San Juan River Basin Recovery Implementation Program

Biology Committee

November 9-10, 1999 Meeting Summary

December 17, 1999

Edited January 3, 1999

A meeting of the San Juan River Basin Recovery Implementation Program Biology Committee was held on November 9-10, 1999 in Farmington, New Mexico. The following Biology Committee members were present:

Frank Pfeifer	Jim Brooks	Bill Miller
Tom Wesche	Paul Holden	David Propst
Vince LaMarra	Ron Bliesner	Tom Chart (For Larry Crist)

Shirley Monday, Program Coordinator

Absent: Larry Crist, Paul Sawyer, Tom Nesler

All Peer Review Panel members were also present: David Galat, Clark Hubbs, Ron Ryel, Ellen Wohl

Draft Final Research Report Review

The primary purpose of this meeting was to review the draft final research reports and receive comments from the peer review panel. Each reviewer will provide written comments and/or copies of the reports with edits noted directly to the authors. Peer reviewers will submit a cover letter with general comment summary and attached individual report comments to Paul Holden in addition to the authors. The exceptions are the two contaminant reports. Comments are to be sent to Ron Bliesner, who will compile these comments and forward to the authors. The discussion included in these notes cover only general comments, for the most part, and should not be considered comprehensive.

General Comments

Not all authors followed the general outline agreed upon in the June meeting as follows:

It was decided that the general formatting issues that Paul Holden circulated concerning the upcoming program

evaluation report would be applied. Paul will update the outline to include more of the common term definitions and citations. Each report needs to identify its linkage to the long range plan. Original objectives of the study need to be clearly stated. Conclusions should be summarized in bullet format with indication if they met or did not meet the objectives or if they confirmed or conflicted the original hypotheses. The conclusions section should also indicate any management or recovery implications.

The general outline to follow is:

* Introduction/Background
* Study Objectives
* Methods
* Results
* Discussion
* Conclusions

If there are multiple parts to the report, it should be divided into chapters by study with the outline above applied to each chapter, except that the background section would be in the introduction/background chapter and only stated once.

This general format should be followed by all, with chapters numbered where they are employed. Multiple chaptered reports should include an introductory chapter that includes the general study area description previously supplied, any general information relating to the overall study, the overall study goals and a brief discussion of the topics to be covered in the following chapters. The bullet items above would be included for each Chapter. An overall summary and conclusions chapter may also be included if discussion across chapter topics is required. All reports should include an executive summary.

All should reference these concurrent research reports rather than earlier progress reports. 2000 will be the date listed in the references.

The review of individual studies typically started with comments from the peer reviewers, followed by general comments by all and then a section-by-section review.

Hydrology, Geomorphology and Habitat Studies, August 16, 1999- Ron Bliesner, Vince Lamarra

Ellen Wohl indicated that she was pleased with the overall report and agreed with the methods and results. She did believe that the limitations of the sediment transport modeling used should be more clearly stated and included in the executive summary.

David Galat would like to see a discussion in the introduction on the function of the San Juan River, what it may have been like naturally and how close we can get back to it through Navajo Dam operation. While those of us in the basin might understand this, other readers may not.

Clark Hubbs found it strange that everything is numbered in the upstream direction rather than downstream. While we cannot at this stage change all the numbering, we should be consistent in the direction we work through the discussion.

Comparison to other methods of getting at embeddedness should be discussed with reasons for why this method was developed. References should be included.

An expanded discussion on summer storm perturbations should be included covering frequency of occurrence and differential impacts spacially. Statements like “the lack of stability over 6 years is not alarming” should be better explained. Why is it not alarming and when would we become alarmed.

The discussion of island count should be reviewed and other ways of measuring change in complexity examined, such as looking at habitat complexity.

In chapter 5, mainstream habitat quality discussion and figures needs to compare habitat quality response by reach. Check figures 6-2 and 6-3. Compare habitat quality to Utah's data.

Age - 0 Native Species Abundances and Nursery Habitat Quality and Availability in the San Juan River, September 1999

Galat - Chapter 1. Sentence on 1-13 is a concern. It suggests that the whole natural flow paradigm may be wrong. If this conclusion is supported by the data, it should be discussed in more detail. Is the concept wrong? How natural are the flows? Has it been long enough? etc.

