

May 7, 2003

**San Juan River Basin
Recovery Implementation Program
Biology Committee
February 24-25, 2003
Meeting Summary**



Members Present:

Jim Brooks
Ron Bliesner
Tom Chart
Paul Holden
Vince LaMarra
Chuck McAda
Bill Miller, Chairman
Dave Propst
Tom Wesche

Representing:

U.S. Fish & Wildlife Service
U.S. Bureau of Indian Affairs
U.S. Bureau of Reclamation
Jicarilla Apache Nation
Navajo Nation
U.S. Fish & Wildlife Service
Southern Ute Indian Tribe
State of New Mexico
Water Development Interests

Others Present:

See Attachment A

Welcome and Review of Agenda

Bill Miller introduced this annual meeting for the Biology Committee to present last year's monitoring research and results. Participants were welcomed and introduced themselves. There were no additions to the agenda, and the agenda was approved as is.

Review and Approval of October 17, 2002 Meeting Summary

The October 17, 2002 meeting summary was approved without any changes.

Presentation of 2002 Results

Larval Fish Monitoring, Specimen Curation / Identification

W. Howard Brandenburg and Michael A. Farrington, UNM

Summary of the 2002 San Juan River Larval razorback sucker surveys.

In 2002, there were six trips on the San Juan River; three trips each on the upper and lower reaches - in April, May, and June. Larval seines and light traps were used to sample larval fish habitats; sampling focused primarily on backwaters and low velocity habitats.

- The first Upper Reach trip included 27 sites; 3,377 total fish were collected. There were no larval sucker collected during this sampling effort.

- The first Lower Reach Trip (April - May 2002) included 28 sites and 4,666 total fish, of which 296 were larval razorback sucker. Razorback sucker larvae were found from near RM 76 downstream to RM 3.
- The second Upper Reach sampling trip was conducted from May 15 - 19, 2002. 32 sites were sampled and 12,881 fish taken. A total of 133 razorback sucker were collected during this sampling effort.
- The second Lower Reach trip was May 29 - June 1. 25 sites were sampled and 2,068 total larval fish were collected, of which 259 were razorback sucker. A lack of low velocity habitat was observed.
- From June 10 - 13, 2002 the third Upper Reach trip was conducted, visiting 28 sites and collecting 24,661 fish total, 109 of which were razorback sucker.
- The third Lower Reach trip was from June 27 - 29, with 12 sites sampled, 8,381 total fish collected, of which 15 were razorback sucker.
- In total, 152 fish samples were taken and 56,034 fish were collected; 812 were razorback sucker, 7,588 were flannelmouth sucker, and 3,589 were bluehead.
- A total of 67 samples yielded razorback sucker, 20 of which contained > ten individuals, and five contained > 50 individuals.
- In 2002, 129 of the razorback sucker taken were juveniles, with the largest specimen being a 62.4 mm TL individual (28.8 mm TL was the largest razorback sucker taken prior to 2002).
- River mile (RM) 134 was the uppermost collection site for razorback sucker.
2002 razorback sucker breakdown by Reach:
 - Reach 1 : 155
 - Reach 2 : 338
 - Reach 3 : 294
 - Reach 4 : 24
 - Reach 5 : 1

Summary of the 2002 San Juan River Larval Colorado Pikeminnow Survey

Michael A. Farrington and W. Howard Brandenburg, UNM

The researchers have yet to process all of the 2002 samples; but they will talk about what has been processed.

- On July 9 - 13, 2002, 34 sites in the Upper Reach (Cudei to Bluff) were sampled and they collected a total of 73,744 fish. Red shiner and fathead minnow comprised almost 99% of samples. There were no Colorado pikeminnow taken.
- From July 22-24, in the Lower Reach, 10 sites were sampled with 3,437 total fish

collected (40% have been processed). The flow was too low to get to Clay Hills, so only 10 samples were collected. Again, almost 99% of the samples were comprised of red shiner and fathead minnow.

- From Aug 13-16, 23 sites were sampled and 5,004 fish were collected.
- From September 9 - 12, 24 sites in the Upper Reach were sampled and 8,333 total fish were collected. There was a high flow which impacted the fish collecting activities.
- No larval or YOY Colorado pikeminnow were found. The researchers obtained good numbers of fish with the new sampling protocol. No roundtail chub were found in the samples.

Small Bodied Fish Monitoring - Dave Propst, NMGF

Dave Propst explained that there has not been even an average spring run-off since 1997. They found that non-natives were more common in secondary channels (low-velocity habitats). 2000 was an extremely good year for non-natives; 95% comprised of red shiners. There was very little difference between primary and secondary channels in terms of native fishes from 1998 - 2001. 1996 and 2000 were very low run-off years and very low count years for native fishes.

The speckled dace, a native fish, appears to be in a downward trend, and is most common in secondary channels which have not been getting flushed out. The secondary channels appear to have become ideal habitats for non-natives since 1998. 2000 was a great year for the red shiner, a non-native. Flow was very low for much of that year.

In secondary channels, there appears to be a significant relationship between native fish density and spring runoff. This does not seem to impact non-natives long-term. Elevated summer flows do seem to negatively impact non-natives. For non-natives, there is a positive relationship between fish density in secondary channels and low flows (under 500 cfs).
[*Note: 2002 data had not been completely analyzed and was not reported on.]

