct enrichment at these facilities.

### **What is the role of the Animas River in recovery?**

This has been a controversial topic in the SJRIP but the diversion prioritization exercise is a step to allow the endangered fish to tell us the role of the Animas River in recovery. Once PIT tag antennas are installed at Ranchmans, assessment of entrainment can occur at that diversion. There is entrainment risk and potential passage barriers at other diversions but there is limited sampling between PNM and Penny Lane so maybe there is a need for more effort in that reach with portable antennas to determine the number of fish that use that reach. Wesche suggested it

will be important to do the diversion prioritization exercise to get water user support but supported additional sampling near the Animas confluence.

**Wrap-up with scheduling upcoming meetings, recapping decision points, assigned actions, and adjourn**

The PO will send a Doodle poll to schedule a BC meeting in February.

The Researchers Meeting is scheduled for 12-13 January 2021.

The next SJRIP CC meeting is scheduled for 26 January 2021.

Miller and Zeigler will distribute habitat workshop exercise by 31 January 2021 and follow this up with a revised draft after the February BC meeting.

Zeigler will draft a memo to the CC asking for guidance on prioritizing SOWs if there is a FY2021 funding short-fall.

The future of the Peer Review panel will be discussed in February.

BC will return comments on diversion prioritization by 28 December 2020 to Gilbert.

Gilbert will send out questions to address in a nonnative symposium by 31 December 2020.

BIOLOGY COMMITTEE ACTION ITEM LOG (Updated January 8, 2021)						
Item No. *	Action Item	Meeting/Origin	Responsible Party(s)	Due Date	Revised Due Date	Date Completed
1	Provide RBS/CPM stocking/capture/recapture data		PIs to PO	Before Jan. 1		
2	Provide Preliminary Draft Report Presentations		PI	At Feb. meeting		
3	Review LRP		BC	At fall meeting		
4	Review Peer Review Comments from the February and May meetings		BC	At fall meeting		
5	Provide Draft Reports		PIs to PO	By end of March		
6	Scopes of Work		PIs to PO	By end of March		
7	Provide Final Reports		PIs to PO	By end of June		
8	Annual Data Delivery		PIs to PO	By June 30		
9	T&E Species Data		BC to PO	By Dec. 31		
10	Compile T&E data and Program progress into summary to address overall Program recovery goals/objectives for presentation		PO/BC	At May meeting		
11	Distribute consolidated data and list of annual data collected and available in the Program's database		PO to BC	By Jan. 31		
12	Recapture analysis on PIT tagged fish		Durst	By March		

BIOLOGY COMMITTEE ACTION ITEM LOG (Updated January 8, 2021)						
Item No. *	Action Item	Meeting/Origin ation	Responsible Party(s)	Due Date	Revised Due Date	Date Completed
13	Coordinate CPM stocking closely with BOR to avoid negative impact due to high flows/releases		PIs	Annually		
14	Revise RBS Augmentation Goals (based on the outcome of experimental stocking and analysis by Franssen and Durst). What is the appropriate numbers of fish to stock?	5/10/10	NMFWCO/PO	05/2011 – provide update and extend as needed	Ongoing	
15	Pursue effects study on Hg/Colorado Pikeminnow with other groups/programs	1/14/10	PO lead		Ongoing	
16	Include benchmarks for recovery in LRP (amended to also included in Pathways document and monitoring protocols)	12/5/14	Mata	01/5/2015	Ongoing	
17	Status updates for the LRP	12/2/15	PIs to Mata	02/23/2016	Ongoing	
18	Make Program peer-reviewed publications available to Program participants	11/29/16	PO (Mata)	02/21/2017	Ongoing	
19	Disposition of Razorback <300 mm TL	02/21/17	NMFWCO	05/16/2017	Ongoing	11/28/2017 TBD 2019
20	Draft a plan for Colorado Pikeminnow stockings	02/21/17	PO, NMFWCO, and NMDGF	02/21/2017	Ongoing	
21	Coordinate aerial flights for base flow imaging	11/28/17	BC (Lamarra)/PO (Franssen)	Fall	Ongoing	

BIOLOGY COMMITTEE ACTION ITEM LOG (Updated January 8, 2021)						
Item No. *	Action Item	Meeting/Origin ation	Responsible Party(s)	Due Date	Revised Due Date	Date Completed
22	Rank entrainment risks for diversions included in the Diversion Study	02/019/2020	PO	Ongoing		
23	Coordinate with Upper Colorado Program on enhancing CPM broodstock	02/019/2020	PO	Ongoing		
24	Planning document for Colorado Pikeminnow rearing at NAPI	5/12/2020	NMFWCO and PO	None given		
25	Explore options for hatchery enrichment across facilities used by the SJRIP	10/29/20	PO	None given		
26	Provide comments on the diversion prioritization	12/15/20	BC to Gilbert	12/28/20		
27	Questions to address in nonnative symposium	12/15/20	BC to Gilbert	12/31/20		
28	BC revised responses on habitat workshop wrap up	12/15/20	BC to Miller and Zeigler	1/31/21		
29	Memo to CC on prioritizing SOWs if there is a funding shortfall	12/15/20	Zeigler	None given		
28	Finalize the trap and transport SOW	8/20/2020	Pilger, Durst, Gilbert	None given		8/24/2020
29	Memo to CC recommending trap and transport options	8/20/2020	Zeigler, BC	None given		9/23/2020
30	Demographic monitoring PIs send memo to CC if revising the SOW effort	8/20/2020	PIs	9/14/2020		10/23/2020
31	Schedule a BC calls for October for focused discussion and another longer meeting after Thanksgiving	8/20/2020	PO	None given		10/29/2020
32	Update long-range plan to reflect change in Colorado Pikeminnow stocking	5/12/2020	PO	6/30/2020	Prior to Oct mtg	10/29/2020

BIOLOGY COMMITTEE ACTION ITEM LOG (Updated January 8, 2021)						
Item No. *	Action Item	Meeting/Origination	Responsible Party(s)	Due Date	Revised Due Date	Date Completed
33	Write a path forward paragraph for habitat workshop summary and send to BC for review	7/14/2020	Zeigler and Miller	None given	9/14/2020	10/29/2020
34	Send the final Razorback Sucker augmentation plan to PO and then BC	7/14/2020	Davenport	None given	End of Aug	10/29/2020

Yellow highlight indicates annual action items  
 Green highlight indicates new action item  
 Red highlight indicates completed action items