

September 29, 2003

**Biology Committee Integration Subcommittee  
Meeting Summary**

Farmington, New Mexico

July 16-17, 2003

**Members & Researchers  
Present:**

Ron Bliesner

Tom Chart

Jason Davis

Paul Holden

Julie Jackson

Vince LaMarra

Chuck McAda

Bill Miller, Chair

Tom Nesler

Steve Platania

Dale Ryden

Tom Wesche

**Others Present:**

Mike Buntjer

Sara Gottlieb

Wayne Hubert

Randy Kirkpatrick

Shirley Mondy

**Representing:**

U.S. Bureau of Indian Affairs

U.S. Bureau of Reclamation

U.S. Fish & Wildlife Service, Region 2

Jicarilla Apache Nation

State of Utah

Navajo Nation

U.S. Fish & Wildlife Service, Region 6

Southern Ute Indian Tribe

State of Colorado

University of New Mexico

U.S. Fish & Wildlife Service, Region 6

Water Development Interests

U.S. Fish & Wildlife Service, Region 2

University of New Mexico

Peer Reviewer

San Juan Water Commission

Program Coordinator

Paul Montoia	City of Farmington
John Pitlick	Peer Reviewer
Steve Ross	Peer Reviewer
Ron Ryel	Peer Reviewer
Melissa Trammell	U.S. National Park Service
Carl Woolfolk	Arizona Public Service

Bill Miller welcomed everyone to the meeting and briefly discussed the process of integration that has taken place so far. The Biology Subgroup met in September and November and the Physical Subgroup met in May and June.

The group discussed whether to include 2002 data into the reports and integration. The consensus was that 2002 data should be included. (Dale Ryden included 2002 rare fish information, but not the common fish information). ***Deadlines: all three year reports are due!***

Ron Bliesner presented information that indicates that the channel is narrower in reaches 3-6, significantly so in 3 & 4. The island count is down in reaches 3-5, significantly so in 3&4. The island area is unchanged, except in Reach 4 where it is down. The channel response is about the same as the 1960-1988 period. For River Miles (RM) 82-158 (during 1992-2002): the channel width did not change; there was a significant decrease in island count and island area.

For the long term comparison, there has been a one percent a year loss of channel width since the dam was built. The number of islands increased during 1960-1988. In general, the channel in reaches 3-6 is deeper, narrower and simpler than in 1992 (supported by habitat mapping data and cross-section survey data). The change appears to be occurring at about the same rate as for the 1930-1988 period. Influence of non-native (Russian olive, tamarisk) vegetation may be a factor.

Backwater habitat has been decreasing with time in all reaches. Other low velocity habitat has also been decreasing, but at a slower rate. It appears to be connected to channel simplification and lower water surface elevation.

It appears that low velocity areas have a split in habitat response with 1995 being the last large positive response and the drop to a new stable low period occurring in the 1996-1997 range. It appears all low velocity habitat types have responded similarly, including slackwater.

We don't have very many large backwaters that are deep. Cobble bar surveys show a response – we need big flows to build up the bars. In low water years, the cobble bars erode overall. That is what we theorized and that appears to be correct. We didn't have the 2500 cfs flow last year and it was the only year we didn't have the cleaning of cobble

bars (just like we predicted).

The whole river may be filling with fine sediment in secondary channels. This may be more a sediment balance issue than a vegetation problem. Trying to do a sediment balance on any reach would be a good thing to do.

Dale Ryden presented his data that indicates that there are still not very many Colorado pikeminnow in the river. Wild adults are rarely caught. The 2001 stocked fish are still skinny and in generally poor condition, but a few still are surviving and a couple have used the new PNM fish ladder. Age 0 pikeminnow from 1996-97 were commonly seen until 1999. After that, they have disappeared. We don't know if they have reached the age where we can't catch them or if they are really gone. Julie Jackson has caught a few in the lower reach.