Adult Monitoring - Dale Ryden, USFWS

FLANNELMOUTH: Low flows tend to affect juveniles more than adults. 2002, which was a low flow year, showed a decrease in juveniles. Juvenile fish in this study were usually 2 - 3 years old; this age can adapt better than 1 year old juveniles. Effects of the low flow may be delayed a year or two on the 2 - 3 year old juveniles.

A decrease in the numbers of juvenile fish in Reaches 5, 4, and 3 was noted; this area of the river is showing the most "reaction". Reaches 2 and 1 had few fish. The flannelmouth population is mostly based in Reaches 5, 4, and 3.

BLUEHEADS (1996 - 2002): Age 2 -3 year old fish are increasing. This was not expected due to lower flows these years.

CATFISH: Catfish collection goes up and down year to year. The researchers have not seen large, consistent increases or decreases. A reduction in the average size has been observed. 2002 showed decreases in adults and juveniles. Very few young of year were found.

CARP: More juvenile carp have been seen in the last 3 years than in the previous 8 years; perhaps due to low flow the last 3 years. The researchers questioned whether there should be a focus on one reach, like Reach 6 where carp have decreased for 6 years to see if they can begin to see consistent improvement in removal efforts.

2000 was a high lake, low river year. There were very high numbers of non-native striped bass in the river. There is a high population of the 1996 year class, which matured in 2000. 2002 was a low lake, low river year and had relatively few striped bass move up from the lake.

PIKEMINNOW:

Small catch per unit effort rates of pikeminnow continued into 2002. All fish that were caught were stocked fish, not wild fish. No fish were caught above PNM. Adults that were found were pretty skinny (from April 2001). They are staying alive, but not thriving.

One roundtail chub was collected in 2002.

**Channel Morphology/Water Temperature Monitoring/Water Quality Monitoring
Ron Bliesner and Vince LaMarra**

Channel Morphology

Vince Lamarra explained that 1995 had the largest number of backwater habitats. 2001 showed a reduced number of backwater and low velocity habitats. Reach 3 showed the greatest loss of habitat; most of the backwater habitat in Reach 3 was gone. Reach 1 also had virtually no backwater habitat. 2002 had the lowest number of backwater measured to date. In 2002, only 51 backwaters were mapped.

Percentage of each habitat type found in 2001:

Run	83.24%
Riffle	8.29%
Shoal	5.33%
Slackwaters	2.07%
Low Velocity	.72%
Backwater	.22%
Inundated Vegetation	.12%

In 1997, flow conditions were very similar to 1995, but backwater habitats crashed between 1995 and 1997, particularly in Reach 3. In 2002, 51 habitats were mapped at 418 cfs. Low flows (below 500 cfs) are not good for backwaters.

Habitat Mapping

Ron Bliesner discussed the impact of sediment depth on habitats.

In water quality studies last summer, the state found high fecal chloroform counts in the Lower Animas River and all through the San Juan River. The sediment load was pretty high during those run offs. Since 1992, 2002 was the first year when there was no spring release. It has been 5 years since we've met the 10,000 cfs or the 8,000 cfs flow recommendation. Flow intervals may not be a good indication of what the river needs to create or maintain the backwater.

1999 had two peak flows. 1998, 1999, and 2001 all had peak releases, but none had 8000 cfs releases. The 2002 low flow was half of what it was in 1977, and the 1977 low flow was half of any previous low flow.

Mean Relative Bed Elevations

1995 had the lowest mean bed elevation. May need more duration of higher flows, rather than magnitude, to get rid of stabilized bars that are covered in vegetation. The net cobble does not seem to change over a 10 year period. Fine sediments are causing the net changes.

The large backwaters have been lost, the smaller backwaters are what remain. 50% of the backwaters found in 2002 were in the lower 17 miles of the river.

Nonnative Species Control - Jason Davis, USFWS

Jason Davis explained that there were ten collection trips in 2001 and nine trips in 2002. 134 hours were spent on electrofishing in 2002 and 3,558 catfish were removed. The catch per unit effort (CPUE) was 23.66 fish per hour in March 2002.

There was a decline in the number of carp caught, but it was not significant. Small carp are very rarely caught. There were questions about whether the larger carp might be coming from an off-channel source.

The September 2001 trip collected 1,712 catfish. In late winter and early spring significant numbers of catfish are collected, then less over the rest of the summer. In early fall the collections skyrocket. 94% of all catfish were captured in June, July, and August.

In 2002, there was a flow increase in late April. 84 catfish per hour were collected in February prior to the increased discharge. There was an increase from 1.16 to 54.37 catfish caught per hour from the April to the June sampling. Jason Davis said that they seem to be doing a good job of getting rid of the larger fish which are capable of reproducing.

The frequency distributions from 1999 - 2002 indicate that there is a shift toward smaller channel catfish, indicating success in knocking down the size class and reducing the reproducing size (300 - 330mm) class availability. The numbers of fish are about the same, but the size of the fish is decreasing.

In November 2001 and April 2002, 725 catfish were tagged. 26 were recaptured above the diversion in 2002. The majority of these were recaptured in June, July, and August.

2 striped bass were collected in 2001. 14 were collected in 2002, half of those during the August sampling trip.

