# Habitat Restoration Work Group Meeting

*September 16, 2014*

## Meeting Materials:

Meeting Agenda

Meeting Minutes

# Middle Rio Grande Endangered Species Collaborative Program
# Habitat Restoration Workgroup (HRW) Meeting
# September 16, 2014
# 12:30 pm – 3:30 pm at the Reclamation

**HRW Regular Business**

1. Agenda Approval
2. Announcements
3. Approval of July 15th and August 19th 2014 HRW meeting notes
4. Action Item Review
5. Corps' Phase I Summary and Update on Phase II Construction (Corps)
6. Potential/future ISC Restoration Projects (GeoSystems)
7. Update on the MRGCD Refugial Habitat Suitability Monitoring of Drain Outfalls (carried over from 8/19 mtg.).

**Next Meeting: September 16th, 2014 from 12:30 PM to 3:30 PM at BOR**

8. Future agenda items: 1) 2) 3)

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**Actions**

- Mick Porter will send the Corps 2010 Inundation Analysis data to Rob Dudley.
- Danielle Galloway will send out a final notice email for comments on the Draft Final 2013 Habitat Effectiveness Monitoring Report. HRW members will be given final notice to submit any comments to Danielle within the specified deadline.

**Ongoing Actions**

- Michael Scialdone will check with the other pueblos to possibly include information on their restoration projects into the 5-year plan and HR Plan (which will include a decision matrix and/or criteria for projects). *continued from 11/18/13; Michelle Mann has a follow up pertaining to this*

# Middle Rio Grande Endangered Species Collaborative Program
# Habitat Restoration Work Group
# September 16th, 2014 – 12:30pm – 3:10pm
# Reclamation

## Actions

- Grace Haggerty will schedule a conference room at ISC for October HRW meeting; if the room is not available, she will inform Ali so another location can be confirmed.
- It was requested that Ondrea Hummel provide HRW members with a copy of the Corps' habitat restoration presentation with "clear" restoration technique polygons in order to see the aerial photography beneath.

## Decisions

- The July 15th and August 19th, 2014 HRW meeting notes were both approved for finalization with no changes.

## Recommendations/Request

- A possible future restoration site was identified during the Corps' project presentation: the site identified as 5d and 5e contains mostly returning vegetation on a burn scar on the eastern side but has sizeable acreage. It is assumed to be "ripe" for restoration.
- It was suggested that the new Lidar and well data from the Corps' restoration projects be used to calibrate the original groundwater model.
- It was requested that the Corps' restoration presentation be made available to work group members, but modified so that the restoration technique polygons be "clear" in order to see the aerial photography and topography underneath.

## Next Meeting: October 21st, 2014 from 12:30 to 3:30 at *Reclamation*

- Tentative agenda items include: (1) ISC Water Trust Board Grant Restoration Project Update; (2) finalize August and Sept meeting notes; (3) review RIP plan and discuss what might be "on the horizon" and how to advocate for HRW/ScW projects; (4) Sandia Pueblo Presentation – The Corrales Syphon Issues White Paper;

## Meeting Summary:

- Rick Billings brought the meeting to order. Introductions were made and the agenda was approved with no changes.
- Both the July 15th and August 19th HRW meeting notes were approved with no changes.
- The July 15th HRW Action Items were reviewed.
- Ondrea Hummel presented an update on the Army Corps' Middle Rio Grande (MRG) Restoration Projects.
    - MRG restoration projects throughout the middle valley over the last 10 years were provided as a printed handout. The Corps works with sponsors and respects/keeps to the specifications of the collaborators.
        - Ondrea highlighted that, when possible, the Corps works to connect their restoration site work with work done by others for more completeness at the sites through an "interconnection" of features.
    - The main objective of each of the projects was to address floodplain connection to benefit the minnow and flycatcher. "Lessons learned" from each site were used to inform new projects.
    - Restoration techniques used during construction of the projects include:

        - Fuel reduction, exotic thinning, and jetty jack removal
        - High flow channels and backwater channels
        - Bank terracing
        - Willow swales
    - The remainder of the presentation consisted of slides showing aerial photographs of different sites overlaid with restoration "polygons" to indicate the work done for each site and photographs of the site response to the September 2013 flooding event.
    - In conclusion, it was shared that the next steps really focus on the monitoring aspect – to make sure that the restoration projects are doing what was intended.