Chapter 3 is the weakest - it’s about inverts not lipids. The number of inverts does not mean a thing. This chapter should discuss mass. You can’t relate numbers of invertebrates to pikeminnow growth. The title needs to be changed to reflect what the study is, and then keep the conclusions to the discussion of invertebrates.

The general report structure, especially the first three chapters, needs to be modified to fit the outline agreed to. The introductions, and in some cases, the discussion, in the first three chapters have repeated paragraphs and references that were cut and pasted. They do not read well.

The first three chapters are woefully lacking in data. In some cases only regression results are shown. In other cases, part of the data used in the regressions is presented, but not all. There is no ability to check the analysis or conclusions unless the data are included. In tables where rankings are shown, the actual data should be included. Readers can mentally rank the three or four values shown.

Chapter 2 - Low-velocity nursery habitat. Since these descriptions are different than those used by other studies in the program, a table should be included to relate them to the San Juan descriptions.

Include data in the tables rather than just the ranking. 2-15 and 2-18 - fix the title - no data for Green and Colorado. Watch terms like “preferred”. This is habitat “selection”. There is a need to check the “p” values in interpretation. Do the principle components analysis first and then relate biology to the habitat.

Chapter 3 - The title needs to be changed. What invertebrates are there? Where are the data? Productivity should be compared to that of the Green River. What does this information link to? Does it relate to the numbers of fish?

Chapter 4 - Include a judgement as to whether this is good recruitment. Are they selecting for these habitats? Temper the discussion on selection. We are not capacity limiting for this life stage.

Look at larval drift in other systems to get at the 50-100 mile issue. This blanket statement is made without a lot of support. There seems to be information from the Green and Colorado that would suggest shorter drift in some instances.

A better description of the habitats is needed to know what we have and if it’s the same in all chapters.

Chapter 5- Move this to an appendix.

Drift of Fishes in the San Juan River 1991-1997, 30 August 1999

How does this drift relate to change in community? Include a discussion on this relationship in the recommendations.

Rain event influence is very interesting phenomenon. Is it possibly clouding potential interpretation of the data?

Compare larval drift to the Upper Colorado. Is it the same or different?

Fish Assemblages of the San Juan River Secondary Channels, September 24, 1999

Introductions of chapters are often a summary of the last chapter. Move the first part to previous section as a summary.

There needs to be more implications drawn from the data in the seasonal comparisons section. Interpret the data.

Page 215. Questions should be answered here, not asked. Move these questions up front and then answer them in the conclusions.

Hubbs - There is no winter data. Is that a limitation? Bring in data from the Guido paper. Discuss native and non-native trends.

Galat - Discuss reasons for response or lack thereof, to the altered hydrograph (e.g. Wrong paradigm, too short a time, can't test full range of flows, etc.)

Galat reminded the group that the response of the fish community to mimicry of a natural hydrograph hydrograph is largely untested, not just in the San Juan but in other systems as well. The response of the fluvial geomorphology and habitat is relatively better understood and documented, but the next step to a positive response in the fish community is not proven. Future monitoring will be important to determine what, if any, response will be seen. Most of these studies on fish community have not really shown a response. Some explanation of the possible reasons for this lack of response should be included in each study where it is an issue.

Galat further commented on the importance of monsoonal precipitation events as a potential limiting factor unique to the San Juan. The nature of these events could be better described statistically and the impact on the fish community addressed where possible. (These last two concepts of response to mimicry and the impact of monsoonal rains came up when dealing with other reports as well and should be considered in each study where they apply.)

Adult Fish Community Monitoring on the San Juan River, 1991-1997, September 15, 1999

Ryel - Keep the key information in the body of the document and move the details to appendices. There is too much detail here. Include alternative hypotheses.

Galat - This is a good volume. You need to address the waterfall issues in the evaluation report. This report says its negative due to influence of up-migration. Discuss establishment or lack thereof of non-natives as a result of the loss of the barrier. Page 187 "Mean K improved somewhat decreased"? This needs to be fixed. It does not make sense.

Include a discussion under study objectives of elements that could not be met. Cover it in the report and summarize in the conclusions.

Check another method of population estimate for Pikeminnow.

Hubbs - The difference between main and secondary channels is mainly due to sampling method and needs to be discussed in that light. The variation of the number of the boats should be addressed, including listing the number of

boats on each trip.

Change the use of the term “lost to Lake Powell” to a term that is less terminal.

Is there a community difference with and without catfish (above and below PNM weir in reach 6)? This could indicate what good could be accomplished by catfish removal.