According to our plan, only razorback suckers that are larger than 350 mm will be stocked. We have only stocked 7000 fish, but the return rate is much higher than the pikeminnow. This is most likely related to the size at stocking. Julie Jackson found a spawning group around RM 18 down by Lake Powell. We have documented spawning for five straight years on the ascending limb of the hydrograph.

Roundtail chub are not really a riverine population in this area. They don't exist long in the river and are probably coming in from the tributaries.

Flannelmouth make up 49-55 % of the fish caught during adult monitoring trips. All life stages are found and the majority are found in reaches 3-5. Flow manipulations don't seem to affect these fish. 2000 was a good year for spawning of flannelmouth and catfish.

The bluehead sucker population is centered around Reach 6 (Hogback diversion and above). 8000 of the 12,000 fish collected in the fish ladder are bluehead suckers. Populations haven't seen any decreases. In 2000, there was a huge increase of age 0 fish.

Channel catfish are the most commonly collected non-native fish. There has been no real affect on the fish from flow manipulations. Non-native removal seems to have the best affects. Catch per unit effort (CPUE) for smaller fish is increasing while that for larger fish is going down. 2000 was an ideal year for spawning.

Common carp are everywhere in the river, in all sorts of habitat. We normally only see adult fish (larger than 350 mm) except in 2000, when they saw lots of age 0 fish. In the lower half of Reach 6, there is a noticeable, not statistically significant, trend of reducing carp perhaps due to nonnative removal efforts. A lot of biomass has been taken out of the river which may allow more food availability for native fish.

Striped bass came up the river with the peak in 2000 and stayed in the river most of the summer. They were seen all the way up to the PNM weir. It could be because the water level was down and the river was clear. Clear water appears important in when and if striped bass enter the river, along with the formation of waterfalls in the lower river that prevent upstream migration under any river conditions. Dale suggested that striped bass

predation reduced native suckers in the river in 2000, but the Peer Review Panel and others disagreed. The data in his report does not show any drop in sucker catch rates for 2000 compared with surrounding years. Increased striped bass predation undoubtedly occurred in 2000, but its effect on native fish populations is not obvious.

Julie Jackson noted a potential spawning aggregation of razorback sucker at a cobble bar at RM

17.5 in 2003. No razorbacks were found congregating at any known spawning bar but 2002 and 2003 had the best documented collection of larval fish.

What was it about calendar year 2000 that allowed all four common, large-bodied fishes to have such a successful spawning effort? (Dave's 2000 data didn't show a big spike of fish). Length/frequency did show you did have a spike of young fish in 2000. Was it good spawning (look at ascending limb conditions) or good survivability (look at summer flows)? All common native fish populations have been relatively stable since the flow recommendations were instituted.

Steven Platania summarized the results his group's larval razorback sucker collecting activities from 1998-2002. They collected almost 200,000 fish (primarily young of year) during that period of which 23% (ca. 46,000) were suckers and 75% cyprinids. Suckers were, relatively consistently, about 25-25% of the annual catch of their project. Flannelmouth sucker larvae were 19% of the overall (1998-2002) catch and bluehead sucker 3%. To date, they have collected about 1,000 larval razorback sucker with most individuals having been taken during 2002 (n=812). Also in 2002, the first collection of a wild spawned juvenile razorback sucker was recorded. The increase in the number larval razorback sucker taken has been attributed to both an increase in the population size of the reproductive cohort and increase in fecundity of maturing adults. The annual first trip for this project is during April and to date, there has never been a larval sucker (of any species) collected during their April trips. The importance of the lack of April sucker specimens is that it helps to better define the spawning season of suckers.

Team members asked if any effort had been made to age the larval razorback sucker in an effort to back-calculate and determine approximate spawning date. Platania stated that had not been done and, to his knowledge, there is nothing currently available for razorback sucker (i.e., model for predicting spawning date from razorback sucker length). He did note, however, that they had retained numerous samples in ethanol (ethyl alcohol) which does not dissolve otoliths and would allow one to examine that boney structure and attempt to determine an age of the individual.

