

Middle Rio Grande Endangered Species Act Collaborative Program
Science Work Group Meeting
20 July 2010 Meeting – 9:00 AM-11:30 AM
Interstate Stream Commission

Decisions

- The June 15, 2010 ScW Meeting Minutes were approved with no changes.

Actions

- Alison Hutson will distribute her summary of the 2008 and 2009 genetics monitoring reports.
- Stacey Kopitsch will email the pdf version of the DBMS data model to the ScW for comments.*
- Jeanne Dye will email the pdf version of the DBMS data model to the Propagation Work Group for comments.*

* Note: These are action items that were assigned following the ScW meeting.

Meeting Summary

- Jeanne Dye brought the meeting to order and introductions were made around the table. The Database Management System (DBMS) presentation was moved to the top of the agenda.
- Kenny Calhoun, Darcee Killpack, and Joseph Foster presented the DBMS data model. For conceptual purposes the data model has been organized into various disciplines. Darcee took the Science Workgroup (ScW) through a couple examples to show how the tables and data are related. The datasets are the center of the database; these are the actual data that is collected. The datasets are then linked to Core Tables, the fundamental tables of how information is collected. The Core Tables have sub tables called Variable Properties. The Variable Properties are list items, they have drop down menus and lists to select from. There are lots of relationships within the data model; along with data import, verifying that the relationships of the data are accurate and that nothing is missing is the most critical part of the project. Two key components of the database are the Document library and the Site Library. The Document Library will contain the actual file of a document as well as any photos or spreadsheets related to the data. The Site Library will be a collection of the sampling sites in order to spatially see where the work is being done. The ScW should submit any comments or changes to Stacey Kopitsch by July 30th (Following the Science meeting it was determined by the DBMS work group to route all comments through the PMT liasions). It was thought that reintroduction and hatcheries should be added to the model. The ScW thought that the Propagation Workgroup should also review the data model.
- The June 15, 2010 ScW Meeting Minutes were approved with no changes.
- The ScW performed an action item review.
 - Jeanne Dye will incorporate suggested questions and changes made to the Genetics peer review questions and send back out to ScW members for review.
 - Complete; copies of the revised questions were distributed to meeting attendees.
 - Alison Hutson will compile recommendations from the last 3-4 years of genetics monitoring documentation for discussion at the July 20, 2010 meeting.

- Complete; Alison read the 2008 and 2009 monitoring reports and wrote a summary. The work group had a discussion on the genetics monitoring (*see below*) to decide if the summary should be distributed.
- All comments on the Fish Passage peer review questions should be sent to Stacey Kopitsch (stacey_kopitsch@fws.gov) by COB Thursday, June 17. Stacey will compile the comments and send to Kathy Dickinson on Friday, June 18.
 - Complete; the CC has decided to have the peer reviewers come up with the questions. The San Acacia Fish Passage review will focus on science components.
- The ScW had a discussion on the genetics monitoring. The 2008 and 2009 genetics monitoring reports show that the hatcheries are increasing diversity in the Rio Grande Silvery Minnow (minnow) in the middle Rio Grande. It was explained that the hatcheries use a “paired spawning” program to create diversity and then spawn are released into the river. The ScW was told about a different program for spawning called “strip spawning” that would further increase diversity; in “strip spawning” 5 females would mate with 5 separate males. It was thought that the genetics monitoring should not be changed because it is important to maintain consistency but that adding other studies, such as studies on gene expression, would benefit the Genetics program. There was mention of documentation of late spawning occurring in the fall but there is not substantial data; the current hatchery program does not include late spawning. Propagation work group meetings would be an appropriate place to get feedback for new studies. It’s important that new studies tie back into the needs of the genetics program. A more structured discussion for where the ScW would like the Genetics program to go was scheduled for the August 17, 2010 ScW meeting. Alison Hutson will distribute her summary of the 2008 and 2009 genetics monitoring reports.
- The ScW was given a Program update:
 - Executive Committee (EC) updates – The EC tasked Jericho Lewis with compiling a list of IAs; the list will be presented at the August 30th EC meeting.
 - Coordination Committee (CC) updates – The CC will be reviewing all ScW LTP Future Activity summaries in a working meeting on July 28th. The meeting is from 8:30 am to 4:30 pm at Bureau of Reclamation (Reclamation); ScW is invited to attend.
 - The RFP for the peer review of the San Acacia Fish Passage project has been released. The Task Order for the Population Estimation peer review will be developed soon; any further changes to the peer review questions should be sent to Stacey Kopitsch or Jeanne Dye by July 22nd. The RFP for Adaptive Management was released, proposals were received, and an offer will be forthcoming. Adaptive Management will require significant input and involvement from the work groups.
- The ScW briefly discussed reintroduction of the minnow. Mark Brennan is funded by the Program but most proposed areas for reintroduction are outside of the Program area.
- It was announced that Terina Perez has taken a job at Reclamation and is no longer the non federal Co-Chair; Alison Hutson was nominated, and any additional nominations should be sent to Jeanne Dye. Voting will take place at the August 17th meeting.
- Rebecca Houtman was welcomed to the ScW; she is replacing Terina as the City of Albuquerque representative.
- Stacey Kopitsch emailed out 2 reports to be reviewed and commented on. The size of the email was very large and some people may not have received it; email Stacey if the reports were not received. There is a 30 day comment period for each report.

