

**Middle Rio Grande Endangered Species Collaborative Program
Habitat Restoration Work Group
19 April 2011
12:30 p.m. to 3:30 p.m.
Interstate Stream Commission
550 San Antonio
Albuquerque, New Mexico**

Action Items

General Items

- Ondrea Hummel will send out MPT monitoring schedule to workgroup.
- March meeting minutes will be approved at the May meeting.
- Rick will send out physical model to workgroup for comment.
- Adaptive management workshop with EC will be on May 19.
- Open house and joint workgroup is scheduled for Oct 7-8 at Tingley Beach area.
- Next CC meeting will be an all-day meeting focusing on LTP on May 4th.

Tamarisk Leaf beetle Presentation

- Gina announced a meeting on April 29th all day with representatives from each agency to focus on the flycatcher area and would send an email to everyone about it.

SRH-2D Modeling Presentation

- Invite Mark Stone to participate in the Population Analysis Group.

San Acacia A&R Peer Review (Read ahead)

- Gina will give a short presentation at some time and highlight what the workgroup wants to take out of it for the next step.
- Gina agreed to have it sent out as a read ahead and on next month's agenda to set dates for it.

Wetland Compliance Monitoring

- Get approval on monitoring plan for a couple of sites.
- Streamline the approach for monitoring all sites under one contract and publish an RFQ.
- Ondrea asked for volunteers to work on this monitoring.

HR Construction Ranking Criteria

- Ondrea will email the criteria and highlight changes in the proposal. Feedback needed by the end of the week.

Meeting Notes

1. Introductions/Agenda Approval

Those present introduced themselves.

2. Announcements

- Ondrea Hummel will send out the MPT monitoring schedule to the workgroup members.

3. Approve previous month's meeting minutes

- The minutes of the March meeting will be considered at the May Workgroup meeting.
- The minutes of the February meeting had not been approved at the March meeting or this meeting so those minutes will also be considered at the May Workgroup meeting.

4. Action item Review

The action items from the previous meeting were reviewed by the workgroup.

- Rick Brenner will send out physical model to the workgroup for comment.- still in progress.

5. Tamarisk Leaf beetle Presentation (Ms. Deb Hill and Hira Walker)

- Ms. Hill presented the first part of the study on the Southwestern Willow Flycatcher and the Salt Cedar Leaf Beetle.
- In 1998 there was a biological infestation of salt cedar leaf beetle. It was at that time outside the habitat were for the flycatcher but now overlapped it. Since the Flycatcher was a riparian obligate breeding was in riparian vegetation close to water. They tended to breed in salt cedar because that was the available vegetation and provided a dense environment. Salt cedar wasn't considered a necessary nesting habitat. The spread of tamarisk coincided with the decline of the Flycatcher. The majority of birds were in areas where there was some salt cedar.
- A study in Arizona found no difference for flycatchers breeding in tamarisk vegetation v. native vegetation.
- Tamarisks did better in areas where they could be dried out for a time. (Due to landscape changes). But they used more water than native trees. Cutting them down allowed native trees to return and grow. Tamarisk increased the risk of fire.
- Where birds breed in Salt Cedar, the Salt Cedar Leaf Beetles could defoliate the trees at their highest level. But they couldn't just take out the Salt Cedar and expect to get native regrowth quickly. Where they did restoration, they had control of when to do it. But they lost that control if the beetle came in.
- Tamarisk dominated woodlands were important to riparian dependent wildlife where native habitat could no longer thrive. That was not considered when the decision to remove them was made.

