

Executive Committee Meeting
November 2, 2016

Meeting Materials:

Meeting Agenda

Meeting Minutes



**Middle Rio Grande Endangered Species Collaborative Program
EXECUTIVE COMMITTEE
MEETING AGENDA**

Wednesday, November 16, 2016

9:00am – 1:00pm

Conference Call information:

Phone 1-800-621-8611 Passcode 59155

Location: U.S. Fish and Wildlife Service, 2105 Osuna NE, Albuquerque, NM 87113

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| 1. INTRODUCTIONS AND REVIEW OF PROPOSED AGENDA* | <i>10 minutes</i> |
| 2. DECISION – APPROVAL OF May 19, 2016 EC MEETING SUMMARY* | <i>10 minutes</i> |
| 3. AGENCY ROUNDTABLE (<i>Litigation updates, Hydrologic update, Species Update, etc.</i>) | <i>20 minutes</i> |
| 4. CC UPDATES (<i>R. Billings</i>) | <i>10 minutes</i> |
| 5. BEMP PRESENTATION (<i>K. Eichhorst</i>) | <i>15 minutes</i> |
| 6. GENETICS PEER REVIEW FINAL REPORT PRESENTATION (<i>Amec Foster Wheeler, D. Johnson</i>) | <i>45 minutes</i> |
| BREAK | <i>10 minutes</i> |
| 7. DRAFT BIOLOGICAL OPINION FOR MIDDLE RIO GRANDE WATER MANAGEMENT AND MAINTENANCE ACTIVITIES (<i>W. Murphy</i>) | <i>60 minutes</i> |
| 8. PROGRAM AND SCIENCE SUPPORT SERVICES (PASS) CONTRACT (<i>WEST, D. Stickland</i>) | <i>30 minutes</i> |
| 9. STATUS OF RIP TRANSITION (<i>J. Faler</i>) | <i>15 minutes</i> |
| 10. MEETING SUMMARY | |
| 11. PUBLIC COMMENT | |
| 12. ANNOUNCEMENTS | |
| 13. DECISION – NEXT PROPOSED EC MEETING: January 18, 2017 from 9am to 12pm @ Reclamation | |

**Middle Rio Grande Endangered Species Collaborative Program
Executive Committee Meeting
November 16th, 2016 – 9:00am to 1:00pm
FWS Osuna**

Decisions

- The May 19th, 2016 EC meeting summary was approved for finalization with no changes.

Actions

- No actions were assigned or designated during the November 16th, 2016 meeting.

Announcements

- Bosque Ecosystem Monitoring Program (BEMP) is hosting its annual Crawford Symposium on Tuesday, March 7th at UNM. There will be professional and student presentations. This symposium is open to all who are interested and invitations will be distributed closer to the event date.
- The Final Biological Opinion (BO) is currently expected December 2nd, 2016.

Next Meeting: January 18th, 2017 from 9:00am to 12:00pm, location TBD

- Tentative January agenda items: (1) Discussion/Questions & Answers from EC on Final BO; (2) Discussion: Role of the Collaborative Program, the EC, and the RIP;
- Tentative future agenda items: (1) EC Attendance Policy in the Bylaws – address possible exceptions and/or changes; (2) Discussion/Updates on Adaptive Management Documents;

Upcoming Dates and Deadlines

- December 6th – ScW Genetics Subgroup meeting from 10:00am to 12:00pm at ISC
- January 4th – CC meeting, 9:00am to 11:00am, location TBD
- January 17th – tentative ScW/HRW meeting, 1:00pm to 3:30pm, to be confirmed
- January 18th – EC meeting, 9:00am to 12:00pm, location TBD

Meeting Summary

Introductions and agenda approval: Brent Esplin brought the meeting to order. Introductions were made and a quorum was confirmed. Building safety procedures were reviewed. The agenda was reviewed and approved with no changes.

Approval of the May 19th EC Meeting Summary:

- The May 19th, 2016 EC meeting summary was approved for finalization with no changes.

Agency Roundtable:

- *NM Interstate Stream Commission (ISC):*
 - Since the last EC meeting in May, ISC has been working diligently with the Biological Assessment (BA) partners and the Fish and Wildlife Service (Service) to address the Draft Biological Opinion (BO) and submit comments.
 - There has been significant dialog and conversation between the partners since the Draft BO was released to Reclamation on September 14th, 2016. Several things have subsequently been addressed with the Service during the comment process.

And ISC remains positive on the progression of the document. The BA partners are anxiously waiting for the Service's response to the submitted comments.

- The Minnow Action Team (MAT) will probably meet early next year. There is nothing the group can address yet. The group will produce a report summarizing the 2016 operations that occurred.
- *Middle Rio Grande Conservancy District (MRGCD or the District):*
 - As one of the BA partners, the District has also been working on formulating coherent and constructive comments on the Draft BO and participating in ongoing discussions to ensure that the everyone involved in the consultation are on the "same page."
- *Litigation Update:*
 - The WildEarth Guardians (WEG) lawsuit is in the Administrative Record Issues phase. WEG filed motion to supplement the record. The District, Reclamation, and the Corps have responded with objections that the Administrative Record is already very extensive and sufficiently covers the decisions for the actions. The District contended that WEG is attempting to try to expand the scope of the litigation; this is inappropriate given that the 2003 BO was issued 13 years ago and endorsed by Congressional Action. The claims raised now are narrow, formidable in themselves, and the District affirmed that the case doesn't need additional information to proceed. The WEG reply, issued several weeks ago, conveniently ignored all the arguments. All parties are waiting for the Court to rule on that request. The suit might then proceed to the Merits Briefing period.
- *Pueblo of Sandia:*
 - Over this past summer, Sandia Pueblo organized several events including a river tour and Bosque Monitoring field trip. Several agencies participated and the events were very successful.
 - Sandia is continuing to work on a Feasibility Study for options on the river related to riparian and river health.
 - The Pueblo Coalition met and submitted comments to the Service on the Draft BO.
- *U.S. Army Corps of Engineers (USACE or Corps):*
 - The Adaptive Management (AM) contractor continues to facilitate meetings and workshops on the endangered species in the Middle Rio Grande (MRG). The most recent were focused on the Southwestern Willow Flycatcher (flycatcher), NM Jumping Mouse (mouse), and Yellow-billed Cuckoo (cuckoo). The purpose of these meetings is to determine the key questions and key uncertainties that will need to be considered in the AM process and make recommendations on potential science priorities.
 - There will be an Independent Science Panel to assist on the Rio Grande Silvery Minnow (minnow) workshop currently scheduled for February 1-3, 2017.
 - Western Ecosystems Technology (WEST; <http://www.west-inc.com/>) has been awarded the Program and Science Support (PASS) contract. This could be a very beneficial situation with a positive link between the EC and the integration of AM.
- *Fish and Wildlife Service (Service):*
 - The Service is transitioning to a new Area Regional Director.
 - As previously mentioned, the Service has been incredibly focused on the addressing of Draft BO comments, revisions, and development of a final document.
 - The Draft BO was released to Reclamation on September 12th and a plethora of comments were received. Involved agencies continue to meet to address comments and concerns. Currently, the release of the Final BO is expected on Friday, December 2nd, 2016.