- Otoliths from 133 individuals were submitted for the Age and Growth study. Sizes ranged from 28 mm to 83 mm standard length.

Next Meeting: August 17, 2010 from 9:00 am to 11:30 am at ISC

Middle Rio Grande Endangered Species Act Collaborative Program Science Work Group Meeting

20 July 2010 Meeting – 9:00 AM-11:30 AM

Interstate Stream Commission

Meeting Minutes

Introductions and Agenda Approval

- Jeanne Dye brought the meeting to order and introductions were made around the table. Presentation of the DBMS data model was moved to the top of the agenda.

D.B. Stephens presentation of the DBMS data model

- Kenny Calhoun, Darcee Killpack, and Joseph Foster presented the Database Management System (DBMS) data model. Handouts of the enlarged Aquatic Terrestrial sections of the data model were distributed to meeting attendees. Pdf files of the enlarged areas and the data model will be made available.
- Kenny gave a brief introduction of the data model. The DBMS is in the development phase of the database. The data model is a conceptual representation of how data is going to be linked within the database. The relationships can be one-to-one, many-to-one, or many-to-many. This is the phase of the project where the Program is needed to verify that relationships are correct and that correct naming is being used; along with data import this is the most critical part of project. There are currently 197 tables in the data model; there will be more tables once it is a normalized database. Today's meeting will be a tutorial of how to read the relationships in the data model.
- The data model has been organized into various disciplines in order to make the relationships easier to visualize. The datasets are the center of the database; these are the actual data that is collected. The datasets are then linked to Core Tables, the fundamental tables of how information is collected. The Core Tables have sub tables called Variable Properties. The Variable Properties are list items, they have drop down menus with lists to select from. Specific Properties are tables that are generic through out the data model. The text boxes beside the tables give a short explanation of the table.
- Example: The Fish Health table. After collecting data the user will enter information about the collection; time, date, and detail about the sample.
- In addition to verifying the relationships of the tables the Science Workgroup (ScW) should see if there are attributes of sampling that are not captured in the data model.
- It was thought that fluvial process should be a larger category in the table; there is some reference in the Habitat Data and Water Data sections. It was also thought that reintroduction could also have its own table; reintroduction is different than salvage and stocking.
- It may look like there is duplication, most notably in Flycatcher and Wildlife surveys, but for conceptual purposes things were broken up, in the database things will be more simplified. The tables for the fish are probably the most complicated; the data model tries to capture the different scales at which sampling occurs, then gear type, different species, and then fish type. In the lower right of the data model there are the scales of data collection and the scales of geography.
- Key components of the data model are the Document Library and the Site Library. The Document Library will have files of documents; it will include related information such as authors and publishers. The Document Library will also contain photos and spreadsheets related to data. The Site

Library is a spatial collection of sampling sites in the Program area. Throughout the tables there are coordinates, these coordinates will link to GIS; users will be able to search spatially in a map for work that has been done.