In 2003, Albuquerque FWS will continue their removal efforts and expand to adjacent downstream reaches. They will continue their investigation of fish movement through the non-selective fish ladder. Transplanting will be continued, especially in the lower reach to Navajo Nation.

Paul Holden asked if it is known what this is doing for native fish? So far we are evaluating what we are doing with the non-native fish. Competition for food source may be more of an issue than predation. A series of hypotheses need to be laid out and then tested. Is there a way to put in an electric barrier to keep the fish out to study if it helps the native fish?

2002 Non-native Species Control in the Lower San Juan - Julie Jackson, UDWR

Julie Jackson explained that electrofishing was used from Mexican Hat to Clay Hills, UT. Six trips were conducted from mid-March to the end of June 2002. Two trips in July and one in August were canceled.

The total counts of the following fish were collected
(the number in parenthesis were seen but not netted):

Stripers	21 (5)
Walleye	14 (1)
Channel Catfish	7136
Carp	1593
Colorado Pikeminnow	6
Razorbacks	28

Striped bass catch rates (CPUE) increased from the third to the fifth trip when they peaked, and then fell on the sixth trip by the end of June. During the third trip (May 6 - 10), striped bass were found only as high as RM 20.3. By the following trip (May 20 - 24) they were collected as high as RM 52. Striped bass stomachs were either empty or had red shiners in them. Striped bass caught in the upper section (near Farmington, by NMFRO in July and August) consumed considerably more native fish than in the lower canyon section.

Correlations between temperature (river and Lake Powell) and striped bass CPUE were strongest. Weak striped bass CPUE correlation was observed with turbidity and river flow. Striped bass tend to migrate in the spring when lake temperatures rise.

Striped Bass stomach contents from the Canyon section showed red shiner or were empty. In the Upper section (Farmington area), 8 of the 12 captured striped bass had fish remains in their stomachs.

- 1961 catfish were caught in May
- 1686 catfish were caught from June 1 - 14
- 1486 catfish were caught from June 24 - 28

There were six colorado pikeminnow captured from RM 46 - RM 8. Four were greater than 450 mm total length. Two were less than 450 mm total length. One of the adults (greater than 450 mm) caught at RM 21.4 on June 12, 2002, was a recapture from October 1, 1999 at RM 86. It had grown 161 mm.

There were 28 razorback sucker captured between RM 48 - 7, and one at RM 4. All were stocked fish ages 3 - 10 years. Catch rates were highest in April when six were captured at RM 17.6 at Slickhorn rapid. Ten others were observed at that time but not netted. Six were tuberculated. One razorback that was captured in May at RM 17.6 was a recapture from April at RM 7.7.

Striped bass showed the most movement in June and showed the strongest correlation with river and lake water temperature. They did not persist in the river through fall, possibly due to 10,000 cfs flow one week prior to the electrofishing trip. The correlations between striped bass catch rates and river and lake conditions are preliminary and will require subsequent years of data to substantiate any real relationship. No native fish were found in striped bass stomachs in the lower canyon. Native fish were found in striped bass stomachs in the upper section near Farmington by NMFRO crews. Two native suckers were found in walleye stomachs in the lower canyon. Channel catfish and carp catch rates varied among trips; there was no significant change from March to October 2002.

2003 Schedule

In 2003, ten sampling trips will be conducted, including the fall monitoring trip. There will be one trip in March, April, May, and October. There will be two trips in June, July, and August.

Augmentation & Monitoring Efforts of Razorback Sucker & Colorado Pikeminnow Dale Ryden, USFWS

There are several year classes of razorback sucker in the East and West Avocet ponds. The West Avocet pond is very overgrown with weeds. They did not have good luck harvesting fish out of there. Only two 450 - 500 mm fish were harvested. East Avocet has almost no weeds.

There are thousands of razorback suckers at 250 mm in Hidden Pond, but they are too small to stock. Hidden Pond may be overstocked.

In April 2002, approximately 4000 - 5000 fish were stocked into each of the Six Pack ponds. In November 2002, only 25 total razorbacks > 300 mm TL were harvested from all nine grow-out ponds combined. In past years, when ponds were harvested during this same time-frame, between 800 and 1100 razorback were harvested. The most probable reason for the poor harvest in 2002 was the extremely cold water temperatures encountered in the ponds, caused by an early winter storm front in the area.

Students from Mancos High School stocked 13 razorback sucker into the San Juan River on April 11, 2002. These were fish that the high school had obtained through the state of

Colorado's I & E program (i.e., Stan Johnson). All fish were PIT-tagged and ranged in size from 110-170 mm TL. Quent Bradwish (UDWR-Wahweap) stocked an additional 101 razorback sucker from the Page, Arizona golf course ponds into the San Juan River on April 22, 2002. All were pit tagged.

Razorback Augmentation Plan

It is anticipated that by 2004 (i.e., when the new razorback augmentation plan addendum goes into effect) the program will be able to produce enough fish to fulfill target stocking numbers. This gives researchers a year (i.e., 2003) to address various issues of concern in the grow-out ponds, such as weeds, bird predation, etc.

Compared to previous years, researchers are starting to catch more razorback suckers in the river. The catch per unit effort (CPUE) has increased for two years in a row. Razorback sucker being stocked into the river appear to be finding each other and suitable spawning habitat, as is evidenced by the capture of larval razorbacks for several consecutive years now. It is encouraging that they are able to find one another even though they have been stocked at different times and in some cases, in different locations.