- Todd Caplan, with GeoSystems, Inc., then presented *Site Selection and Project Recommendation for Improving Off-Channel Habitat for RGSM, River Mile (RM) 130-99.*
    - River Eyes Program observations from 1995 to 2010 were used to develop a "Rio Grande Drying Potential Map." There are stretches of the river that have a propensity to stay wet or to dry. Approximately 10 miles north and south of the San Acacia Diversion Dam is one stretch that consistently remains wet.
    - Using 2010 Lidar and HEC-RAS models that were constructed, GeoSystems identified the topographically "low" spots which could indicate areas that could be modified relatively easily in order to inundate at 1,500 cfs.
        - The model predictions were field verified when possible. The field checking occurred at 1,000 cfs – which was the closest to 1,500 cfs possible.
        - Vegetation mapping on the identified potential sites was completed to determine possible impacts of excavation and document areas of natives that would have to be "worked around."
    - Potential sites were selected when they:
        - Were located on government or accessible property; and
        - No longer inundated at ≤2,500 cfs but could do so with "reasonable" level of site manipulation.
        - If a site met these criteria, then the team moved forward with the conceptual design and cost estimate.
    - Potential sites were rejected when they:
        - Were located on private land;
        - Model and field verification indicated excessive excavation would be required for the site to inundate at 2,500 cfs;
        - Site conditions were determined to be too hydro-geomorphically active – example: the channel had too much dramatic movement after a storm event or the area was too dynamic to justify the work;
        - Model and field verification indicated that the site already inundates at ≤2,500 cfs;
    - Within the ~20 miles around the San Acacia Diversion Dam, 7 potential restoration sites were identified. The presentation continued with highlighting 3 of those recommended sites to show the diversity of those projects.
    - In the conclusion, it was shared that the preliminary results of this work identified 7 sites with a total construction footprint of 27.5 acres but that would achieve 87.2 acres of estimated inundation habitat at 2,500 cfs.
    - Next steps include getting more topographic data to calibrate the data, fine-tune and finalize the designs and construction costs. Meeting with the project stakeholders and landowners will also begin.

- MRGCD provided an update on their Refugial Habitat Suitability Monitoring of Drain Outfalls. 2 of the 3 sampling events have been completed – 1 in late July and 1 in mid-August. The last monitoring event is scheduled for late September.

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- In the Alejandro Drain in July, 9 minnow were discovered: 5 young-of-year, 3 marked adults, and 1 unmarked adult.
- In August, 1 young-of-year was found in the Lower Peralta drain and 3 minnow were found in Alejandro. The seining done in the adjacent river did not produce any minnow.

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# Meeting Notes

**Introductions and agenda approval:** Rick Billings brought the meeting to order. Introductions were made and the agenda was approved with no changes. It was mentioned that some members would like to incorporate review of the RIP documents as a future HRW agenda item in order to keep aware, be proactive and prepared for the transition.

**Approval of July 15th and August 19th, 2014 HRW Meeting Notes**

- Upon clarification that the July 15th *Habitat Relationships along the MRG of New Mexico for the Endangered Southwestern Willow Flycatcher* presentation had been reviewed, modified to protect the flycatcher locations, and approved by the federal agencies, then the July 15th 2014 HRW meeting notes were approved for finalization with no changes. The final revised presentation will be posted and available on the database.
- The August 19th HRW meeting notes were approved with no changes.

**August 19th, 2014 HRW Action Item Review:**

- Mick Porter will send the Corps 2010 Inundation Analysis data to Rob Dudley. – *unknown/ongoing;*
- Danielle Galloway will send out a final notice email for comments on the Draft Final 2013 Habitat Effectiveness Monitoring Report. HRW members will be given final notice to submit any comments to Danielle within the specified deadline. – *complete;*
    - It was shared that the Service sent comments this morning (9/16). Those comments will be forwarded to the contractor. The report will be made available when finalized.

**Presentation: Corps' Phase I Summary and Update on Phase II Construction (USACE)**

- Ondrea Hummel presented an update on the Army Corps' Middle Rio Grande (MRG) Restoration Project.
    - MRG restoration projects throughout the middle valley over the last 10 years were provided as a printed handout. The Corps works with sponsors and respects/keeps to the specifications of the collaborators.
        - Ondrea highlighted that, when possible, the Corps works to connect their restoration site work with work done by others for more completeness at the sites through an "interconnection" of features.
    - The main objective of each of the projects was to address floodplain connection to benefit the minnow and flycatcher. "Lessons learned" from each site were used to inform new projects.
    - Restoration techniques used during construction of the projects include:
        - Fuel reduction, exotic thinning, and jetty jack removal – this technique reduces the percentages of exotic species and removed/reduces the fuel/fire potential; ~10,000 out of 30,000 total jetty jacks have been removed to date;
        - High flow channels and backwater channels
        - Bank terracing – once features are "created," water is more easily able to reach the rest of the riparian areas;
        - Willow swales - the design and construction of the willow swales has evolved over time but in general involves lower the entire ground area including sediment removal, digging trenches to the water table, planting and then back filling;
    - The remainder of the presentation consisted of slides showing aerial photographs of different sites overlaid with restoration "polygons" to indicate the work done for each site and photographs of the site response to the September 2013 flooding event.