- *Rio Grande Silvery Minnow (minnow) Species Update:*
 - The October Population Monitoring surveys indicated a minnow density of 5.9 minnow per 100m².
 - This is above the recovery goal of 5 minnow/100m² and in the Service's perspective indicates:
 - (1) the recovery goals are indeed achievable; and
 - (2) the modified El Vado operations this past spring combined with Colorado's water management and Mother Nature provided a hugely successful recruitment.
 - Flows of ~3,000 cfs were achieved at the Albuquerque gauge for a significant period of time.
 - The minnow density achieved a high of 22 minnow/100m² in July and subsequently declined as drying occurred.
 - A winter decrease is anticipated but the population has significant numbers expected for the next spawning period.
 - *Southwestern Willow Flycatcher (flycatcher) and Yellow-billed Cuckoo (cuckoo):*
 - The flycatcher population numbers remain stable and surpassing recovery number goals. This is in part due to the substantial population located in the Elephant Butte headwaters.
 - Similarly, the cuckoo population is doing well due to stable populations in the Elephant Butte headwaters and Bosque del Apache.
- *Hydrology Update:*
 - Water managers (with a helpful Mother Nature!) were able to successfully maximize the spring opportunities. Included in the efforts was the Compact Resolution that provided for flexibilities.
 - Approximately 21,000 ac-ft of Supplemental Water was released this past year.
 - In an example of the attempts to "unshackle the system," there were actually 3 "pots" of water:
 - (1) the conservation pool in Abiquiu,
 - (2) Audubon water (784 ac-ft; part of which was pre-1907 Price's Dairy water swerved against that water right from Valle de Oro; supplied to strategic places in the river); and
 - (3) State relinquishment drought credit water.
 - To date, this has been a very warm, dry fall season. The La Nina conditions are predicted to be above average temperatures and below average precipitation. Hopefully, there will be good snow pack this winter.
 - Prior and Paramount (P&P) releases are underway and were started earlier this year to help avoid impacts to the Rio Chama. There has been good cooperation in moving all the San Juan/Chama water that has to be vacated.
 - Even with the astonishing accomplishments this past spring, NM is in a slight debit situation with TX right now. Fall rains would help. The year-end situation and potential impacts won't be confirmed until December. Even with a slight debit, NM remains in Compact compliance.
 - Next year's predictions are currently dire. There is basically no water in the system with a La Nina winter. MRGCD has ~31,000 ac-ft for next irrigation season.
- *U.S. Bureau of Reclamation (Reclamation):*
 - Reclamation expressed gratitude to all the BA partners for the continuous work and progress made toward finalizing the BO. As the process nears completion, Reclamation

has begun “building momentum” toward implementing the actions and activities in the BO, including initiating hiring processes for Project Managers and starting lower reach (Isleta and San Acacia) planning.

- The FY2017 budget will depend on whether or not a President’s Budget is passed – which would provide for nearly \$4 million. Continuing Resolution would mean a smaller budget of approximately \$3.3 million.
- Reclamation, MRGCD, and Isleta Pueblo have worked closely on the litigation regarding the ownership and operation of the Isleta Diversion structure. The litigation was settled with agreement on a 100-year easement on this federally owned facility that will be operated by the District and will undergo significant improvements. In exchange, Isleta will have an increased presence on any future decisions related to the structure and will be provided financial support for habitat restoration in the Isleta Reach.
 - In response to a question on the operation, it was clarified that Reclamation owns the Isleta Diversion structure and it will be operated and maintained under the 1951 contract with MRGCD.

Coordination Committee (CC) Updates:

- The CC didn’t meet in November but will meet in early January to begin working with the Program and Science Support (PASS; formerly 3rd Party Management) contractor on the management and next steps for the Program.
- The Population Monitoring Workgroup will meet fairly soon to begin work on tasks in accordance with the May EC decisions.

Bosque Ecosystem Monitoring Program (BEMP) Presentation

- Kim Eichhorst presented *Bosque Ecosystem Monitoring Program: Science, Education, and Stewardship of the Rio Grande*.
- BEMP is celebrating its 20th year as a non-advocacy group.
- *Goals*
 - BEMP aims for long-term monitoring of the bosque and outreach/education.
 - Outreach is accomplished through the use of students to assist with the monitoring.
 - The intent is to have usable data that can (and do) inform management and policy decisions.
- *Background*
 - BEMP originally started in the 1996-1997 school year with less than 200 students. There are now over 10,000 students in 45 schools across 6 counties who participate every year.
 - There are 32 monitoring sites spanning from Ohkay Owingeh down to Las Cruces. The sites are very different and allow for collection of different data which will hopefully be useful to answering a range of different questions.
- *Main Datasets*
 - There are 11 different datasets that are collected:
 - (1) groundwater depth; (2) surface water level; (3) precipitation; (4) litterfall; (5) vegetation cover; (6) water quality; (7) temperature; (8) cottonwood sex & diameter at breast height; (9) surface-active arthropods; (10) woody debris/fuel load; and (11) tamarisk leaf beetle data.
 - Sites are set up using the same parameters to allow for comparison across sites:
 - 5 groundwater wells; 10 leaf litter bins; 2 precipitation gauges; and 1 ditch.
 - *Groundwater*
 - Overall, for the vast majority of sites, the groundwater is strongly connected to the river flow. When river flow dries some of the wells actually go dry, too. In drought recovery years, many sites had a corresponding recovery in response.