Discussion of Razorback Pond Harvest - Dale Ryden, USFWS

West Avocet pond has about 3½ surface acres. It has become heavily overgrown and needs to be treated due to the weeds. Using a blue dye will keep the weeds and plants from photosynthesizing, thus killing them off, but this may create an oxygen depletion problem as the dead plants decay. The Program will need to look at different options.

Dale Ryden suggested that the ponds be harvested a couple of times per year to help facilitate the harvest of bigger fish (> 300 mm TL). He also suggested that since Hidden Pond appears to be overstocked, smaller fish from this pond should be trapped and spread around to the other ponds, specifically East and West Avocet ponds. Dale currently has three harvest efforts planned throughout 2003 (and a fourth may be added) to make more room for the smaller fish and to better assess the population dynamics within the ponds. Dale would suggest that the ponds not be stocked with large numbers of larval fish in 2003, although as many as 10,000 six-inch fish will apparently be available from the Upper Basin Recovery Program (i.e., the 24-Road Hatchery in Grand Junction). These fish are probably too small to put in river. There has been almost zero survival when fish this size have been stocked directly into the river in the past.

Hidden Pond is heavily loaded with smaller fish. There are a lot of fish at about 250 mm TL. It might be better to spread out the smaller fish. It seems like all the fish in Hidden Pond, regardless of year-class, are becoming stunted at this size. Dale suggested that whatever fish can be stocked this year out of Hidden Pond would make more resources available in this pond for the remaining fish to be able to grow. The bigger fish (> 300 mm TL) from Hidden Pond can be stocked into the river and the smaller fish can be spread to the two Avocet ponds, so that they have room to grow.

Dale does not feel that he can harvest enough 300+ mm fish to make enough room to take the

10,000 six-inch fish available from the 24-Road Hatchery. As a guess, Dale estimated that it may be possible to harvest 2,000 - 3,000 fish > 300 mm TL from the grow-out ponds.

Dale Ryden indicated that when the San Juan grow-out ponds were initially built, the standing logic (based on estimates being used by pond managers in the Upper Basin Recovery Program) was that each pond should be able to produce about 500 lbs. of fish per acre. However, we are not even close to hitting that kind of production at this time. Each pond has distinct features and conditions that make it produce fish at a unique rate. With intensive management, some ponds may eventually produce at full expected production (500 lbs. per acre), but others may only produce at one percent. Careful year to year records should be kept on each pond so that in the future, pond managers may be able to predict production from any given pond. Dale Ryden suggested that a more proactive management plan is needed for the ponds. Someone needs to be able to manage the ponds locally, on a daily basis.

Dale Ryden will inventory the fish in the ponds and determine the fish density during the 2nd week of April. He will determine what is actually in the ponds and will harvest whatever can be harvested and stock them in the river.

If the West Avocet pond needs to be pumped down in order to harvest fish, Keller Bliesner can get pumps that will pump 2,000 gallons per minute out of that pond. The fish could be more easily isolated in half the amount of water than is in there right now. It is too high a risk to treat the pond with the fish in the pond. The Committee agreed to pump it down and harvest it and get the fish out first.

Dale Ryden and Jim Brooks will talk with Mike Baker and Manuel Ulibarri and set up a consultation meeting, evaluate the current ponds, come up with criteria (sizing, etc.) for new ponds, and then make recommendations to bring back to the Committee by the end of March.

The Biology Committee will meet in May to discuss scopes of work. They agreed to discuss and make a decision regarding the ponds (current and possibly more ponds), and the 10,000 available fish, at that time.

February 25, 2003

Population Estimates 1998 - 2001 and Update on SJR Population Model

John Ptacek, Miller Ecological Consultants

The Population Model concepts were explained by John Ptacek. It tracks water temperature, stream discharge, and storm events which effect growth rates, and habitat, to determine available food for the Colorado pikeminnow. The biological community includes predator fish (colorado pikeminnow), omnivorous fish (flannelmouth, bluehead sucker.), macroinvertebrates and periphyton.

Bill Miller would like to have a workshop with the SJRIP researchers in May or June of 2003 to demonstrate the model and to give further explanation about how it works. Ron Ryel suggested that the assumptions be distributed to the Committee before the users manual, and that information be included regarding inputs and outputs, so that members can review and have a chance to agree on the assumptions.

Population Estimates of San Juan River Fishes for the Model

A section of each sampled riffle and run was enclosed using block nets and a bag seine. Electrofishing was used and fish were captured by netters and the downstream bag seine. They completed three to four passes in each sample area of about 10 meters by 30 - 40 meters. Three rafts were used and all passes were conducted during one day.

19 species were captured during the four years. There were 14 endangered fish (6 Colorado pikeminnow and 8 razorback sucker) collected.

Reach 6 had a higher abundance of small bodied fish than Reach 3 (based on the number of fish per meter squared) in all years.

In Reach 3, Speckled dace were the most common small bodied fish captured. There were more channel catfish in 1998. Red Shiner were abundant in 2001. In Reach 3, native fish were more abundant than nonnative fish. Channel catfish and red shiner were the most common nonnative fish in run habitats in Reach 3.