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- Phase I of the MRG Restoration Project - November 2011 to April 2014
  - Corrales – 1G, 1E
    - There is now floodplain connection and the willows are now 5 to 6 feet tall.
    - The Corps restoration projects attempt, when/where possible, to support and encourage the mosaic complexity of the habitat – overstory, mid-story, and understory with cottonwoods, shrubs, and grasses.
  - Pueblo of Sandia – 1B
    - Almost the entire upper portion of this site is a Romero Burn scar – the fire jumped the terraces. As a result, extra seeding efforts were put into place.
  - Tingley – 4A
    - Using the Tingely site as an example, it was shared that up to 10% of a Corps' restoration project can be recreational restoration - interpretive signs, benches, commute/parking/access areas, viewing blinds, bridges, boardwalk areas, etc.
  - Rio Bravo SE – 4B
    - The Rio Brave SE site was offered as an example where the Corps "connected" their restoration work with restoration previously completed by ISC.
  - South Diversion Channel (SDC) – 4C
    - This site is covered in kochia.
  - 5A - across the river from the SDC
    - Concerns with the extra pressure against the levee spurred the addition of rip rap near the levee.
  - 5C – Next to Price's Dairy
    - This site was burned during the Brown fire. It is very "weedy" and will require a lot of work in order to get other vegetation to grow successfully.
  - 5D and 5E -
    - These sites are usually "lumped" into one. These sites offer another example of the connection of features, whether existing or to be constructed.
    - These lumped sites were offered as a recommended place to target a new project, on the east side which is mostly kochia on a burn; nice size acreage.
    - Attendees briefly discussed the calculation of net depletions based on the 600 ft corridor (300 ft either side of the centerline). It is likely that the Strategic Water Reserve will be used to address the offsets.
- Phase II of the MRG Restoration Project – construction estimated Fall 2014 to Spring 2016
  - Corrales – 1A (at the Harvey Jones Canal)
    - This site was offered as an example of burn restoration treatment to address dead and possibly falling cottonwoods.
  - Sandia Pueblo – 1D North, proposed site

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- During discussion of this site, the Service representative asked that the Corps and contractors consider/speak to the quality of cuckoo habitat and water temperature "rule" of "1 to 30" for areas that touch the river.

▪ Oxbow – 3A, downstream of Montaño
- This parcel of land has a separate contracting process because there are separate land ownership issues.
- This area is basically 54 acres of wetland. There is high sediment input from the Namaste Road Outfall.
- The site is targeted for "plumping" fixes and overall water management.

o MRG Restoration Monitoring - trying to evaluate that the restoration is doing what it is supposed to do
▪ Up to 10 years;
▪ Avian surveys – Bell's vireo;
▪ BEMP;
▪ High flow monitoring;
▪ Threatened and endangered species – flycatcher and minnow;
▪ Vegetation – survival, transects, etc.
▪ Overall monitoring plan – includes ground monitoring wells (up to 50 throughout the MRG bosque)

o Questions/Comments
▪ In response to a question on the wells, it was shared that all the willow wetland features have an instrumented piezometer to validate that the maximum depth-to-groundwater doesn't exceed 3 feet. They also help to determine when sites get inundated.
- There have been observations of increased depth-to-groundwater; and yes, some wells have dried out. But overall, the depth is remaining relatively stable.

▪ It was suggested that the new Lidar and well data from the Corps' restoration projects be used to calibrate the original groundwater model.
▪ It was requested that the Corps' restoration presentation be made available to work group members, but modified so that the restoration technique polygons be "clear" in order to see the aerial photography and topography underneath.

**Presentation: Potential/Future ISC Restoration Projects (GeoSystems)**

- Todd Caplan, with GeoSystems, Inc., then presented *Site Selection and Project Recommendation for Improving Off-Channel Habitat for RGSM, River Mile (RM) 130-99.*
  - o This project stemmed from ISC's ongoing commitment to the Program and their desire to accomplish on-the-ground projects. The project was aimed at determining restoration location opportunities for both the minnow and flycatcher.
  - o The objectives for this project included (1) expanding acreage of available off-channel spawning/rearing habitat and promote inundation at "moderate" flow levels from 1,500 to 2,500 cfs and (2) enhancing habitat attributes for breeding flycatchers including increase in inundation frequency/duration and proximity to recent breeding territories.
    - ▪ For reference, it was explained that flows in San Acacia are typically 500 cfs less than what is registered at the Central Gage. For example, if Central flows are 1,500 cfs then one can expect the southern reach to be around 1,000 cfs.
  - o River Eyes Program observations from 1995 to 2010 were used to develop a "Rio Grande Drying Potential Map." There are stretches of the river that have a propensity to stay wet

or to dry. Approximately 10 miles north and south of the San Acacia Diversion Dam is one stretch that consistently remains wet. Thus, between river mile 130 and 99 became the study area.