Regarding the Colorado pikeminnow study, 2002 was the first year that the new sampling technique (larval seine samples) was employed. During the four sampling trips (mid-July through mid-September 2002), over 90,000 larval and young of year fish were collected. This was more than four times the number of specimens that had been taken during the previous 10 years of drift-net sampling combined. Introduced cyprinids numerically dominated the 2002 Colorado pikeminnow samples comprising 98.7% of the total catch. No Colorado pikeminnow were collected in 2002.

Finally, Platania noted that there are still several (ca. 10) larval fish from the 2002 samples awaiting final confirmation of the preliminary identification from Darrel Snyder (Colorado State University Larval Fish Laboratory). He said he would contact Darrel and try to obtain that information so that the 2002 reports (both razorback sucker and Colorado pikeminnow) could be finalized. Paul Holden asked Platania for some clarification regarding statements made at a previous meeting. Holden wanted to know the status of a “potential” Colorado pikeminnow that Platania had, in a previous meeting, stated was collected during a Colorado pikeminnow larval fish survey and sent by MSB-UNM researchers to CSU for identification verification. Platania said he look up that information upon return to Albuquerque.

(Platania provided the following information to Shirley Mondy on Tuesday, 22 July 2003 regarding the Colorado pikeminnow in question. An 8.9 mm TL larval fish (proto-or preflexion mesolarvae) tentatively identified as a Colorado pikeminnow was collected in a drift-net sample (Field Number FC01-054) on 01 August 2001 at River Mile 128. The specimen was sent to Darrel Snyder, CSU Larval fish laboratory, on 10 February 2003 for verification of the specimen identification. A recent inquiry was made of Darrel Snyder of the status of the loan at which time he told us he had not had the opportunity to process the samples but would do so shortly.)

From Dave Propst’s reports, he is not picking up any suckers in his fall monitoring. This is not consistent with Dale Ryden’s and Steve Platania’s data. Bill Miller also has some data and is looking at this as well.

Comparison of common species from Dave Propst’s, Steve Platania’s and Dale Ryden’s data shows that we are not picking up native fishes in the small-bodied monitoring in September. The time of year sampling occurs, the areas to be sampled, or the sampling method need to be modified. Dave Propst is not doing collecting his data by habitat type even though it is part of the protocol. If you look at them by habitat, will you see a better correlation? There is a big difference between what Bill Miller and Dave Propst are seeing. This is probably due to equipment and sampling differences. Bill is electro-fishing with multiple passes and using a block net. Dave is seining with some kick-netting. Dave picked up a couple pikeminnow and Julie Jackson picked up a couple as well (through electro-fishing). Could be missing what we need to see pikeminnow in the fall monitoring.

Can we determine that if we lose backwaters, we are losing fish? Yes, we think we can. Then we need to go back and look at mile by mile integration. Now that we see changes, we need to figure out why. What do we do when we find a change? How do you determine significance? We are seeing changes in the physical habitat now, but most likely, we won’t see changes in the fish community until later. What is the analytical process to use what the researchers came up with relate it to the physical data? Where do we go from here?

***The most important next step is to finish all reports 99-02 reports as soon as possible. Need to go back to the monitoring protocol at a minimum for Dave Propst’s data.***

Small bodied monitoring needs some more effort. Do we need electro-fishing with riffles

and shorelines? Dave Propst is doing seining well – maybe too well. They have increased the number of secondary channels and backwaters that are sampled and therefore had to give up doing it by habitat type. If they go back to original protocol, there may be enough time. Maybe we need to do half of the seining for numbers of fish and half of the seining for presence/absence of pikeminnow.

***Individual researchers need to look at their own data for trends over time.*** Use the Monitoring Summary Report Outline that Bill Miller sent out. (See attachment.) The unit of synthesis will be determined by the individual researchers. You should look at how small you can go without getting overwhelmed by the data. River mile would be good if you can do it. For fish population data, reach is probably a better key.