In Reach 6, speckled dace were again most common. Native fish were more abundant than nonnative fish, almost to the exclusion of nonnative fish. Riffle habitat in Reach 6 had completely native fish. Fathead minnows and red shiners were more common in run habitat. Nonnative fish are more predominant downstream.

The Committee discussed the differences between Bill Miller's electrofishing data and Dave Propst's seining data. It was concluded that the two studies sampled different habitats and that combining the two data sets may provide a more complete picture of fish populations in those portions of the river.

Population and Biomass Estimates for the Model

Only riffle and run habitats (90 percent of the surface area of the river) were sampled for small-bodied fish. In Reach 3, there was more biomass per meter squared in riffle habitat, except in 2001. Reach 6 riffle habitat had much higher biomass than run habitat.

In 2000, there was less biomass than in 1998. There was an increase in biomass in Reach 6 in 2001, and a dramatic increase in biomass in Reach 3.

Prey base is everything except channel catfish and carp for Colorado pikeminnow. Reach 3 has a lot of biomass that is unavailable to pikeminnow for prey - a lot of year one catfish. Red shiner, which is potential prey for pikeminnow, was increased in 2001.

Reach 6 showed a large increase in speckled dace in 2000 and 2001, which contributed to the increase in the prey base in Reach 6.

This technique is effective for determining relative abundance and total populations for specific habitats and one-mile boat estimates. Habitat specific estimates are very accurate for individual size classes.

For data integration, data comparisons can be made by reach. We can evaluate whether electrofishing is better for some habitats and block netting for other habitats. Do we need to make a decision about switching the monitoring protocol? Researchers will compare the data sets (by reach and habitat) to see if the same trends are being shown in the same habitats by each researcher. Different age fish may also be using different habitats - if fish are being found in different areas/habitats in different years. The Biology Subcommittee can review some of this data.

They want to compare the first pass of their runs and compare it to Dale Ryden's and then compare portions with Dave Propst's as well. There are concerns about populations of native suckers fluctuating so much. There is also a concern about this being an estimate that will be extrapolated to determine an estimate of the population in the entire river. It is suggested that they use length and frequency to determine whether they are on track. Then compare to Dale Ryden's data to see if they are similar. See if they all have years that are similar and then go from there. If Miller's and Ryden's data are somewhat close, then it is probably good enough for biomass.

Integration Report

Biology Subcommittee final reports were due in January. Reports (with data sets set up by habitat type) are needed before the next meeting to review and evaluate findings. The Physical Subcommittee is scheduled to meet in May. The two groups probably will not meet together until June or July.

Navajo/San Juan Temperature Model - Tom Chart, BOR

Tom Chart explained that Amy Cutler is the lead on this temperature model. Amy has been able to provide some new information. The Committee viewed Amy Cutler's PowerPoint presentation, which was similar to what she presented to the Hydrology Committee in 2002. Tom Chart showed how the application procedures create the reservoir in the model and ensure that the computer version is operating similarly to how the reservoir runs in real life. It is a two-dimensional model, using longitudinal and vertical grids with inflow and outflow. The time series boundary data includes meteorological data from Farmington. The model period focuses on 1995 - 2000. There are low reservoir elevation and inflows, and high inflows and elevations, within this 6 year period of record.

The water temperature equilibrium model was used to fill in the blanks in temperature in some years to carry it through to 2000. A similar process was used to fill in some blanks in water quality data also. With data from Ron Bliesner and Vince LaMarra, Amy Cutler has been able to get the model tracking much more accurately. The elevation and storage relationship took quite a bit of time to get correlated correctly. The model is now tracking the flow through the reservoir very closely. The next steps include finalizing the calibrations, running temperature control scenarios, and testing the river model.

Amy Cutler would like the Committees to let her know: What are your expectations? What are your concerns?

Vince LaMarra and Ron Bliesner are doing the water temperature river modeling (which only got funded a month ago), and Amy Cutler is doing the reservoir water temperature modeling.

Ron Ryel wondered if anyone was looking at productivity in the river relative to temperature? Ron Bliesner stated that the river seems to be very productive just outside the dam where there is a five degree suppression.

PNM Fish Passage Operation SOW - BOR and Navajo Nation

Jeff Cole, from the Navajo Nation, resubmitted the original proposal for management of the fish ladder at the PNM Weir, which will be completed on March 31, 2003. It was suggested that pond management be added to this proposal to justify having someone here full-time everyday to do the ponds and the fish ladder on a daily basis. The Committee needs to recommend to the Coordination Committee to either approve the fish passage proposal, or to approve a modification to include pond management.

Ron Bliesner suggested that BIA staff be assigned the fish ladder and pond management for this year, and then Jeff Cole can get a proposal in place for next year to include the fish ladder and pond management. ***The Committee agreed to recommend funding to BIA for this project for this year. The Biology Committee will write a proposal on pond management once the evaluations on current ponds and new pond criteria is completed.***

Discussion of Final Augmentation Plans

Dale Ryden stated that the final Augmentation Plan has been sent out to the Committee. It will be added to the website.

Shirley Mondy added that the Genetics Management Plan went out on Friday, February 21, 2003; there is a 30-day comment period on that.