- *Litterfall*
 - There are 10 different species that are included in the determination of litterfall.
 - Litterfall provides the ability to track the decline and death of trees including cottonwood.
- *Arthropods*
 - Presence and number of arthropods is an indicator for health of a site.
 - They need moisture so their population(s) decline in response to decreases in precipitation, litter cover, etc.
- *Vegetation Transact Data*
 - Vegetation data provides information on species diversity, declining tree cover, etc.
 - When the senescing cottonwoods are gone in an estimated 20 years, they will be replaced with non-natives.
- *Water Quality*
 - Water quality parameters collected include: (1) turbidity; (2) dissolved oxygen; (3) temperature; (4) specific conductance; (5) conductivity; (6) pH; and (7) photographic record.
 - Lab Work tests for: (1) chloride; (2) bromide; (3) nitrate; (4) nitrite; (5) phosphate; (6) sulfate; (7) ammonium; (8) *E. coli*; (9) PCBs and pesticides; and (10) PPCPs
- The BEMP data is non-proprietary so it is posted on the website (updated monthly).
 - bemp.org and bemp.org/data-sets/
- *Questions*
 - *Question:* Do any of the students produce follow-up papers?
 - *Response:* Yes. And in fact, several present at both professional and sponsored conferences. BEMP as a 2nd graduate student and there are 2 on the waiting list.
 - The students tend to have far more hope about the future than the adults. Their work and presentations are very uplifting.
 - *Question:* In other systems, substantial increases in pharmaceuticals have been detected – hormones and related chemical bi-products. Are you seeing similar impacts here?
 - *Response:* Yes, below wastewater treatment plants. There are 81 compounds tested for and 23 of those register in the Rio Grande. However, the physiological impact on the species is unknown.

Genetics Peer Review Final Report Presentation

- Dawn Johnson, and three (3) panelists participating via teleconference, presented the *Peer Review of RGSM Genetics Project: Final Recommendations*.
- *Peer Review Process*
 - The review panel consisted of five (5) identified experts with the task of reviewing the genetics projects and related management activities. The peer review panel (panel) interviewed Principal Investigators (PIs), the Captive Propagation Workgroup, and Science Workshop (ScW).
 - The panel also reviewed pertinent documents (annual reports, genetics and propagation plans, and augmentation and population monitoring reports).
 - The panel responded to 16 questions and provided overall conclusions and recommendations in a consensus-based report. The final report was completed on August 1st after comments were received and addressed.

- This presentation will cover just the high priority recommendations. Please refer to the actual final report for additional details and other recommendations.
- *High Priority Recommendations*
 - 1. Construct a flow chart each year for each hatchery that shows (with dates):
 1. Eggs and dates taken
 2. Disposition of eggs/larvae to specific rearing sites
 3. Bloodstock maintained
 4. Actual breeding strategy
 5. Pooling of larvae prior to stocking
 6. Stocking sites
 7. Source of juveniles
 - The intent of this recommendation is to make sure data is available, comparable, and known deviations are well documented.
 - A flowchart with the Propagation Plan for accomplishing the production of the fish would put everyone on the same page. During the year, the documentation should be filled in with the specific information/numbers to see progression and guide coherent discussions on status and how the plan might need to evolve in subsequent years. Without this, the Program will be unable to really distinguish the pieces that are in play and the individual impacts of each. This organizational tracking should be considered a key element in trying to affect the complex genetics program over time.
 - 2. When deviations from planned methodologies result in the production of offspring, those offspring should not be released to the wild.
 - Any unplanned (“extra”) fish should not be released. The genetic plan is intended to maximize the genetics and involves controlling family size among other management activities.
 - 3. All broodstock and a sufficient subset of the pre-release juveniles should be genotyped and the contribution of each broodstock individual determined.
 - Progeny are devised from the breeding set-up and an equal contribution from each is needed. This requires genotyping. Ideally, if at all possible, there should be a single male and female breeding combination so to equalize the contributions from each. The broodstock and juveniles have to be genotyped in order to have an idea of what is released each year. It is acknowledged that this can be a “major deal” but the review panel considers it to be very prudent and necessary.
 - One reason the panel assigned a high priority for this recommendation is that the different research and monitoring currently done provide very different effective population size estimates. The actual number of breeders needs to be known to better address the actual family size of each.
 - *Question:* That scenario work well in 25x25 paired breeding but how should it be reconciled in a communal breeding species in a hatchery facility?
 - *Response:* Bypass the communal spawning; attempt individual mating. The information is extremely valuable to the effective population size. One can estimate the juveniles from the gametes of the parents, but it is preferable to do individual mating. Otherwise samples have to be taken from both parents and juveniles in order to type them and get a direct measure of the effective size. Communal estimates are wrought with assumptions and errors – thus producing too high a variance to be meaningful.