- It was asked if people knowledgeable in fish health had been shown the data model. The data model was shown to workgroups in the hopes that they could share the data model with the appropriate people. The DBMS should be notified if there is anyone else they should meet with for data model review.
- It was commented that there should be information about the hatcheries included in the data model.
- The ScW thought that it would be helpful to have the Propagation workgroup look at the data model.
- It was asked how the database would interface with the PVA models. The current understanding is that output from the PVA models will be captured in the Document Library, but the connection between the database and the PVA models is unclear.
- Mike Hatch helped to organize most of the aquatic information in the data model.
- It was asked who provides information on Fish Pathology to the Program. Dexter provides fish health expertise on the Rio Grande Silvery Minnow (minnow) to the Program. It was thought that Jason Remshardt should see the data model. The ScW would like to compile a list of people who they think should review the data model. There needs to be information in the data model about the number of minnow hatcheries are producing and the size of the minnow that are released from the hatcheries.

Approve 06/15/10 ScW Meeting Minutes

Decision: The June 15, 2010 Meeting Minutes were approved with no changes.

Action Item Review (see below)

- **Jeanne Dye will incorporate suggested questions and changes made to the Genetics peer review questions and send back out to ScW members for review.**
 - Complete; hard copies of the revised Genetics peer review questions were provided to meeting attendees.
- **Alison Hutson will compile recommendations from the last 3-4 years of genetics monitoring documentation for discussion at the July 20, 2010 meeting.**
 - Complete; Alison read the 2008 and 2009 monitoring reports and wrote a summary. The work group had a discussion on the genetics monitoring (*see below*) to decide if the summary should be distributed.
- **All comments on the Fish Passage peer review questions should be sent to Stacey Kopitsch (stacey_kopitsch@fws.gov) by COB Thursday, June 17. Stacey will compile the comments and send to Kathy Dickinson on Friday, June 18.**
 - Complete; the CC has decided to have the peer reviewers come up with the questions. The San Acacia Fish Passage review will focus on science components.

Genetics Monitoring Discussion

- The 2008 and 2009 genetics monitoring reports show that the hatcheries are increasing diversity in the minnow in the middle Rio Grande
- It was asked how the hatcheries are increasing diversity if the fish in the hatcheries came from the river. It was explained that with the appropriate breeding programs diversity is increased. The hatcheries use a “paired spawning” program in which 6 females and 6 males are placed in the same

tank. An issue with this type of spawning program is that there is no way of knowing which males have contributed. "Strip spawning" is another type spawning program. In this program 5 females mate with 5 different males. It's thought that a "strip spawning" program would capture more genetic diversity than "paired spawning" but would also be more labor intensive.

- It was asked how diversity is increased if there is a significant bottleneck.
 - It takes as little as one mutation to create diversity.
- How much more diverse are the fish in the hatchery as opposed to the fish in the river?
 - The hatchery fish are not significantly more diverse.
- It was thought that the genetics monitoring should not be changed because it is important to maintain consistency but that adding other studies, such as studies on gene expression, would benefit the Genetics program.
- It was asked if the fish can also spawn in the fall. There's been documentation of spawning occurring as early as March and as late as August but it was thought that there was not enough information to be conclusive. The current hatchery program does not include late spawning. It was said that fish from late spawning might be too small to overwinter. There are those involved with the Program who think that fish from late spawning are showing up the following year but there has never been a dedicated study.
- It was thought that ScW needs to discuss where the Genetics program is going. It was thought that Alison's summary of the 2008 and 2009 monitoring reports would be helpful to evaluate the Genetics program. The ScW has previously discussed that not enough is being done with the Genetics program.
 - The Propagation work group might be able to give feedback on ideas for new studies.
 - It's important that new studies tie back into the needs of the genetics program. The peer review will be helpful in focusing management decisions.
 - Discussions on where the Genetics program should go and on future studies could be helpful in developing peer review questions.
 - It was pointed out that at some point the population needs to be self sustaining. Genetics is a component and fish passage is the mechanism.
 - A more structured discussion on where the ScW would like the Genetics program to go was scheduled for the August 17, 2010 ScW meeting.
 - It was thought that Tom Turner and Megan Osborne may also be able to provide feedback but at this point it would be premature to invite them to discussions.