Update on Budget and Long Range Plan Subcommittees

The Budget Subcommittee is looking at developing a contracting process for handling research proposals, in light of the Coordination Committee's suggestion to develop a more open, competitive process for soliciting and reviewing research proposals. The subcommittee would also like to develop a long term budget plan that would help prevent contract funding delays in the future. It has been suggested that individuals who are on the San Juan Biology Committee not submit research proposals or be awarded contracts for San Juan Program Biology Committee research. This is due to a concern that the group conducting the work is the same group that is deciding what work is to be conducted. Once the subcommittee has developed a process, the Coordination Committee will review and approve it, or make suggestions for changes.

There is currently no process in place for new starts (research) or how to develop RFP's. The subcommittee needs to determine how the process will be developed, how to do RFPs, who will award RFPs, and who will decide what research/projects need to be done (what tasks will be contracted for). Handling RFP's will add a lot of time and manpower costs to the San Juan Program. On the other hand, the peer review panel has expressed concern about not having Biology Committee members doing the research. Their concern is based on the loss of continuity of the people who have been doing the work and who understand the process as it has been done until now.

The next Budget Subcommittee conference call is on March 28, 2003. Bill Miller will reiterate Ron Ryel's comments and concerns at that time. There was a suggestion that pond management could go out to RFP and give us an idea of how this process might work.

Long Range Plan Subcommittee is reviewing the LRP for revisions. Tom Pitts sent it out to the Coordination Committee for review; then it will be sent out to the rest of the committees.

Standardized Monitoring Integration Report/Subgroup Status

Final draft reports were supposed to be submitted to the Biology subgroups by January. The members of the physical subgroup just received funding a month ago. The physical subgroup will need meet before a meeting of both groups can be convened.

John Pitlick has not been very involved, although the physical subgroup has not had a chance to meet yet. He would need to be at the physical subgroup, and then the meeting of both groups. ***Ron Bliesner agreed to talk with John Pitlick to see what his availability will be.***

There was a question about whether to incorporate the 2002 data into the integration report now that we are this much delayed, or would adding the 2002 data delay the integration even more? **The Committee felt that If everyone is up to speed, it would be a good idea to add the 2002 data.**

Data may be identified that needs to be collected that has not been collected yet. This may necessitate the modification of a scope of work after the physical group meets in May. If the Biology subgroup needs another meeting, they can meet by mid-May as well. Then it is hoped that the combined group would be able to meet in early July. **There was a suggestion to have the 2002 data incorporated by May 1, 2003.** Most researchers felt they could include their 2002 data by May 1. Some researchers will be in the field and may be unable to incorporate their 2002 data before May 1.

The 2002 annual reports are due by the end of March 2003. Those researchers who do not have time to analyze their 2002 data should still turn out the annual reports. They would just need to pull out the highlights of their findings and point out anything that may have shown up that is significantly different than in previous years - rather than analyze in detail.

2004 Scopes of Work Time Lines

The 2004 Draft SOW's will be sent to Shirley Mondy and to the Biology Committee by Tuesday, April 15, 2003.

The next meeting to discuss SOW's will be on Tuesday, May 6, 2003 at 8am in Durango, Colorado. Pond discussion will be added to that agenda as well.

The Committee discussed when new needs and new scopes of work would need to be identified in order to put out RFP's. A discussion was needed about what scopes of work to pursue how to proceed, before people began to bring full blown scopes of work to the May 6th meeting. How would unsolicited proposals versus scopes of work that were identified during Committee discussion be handled? The long range plan will also have an impact on this discussion. Many members felt that it was important to talk about project proposals before creating scopes of work. The draft SOW's will need to be revised and out for final approval by the July Biology Committee meeting.

The Biology Committee decided to determine critical needs by looking at the Long Range Plan (LRP).

Some of the issues and needs that were identified include:

- Expansion of nonnative removal/studies
- Pond Management

- **Stocking**
How to improve the stocking program, how to make it more efficient and effective?
Locations - how to keep fish higher in the system
Techniques
Fish Retention, what will keep fish in the system?
Monitoring of Pikeminnow in the lower river
- **Habitat Enhancement**
Creating debris areas (dropping Russian Olives) / backwaters for pikeminnow?
Habitat (backwater decline) and fish numbers changed in 1996 - 1997. Integration will look at some of the correlations and data related to those two events. Will more research be needed?
Declining Backwaters

There was a suggestion for the Committee to keep a list, throughout the year, of issues that are identified that need to be researched and followed up on. The February meeting would be the time to review and make decisions on what has been added to the list(s).

The Committee discussed whether stocking locations needed to be changed. Tasks could include examining whether downstream dispersal causes fish to move closer to Lake Powell, whether it would be better to acclimate the fish to current in backwaters before putting the fish in the currents; and whether stocking needed to be done differently in low flows to facilitate viability of the fish.

This Program is funded for capital improvements through 2008. What is done today will impact the 2006 budget. That only leaves two more years for capital improvements. There is a need for this Committee to look at needed tasks and create priorities and a timeline.

Priority Issues Identified Through Review of the August 2002 Version of the LRP

- **Energetics Model** - the time has been extended due to budget problems. This will be reviewed in the workshop, tentatively set for late May or early June
- **Razorback Augmentation**
Behind in Stocking Rate - one solution would include improving management of existing ponds, while proceeding on a parallel track to build \$400,000 worth of ponds this year.
- **Pond Management** - review facilities and integrate limnology results in the management plan (detail would be needed in this area with concrete milestones - what is needed (how much) and when is it needed). Complete the plan in 2003 and complete the implementation in 2004. [Need plans for both species.]