- Defoliation was not complete when invaded by leaf beetles. In Utah, the beetles came right after the flycatcher arrived. She showed where they knew the beetles were out. For several years, people could go to extension offices and get a bucket of the beetles to defoliate their salt cedars.
- They now knew that:
 1. Beetles could move many miles in a single year.
 2. Beetles could persist below 38 degrees latitude - now at 36 degrees latitude in Littlefield, AZ
 3. It might take 5+ years to lead to mortality of tamarisk but it varied widely.
 4. Tamarisk defoliation cycles were increased, occurring more during nesting season for many birds.
- Ms. Walker added that some of them had hybridized. People expected to have some water savings with this effort.
- The effect to wildlife and habitat was not being done in comprehensive studies through the beetle release/permit programs. Some other groups/agencies were beginning to evaluate effects. Restoration was not part of the beetle program. The situation might already be beyond their control.
- Ms. Walker encouraged people to read the literature and ask hard questions and also to report observation of beetles to the local FWS office. The beetles were present although the release program had been halted. She said the USDA did the initial research that led to beetle control of Salt Cedar.
- Ms. Walker presented the second part of the presentation. There were beetle releases starting in 2001 with releases in Nevada, Utah, Colorado and some other locations. The releases were located away from known flycatcher breeding sites.
- There were a few beetles in New Mexico; some on the Pecos River near Artesia and in 2005 they were found at Bradley Lake State Park . They were all within the 200 mile buffer and had to have approval. They were approved in the the Tularosa basin with assumption they would not move to the Rio Grande. In all of them, the beetles had not become established. These were considered to be defunct.
- But, potentially, New Mexico could get them from the release sites in Texas. There was one at Pecos that was established.
- Most of their attention was now on the San Juan basin where the beetles had now come in northwestern New Mexico.
- They drove all around Fruitland, Bloomfield and Farmington and saw evidence of the beetles on those trees that were distressed going into the fall. On highway 550 near Cuba they saw salt cedar trees that were infested along the road. She didn't know if they were here at the Rio Grande but could easily get here from the Rio Puerco, Chama or Jemez.
- Can the beetles fly? Ms. Walker agreed and said they breed multiple times during the

warm season. They could make it to the Rio Grande in one season.

- Tamarisk was used by the birds during all seasons. During breeding they had an open cup nesting of several bird species.
- Some types of tamarisk vegetation were ecologically equivalent to native vegetation.
- Alteration of Arthropod Prey: It increases beetles but heavy beetle infestations result in heavy defoliation and then loss of beetles and other foliage arthropods.
- Alteration of reproduction: most defoliation of tamarisks happen during mid summer.
- Birds that breed in midsummer would be affected by increased nest abandonment, increased nest predation and decreased ability of eggs and young to thermoregulate (no shade) so it cooks the eggs.
- Tamarisk recovers from defoliation for several years. Thus it was an ecological trap. We need to start looking at where the beetles were going to go and start replacing salt cedar with native vegetation.
- Do the beetles come from Asia. Ms. Walker agreed.
- Is there some type of control available?
 - Ms. Walker said they had a wasp that controls them. there were various wasps in California. There were other bird species where they didn't know breeding locations and were concerned about impact upon them. They were not sure about an ecological solution but had to be thinking about proactive restoration.
 - Ms. Walker was asked about pheromone control to alter what the beetles would eat. She explained that part of the beetle life cycle was underground. She was open to exploring those further.
- At the middle Rio Grande in the database were some breeding grounds next to salt cedar - especially between Bernardo and San Acacia. Hopefully this would be brought into the process.
- She gave several Next Steps.
 - Train those completing vegetation and bird surveys in beetle identification.
 - Report detected beetles by date, location, abundance, life stage, and photos.
- She said they had some sites in Utah and Arizona where it had wiped out entire populations. Ms. Hill said the concern would be them getting from San Juan.
 - It was felt that this was essentially difficult for the Collaboration Program because they didn't have any role in releasing beetles.

- Ms. Hill said there were different threats but if you were concerned about recovery, you wouldn't get it without dealing with this problem. This was a threat that could quickly go against your work. So an overall recovery effort was important. Ms. Walker didn't know the workgroup's checklist but would like to promote this concept in their processes. This was an area where she knew there were flycatchers next to salt cedars. So if you could, put emphasis on those sites. Try to restore them as quickly as possible.
- Ms. Hill said there was an issue in Mexico where they were eating Tamarisk but no evidence of them eating other things.
- Ms. Walker said the lower Rio Grande was the greatest area of concern and there was a lot of salt cedar there. Defoliation means the trees would still be there but dead so there would be standing vegetation.
- Ms. Hill thought it would be good to see in the places where they were now what ecological changes were happening. Ms. Walker didn't think they would see a lot of natural regeneration unless a fire cleaned it all out. Some of these have taken 8-10 years to kill the salt cedar. So they were just beginning to understand it.
 - Ondrea Hummel noted in our current restoration areas, especially down south, we were looking at that.
- What exactly is the restoration of flycatcher habitat? The HRW had tried various things to establish the same structure. They didn't have natural areas to restore willows and cottonwoods to the area. In their criteria they had to put the layer of hydrology in. Otherwise, they could plant a whole bunch of willows but they might not have the vibrance needed to survive.
- Ms. Walker asked to consider where the flycatchers were nesting now:
 - They were in the salt cedars on the southern Rio Grande.
- Did they document the induction and number of birds? If the birds were reducing because of this then it would become a documented concern.
 - Ms. Walker said she and Ms. Hill had both observed it. It was not just from defoliation but also from removal of salt cedar. On the Pecos where aerial herbicide was applied, for instance, they observed it. There were others that she had been reviewing for publication. She knew that some people had calculated based on various models and they crunched the numbers and it had not resulted in the answer. They might be keeping the salt cedar numbers from growing but that had helped native sustaining.
 - Ms. Walker said they had to have the right structure for the nesting to happen - Structure and age were important.
- What are the impacts to other riparian species with Salt Cedar if they were anticipating ending up with more species than now? Are other bird species threatened by this phenomenon?