- Design Approach
  - Potential restoration sites were categorized in terms of the level of effort required to achieve the targeted restoration:
    - Tier 1 – minimal site manipulations, relatively simpler and cheaper to construct but may not "last" with larger flows; ex. bankline notching;
    - Tier 2 – limited vegetation removal and terrace excavation; more heavy equipment work; more reconnection and lowering work for more frequent inundation; ex. terrace excavation;
    - Tier 3 – major vegetation conversion and terrace excavation; heavy duty in terms of investment and vegetation conversion from non-native to native.
- Analytical Approach
  - Using 2010 Lidar and HEC-RAS models that were constructed, GeoSystems identified the topographically "low" spots which could indicate areas that could be modified relatively easily in order to inundate at 1,500 cfs.
  - The model predictions were field verified when possible. The field checking occurred at 1,000 cfs – which was the closest possible flow to 1,500 cfs.
  - Vegetation mapping on the identified potential sites was completed to determine possible impacts of excavation and document areas of natives that would have to be "worked around."
- Preliminary Project Site Selection Process
  - Accepted or good site determined by:
    - Located on government or accessible property;
    - No longer inundates at <2,500 cfs but could with "reasonable" level of site manipulation;
    - If these 2 conditions were met, then the site moved forward with conceptual design and cost estimates.
  - Rejected or poor sites determined by:
    - Located on private land;
    - Model and field verification indicate excessive excavation required to inundate at 2,500 cfs;
    - Site conditions were determined to be too hydro-geomorphically active – example: the channel had too much dramatic movement after a storm event or the area was too dynamic to justify the work;
    - Model and field verification indicated that the site already inundates at ≤2,500 cfs;
- Site Recommendation Results
  - Within the ~20 miles around the San Acacia Diversion Dam, 7 potential restoration sites were identified. This presentation highlights 3 of them to show the diversity of those projects:
    - Near Rio Puerco confluence
      - This site is a La Joya Game Refuge property that was previously identified in the San Acacia A&R reports as a potential restoration site.

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- This site is used as an example of a Tier 3 project with some work necessary to lower and reconnect with the river and then to plant willows.
- There are consistent flycatcher territories here, so restoration could expand existing flycatcher habitat.
- There has already been some non-native removal work done here (in the understory).
- One attendee commented on water temperature concerns. Approximately 75-95% of the time, the water temperatures will be suitable for minnow but it was recommended that this be considered during the design and construction. For example, it might mean excavating deeper to ensure the depth is more appropriate for the minnow. Attendees briefly discussed water temperatures during the spring run-off, variations in temperatures over the course of the year, and the high variability in terms of sites. Optimum spawning habitat will be between 20 to 24ºC.

- Sevilleta National Wildlife Refuge (NWR) – Unit B
  - This site consists of ~32 to 34 acres that the Refuge inundates in the winter. However, they do not have the water rights to keep diverting and move the water.
  - It is a large area that could be engineered in such a way to encourage fish movement up into to it. The river connection would be controlled with a gate.
  - It could provide a large nursery habitat area in this reach.
  - This site is offered as an example of a Tier 2.

- Near RM 100 – Site 20
  - This is the 4th recommended site downstream of the San Acacia Diversion Dam. The model indicates that there are long stretches here that inundate at ~2,000 cfs but for the sediment deposition.
  - There is a lot of livestock in the area and along the river bank.
  - This is a Tier 1 site that with some lowering could inundate regularly – at 1,000 cfs at the southern end, near the portion that connects with the river. This would act as almost an immediate embayment but the feature would continue to inundate farther back with increased flows.

- Preliminary Results
  - In the conclusion, it was shared that the preliminary results of this work identified 7 sites with a total construction footprint of 27.5 acres but that would achieve 87.2 acres of estimated inundation habitat at 2,500 cfs.
  - Next steps include getting more topographic data to calibrate the data, fine-tune and finalize the designs and construction costs. Meeting with the project stakeholders and landowners will also begin.
    - The compliance work (biological assessments, environmental assessments, NEPA, etc.) will need to be completed. Given the expected timeframes, ISC hopes to begin construction at the end of 2015 or early 2016.