***Bill Miller will get together with Dave Propst to see how far along his data is and in what format it is in. Bill will determine if he needs to submit a scope of work to do his stuff.***

Paul Holden plans to have a draft monitoring summary report completed by the end of the month. He is looking at the basic data and then concentrating more on the endangered fish.

The Committee worked on the following integration objectives and hypotheses. The numbered items are specified in the monitoring plan.

### **Integration Objectives, Hypotheses and Assessment**

1. Track the status and trends of endangered and other fish populations in the San Juan River. (Bring different species together with each life stage)

Hypothesis: No significant reduction in native populations (river-wide and reach-wide).

Hypothesis: Significant decrease in nonnative fish populations. Hypothesis: Significant increase in endangered fish populations.

2. Track changes in abiotic parameters, including water quality, channel morphology, and habitat, important to the fish community.

Hypothesis: No significant reduction in habitat parameters.

Hypothesis: No significant loss of water quality.

Hypothesis: No significant loss in channel complexity.

Hypothesis: Elements of the flow recommendations have altered or maintained the habitat as predicted.

3. Utilize data collected under Goals 1 and 2 to help assess progress towards recovery of endangered fish species.

#### Evaluation of habitat hypotheses

Hypothesis: Fish densities are correlated to habitat characteristics.

Hypothesis: Spatial and temporal changes in habitat are correlated to changes in fish densities.

Assessment towards recovery Hypothesis: The flow recommendations and other management actions are appropriate for recovery of endangered fish. Hypothesis: The status of the endangered fish is moving toward recovery. (Positive population response criteria) Hypothesis: The recovery goals for the San Juan River have been met.

Ron Bliesner said that he and Vince LaMarra would take a first cut at correlating habitat and fish data if the fish data is provided to them. ***All data should be sent to Ron and Vince by August 8th. The data needs to be in a database format with river mile or coordinates in it. (Ron will look at the data that is in the database now and if it isn't in an acceptable format, he will let researchers know). The main researchers will meet in Grand Junction August 27-28.*** The meeting will start at 1 pm on the 27<sup>th</sup>.

#### Other issues:

GIS database and maps Sara Gottlieb gave a presentation on the error found on the 1998 aerial photography. Sara discovered an error on the maps at river mile 28. Ron Bliesner stated that they found the error after the maps were printed, but had sent a note on how to correct the maps at the time the maps were sent out. Some researchers were aware of the error and others weren't. Sarah also noted that river miles were often not a mile long and that a new river map would have 21 more miles from Clay Hills to Navajo Dam than the map being used. Sara proposed generating new maps from the GIS data. There was a long discussion about how to designate the river miles (RM). It was decided to use the current RM designation. ***New maps will be generated by Sara and distributed to everyone on the committee and researchers. They will be marked tenths of mile (or tenths of segment) increments.***

There was a discussion about the use of GPS coordinates while in the field. ***There was agreement that GPS coordinates should be taken for all collection data and that when doing longer stretches of the river, take a coordinate at the beginning and end points of the sampling or removal effort.***

There was also a short discussion about the database and what data was missing. For correlation of data, ***Sara will talk with each researcher to determine which aerial photography was used for the data collection.***

Requests for proposals (RFP) for Fiscal Year 2004 Pikeminnow stocking -- Paul Holden stated that after much discussion, it was determined that this RFP really had three elements to it:

- . • looking at stocking methods to improve retention
- . • stocking larger size fish
- . • looking at the feasibility to modify habitats

Changing stocking methods falls into what Dale Ryden and Paul Holden are already doing. This would just require modifications to their existing scopes of work. ***Paul will modify his current pikeminnow scope of work to include this new stocking protocol experiment and give it to Shirley Mondy next week.***

The larger fish part can be done at Dexter National Fish Hatchery and Technology Center and would make no sense to put this out as an RFP. Dexter is already growing the fish for us; it would be a modification to their scope of work.

