# Middle Rio Grande Endangered Species Collaborative Program Habitat Restoration Workgroup (HRW) Meeting 16 August 2011, Tuesday 12:30-3:30 pm at Interstate Stream Commission

#### **Actions**

- Gina Dello Russo will verify with Stacey from the Tamarisk Coalition that the joint presentation can be scheduled for September 20<sup>th</sup>.
- Anders Lundahl and Rick Billings will integrate the 2 draft San Acacia Diversion Dam Fish Passage statements and distribute to the HRW for review.
- Gina Dello Russo will send a draft response to Recommendation #7 to the HRW for review.
- HRW comments on the future activity summaries are due to Monica Sanchez by August 25<sup>th</sup>.

#### Decision

• The HRW voted and agreed to have Gina Dello Russo and Danielle Galloway jointly fill the HRW federal co-chair position.

#### **Summary of Joint USGS Presentation**

- Prior to the regular HRW meeting, several members attended a joint presentation from the USGS
  on the Mesohabitat Mapping at various flows in the Big Bend Region of the Rio Grande and
  tentative plan for mesohabitat mapping in the MRG.
  - Mesohabitats (backwaters, forewaters, embayments, rapids, riffles, runs/glides, pools {eddy, main channel and isolated}, submerged channels and point bars) were mapped at the minnow release sites in the Big Bend Reach of the Rio Grande for 3 distinct flows: low flow (200-400 cfs), high flow (500-1500 cfs), and overbank flow (ca. 50,000 cfs) using the 2008 flooding event. An extreme low flow (<100 cfs) was mapped in May 2011. Fish assemblages were also collected within each mesohabitat.</p>
  - The project website is being populated but currently contains a project overview, Google Map application, site locations, sample dates, and discharge estimates. <a href="http://tx.usgs.gov/projects/bigbend/mappingSMhabitat.html">http://tx.usgs.gov/projects/bigbend/mappingSMhabitat.html</a>
     Final data products are also available.
  - o The short term plans for the Middle Rio Grande mesohabitat mapping project are to (1) Finalize sites (max. of 20 in MRG reach); (2) complete site reconnaissance in mid to late September; (3) then expand the statement of work into a full Work Plan; (4) the 1st round of mapping and assessments to be completed during late fall to early winter low flow (2011); (5) the 2<sup>nd</sup> round of mapping and assessment to be completed during spring high pulse flow (2012); (6) draft reach maps expected in mid-summer 2012; and (7) final map report expected in fall of 2013. Right now, the project does not include collecting fish assemblage data. The

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presenters advocated for inclusion of this piece in order to assure that the data could be directly compared with the Big Bend work and to assure the highest quality final product (data rich).