Action: Alison Hutson will distribute her summary of the 2008 and 2009 genetics monitoring reports.

Program update

- **EC update**
 - The Executive Committee (EC) tasked Jericho Lewis with compiling a list of IAs to be presented at the August EC meeting.
- **CC update**
 - The CC will be reviewing all ScW LTP Future Activity summaries in a working meeting on July 28, 2010. The meeting is from 8:30 am to 4:30 pm at Bureau of Reclamation (Reclamation); ScW is invited to attend.

- The RFP for the peer review of the San Acacia Fish Passage project has been released.
- The Task Order for the Population Estimation peer review will be developed soon; any further changes to the peer review questions should be sent to Stacey Kopitsch or Jeanne Dye by July 22nd.
- The RFP for Adaptive Management was released, proposals were received, and an offer will be forthcoming. Adaptive Management will require significant input and involvement from the work groups. It is unknown when Adaptive Management will start.

Reintroduction

- At the last EC meeting there was discussion about Mark Brennan's reintroduction work being significantly outside of the Program area; the ScW workgroup heard an overview of viewpoints shared at that EC meeting, including that reintroduction should go to the most viable section of the river regardless of it being outside of the Program area, as well as the Program is funding Mark so the reintroduction work should be done within the Program area.
- Fundamentally, 10(j) work cannot be done in the middle Rio Grande within the current range of the minnow.
- There is a potential 10(j) site above Cochiti
- Reintroductions outside the Program area would still benefit the Program.
- It was asked what the habitat criteria are for the minnow for potential reintroduction sites.
 - This will be different for each location and is something that Mark is working on now.
- Mark was asked if he thought that the initial success in Big Bend is an indication that reintroduction won't be as difficult as it was thought to be a couple of years ago.
 - In the last two seasons a couple of eggs and a couple of larvae have been found but there will need to be more stocking. Hopefully Big Bend will help substantiate reintroduction in other areas in Texas however a lot more analytical work needs to be done.
 - Jason Remshardt will be going back to Big Bend in August to conduct monitoring.
- It was asked if Amistad could be a future reintroduction site.
 - It potentially could be, but if minnow are going there from Big Bend it might be considered an existing population.

Announcements

- It was announced that Terina Perez has taken a job at Reclamation and is no longer the ScW non federal Co-Chair; Alison Hutson was nominated, and any additional nominations should be sent to Jeanne Dye. Voting will take place at the August 17th meeting.
- Rebecca Houtman was welcomed to the ScW; she is replacing Terina as the City of Albuquerque representative.
- Stacey Kopitsch emailed out 2 reports to be reviewed and commented on. The size of the email was very large and some people may not have received it; email Stacey if the reports were not received. There is a 30 day comment period for each report.
- Otoliths from 133 individuals were submitted for the Age and Growth study. Sizes ranged from 28 mm to 83 mm standard length.

Next Meeting: August 17, 2010 from 9:00 am to 11:30 am at ISC

**Science Work Group
20 July 2010 Meeting Attendees**

NAME	AFFILIATION	PHONE NUMBER	EMAIL ADDRESS
Jeanne Dye	Reclamation	462-3564	jdye@usbr.gov
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