The only thing suitable for an RFP would be habitat issues. This is proposed with a limit of \$50,000 and should be a one year proposal from time the contract is awarded. ***The proposal should be modified to change “pedestrian survey” to “field surveys.”*** It is a feasibility study and not actual habitat restoration. What can we do to increase low velocity habitats? What can we do to make better areas for the pikeminnow? Is it feasible to do manipulation in this system? Should we do actual habitat manipulation? The RFP would have to explain what resources available so the person doesn't try to duplicate what is already done. We will need to explain the qualifications needed to do this work.

On a side note, Carl Woolfolk from the Arizona Public Service Four Corners Generating Station reported that personnel from the Bureau of Reclamation were cutting down Russian olive trees just upstream of APS weir which was causing debris to be trapped at their facility. ***Tom Chart said he would check on what is happening and why Reclamation was removing trees and would report back to the committee.***

The RFP's for evaluation of the need for fish passage at Fruitland and the Arizona Public Service weir have not been sent to the committee. Jim Brooks sent a draft to Ron Bliesner and Bill Miller. ***It needs to go to the whole committee for review.*** Bill Miller hasn't completed the RFP for the entrainment of fish at the Hogback diversion. ***He will send the draft to the committee for review.*** The other RFP is for building five nursery ponds. Ron is putting it together and will get it to Reclamation for the actual construction RFP. One of the evaluation criteria for the nursery ponds contract will be the cost of moving the fish from the nursery ponds to the NIIP ponds. The Hidden Pond modification for salamander fencing and other items has been sent forward as an add-on to an existing fiscal year 2003 scope of work to Ron Bliesner.

Other scopes of work for fiscal year 2004 Darrell Snyder from the Larval Fish Laboratory in Fort Collins put in a proposal to the Upper Basin Program to get a new razorback

sucker key printed with updated information. The Upper Basin Program has \$10,000 to put toward the printing, and asked if we would agree to fund the remaining \$6,000. The Biology Committee agreed that this is an important tool and worthy of our dollars. ***The Biology Committee agreed to put it forward to the Coordination Committee for inclusion in the fiscal year 2004 work plan.***

Melissa Trammell stated that the National Park Service (NPS) has agreed to fund Colorado pikeminnow work in Utah. The money that the NPS found requires matching funds. The State of Utah has agreed to provide the matching funds. Melissa suggested that the Utah portion of Paul Holden's scope of work be funded by NPS and the State of Utah which would free up approximately \$14,000 for other Program work. Utah will follow the same protocol that Paul uses on the trip that they take this summer (separate from Paul's crew). All other work would be in conjunction with Paul's crew. The Committee agreed to this change in scope of work. ***Paul will modify his scope of work to include this source of money.***

A scope of work for operation of the fish passage at the PNM weir was submitted by Jeff Cole from the Navajo Nation. The majority of the proposal is identical to the last scope of work. Vince LaMarra suggests that the labor costs indicated are not adequate to cover the workload. He suggests that it be modified to show \$46,000 for labor. ***Vince will get with Jeff to fix the budget. It will be submitted to Shirley for inclusion into the fiscal year 2004 work plan that will be forwarded to the Coordination Committee.***

Discussion of issues at the PNM fish passage structure The Committee was impressed with the facility but was concerned for the personnel who operate the structure. There are several safety issues that should be addressed quickly:

- . • There should be two-way communication available on site.
- . • There should be two people on-site during operation of the structure.
- . • The booms need to be stabilized as they are a hazard during windy conditions.
- . • Bringing the baskets over the top of the safety rails may violate OSHA rules.

***Bill Miller will draft letter from Biology Committee to Coordination Committee and Reclamation regarding the above-mentioned safety concerns.***

There will be a Biology Committee conference call on September 15 at 8:30 am. It is scheduled to take care of any concerns that come out of the Coordination Committee meeting that is scheduled on August 26.

The next integration meeting and full Biology Committee will be October 28 – 29 in Farmington.

The meeting will be from 9 am – 5 pm on October 28 and from 8 am – noon on Oct 29.