- *Question:* So the panel is advocating for paired mating for this species?
 - *Response:* Yes. Paired matings lead to much better understanding of the families and help avoid excess numbers of progeny. It is really the only way to equalize the family sizes and increase the effective population size.
 - Is there a minimum paired mating number needed to maintain diversity?
 - It depends on the situation and how many progeny need to be produced. If more fish are needed, then the paired matings would have to increase as well.
- 4. The use of only 4-year fish as broodstock may compromise the maintenance of genetic diversity because of the possibility of non-random, differential survival of individuals in the hatchery. Crosses should include younger fish.
 - Basically, there is inadvertent selection going on with the practice of limiting broodstock to 4-year olds. The panel's understanding is that 4 years is the "extreme" upper age of these fish in the wild. The broodstock is thus selected for success in the hatchery instead of what might be better for other fish in the wild.
 - Starting and including younger fish (and not waiting until they reach 4-years old) is also a mechanism that can help in the drought years.
 - *Question:* How does this really "work" given that all the younger fish in the river are related back to the hatchery stock? Would we really be getting something/anything different?
 - *Response:* If anything was lost (genetically), you would not gain those back. However, you can slow the further loss in the future by changing this practice. It is a safe guard against drought years with no natural production from the river.
 - *Question:* Regarding that "mixing" of breeding ages, does genotyping provide for the best genetic diversity?
 - *Response:* The genetic markers used are considered "neutral" so they are not under selection. We may miss the signal if just monitoring for neutral markers continues.
 - Neutral gene sections do not code for any particular characteristic for the organism. A 4-year fish is coded for doing better in hatchery settings. But there could be a loss of important genetics because the fish have been in the hatchery for years.
 - *Question:* What about the fecundity related to the age of the fish? Colleen Coldwell recently reported on the ~10,000 eggs for a 4-year old female versus the < 2,000 eggs for a 1-year old female. How would this impact the suggested changes to the propagation program?
 - *Response:* It is true that you wouldn't have to mate as many fish if they are the 4-year olds. But 1-year old fish could potentially be mated for several years as is what happens when they survive to breed in more than one season. But the entire point of the program is to maximize genetic diversity.
- 5. It will be useful to conduct an evaluation of whether domestication selection is occurring in the hatcheries.
 - There is one real advantage in the current genetics program and that is the ability of released minnow to complete a cycle in nature before any are taken back to the hatchery. This provides exposure to "wild" conditions and exposure to natural selection.

- However, there is concern over the practice of holding the fish in captivity up to 4 years. This is a preferential practice and is likely producing differential survivorship and possibly differential growth rates (under hatchery conditions which produce more eggs). Basically, selective breeding is occurring even though the fish produced are going to the wild.
- *Question:* How would you accomplish an evaluation of domestication? Pedigrees?
 - *Response:* Yes, if you have the genetic information with genotype of all broodstock and pedigrees to determine differential survival among families. You can look at traits of the fish themselves. The genetic markers aren't currently documented; but the genotype of the fish can speak to the traits and differential survival.
 - Or possibly look at traits within the same cohort within the 4 years in captivity to see if there any changes in distribution and whether individuals are more likely to be part of the sample.
- *Question:* This is easier to accomplish with a long-lived species, but the minnow is short lived. How should the program balance against the risk of domestication for fish held in captivity?
 - R: There needs to be continuous “refreshing” of the captive population with wild fish. That is the advantage in this situation – the broodstock can be “refreshed” after a cycle in the wild thus using a naturally selected next generation. That is one way to avoid the domestication in the hatchery.
- 6. The Genetics Management and Propagation Plan (and/or the Augmentation Plan) should have a detailed methodology during a drought lasting more than 3-4 years and if all 4 year classes of broodstock are lost to a major hatchery accident.
 - There needs to be a “back up” of potential broodstock. The idea is to go through a worst-case scenario and determine the necessary process(es) that should be developed and in place now in order to best address extended drought and emergency situations.
- 7. The Science Workgroup (ScW) and the Genetics Workgroup should integrate the genetics data and the decision-making more carefully. Specifically, there should be more translation of the genetics research into the adaptive management process, hatchery broodstock practices, and the integration of the past 15 years of research (genetics and ecology combined).
 - The peer review panel identified a significant communication disconnect. There needs to be greater integration of results and interpretation into the adaptive management and decisions on maintaining the genetic diversity.
 - Groups, hatcheries, and managers need to have regular interface for making and implementing decisions. Everyone needs to be on “the same page” in order to know what will and is to be done in certain situations.
- 8. A more stable, consistent funding stream for the genetics research (ex. an extended funding cycle) would ensure that all critical, temporally important genetic studies are accomplished each year.
 - The review panel acknowledged the difficulty, from an agency standpoint, to ensure and promise funding. However, securing a 4 or 5 year funding “stream” will help to maintain consistent research support and efforts. Having consistent genetic data is particularly important given the short-lived species.
- *Conclusions*

- The peer reviewers recognized the considerable efforts put forth by the Collaborative Program (and its associated workgroups) towards the goal of staving off extinction and enacting positive actions towards conservation of the silvery minnow. These efforts have played an important role in preventing this species from going extinct. This is a definite success.
- As part of the independent peer review, the panel's answers to the questions posed and the recommendations provided are meant to improve the likelihood of survival and genetic health of the minnow through constructive critiques.
 - It is a very admirable project and the suggestions are ways to make it even better – through improvements and suggested future objectives and paths with a focus on areas that could be grown or refined.
- *Questions*
 - *Question:* Most of the recommendations are focused on the hatcheries and propagation. What about recommendations on tracking the wild fish? Are the 50 samples taken from fish collected during the population monitoring adequate? Should sequencing be expanded to get more markers?
 - *Response:* The final report includes and addresses many recommendations that were not covered during this presentation including further exploring genetic differentiation along the river sections, exploring differences between minnow in the floodplains versus main stem, and looking at other genetic markers and use of newer techniques for coding for other meaningful traits. Those are discussed in the report and are important, but this presentation reflects the highest of the priority recommendations.
 - One reason the panel prioritized what they did was in consideration that the wild population is really hatchery derived and most have a “hatchery background” due to stocking practices. This is why some things were not listed as high a priority.
 - *Comment:* The ScW and Habitat Restoration workgroups are reviewing the genetics report and will provide feedback on the priorities and consolidation of the number of recommendations in order to have an integrated plan. The workgroups hope this effort will assist the Program in determining how begin addressing the recommendations.
 - *Comment:* A new genetic analysis contract should be awarded in December and some of the peer review recommendations were included as options that can be exercised if/when directed by the Program. Hopefully, the workgroup recommendations can be integrated into the Interagency Agreement (IA) with the Service during contract renewal.