#### **HRW Meeting Summary**

- Rick Billings brought the meeting to order and introductions were made.
- Meeting attendees viewed a presentation from Mike Hatch (SWCA) on the Sandia Habitat Restoration Fisheries Monitoring for spring of 2011. The monitoring included surveys for fish and silvery minnow eggs, and surveys of chemical and physical conditions at newly finished restoration sites on Sandia Pueblo land. The goals of the monitoring were to monitor for the presence of adult silvery minnow and other fish species and to determine if silvery minnow are actively spawning on the newly completed habitat restoration sites. Fifty minnow were collected across the sites with the bulk of the fish being collected just as the hydrograph rose. It was noted that silvery minnow smaller than 60 mm standard length were not found in the newly created habitat restoration sites though silvery minnow of this size have been found around this time frame in other sites in previous years; the number of silvery minnow picked up for during the monitoring was also lower than the monitoring previous years. Egg monitoring was also consistent with the hydrograph when the hydrograph rose the silvery minnow spawned. In the most favorable locations, RGSM eggs/ft³ ranged from 1.15 to 16.18.
- Mike Harvey (Tetra Tech) presented an Update on the River Mile (RM) 83 project. The update included a 4<sup>th</sup> alternative for channel realignment. The proposed alternative is to realign the channel on the east side of the river diverting it around RM 82 (below the archeological site) and reconnecting at RM 79. HEC-6T and FLO-2D modeling will be used to determine impacts of the pilot channel. A suggestion from the HRW was to divert the channel a little further downstream (around RM 81.4) instead, in order to lessen impact to nearby Southwestern Willow Flycatcher nesting locations along the current channel. The HRW will further discuss the proposed alternative and provide direction to Tetra Tech in writing.
- The Tamarisk Coalition would like to give a joint presentation to the Science work group and HRW on Tamarisk monitoring protocol. The date for that meeting has been tentatively set for September 22<sup>nd</sup> but due to HRW member availability it was requested that the meeting be rescheduled for September 20<sup>th</sup>. Gina will verify with Stacey from the Tamarisk Coalition that the joint presentation can be scheduled for September 20<sup>th</sup>.
- Gina Dello Russo updated the workgroup that the San Acacia Reach (SAR) work group hosted a roundtable forum on July 28<sup>th</sup> to discuss floodplain encroachment with stakeholders in the SAR. Landowners and representative from the county and city were in attendance and a good amount of feedback was received. The SAR work group plans to use feedback from the roundtable to create a white paper with technical suggestions from the SAR work group.
- The work group had no further comments or edits to the 2 draft San Acacia Diversion Dam Fish
  Passage statements. Anders Lundahl and Rick Billings will integrate the 2 drafts and distribute to
  the HRW for review.
- Gina updated the work group that she has been reviewing the SADD Peer Reviewer
  Recommendations document and the SADD Fish Passage Peer Review to develop a HRW
  response to Recommendation #7. Gina has had issues with reconciling the two documents and

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would like more information on how the SADD Peer Reviewer Recommendations document was developed. Gina plans for the HRW response to include a system wide analysis as an initial step towards an end goal of developing a tool that can be used to find the most effective location for future habitat restoration work. Gina will send a draft response to Recommendation #7 to the HRW for review. Rick Billings, Grace Haggerty, and Brooke Wyman offered to try to find out how the SADD Fish Passage Peer Reviewer Recommendations document was developed (if it was a summarized from the report) and will try to get more clarifying information from the Coordination Committee.

- Gina Dello Russo and Danielle Galloway volunteered to jointly fill the federal co-chair position;
   Gina will be the primary co-chair and Danielle will fill in when Gina is unable to attend a meeting. The HRW voted and agreed to have Gina and Danielle jointly fill the HRW federal co-chair position.
- As a part of the Program update meeting attendees were reminded to review the Long Term Plan (LTP) future activity summaries as this will be the last work group review before they are included in the draft LTP. Comments on the future activity summaries are due to Monica Sanchez by August 25<sup>th</sup>.

# Next Meeting: September 20<sup>th</sup> from 12:30 PM to 3:30 PM at ISC

• Tentative agenda items to include: (1) San Acacia A&R Peer Review Discussion of next steps (Gina); (2) Discussion of CC request from 8/3 CC meeting - "The CC requests that the ScW and HRW work to modify the ScW activity 'Better understand fish movement' (RGSM longitudinal movement) to include research of minnow movement below San Acacia diversion dam and other diversion structures during the critical low flow summer months."; (3) Santo Domingo Update; (4) MRG Bernalillo to Belen Flood Risk Management Presentation (Jerry Nieto); (5) Approval of 7/19 and 8/16 meeting notes

Joint HRW/ScW/SWM Tamarisk Coalition Presentation: September  $20^{\text{th}}$  or September  $22^{\text{nd}}$ 

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### Middle Rio Grande Endangered Species Collaborative Program Habitat Restoration Workgroup (HRW) Meeting 16 August 2011, Tuesday 12:30-3:30 pm at Interstate Stream Commission

#### **Draft Notes**

#### **HRW Regularly Scheduled Meeting**

#### Introductions/Agenda Approval

- Rick Billings brought the meeting to order and introductions were made.
- The agenda was reordered so that the Sandia Monitoring and River Mile 83 update presentations would be first.