- Ms. Walker indicated they had decided not to include some areas like the Pecos. Much of those on the federal endangered species list were not considered at present but she would think about it.

6. SRH-2D Modeling Presentation – Mark Stone, Presenter

- Dagmar Llewellyn introduced the reason for this presentation. She had heard the reclamation code for SRH would be most appropriate for this project. This was based on conditions before restoration. Ondrea Hummel was involved with it when it happened. It seemed to be an exciting start for this. Mark Stone would share the project and larger aspects of it. Mr. Stone clarified that this was part of his research in Nevada.
- He said he would begin with an overview of the theory behind 2D models; provide a glance at some of the models out there; describe the value-added capabilities of 2D models and give an example application for RGSM habitat evaluation.
- There were 3 different equations to work with. Mostly they talk about Newton's second law. The difference was how they went about solving them.
- The 1D equation only considered flow in a stream-wise direction. A 2D equation typically considered variations in the stream-wise and transverse directions (SRH-2D) Quasi 2D models used approximation methods to estimate variations in the transverse direction while solving equations explicitly in the stream-wise direction.
- The 3D models considered variations in the stream-wise, transverse and vertical directions. (Depth) When solving with quasi 2D models you solve at all the points and then go back in with the computations. It was valuable information and could solve important problems but it didn't provide all the information one might need. In most practical problems the 3D model was overkill. But where depth was complicated it would be useful.
- He shared several 2D models. SRH-2D was the sedimentation and river hydraulics model by BOR. ADH from the Army Corps of Engineers (adaptive hydrodynamics) used a grid and focused on the places where it was needed. SRH-2D solved the 2D momentum equations. It used a flexible mesh that might contain arbitrarily shaped cells. Most mesh cells would be 1-10 meters. The 2D hydrodynamic codes produced primarily depth and velocity as a function of x and y in the river.
- His study of Rio Grande was a sediment transport study. He shared some of the answers that could be garnered from that model. He also shared the work of his RGSM Habitat Suitability project in 2006-2007 as part of the Army Corps of Engineers' Urban Flood Demonstration Project. It focused on flood plan and stranding between the Alameda Bridge and Paseo Del Norte.
- The Conclusions from his study demonstrated the value of the 2D hydrodynamic model; provided a baseline for pre-restoration conditions; and could be updated to investigate changes associated with restoration projects and/or to evaluate pre and post conditions with other parts of the Middle Rio Grande.

- One size doesn't fit all. It could provide important information beyond classic applications to flood control and sediment transport; a modeling framework could be applied to all stages of restoration between design, monitoring, hypothesis testing and adaptive management.
- Where did this model come from?
 - Mr. Stone said it was a combination of cross actions. You've got a cross section with high resolution - the higher the resolution the better. With LIDAR coming on it was a easier to manage. For this case he only did habitat but other things could be added. Most of them had sediment transport included.
- Does the index include velocity?
 - Mr. Stone said it was based on velocity/depth correlations. It was a very simple approach. He couldn't access the raw data so he couldn't do the higher analysis statistics.
- Peter Wilkinson asked if it would be helpful now to go back and look at the data. Mr. Stone agreed.
- Peter Wilkinson asked Mr. Stone if he would be available to come to the population analysis group. Mr. Stone agreed. He added that the code for this model was free.

7. San Acacia A&R Peer Review (Read ahead)

- Originally Gina Dello Russo took this project on not as a product but it actually made recommendations on a product of this work group. She asked if it would be okay to have everyone read through what Ondrea Hummel and she had gathered up from the product, including conversation and action.
- Rick Brenner said it was also being discussed in ScW and there was no process for dealing with the issue.
- Gina Dello Russo suggested they could take a stab at prioritizing the outfit and share reflections on the things this group thought they would really benefit from knowing. That might streamline it.
- Peter Wilkinson asked if she would give a short presentation to the work group at some time and highlight what she wanted to take out of it for the next step. Gina Dello Russo agreed that could be done and she would share what needed to be done by email. It should be part of what other workgroups might need to get information or provide input.
- She said there was a benefit out of the A&R but there were other benefits too if they focused the discussion on what could be done. There were a couple of recommendations the peer reviewers made that fit very well with the physical model and the need for statistical analysis and other things the workgroup talked about. She didn't want to talk about it forever and wasn't sure people had read it.