Program and Science Support Services (PASS) Contract

- Western Ecosystems Technologies, Inc. (WEST), an environmental and statistical consultant company, was awarded the PASS contract.
- As the selected contractor, WEST's charge is to support the Collaborative Program through program management services, science coordination services and other support services to facilitate achievement of Program Goals.
 - The WEST team is viewed as “staff” to the Collaborative Program with support roles (not “in charge of” roles).
- *Interim Administrative Team*
 - WEST has a proposed “interim” administrative team that will be in place during the 6-month transition and hiring process for the filling of permanent positions.
 - The interim Program Administrative team consists of:
 - Interim Program Manager – Dale Strickland;
 - Deputy Program Manager – Clayton Derby;
 - Set-Up Support – Casi Lathan;

- Program Assistant/Facilitator – Debbie Lee;
 - Science Coordinator – Dale Strickland;
 - Technical Advisors – Clinton Hayes and Gretchen Norman.
 - Work Product Development – Gretchen Norman
 - Additional staff of statisticians; available as needed
- *Objectives (3 to 4 Months)*
 - Establish a WEST Albuquerque office – *partially completed; in progress*;
 - Hire a Program Director by January 20th, 2017;
 - Set up a Program Office: location TBD, with input from the Program Director
 - Program Director to hire appropriate Administrative Support;
 - Prepare for and facilitate the January 2017 EC meeting;
 - Support the Corps' Adaptive Management Program through GSA contract; help transition that work to the Program;
 - Administrative Assistance for the EC;
 - Interview and document other RIP programs.
- *Future WEST Program Team*
 - WEST is under contract with Reclamation to support (work for) the Program.
 - WEST's senior advisors will be retained to provide consistency during the hiring and transitioning to a permanent Program Manager and Science Director.
 - The Program Office, under the Program Manager will consist of:
 - Program Assistant/Facilitator – Debbie Lee;
 - Administrative Assistant – TBD;
 - Science Assistant – TBD;
 - Others – Statisticians, GIS Staff, Technical Editors, Graphics, Resource Experts (to be provided through WEST as needed/appropriate within budget constraints)
- *Program Manager*
 - Hiring the Program Manager is a priority with an expected completion date of January 20th, 2017.
 - The “ideal” candidate:
 - Senior level (Master's degree + 10 year's experience minimum; PhD preferred)
 - Experience with running a large-scale program
 - Scientist, or has extensive experience working with scientists
 - Familiar with water issues in the Western USA, and ESA
 - Collaborative leader
- *Adaptive Management*
 - WEST is currently partnered with GeoSystem's Analysis, Inc. (GSA) to further the Adaptive Management (AM) Plan development through a contract with the Corps.
 - There are six (6) phases to an Adaptive Management cycle: (1) assessment; (2) design; (3) implementation; (4) monitoring; (5) evaluation; and (6) adjusting.
 - Assessment Phase (GSA Team)
 - ✓ General convening assessment - *completed*
 - Species Specific Technical Convening Assessment – *in process*
 - Specific workshops/meetings – *in process*
 - Management-relevant key uncertainties – *in process*
 - Design Phase (GSA and WEST)
 - Monitoring plan frameworks
 - These frameworks will be brought to the Program and relevant committees for review and evaluation.
 - Monitoring RFPs (WEST)

- Full monitoring Plans (WEST)
- *Adaptive Management Transition*
 - Committed to a smooth transition
 - Working closely with GSA and the EC
 - Introduction of AM Plan to EC and committees
 - Debbie Lee working on both contracts
 - February minnow workshop
- *Activities to Date*
 - Conversation with management agencies and organizations
 - Drafted Program Director job description with input from small group
 - Support the AM framework, including the October flycatcher/cuckoo workshop through the Corps' contract
 - Set up temporary WEST Albuquerque office
- *Upcoming Activities*
 - Continue having conversations with Program partners
 - Study of existing Program committees/ subgroups and determine where overlap may occur
 - Supporting the AM framework and February minnow workshop (through Corps' contract)
 - Program Director hire process
 - Setting up WEST Albuquerque office
 - Administrative support for EC and committees
- *Contact Information*
 - www.west-inc.com
- *Questions*
 - *Comment:* Regarding the Program Director and Program Scientist positions, it seems like there is a focus on having a scientist background. But both positions will need to also have a “water” focus – so engineers and/or government backgrounds would also be appropriate, especially considering the complex federal contracting.
 - *Response:* The job descriptions include knowledge of water issues. A good applicant with an engineering background would not be turned down.
 - *Question:* Would you please share your experience with adaptive management on the Platte.
 - *Response:* Gladly; with the understanding that not all pieces may translate to the issues here. That being said, adaptive management is a valuable tool in trying to reduce uncertainty. Many uncertainties can end up being “opinions” based on limited data and resulting in competing hypotheses. These ideas and thoughts on what might/should/could work and the opinions on the other side(s).
 - Adaptive management is not easy, but it is working for the Platte River situation.
 - One learns that people generally have to “give up something.” The adaptive process requires admitting we don’t know all the answers. On the Platte, the Service “gave up” their ability to make decisions unilaterally. They want to know what the governance committee thinks and in return, they get a fuller range of possible options. Adaptive management requires that everyone look into the future with the acknowledgement that we don’t know what is going to happen or what results will be, so we all have to be willing to accept decisions in the future as they come.

- Adaptive management can take a long time, particularly when working with natural settings. In the MRG case, regarding the hatcheries, there are many opportunities to explore the genetics and address uncertainties in the controlled environment of the facilities.
- There are two (2) types of adaptive management: (1) passive and (2) active.
 - *Passive:* in passive adaptive management, things are implemented and we “wait to see what happens.” This can take years. Most practitioners don’t like the passive approach. It is challenging to commit resources to something but then have to wait many years to see if it is even working.
 - *Active:* in active adaptive management, studies and research are set up (including controlled situations to the extent possible) to gauge effects. This takes more resources and effort up front but typically doesn’t take as long to determine what option is a better approach. The effectiveness of active management is impacted/limited by budget, political, and regulatory realities.
- *Question:* What is the role of regional and local “traditional ecological knowledge” in adaptive management?
 - *Response:* Local knowledge has its place – adaptive management includes both field and lab work. The field work is easier to accomplish if there is traditional knowledge with understanding of what has happened in the past and what is happening now. That historical knowledge can be very informative.
- *Question:* Regarding the future organization structure, are there plans for a long-term or permanent external science panel to help evaluate the work to be done, the progress of that work, and how that information is integrated?
 - *Response:* Yes; there should to be a good subcommittee structure in place that meets and addresses the needs and issues. An independent science review panel is an important piece. It will be up to the EC to determine if that panel is a permanent/standing group or if is more ad hoc.