#### Sandia Monitoring Update

- Meeting attendees viewed a presentation from Mike Hatch (SWCA) on the Sandia Habitat Restoration Fisheries Monitoring for spring of 2011. For specific details see actual presentation materials.
  - o In spring 2011 SWCA conducted monitoring at the newly completed Riverine Habitat Restoration Project, the Bosque Rehabilitation Channel Project, and the Management of Exotics for Endangered Species (MERES) Project on Sandia Pueblo land. This presentation will report on the results of faunal surveys and associated monitoring of environmental variables conducted during spring 2011.
  - O All of the design elements of the individual restoration projects vary considerably by site, but all incorporate measures to lower the flow threshold at which floodplain and main channel habitats become confluent. The objectives of the restoration projects were to increase mesohabitat heterogeneity, increase the inundation frequency and duration, promote sediment mobilization, and enable fluvial processes to function.
  - The goals of the monitoring were to monitor for the presence of adult silvery minnow and other fish species and to determine if silvery minnow are actively spawning on the newly completed habitat restoration sites.
  - o Some of the habitat attributes of interest include: Hydrology, Microtopography (main and secondary channel, backwater and dead end channels), Macrotopography (Is there a difference between the performance of fish on convex or concave (bends) or straight features?
    ). The sites had moderate to high velocities.
  - Sampling Overview: Sampling was attempted on 11 days over the period from May 16<sup>th</sup> to June 5<sup>th</sup>, 2011. Only 6 of the 14 habitat restoration features were sufficiently inundated to enable fish sampling with fyke nets for one or more days. Eight of the features were never sufficiently inundated for sampling. The dead end channel was inundated the entire time and had huge hydrologic exchange.
    - During the monitoring period average daily flow ranged from a low of 768 cfs to a high of 1278 cfs as measured at the USGS gage near Alameda. By chance the sampling ended just as the hydrograph topped out.

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- Data loggers were used to pinpoint when the MERES project coupled with the river once the river rose sufficiently.
- Attendees viewed pictures of some of the features; dead end channel, islands, confined channels (where water is likely to be quicker), backwater, common trapezoidal designed features.
- o It was noted that eggs were found in a backwater site after the connection with the main channel was broken.
- o Because of the low number of inundated sites the outcomes of interest could not be assessed so the survey protocol was modified to include a natural site that was outside of the footprint of the constructed sites and that exhibited a desirable suite of microtopographic features (low hydrologic exchange, vegetation, back water) compatible with the needs of the silvery minnow.
- o 52 silvery minnow were collected with the bulk of the fish being collected on May 31<sup>st</sup>, 2011 just as the hydrograph rose. A fairly even sex ratio was collected. These numbers correlated with the results of the MEC egg collection.
  - It was noted that silvery minnow smaller than 60 mm standard length were not found in the newly created habitat restoration sites with the majority of the fish being around 74 mm. It was pointed out that this does not correspond with the length-frequency of silvery minnow found at the Los Lunas Habitat Restoration Project in May, 2009 where the majority of the silvery minnow collected were around 52 mm; it was also pointed out that the total number of silvery minnow collected was much less than at the Los Lunas Habitat Restoration Project.
    - Based on fish size, it seems the 1-year olds were missing from these collections. The implications of this are that weak or missing young-of-year age class in fall collections will have cascading effects on reproductive potential over the species life span; however it was pointed out that the smaller fish were only missing from the newly created sites and not necessarily the entire Albuquerque reach.
- Entrapment Monitoring was also done at the sites. Attendees were shown a picture of the MERES site where silvery minnow were being trapped in isolated pools.
- Egg monitoring was also consistent with the hydrograph when the hydrograph rose the silvery minnow spawned.
- O Systematic sampling was used to describe the environmental gradient in areas of the river. The sampling took the number of silvery minnow eggs, position (distance to shore), vegetated/non-vegetated, substrate, depth, and velocity for each sampling site.
  - Carp and silvery minnow eggs were found. In the most favorable locations, silvery minnow eggs/ft<sup>3</sup> ranged from 1.15 to 16.18.
  - In a low run off year, many features, though marginally wet, are still important. The restored sites were designed to couple with the river at a particular flow regime; there may be a need to consider if the sites should couple with the river at a low flow regime.
  - Velocity and depth were analyzed with a regression analysis. ANOVA was used to see if position in distance from the bank is important.