Tone down effect of walleye on pikeminnow on page 233.

Page 234 - Adult razorbacks do not have an affinity for lakes. They may do OK their, but they do not prefer them.

Monitoring of Experimentally Stocked Razorback Sucker in the San Juan River: March 1994 through October 1997

Ryel - Relate habitat to flows in terms of availability of habitat in the synthesis report. There is an issue of wild fish as progeny from stocked fish. This issue needs to be clarified.

Genetic concerns - 33% of survival was from one paired mating. Is this a concern? If not, why not. This will be dampened by other crosses. Look at wording on reasons for choosing the stocking size. State thattThose over 350-400 mm survive better.

Check language on losing fish into Lake Powell so you do not say something that is not supportable.

Compare results to upper-basin habitat use for wild razorbacks. There may be some differences.

Tone down the discussion on movement on page 49.

Check the stocking dates on Page 10 in 1994.

Page 60 - check the language on comparison of growth rates.

Page 78 - recommendation 3. Attach conditions necessary to keeping the waterfall inundated.

In the discussion on the meaning of habitat complexity, high complexity does not necessarily mean that the habitat they want is there. A better explanation of why this may be important, if it is, is warranted.

The Relationship to Recovery section is good. A section with this title could be included in other reports.

Check figures 8 and 9. The lines on movement need to be clarified. Fix the scales.

Look at completing statistical analysis of habitat use. A discussion with Ron Ryel on approach would help

Use the term “habitat richness” rather than “habitat complexity”.

Nonnative Species Interaction, October 8, 1999

Galat: Is the increase in non-native fish over the study period real? This discussion should be more focused on the objective . Are test releases an effective control measure for non-native?

Ron Ryel - Statistics on these metrics are needed. Are the changes statistically significant?

The introduction is long in the front. Break it up and shorten the description of objectives.

Make sure that the conclusions present what was seen in the Mark and Recapture section, especially for the territorial data with no movement. Bulleted conclusions are needed.

Check other methods for computing population estimates.

Chapter 2. The net movement analysis is good. The statistics on metrics of movement need to be tightened up. on metrics of movement. The “could” statement at the bottom of 54 should be done. Better use of citations from other reports is needed.

Chapter 3. Go back to the objectives and evaluate each one. Firm up the conclusions. Include conclusions in each chapter. It is difficult to follow the results. Possibly some tables are mis-labeling. The basic conclusion appears to be: they eat what is available.

Correlation to other studies in the program to examine competition and predation would assist in testing the hypotheses. However, this comparison would be more appropriate in the program evaluation report.

Make sure conclusions are supported by the data. Look at statistics of overlap in food habits of the species.

Chapter 4. Rainfall events have a high impact on invertebrates. The numbers of inverts being low, may increase the issues of competition. The program evaluation report should address the difference between the Green, Yampa, Colorado and San Juan. What about the Salt River and other monsoonal rivers? Do they respond the same way?

Are there any changes in the communities with reoperation?

Ryel - Analysis of variance should be completed in the statistical analysis. Standard ANOVA with Log Transforms would be appropriate.

Galat - The Invertebrate data are too crude to compare and not uniformly collected by the same methods. New methods used by Vince are answering some of these concerns.

Chapter 5. Tying to the sport fishery is good. Are we changing the biomass to littler fish? If we are, this could be a problem. There is a shift to smaller fish, although the catch per unit effort for catfish is going up through 1997.

Discuss the shift in age structure. Is it good or bad? What about the biomass? Reference Dale's report. Is this a forever activity? How does it fit with recovery?

Management Implications - Analyze the study according to the study design. Test the removal verses the non-removal reaches. Test during the last year to check cumulative effect. Nice study design. Is it a problem to the native fish to shock them all the time?

Could you develop a Catfish sportfishery on the river to accomplish the same thing? Public education would be needed.

Ichthyofaunal Surveys of Tributaries, August 23, 1999

Hubbs - Why did we stop in 1994? Check on the 1995-99 data. Appendix Page 2 delete lines that have no data. Are they no fish or no data? Tables - asterisk values could be combined in one line since the data are composited. In the text - list by taxus or by abundance. Historic or historical? Get the meaning right.

There are three objectives and they all say "compile". Is that all that is being done?

Insert a table that lists the collections - who, where, when on collections, with a chronological summary.