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- Questions/Comments
  - In response to a question regarding the depletions, it was shared that the depletions would likely be off-set through the Strategic Water Reserve.
  - It was commented that it would be interesting to get fish surveys specific to this area above the dam. They might be useful in determining which projects are worthwhile.
  - It was pointed out that some projects will need regular maintenance because of the sediment build up that will occur. But any area(s) that consistently remain wetter combined with the enhanced habitat increase the chance of survivability.

**Update on the MRGCD Refugial Habitat Suitability Monitoring of Drain Outfalls**

- MRGCD provided an update on their Refugial Habitat Suitability Monitoring of Drain Outfalls. 2 of the 3 sampling events have been completed – 1 in late July and 1 in mid-August. The last monitoring event is scheduled for late September. There has not been much drying due to summer rains and in order to speak to the effects of drying, the 3rd sampling has been delayed.
- In the month prior to the 1st sampling event, MRGCD began providing a small amount of water into the selected drains.
  - In the Alejandro Drain in July, 9 minnow were discovered: 5 young-of-year, 3 marked adults, and 1 unmarked adult.
  - In August, 1 young-of-year was found in the Lower Peralta drain and 3 minnow were found in Alejandro. The seining done in the adjacent river did not produce any minnow.
  - While the numbers are low, it is clear that (1) there are wild young-of-year and adult minnows in the river and (2) the minnow do utilize the drains.
    - It was shared that based on the Population Monitoring, approximately 22% collected were marked minnow; this means that many young-of-year appear to be hatched and surviving.
- Continuous water quality is being collected by the Corps (through loggers). The temperatures are so far within the optimum range for the minnow (20 to 24°C).
  - Drains are consistently cooler than the river – possibly due to depth, flowing water, groundwater supported for thermal changes, etc.
  - During the temperature discussion, one member cautioned that any restoration work done/created is not going to stay that way permanently. Time will change each and every site - vegetation grows in, sediment movement, etc. It is a dynamic system with dramatic changes. It is unrealistic to expect a site to always stay at "optimal." The best anyone can do is to justify the work, document the intents, and do the best possible. But a larger site will have so many micro-situations that no one can't expect to be able to make the entire thing "optimal."

**Next Meeting: October 21st, 2014 from 12:30 to 3:30 at *Reclamation***

- Tentative agenda items include: (1) ISC Water Trust Board Grant Restoration Project Update; (2) finalize August and Sept meeting notes; (3) review RIP plan and discuss what might be "on the horizon" and how to advocate for HRW/ScW projects; (4) Sandia Pueblo Presentation – The Corrales Syphon Issues White Paper;
- November Tentative Agenda Items: (1) ABCWUA presentation, project updates; (2) MRGCD final report/results on Monitoring of Drain Outfalls;
- Future Agenda Items: (1) HR Site Descriptions (built dates, if maintained, acres included, reference to specific reports, etc.) for the GIS/Map portion of the database. Tags for HR sites; (2) Review map presentation in/on DBMS - identifying needs and fixing; (3) Discussion on development of 10-year monitoring plan;

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- Future Research/Study/Experiments: (1) location of minnow eggs – leaf litter areas, hydrostatic attachment to reeds, etc.; (2) comparing the survival of minnow fries at 15°C to determine if there is a genetic component to survival; and if so, then develop a stock that can survive and reproduce; (3) determine why the Pecos' hybognathus wouldn't hybridize with Rio Grande Silvery Minnow (hybognathus amarus) – determine if the Pecos minnow is actually a hybrid with the Plains Minnow (hybognathus placitus). If so, the Pecos' population could be replaced with the silvery minnow.

**Habitat Restoration Meeting Attendees**
**16 September 2014**

| NAME | AFFILIATION | PHONE NUMBER | PRIMARY (P) ALTERNATE (A) OTHERS (O) | EMAIL ADDRESS |
|---|---|---|---|---|
| Rick Billings | ABCWUA | 259-0535 | CC/HRW Co-Chair | rbillings@abcwua.org |
| Brooke Wyman | MRGCD | 247-0234 | ScW Co-Chair | brooke@mrgcd.com |
| Grace Haggerty | ISC | 383-4042 | MAT Co-Chair | grace.haggerty@state.nm.us |
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| Todd Caplan | GeoSystems/Contractor | 980-0336 | O | todd@gsanalysis.com |
| Ondrea Hummel | USACE | 342-3375 | HRW Member | ondrea.c.hummel@usace.army.mil |
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