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- The differences in the median values of eggs among the treatment groups (distance to shore) are greater than would be expected by chance.
- When measuring vegetation and position the main effects cannot be properly interpreted due to significant interaction. The effect of different levels of vegetation/non-vegetation depends on what level of position is present. Additional studies should be done to control for vegetation.
- A hypothesis is that silvery minnow spawn in shallow water over a variety of substrates at the interface of low velocity lotic and sheltered, hydrologically retentive lentic habitats.
  - An argument is also made for diffusive dispersal of silvery minnow eggs, as a proportion of the population is more likely to be successful in reproducing close to their natal location. The likelihood of such would logically increase when spawning occurs near sheltered, hydrologically retentive, lentic habitats and when lateral dispersal of eggs and larvae is high.
- Minnow eggs were found in hydrologically retentive pockets in some of the restored habitats. These habitats tend to exist along lateral margins of running-water habitats.
- This was the first year of species sampling in these newly completed habitat restoration sites. This year was vital to learning what can occur in low discharges.

#### **Update on RM 83 Project**

- Mike Harvey (Tetra Tech) presented an Update on the River Mile (RM) 83 project. For specific details see actual presentation materials.
  - The presentation proposes a 4<sup>th</sup> alternative to look at realigning the channel on the east side of the river diverting it around RM 82 (below the archeological site) and reconnecting at RM 79. Tetra Tech would like to get approval for the proposed alignment to do sediment transport and hydrologic modeling.
  - O Previously, diverting the channel just south of the north boundary of Bosque Del Apache Wildlife Refuge (the Refuge) with flows coming back into the river just above the archeological site had been looked at but this footprint doesn't work for topographical reasons. So it is proposed that the river be diverted just below the archeological site.
  - The current channel is perched way above the east overbank and functionally acts as a fluvial fan making the direction of flows unpredictable; for this reason it's proposed for the realignment to be on the east side of the river so there is not a threat to the levee.
  - O Attendees were shown pictures of potential sites for reconnection and potential areas for the alternate flow path.
  - o There are several Southwestern willow flycatcher (flycatcher) nests that are along the current channel. Part of the analysis will be to determine possible impact to these nests.
  - o Model geometry, sediment inflows and gradation, will be used for HEC-6T modeling to run two 40-year hydrologic sequences (wet period initially; dry period initially), to bracket the range of responses, to get channel geometry at 10- and 20-years. The 10- and 20-year channel geometries will then be put into a FLO-2D model for inundation analyses; the previous alternatives were all evaluated with FLO-2D.
    - Question: How long will the initial dry period be?