Cover management implications for some troublesome species (e.g. White sucker). Discussion of Roundtail chub might be included. (Dave Propst thinks this is the next species for which we will face legal challenges). Insert a conclusion on what is happening with the species, if you know.

"Data" is plural.

List method of sampling. Most of these methods could be filled in where they are blanks if you can find out.

Check the listing of Brown Bullhead - it probably isn't (qualify the observation).

Colorado Pikeminnow Habitat Use, August 23, 1999

1998 data were included while other studies are only through 1997. The reason for inclusion should be stated. No

wild fish behavior in 1998 from the radio tracking. Make sure we point that out and qualify the potential spawning behavior.

How about a comparison to Green and Colorado Data? Are there upper basin data? Look at Osmundsen's results on habitat utilization. Tyus may have some data as well.

Data to support warmer temperatures in the Mancos and in Eddies should be included.

Page 72 - Is this activity described in the second paragraph really unique? It may not be unique to the population, but just first documented here.

Beef up the discussion on this detailed use.

Fish Health (no report yet)

Shirley reported that Rene is working on this.

The Chronic Toxicity of Dietary and Waterborne Selenium to Adult ColoradoPikeminnow, September 30, 1999

Substantial concerns still exist for the conclusions of this study. Ryel believes that the correct statistical analysis would allow using the data to reach conclusions in terms of the effect of selenium levels tested on reproductive success. He will work with Ron Bliesner to examine this and then respond to Hamilton. Ron was asked to notify Hamilton that the report was not final until it has been accepted by the Program.

An Environmental Contaminant Investigation of Aquatic Plants, Invertebrates, and Fishes of the San Juan River Main Stem, 1990-1996, August 11, 1999

Ron reviews & comments - we need some comparison to upper basin. White River, Gunnison may be upper basin background rivers.

There is a need to review lesion data to see trends.

MONITORING PLAN

Not a lot of changes are needed based on the implementation of the methods this year. Dave indicated that 5 secondary channels would be added to the survey and that all backwaters in each designated mile would be seined. The committee agreed to these changes. Each contributor is to review their sections and submit changes to Dave by the end of November.

SCHEDULE

After some discussion, the following schedule was developed. Our schedule has slipped several times and our credibility with the Coordination Committee is slipping. It is important to do everything we can to stay on schedule.

1. December 1, 1999, Comments due to authors.
2. December 31, 1999: David Propst has revised draft Monitoring Plan back to the Committee for review.
3. January 31, 2000: Comments back to David Propst.
4. January 31, 2000: First draft of Program Evaluation Report and Long-Range Plan to Biology Committee.
5. February 1, 2000: Edited final reports due from each author.
6. February 15-16, 2000: Meeting to review the first draft Program Evaluation Report and Long-Range Plan (include Peer Review Panel in distribution).
7. March 15, 2000: Distribute final Monitoring Plan to Coordination Committee.
8. March 15, 2000: Distribute second draft Program Evaluation Report and Long-Range Plan (include Peer Review Panel in distribution).
9. March 31, 2000: 1998 and 1999 Annual Reports due.
10. April 11-12, 2000: Review Evaluation Report and Long-Range Plan with Peer Review Panel.
11. May 15, 2000: Final Program Evaluation Report and Long-Range Plan sent to Coordination Committee.

Findings from 1999 Larval Colorado Pikeminnow Stocking

Melissa Trammel reported that no larval pikeminnow were found in the surveys conducted by Utah following stocking of 500,000 larvae below the Hogback diversion on July 7. However, Steve Platania reported that the larval drift sampling caught 260: 180 at Shiprock (3 days), 60 at Cudei, none at Mexican Hat, at 14 Clay Hills. The fish tended to move downstream in a ball, arriving downstream at Lake Powell about 70-70 hours after stocking.

14,000,000 neutral buoyancy beads were place in the river at the same time, of which 22,000 were collected in the drift samplers. The transit time was about the same as the fish, but the capture percentage was about 3 times higher for beads compared to larval fish.

Since only 14 were collected at Lake Powell and the capture rate of beads was higher than that for fish in the drift, some larvae likely found habitats to remain in between Hogback and Lake Powell. Based on these data, the discussion of the Utah 2000 Work Plan to stock 1,000,000 larvae in 2000 was reopened and is reported in the next section.