- It would be easy to take a few things out of it and the revision would come back to adaptive management. There were some pieces that came together here in the program.
 - This is especially true if the areas for restoration were flycatcher habitats below San Acacia. This group worked up a contract and cost/benefit of such an analysis. If they were keeping that reach, they should do the homework now rather than later in outreach.

8. Wetland Compliance Monitoring

- Ondrea Hummel reported on the number of projects constructed. The alternates were put in place and she proposed getting all of the monitoring under one umbrella. The compliance needs to be done on all sites so it should be put in one contract involving all the sites.
- Phase 2 needs to be figured out. We've been working on to streamline how monitoring was done so it would be the same way at all of them. So we were taking a monitoring plan for a couple of sites and putting it all together and get approval for it and then an RFQ so it would be compliant.
- She wanted to find out who was interested in it.
- There was general consensus to proceed with her proposal.

9. Adding new maintenance/monitoring phase to HR work

1. What was the group doing that it should continue doing?
2. What was the group doing that it should improve in some way?
3. What was the group not doing that it should be doing?
4. What was the group doing that it should stop doing?

This item was not discussed at the meeting.

10. HR Construction Ranking Criteria

- Ondrea Hummel didn't have the criteria with her. The discussion on the proposal would be done perhaps by email with the changes highlighted for the ranking criteria they had in the list before outreach and other things. They needed to be as specific as possible.
- She agreed to send it out and asked for members to give her feedback this week.
- She needed to put in some species for evaluation.
- Gina Dello Russo asked her to send it out to contractors too.

- Ondrea Hummel agreed to do that but could not send it to the contractors yet.

11. Program Update

- Monika Mann announced the open house and joint workgroup would be on October 7-8 at Tingley Beach.
- She shared the information on the 1000 acre event.
- The next PHVA-PVA joint meeting had been postponed.
- The Adaptive Management workshop with EC would be on May 18-19.
- She announced the change in note takers and announced the new Administrative Assistant was Ali Saenz.
- Gina Dello Russo announced an all day meeting on April 29th with one rep from each group. She agreed to email the details. She said they would be looking at the flycatcher area, hopefully with people who knew the program. She asked to be notified who would attend.
- Gina also agreed to send it as a read ahead.

3:30 – Sandia Monitoring Plan discussion with SWCA and Sandia Pueblo

The HRW adjourned the meeting at approximately 3:45 and the Sandia Monitoring Plan was presented but no notes were taken.

Habitat Restoration Workgroup (HRW) Meeting Attendees March 15, 2011 12:30 to 3:30 pm

| Name | Agency | Email Address |
|-------------------|-------------------------|--|
| Mark Brennan | FWS | Mark_brennan@fws.gov |
| Gina Dello Russo | FWS | Gina_dellorusso@fws.gov |
| Robert Padilla | BOR | rpadilla@usbr.gov |
| Dagmar Llewellyn | BOR | dllewellyn@usbr.gov |
| Jen Bachus | FWS | jennifer_bachus@fws.gov |
| Hira Walker | NMDGF | hira.walker@state.nm.us |
| Ondrea Hummel | Army Corps of Engineers | Ondrea.c.hummel@usace.army.mil |
| Danielle Galloway | Army Corps of engineers | danielle.a.galloway@usace.army.mil |
| Rick Billings | ABCWUA | rbillings@abcwua.org |
| Peter Wilkinson | NMISC | Peter.wilkinson@state.nm.us |
| Michael Scialdone | Sandia Pueblo | msialdone@sandiapueblo.nsn.us |
| Hannah Wolfman | Army Corps of Engineers | Hannah.g.wolfman@usace.army.mil |
| Steve Ryan | City of Albuquerque | sryan@cabq.gov |
| Matt Schmader | City of Albuquerque | mschmader@cabq.gov |

| | | |
|-----------------|-------------------------|--|
| Monika Mann | Army Corps of Engineers | Monika.mann@usace.army.mil |
| Mike Marcus | TetraTech | Mike.marcus@tetrattech.com |
| Stacey Kopitsch | FWS | Stacey.kopitsch@fws.gov |
| Grace Haggerty | NMISC | Grace.haggerty@state.nm.us |
| Colin Lee | Santo Domingo | clee@sdutilities.com |
| Anders Lundahl | NMISC | Anders.lundahl@state.nm.us |
| Mark Stone | UNM | stone@unm.edu |