Draft Biological Opinion (BO) for Middle Rio Grande (MRG) Water Management and Maintenance Activities

- *Please note that the contents of this presentation (based on the September 12th draft release to Reclamation) have changed since its development and that more changes are expected as the Draft BO is still in progress with the BA partners and the Service. However, the overall framework of the BO is the main focus of today’s presentation.*
- There are no ESA applicants in this consultation – ISC, MRGCD, and the State do not need permissions to do their job. There are state statues providing for them. These agencies are portrayed at the “BA Partners” with Reclamation.
- The Final BO is expected to be released to Reclamation on December 2nd, 2016.
- *Brief History*
 - *Please refer to the actual presentation for additional details.*
 - On March 17, 2003, the Service issued a jeopardy BO for the silvery minnow and flycatcher. This 2003 BO contained: 5 RPMs, 9 T&Cs and 1 RPA, with 32 elements.
 - Specific actions included:
 - an increase in flows between April 15 and June 15 of each year;
 - beneficial use of Reclamation’s supplemental water;
 - continuous river flows between November 16 and June 15, and

- continuous flows of 100 cfs in the river from Cochiti Dam to Isleta Diversion Dam;
 - salvage of silvery minnows;
 - captive propagation of silvery minnow; and
 - fish passage at Isleta and San Acacia Diversion Dams.
- Under the MRG ESA Collaborative Program, agencies and organizations began implementing these activities. Spending over \$125 million to comply with the 2003 BiOp.
 - Some specific components were accomplished and others, for various reasons, weren't (ex. fish passage at diversion structures, relocation of the San Acacia railroad bridge).
- The information, lesson's learned, and data collected during the last 14 years were used to develop the new BO.
- *Action Area*
 - The entire width of the 100-year floodplain of the Rio Grande basin and its tributaries from the Colorado/New Mexico state line to Elephant Butte Dam
- *Reclamation Proposed Water Management Actions*
 1. Release of nonnative San Juan/Chama (SJC) Project water from Heron Reservoir to deliver water to downstream users;
 2. Operate El Vado Dam and Reservoir to store and release water, including response to requests by the MRGCD and BIA.
- *Bureau of Indian Affairs (BIA) Proposed Water Management Actions*
 1. Request storage and releases of water from El Vado to meet the 6 MRG pueblos' irrigation needs.
- *MRGCD Proposed Water Management Actions*
 1. Operate the MRG Project Diversion Dams to deliver water to MRGCD lands to meet agricultural demand on lands with water rights, including the lands of the 6 MRG Pueblos;
 2. Operate irrigation drains and wasteways to return water to the river;
 3. Request storage and release of water from El Vado to meet the irrigation needs of their constituents.
- *State Proposed Water Management Actions*
 1. Continue Compact related activities to administer relinquishment of New Mexico credit water and allocation of relinquished Compact credits;
 2. Continue to administer surface water and groundwater;
 3. Continue to issue permits for small domestic, livestock, and temporary uses.
- *Conservative Measures*
 - Characterized by the BA Partners in 2 ways: (1) offsetting measures - to ameliorate the ongoing activities and (2) conservation measures - additional to the offsetting measures.
 - The Service would prefer these be combined into one set of proposals for a "total" analysis approach; but discussions are ongoing and have yet to be resolved.
 - Table 1 looks at the impacts of offsets and conservation measures and whether the total results in a jeopardy situation.
- *5-Year Adaptive Management Review (RIO)*
 - Reclamation and the BA Partners will implement a defined Adaptive Management process (River Integrated Operations or RIO) over the duration of the BO to allow for evaluation and adjustment of Offsetting and Conservation Measures at 5-year intervals.
 - This Adaptive Management review will allow for lessons learned to be applied to the prioritization of Offsetting and Conservation Measures to improve resource benefits to

listed species. The Offsetting and Conservation Measures would be reviewed, adjusted, and incorporated into milestones related to 5-year performance elements.

- *Minnow Survival And Recovery Strategy: 4 Parts*
 - The Service believes that accomplishing the Silvery Minnow Survival and Recovery Strategy will result in a significant improvement in the status of the minnow.
 - The implementation of the Silvery Minnow Survival and Recovery Strategy is through the conservation measures listed in Table 1. The decision to implement will be made by the RIO through Adaptive Management.
 - 1. Minnow Spawning Age 0 & Survival Age 1 (HBO)
 - Target of 1 fish/100 m², 10/15 yrs
 - Less than 1 fish/100 m², 5/15 yrs
 - Less than 0.3 fish/100 m², 2/15 yrs
 - 2. Restoration of river connectivity: Angostura, Isleta, & San Acacia Diversion Dams within 10 years
 - 3. Large Scale Habitat Restoration: Isleta and San Acacia Reaches: increase available habitat and perennially wetted miles
 - 4. Conservation storage: 30,000 to 60,000 ac-ft.
- *Analytical Framework*
 - Effects to the silvery minnow, flycatcher, and cuckoo resulting from the Proposed Actions were analyzed by identifying impacts and benefits to the river environment, including:
 - Hydrology, geomorphology, water quality, riparian vegetation dynamics, other disturbances.
 - The process for identifying impacts and benefits to the river environment is referred to as the Matrix of River System Impacts or MRSI.
 - The process for assessing the impacts and benefits and the resultant effects on the species is referred to as A System of Assessing Effects to Species (ASAETS).
 - In the following examples, one area of impact and one species are used to highlight the analysis process(es):
 - *Example: Hydrology - Minnow*
 - Hydrology refers to the flow volumes, duration, timing and velocities within the Action Area. Based on the Service's review and analysis of the proposed action as summarized in the MRSI and ASAETS (Appendix C), the following proposed actions are anticipated to negatively affect river hydrology:
 - Prior and Paramount Storage and Diversion
 - Diversions and consumption of water at dams, drains, wasteways, and in the LFCC
 - Release and storage of native and SJC water in El Vado
 - Relinquishment program storage during spring
 - *Example: Geomorphology - Cuckoo*
 - Geomorphology refers to the physical properties of the river channel (i.e., width, depth, whether it is channelized or meanders). Based on the Service's review and analysis of the proposed action as summarized in the MRSI (Appendix C),

the following proposed actions are anticipated to affect MRG geomorphology:

- Water releases from upstream reservoirs.
- Diversions and consumption of water at dams, drains, wasteways, and in the LFCC
- Relinquishment program storage during spring.
- Delta Channel maintenance
- River channel maintenance projects

▪ *Example: Riparian Vegetation - Flycatcher*

- Based on the Service's review and analysis of the proposed action as summarized in the MRSI (Appendix C), the following proposed actions are anticipated to negatively affect riparian vegetation dynamics and therefore flycatcher habitat:

- Diversion and consumption of water at dams, pumped from groundwater, and in drains, wasteways, canals, or the LFCC
- Maintenance activities in the river and at dams and levees including the LFCC
- River channel maintenance projects
- Storage of water at El Vado Reservoir

- Based on the analyses (and described in the BO), the Service is then able to conclude which of the proposed actions would adversely affect designated critical habitat (both permanently and temporarily) for each species.

• *Conclusions: Minnow*

- After reviewing the current status of the silvery minnow, the environmental baseline for the Action Area, the effects of the proposed MRG Project and the cumulative effects including climate change, it is the Service's Biological Opinion that the MRG Project, as proposed, *will not jeopardize* the continued existence of the silvery minnow, flycatcher and cuckoo and will not destroy or adversely modify their designated critical habitats.
- *Please refer to the actual presentation for details on the rationale supporting these opinions.*

• *Reasonable And Prudent Measures (RPMs): to minimize impacts of incidental takes of silvery minnows, flycatchers, and cuckoos*

1. Reclamation will use the RIO to optimize the management of spring runoff in May and June to increase silvery minnow production and recruitment as monitored in the fall.
2. Reclamation will develop a model on and use, information about the elevations of surface water and groundwater levels, and ground surface elevations.
3. Reclamation will minimize take of silvery minnow due to river intermittency and drying by implementing fish passage at the Angostura Diversion Dam within 10 years, Isleta Diversion Dam within 6 years and San Acacia Diversion Dam within 5 years.
4. Reclamation will work with the Service to minimize take of silvery minnows by using the fish rescue service and by actively managing recession
5. Reclamation will standardize, fund, and implement an active captive propagation and population augmentation program.
6. Reclamation will maintain and foster regular interactions with staffs of BIA (on behalf of the six MRG Pueblos), State of New Mexico (NMISC and NMOSE), MRGCD, and the Service (NMESFO) as part of adaptive management and habitat restoration project planning, and water management through the RIO.

7. Reclamation will monitor the populations of the silvery minnow, flycatcher, cuckoo and their habitats in the Action Area.
 8. Reclamation will standardize and implement all BMPs that minimize effects to listed species
 9. Reclamation will minimize take of silvery minnow, flycatchers and cuckoos due to proposed water operations, maintenance, and habitat restoration activities.
 10. Reclamation will share and integrate all data collected for the proposed action through the RIO.
 11. Reclamation will annually report to the Service on implementation of the proposed action, the annual ITS summary, the RPMs, and their implementing terms and conditions.
- *Questions*
 - *Question:* Why hasn't the Draft BO been provided to the EC as previously promised? This is a big concern for many EC members.
 - *Response:* The Draft BO was released to Reclamation, as was the Service's intention from the beginning. This is one of the most complex consultations out there. It has been a highly interactive consultation and there have been "constant" meetings. Reclamation did commit to providing the draft but the Draft BO has changed a lot – it's basically a "moving target." There are also pre-decisional legal counsel aspects to be considered. There is current/ongoing litigation and associated concerns should the draft find its way to the public before anything is finalized.
 - At the time the promise was made, the BO consultation and Recovery Implementation Program (RIP) were hand-in-hand and thus this group was affected. But now the RIP is no longer a part of the consultation or a requirement of this Program.
 - Several BA partnering agencies concurred – there was such a short comment timeframe that the agencies didn't have time to do anything besides reading it, formulate, and provide comments. It was basically useless to release the draft because of the significant changes.
 - *Question:* What does the separation of the RIP and BO mean for the Program now? What about the agencies that are not part of the consultation but are EC members? What role does the Program have in this process?
 - *Response:* It will be up to the EC to determine the future of the Program.
 - Discussion on the status of the RIP will occur under the next agenda item.

Status of RIP (Recovery Implementation Program) Transition

- Back in the May 2016 EC meeting, there were rigorous discussions about the RIP and authorities – Section 4, Section 7, voluntary? There were significant disagreements on the funding aspects, front loading activities, voluntary actions versus mandatory, etc.
- The RIP development was put on hold in order to get through the consultation. Given that this was an election year with a new administration, it became very important to have a finalized BO before the New Year.
- *Current Status*
 - Many "big ticket" items are finally resolving:
 - The PASS contract for Program administration has been awarded and being implemented;
 - The BO will be finalized before the New Year;
 - Adaptive management plans are being formulated through the Corps' contract.
 - The litigation process might be active again by the New Year;