- Limiting habitat for razorback - data collection during monitoring includes habitat data. The biggest missing piece is between larval and adult (habitat). We know that the system provides some spawning and adult habitat, although we do not know if it is sufficient for recovery. We do not know what the fish need between larval and adult life stages. Should expect to see development in the river from larval to subadult in 4 - 5 years.
- The recovery goals were written after the long range plan. Milestones need to be identified and incorporated.
- Control of nonnative fish needs a milestone to identify the measurable objectives. The energetics model could possibly be used to assist in this process. This will be an outcome of integration in 2003.
- Non-native fish stocking and baitfish policies are needed in conjunction with affected states and tribes - this action hasn't been done, but may get done this year. It is still important.
- Pikeminnow
Are there native fish issues in the upper river (above the Animas Confluence)? Bill Miller and crew did look at Reach 7 when they came up with the 800 colorado pikeminnow for the recovery goals. May need to look at this further
- Pikeminnow growout facilities
Young fish can be raised. Dexter couldn't raise a large number of bigger fish without sticking a whole bunch in one pond, which causes the pikeminnow to become cannibalistic.

Should we look at stocking larger fish as an experiment? Take part of the 300,000 fingerlings and grow them another season and see what happens? Put the extra fish into a pond? This would be more intensive, someone would have to feed them. Should we look at existing facilities for fall? A paragraph is needed on what we need to achieve by having larger fish in ponds. Tom Wesche will provide a white paper/statement for the May meeting, integrated with the other pond work.

What about other stocking techniques? Should that be separate or added to Dale Ryden's scope of work, with help from everyone else. Some think that this would be a new proposal.

Pikeminnow augmentation - evaluation of stocking procedures to improve retention. A study design needs to be identified.

It would be good to look at the data that has been collected to see what it tells us about stocking procedures and retention. Paul Holden volunteered to write a scope of work to pull together all of the data that has been collected by different (2 - 3) individuals on stocking plans/procedures.

Stocking info from Utah
Different techniques

Paul Holden asked whether we should be monitoring pikeminnow lower in the system? Currently monitoring is only being done higher in the system. Ron Bliesner stated that this is an unmanageable reach of river. The Committee agreed to not expand monitoring of the pikeminnow to the lower reaches at this time. Julie Jackson will continue to remove striped bass. The Committee will evaluate radio tagging, or some other form of tracking, for pikeminnow in the lower river perhaps at some point in the future.

- The need for a fish passage at Fruitland should be evaluated, determine whether fish passage is a problem at Fruitland. From August - October is when it would be most beneficial for the fish to be able to get through. Determine whether construction of a permanent structure with a fish passage is needed; is it a barrier? How much river would it open up for the pikeminnow? How often would they have to fix the dike? Is it passable most years as it is?
- Evaluate entrainment of all life stages at diversion dams. Screening at Hogback, or anywhere else, would have to include trash removal/cleaning. It is not clear how big a problem it is right now. Entrainment needs to be evaluated; Hogback would be a good place to start. Determine how many fish are entering the canal to determine how big a problem entrainment is. Look at entrainment over a period of time, 2 or 3 times per season.
- Habitat use and limiting factors
Will not get fish spawning until they are over 500 mm. Until then, it will be difficult to determine spawning areas. Use monitoring and other capture results to identify pikeminnow over 500 mm. This will determine timing of the initiation of radio tracking. Include debris cover data that is available in the integration report.

Is there a need to enhance bank edge features to increase bank stabilization? Long stretches of the river currently have canal features. Examine cover issue and debris pile data to determine if edge features and vegetative cover are important and manageable. Is bank de-stabilization important? Following the integration evaluation, a work plan may be necessary. Bank de-stabilization could be done as a pilot project under capital projects.

- Evaluate influence of Lake Powell level on nursery habitat in this reach.

Shirley Mondy and Bill Miller will type up a paragraph for each of the above issues that have been identified as potential scopes of work. These will be sent out on the listserve. The procedures and process for submitting a scope of work will be included.

Recommendations for New Member to Peer Review Panel

Dave Galat has resigned from the peer review panel. Does the Biology Committee want and need to replace Dave Galat? The Biology Committee knew that Dave Galat would have limited availability and selected Steve Ross for that reason; therefore, another ecologist is not needed. The original peer review panel had four people.

Ron Ryel suggested that the Committee look at its long range plans. Dave Galat, Kevin Bestgen, or other potential peer reviewers could review specific documents once a year rather than attending meetings.

The Committee agreed to replace Dave Galat in order to maintain four peer reviewers. They agreed to replace Dave Galat with a large river fish ecologist who is not associated with the Upper Basin or the San Juan Program. The Committee would hope to have this person work with the subgroups. ***Please get suggestions, with resume and credentials, to Paul Holden by April 15th so the package will be ready for the May 6th Biology Committee meeting.*** The potential reviewer should have been contacted to determine their interest and availability prior to submitting them for consideration. Costs are covered for 2003. The Committee will revise the budget after a new person is selected, and then revise the scope of work to cycle through the Biology Committee and the Coordination Committee. ***Document reviewers can be added to the 2004 scope of work.*** Previous peer reviewers would be the Committee's first choice for periodic review of documents.