2000 WORK PLAN

USBR has indicated that they can fund from capital projects funding only the $40,000 for pit tags. They have no other programmed money for the San Juan. Tom Chart indicated that USBR could probably obtain about $225,000 in addition, to support program. With this funding level, some changes are necessary to maintain balance between funding requests and available funds. Funds available allow just the critical work to go forward. In as much as the workplan for optimizing operating rules for Navajo Dam are not time-critical, the Biology Committee removed that work plan prior to approving the remaining elements. Fish health was also removed from the monitoring program and from the 2000 work plan.

The Utah work plan was discussed at some length. The conclusion was that the work plan, as edited by Melissa Trammel, with a few modifications, will remain in. Utah will conduct two sampling trips, one immediately after stocking and one about 4 weeks later. Potential recruitment will be assessed with the standardized monitoring program conducted in September. There will be no cost to the budget this year, as sufficient carry-over funds are available. However, there is a need to include larval drift sampling by UNM to support the work at a cost of $26,220 according to the previously submitted work plan. This work plan will be put back in. Utah will examine their budget and subcontract with UNM for the amount they included for specimen ID and contract with UNM for that amount.

Frank Pfeifer indicated that the USFWS budget for tracking stocked razorbacks would drop to $39,040 based on some changes in sampling requirements and improved efficiency of sampling.

Taken together, these changes will reduce the overall budget request to $570,289. This leaves a shortfall of $8,789.

Tom indicated that USBR would attempt to find this additional funding. Melissa will send final edits to Ron. Frank will send revised budget to Ron. Ron will finalize work plan and send to Shirley.

Razorback Rearing Ponds

Ron submitted information on construction of a razorback rearing pond on NIIP lands. The site, called Hidden Pond, can be constructed for $45,000. The Committee approved construction to be funded from Capital Funds. Ron will follow up with Reclamation on funding.

Bill Miller, Santa Fe, New Mexico, presented a concept of constructing a rearing pond in Bluff on land owned by Recapture Lodge. There was general support for this concept. Several questions still need to be addressed, such as: quality of the water in the aquifer that will feed the pond, wetlands delineation, NEPA compliance, design and cost. Bill indicated that there may be a funding source from the Lower Basin or Central Utah Project to assist in the construction. Frank Pfeifer pointed out that the Program has $50,000 dollars in the Fish and Wildlife Foundation account that is specifically earmarked for growout ponds, and could be used for the RecaptureLodge pond project. Ron stated that he had been contacted by Tom Pitts requesting we don't use these funds. Frank and others on the Committee believe the money is available for use unless wehear otherwise from the Coordination Committee.

The Committee agreed to support the concept and recommend that it be in the long term capital funding requirements to be recommended to the Coordination Committee. They also asked that a proposal be submitted to better evaluate what was contemplated and how it could benefit the program.

Long-Term Capital Funding Requirements

A preliminary list of capital funding requirements (attached) was presented and discussed with the group. While there is uncertainty concerning some of the items, it was recommended that we use this document for planning purposes. It should be forwarded to the Coordination Committee for their consideration and approval.

Election of Chairman

Nominations were opened for election of Chairman (2 year term). Jim Brooks was nominated by Dave Propst. The nomination was seconded by Frank. The voting was unanimous in the affirmative.

Biology Committee Meeting

November 9-10, 1999

	Name	Organization	Phone
*	Frank Pfeifer	FWS	(970) 245-9319
*	Paul Holden	Bio/West	(435) 752-4202
*	David Propst	NM Game & Fish	(505) 827-9906
*	Tom Wesche	HabiTech	(307) 742-4902
*	Bill Miller	Miller Ecological Consultants	(970) 224-4505
*	Vince Lamarra	Ecosystems Research Institute	(435) 752-2580
*	Ron Bliesner	Keller-Bliesner Engineering (BIA)	(435) 753-5651
*	Jim Brooks	FWS	(505) 346-2538
	Shirley Mondy	FWS - Program Coordinator	(505) 248-6806
	Tom Chart	Utah Division of Wildlife	(435) 259-3781
	Ernie Teller	BIA - NIIP	(505) 325-1864
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	Dale Ryden	USFWS - Grand Junction	(970) 245-9319
	Bob Krakow	BIA - NIIP	(505) 325-1864
	Melissa Trammell	UDWR	(435) 259-3782
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	Matthew Andersen	UT Division of Wildlife Resources	(801) 538-4756

Clark Hubbs	University of Texas at Austin	(512) 471-1176
David Galat	USGS - BRD	(573-882-9426
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A "*" indicates member of the Biology Committee.