- Reclamation's perspective is that "active" adaptive management will not be a big driver for the BO commitments. There will be 10 to 15 years to complete the new BO activities and that adaptive management (probably most passive) will be used to inform the next BO.
- *Status of the RIP*
 - It has been previously acknowledged that the "RIP" was more accurately a "RIP Lite" and there are terminology implications and concerns that will have to be addressed.
 - The Program will need to resume discussions on how to progress, determine the relationship on the compliance with the BO, figure out how other entities (with or without their own BOs) interact with this BO, etc.
- *Questions*
 - *Question:* What is the incentive for others to remain active in the Program? It is unclear if there are any advantages to entities that are not BA partners.
 - *Response:* The Program is a valuable place to share what everyone is doing. It performs an informational service. And hopefully, the Program will be a science "hot-spot" for the MRG and facilitate rigorous science debates and consensus-reaching on that science.
 - Reclamation is making a large investment in the management of the Program – that is a commitment. And the PASS contractor will be in place to help redefine the Program and expectations.
 - *Comment:* MRGCD raised questions in their comments regarding the inclusion of the RIP. As you know, half of the May EC meeting was spent trying to clarify the role of the RIP in the consultation. It did add another layer of complexity to the BO. Including the RIP would have prevented the BO from being developed in the given deadlines. Still, concerns remain that the RIP has not been included.
 - Reclamation is "on the hook" to develop an adaptive management program. This can be done within the Program.
 - As far as adaptive management, there were three (3) driving "values" that lead the District's approach when looking at the BO: (1) is it implementable? (2) is it defensible? and (3) adaptive management (and critical science applications) – the BO needs to provide space for those science uncertainties to evolve.
 - *Question:* The Corps has put a lot of money and activity into the Program and has been a very beneficial participant. How will the Corps look at some of these endeavors?
 - *Response:* The Corps has always tried to separate regulatory compliance from the dedication and responsibility to the Program. Because we are not involved in the consultation, we've attempted to have clear articulation in the documents that supports broader participation. The Corps supports the approach of separating the voluntary activities from individual compliance activities. Going forward, the compliance responsibilities are closely related to but are different from the Program. The Program - in the current form and how it evolves – will hopefully continue to assist all of us in the day-to-day activities on/in the river versus the formal compliance arena. The Corps commits to remaining at the table to try to forward the recovery process.
 - *Comment:* There is a lot of responsibility for the BA partners to make sure things are implemented; but there is no question that we will need everyone at the table "to get it all done" and contributing over time, particularly with the science elements.
 - It will take involvement, commitment, contributions, and thoughts from everyone in order to reach a "synergy" and continue to be a constructive group that will make the MRG a better place.

Public Comment

- Mike Marcus raised concerns regarding the original NEPA analysis for critical habitat and the specified water volumes that range from 17,000 ac-ft up to 40,000 to 45,000 ac-ft. Does the new BO stay within those limits of water use or is the previous NEPA analysis invalidated?
 - It was responded that there are no volume requirements specified in the Draft BO document.

Announcements

- Bosque Ecosystem Monitoring Program (BEMP) is hosting its annual Crawford Symposium on Tuesday, March 7th at UNM. There will be professional and student presentations. This symposium is open to all who are interested and invitations will be distributed closer to the event date.
- The Final Biological Opinion (BO) is currently expected December 2nd, 2016.

Next Meeting: **January 18th, 2017 from 9:00am to 12:00pm, location TBD**

- Tentative January agenda items: (1) Discussion/Questions & Answers from EC on Final BO; (2) Discussion: Role of the Collaborative Program, the EC, and the RIP;
- Tentative future agenda items: (1) EC Attendance Policy in the Bylaws – address possible exceptions and/or changes; (2) Discussion/Updates on Adaptive Management Documents;

Executive Committee Meeting Attendees November 16th, 2016

Attendees:

<i>Representative</i>	<i>Organization</i>	<i>Seat</i>
Brent Esplin	Bureau of Reclamation	Federal co-chair
Rick Billings (A)	Albuquerque/Bernalillo County Water Utility Authority	Non-federal co-chair
Jennifer Faler (P)	Bureau of Reclamation	Reclamation
Patrick Redmond (A)	Middle Rio Grande Conservancy District	MRGCD
Grace Haggerty (A)	NM Interstate Stream Commission	NMISC
Kris Schafer (A)	U.S. Army Corps of Engineers	Corps
Wally Murphy (A)	U.S. Fish and Wildlife Service	USFWS
Matt Schmader (P)	City of Albuquerque	COA
Kim Eichhorst (P)	Bosque Ecosystem Monitoring Program	BEMP
Frank Chaves (P)	Pueblo of Sandia	Sandia
Matt Wunder (P)	NM Department of Game and Fish	NMDGF
Janet Jarratt (P)	Assessment Payers Association of the MRGCD	APA
Cody Walker (A)	Pueblo of Isleta	Isleta
Alan Hatch (A)	Pueblo of Santa Ana	Santa Ana
Bill Grantham (A)	NM Attorney General's Office	NMAGO
Ryan Ward (P) (via phone)	NM Department of Agriculture	NMDA

Others

Leann Woodruff	Bureau of Reclamation
Ann Demint	Bureau of Reclamation
Brian Hobbs	Bureau of Reclamation
Pat Page	Bureau of Reclamation
Josh Mann	Solicitor's Office
Susan Bittick (A)	U.S. Army Corps of Engineers
Danielle Galloway	U.S. Army Corps of Engineers

William DeRagon	U.S. Army Corps of Engineers
Ryan Gronewold	U.S. Army Corps of Engineers
Dana Price	U.S. Army Corps of Engineers
Mick Porter	U.S. Army Corps of Engineers
Beth Pitrolo	U.S. Army Corps of Engineers
Ashley Tellier	U.S. Army Corps of Engineers
Wally Murphy (A)	U.S. Fish and Wildlife Service
Dave Campbell	U.S. Fish and Wildlife Service
Vicki Ryan	U.S. Fish and Wildlife Service
Joel Lusk	U.S. Fish and Wildlife Service
Clinton Smith	U.S. Fish and Wildlife Service
Deborah Dixon	NMISC
Chris Shaw	NMISC
Kim Fike	BEMP
Joe Jojola	BIA
Rich Valdez	SWCA for NMISC
Brian Bader	SWCA
Rick Carpenter	BBD/City of Santa Fe
Kyle Harwood	BBD/City of Santa Fe
Elizabeth Reitzel	US Rep. Lujan Grisham
Todd Caplan	GeoSystems Analysis (GSA)
Gale Bingham	GSA/Civic Dialog Group
Alaina Pershall	Tetra Tech
Dawn Johnson	Amec Foster-Wheeler
Gene Wilde	Texas Tech
Mike Marcus	Water Assembly
Dale Strickland	WEST, Inc.
Casi Lathan	WEST, Inc.
Debbie Lee	WEST, Inc.
Gretchen Norman	WEST, Inc.
Clayton Derby	WEST, Inc.
Amy Welsh	West Virginia University (via teleconference; for genetics)
Bernard May	University of California at Davis (via teleconference; for genetics)
Marta Wood	Alliant Environmental (note taker)