What is John Pitlick's availability? He was at the February subcommittee meeting. Has not seemed to be very flexible in order to meet our needs as a peer reviewer. This meeting was a meeting where we could have benefitted from his input. He was invited 3 or 4 weeks ago. ***Paul Holden will contact John Pitlick and ask about his availability and find out whether he is interested and willing to commit to being involved in the Program peer review.***

Ron Bliesner will contact John Pitlick to see if he is available for the May 6th meeting, the mid- May Physical subcommittee meeting, and the combined subcommittee group meeting in early July. If he is inflexible then we may need to look at finding a replacement.

Additional Items / New Business

Updates on Colorado Pikeminnow Augmentation Monitoring - Mike Golden, BioWest
100,000 YOY pikeminnow were released at Farmington and at Shiprock on October 24, 2002. The first trip was unavoidably delayed until Dec 3 - 10, 2002. Eight reaches of river were sampled with seines, for a total of 54 river miles sampled. Although the researchers concentrated on pikeminnow, they did count and measure other fish that were caught.

They did not find any YOY pikeminnow above the Animas or the confluence. They found fish below the Fruitland Diversion, around Shiprock and Cudei, and the most were at Four Corners.

87 fish were found in a backwater that was barely open to the main channel; it was about 17 cm deep.

Pikeminnow Habitat Characteristics:

Backwaters, debris piles, backwaters with debris piles, and runs with debris piles were all used by pikeminnows. The mean average pikeminnow habitat depth was 39cm, the maximum depth was 43cm. The habitat was mainly located over silt and sand substrates. Most pikeminnow were found in debris piles. Many side channels were high and dry and the back waters were small and shallow without much habitat for fish, some were iced over.

- Only 12 pikeminnow were captured in 2002 in the Upper Reach. The Upper Reach does not seem to retain fish. 111 were captured below Shiprock.
- In 1996 less fish were stocked (25% of what was stocked in 2002) but about the same number of fish were captured as on the 2002 sampling trip.
- Retention of YOY pikeminnow above Shiprock appears to be poor. Current retention appears to be lower than in 1996. Low water conditions appeared to have reduced the amount of good habitat.
- Combinations of cold water temperatures and reduced available habitat may have reduced the researchers ability to catch fish or reduced the ability of the fish to stay in the river.

2003 Monitoring Activities Discussion

Tom Nesler had concerns regarding the impact of water sampling trips, especially electrofishing, during low water conditions. Do these trips stress the fish, especially during low water conditions? Jerry Landye's conclusion was that a large part of the damage to the fish came from the way people handled them. Some compression fractures have been noted in flannelmouth sucker, but there has been no indication of it causing inability to live and thrive. No one has really observed problems of fish that have been electrofished. There is a report in the Upper Basin where they x-rayed the fish after they were electrofished and they didn't see too much of a problem. May have to take a look at this as the flow years go and see if changes are needed. Methods may need to be changed, such as to not go in the summer when water temperatures are high, but wait until water temperatures cool down. ***The Committee will take a look at this at the May 6th meeting.***

The Committee also discussed whether natives and endangered fish should be released instead of keeping them all for identification for labs. Could they be identified, counted, and then released; and just measure a subsample? Right now there would be a danger of missing a rare, endangered fish if they were not all taken back to the lab at this time. You can see

things in the lab that you would not see in the field; accuracy is increased. It was suggested that once the endangered, rare, fish are seen more frequently, then perhaps we can begin measuring and completing the research in the field.

Shirley Mondy is missing some annual reports from 2001. Please send them to her as soon as possible. Also, please send photos to Shirley Mondy to be used for the briefing book and for the website.

Please vote [on the listserve] on whether to add Sara Gottlieb, Amber Kingsbury, Mike Buntjer, and Ed Warner to the listserve?

The meeting was adjourned. The next meeting will be on May 6th, in Durango, Colorado.

Attachment A

Others Present:

Rob Ashman	Public Service Company of NM
Howard Brandenburg	University of New Mexico
Mike Buntjer	U.S. Fish & Wildlife Service
Jason Davis	U.S. Fish & Wildlife Service
Michael Farrington	University of New Mexico
Michael Golden	BIO-WEST
Sara Gottlieb	University of New Mexico
Steve Harris	Water Development Interests
Julie Jackson	Utah Division of Wildlife Resources
Amber Kingsbury	New Mexico Game & Fish
Bob Krakow	U.S. Bureau of Indian Affairs
Paul Montoia	City of Farmington
Bill Ostheimer	U.S. Fish & Wildlife Service
Steve Platania	University of New Mexico
Jon Ptacek	Miller Ecological Consultants
Dale Ryden	U.S. Fish & Wildlife Service
John Simons	U.S. Bureau of Reclamation
Ernie Teller	U.S. Bureau of Indian Affairs
Jerry Thomas	U.S. Bureau of Indian Affairs
Brent Uilenberg	U.S. Bureau of Reclamation
John Whipple	State of New Mexico
Steve Whiteman	Southern Ute Tribe
Shawn Williams	City of Farmington
Carl Woolfolk	Arizona Public Service
Ron Ryel	Peer Review Panel Member
Steve Ross	Peer Review Panel Member
Shirley Mondy, Program Coordinator	U.S. Fish & Wildlife Service
Marilyn Greenberg, Program Assistant	U.S. Fish & Wildlife Service