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- *Response*: It will be 10 years initially.
- *Question*: What width will be used?
  - *Response*: The width upstream of the boundary will be used and it will be about 2-3 feet deep. LIDAR mapping is available for the area. Attempts will be made to try to minimize the amount of cut and fill.
- *Question*: Is there bed material data?
  - *Response*: There are fine materials but the bulk of the bed material is believed to be fine to medium sand.
- Question: Would the model show if the pilot channel becomes perched overtime?
  - Response: At the upper end of the point of diversion where the channel will drop out it's expected that there will be upstream erosion that will produce large amounts of sediment. Initially the channel will be overwhelmed with sediment and this will disperse into the overbanks. The initial period will have aggredation and the top end will fill. There will be the potential for headcut from upstream and aggredation, both upstream to downstream and downstream to upstream; HEC 6T will be able to handle this and also handle channel widening.
- Question: Can the monsoon and runoff be parceled out for the hydrologic sequences?
  - *Response*: There is not that level of detail in the model.
- There is the potential for degradation to keep moving upstream. The headcut going upstream will be modeled.
- A groundwater analysis will also be done using existing modeling based on modeled water-surface elevations in initial project reach.
- Questions/Discussion
  - o It was suggested that the channel be diverted below the flycatcher nests (around RM 81.4) in order to keep the flycatchers next to the surface water and preserve the quality of the existing habitat. The project should also avoid digging through the existing wetland in order to maintain the habitat around the refuge. The level of success of the project will be evaluated by the impact to the refuge.
  - o *Question*: Will this alternative address the perching of the river system, which is the big issue in the San Acacia reach?
    - *Response*: Two things will happen when the river is moved to the east: 1) the elevation of the river bed will be rejuvenated; 2) it will get away from the low flow conveyance channel and the probability for keeping the area wetter for a longer duration increases.
  - O Question: Will the channel be severed completely from the existing downstream when it is diverted.
    - Response: A plug will be put in the existing channel where the river will be diverted.
  - O Comment: If the project footprint is changed to not address the areas of greatest difference is the problem being solved? Is there a balance of doing the whole project and

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having some impact to the species but not having to manage as much in the future? This alternative is not addressing the problem area.

- Response: Where ever the channel drops out there will be upstream headcut impacts. The channel capacity upstream will increase. This impacts the potential for plugs to form again. The more water that can be kept in the channel the more the probability of a plug goes down, so any increase in capacity will be a good thing. The less the difference between the channel and the overbanks the less headcuts there will be. There will be better conveyance regardless of where the channel is diverted; unless it is diverted too far downstream where there is no longer perching (the channel becomes less perched as it nears RM 79).
- o It was posed that the workgroup consider whether picking the proposed point downstream of the flycatcher nests (RM 81.4) would exclude the group from picking another point without needing a new analysis.
  - One opinion was that if the point was even a mile further from RM 81.4 a new analysis would be needed.
- O Attendees were reminded that this is not an ultimate solution but will just buy some time because unless the transport rate is increased sediment will build up again.
- The HRW will further discuss the proposed alternative and provide direction to Tetra Tech in writing.

#### Tamarisk Coalition Support for the salt cedar leaf beetle

- Steve Harris, member of the board of the Tamarisk Coalition, gave a brief background on the Tamarisk Coalition: The Tamarisk Coalition has been involved with the reintroduction of the Tamarisk Beetle (the beetle) and is conducting training for monitoring protocol to follow the spread and impacts of the beetle. The Tamarisk Coalition has most recently been working in San Juan, where the beetles observed in Jemez Canyon are believed to have come from. It was explained that the beetle was not reintroduced into the MRG because of potential impact to the flycatcher and the Tamarisk Coalition would like to learn about the Program agencies' concerns and if they plan to take any actions at this point in time.
- It has been requested that the ScW and HRW participate in a joint work group presentation open to all those who want to view the training presentation and discuss the beetle, tentatively scheduled for September 22<sup>nd</sup>. It was shared that the ScW had expressed interest in participating.
  - In addition to the monitoring protocol, a planning document for the Virgin River area to look at occupied and vulnerable habitat is also available; the Virgin River Program is only 18 months old and though they are still in the planning process they have identified several sites that are of a high priority.
  - o It was discussed that the focus of the HRW in beetle monitoring would be to evaluate existing flycatcher habitat and to discuss where new habitat might be built as there is the potential for impact to existing and future flycatcher habitat.
  - o In a brief discussion on sediment movement due to the defoliation of large amounts of salt cedar it was explained that though the foliage of the tree will fall off, the tree and root structure will remain intact and that should provide some erosion control.
  - Due to HRW member availability, attendees proposed that the discussion/training be on Sept 20<sup>th</sup> during either the regularly scheduled HRW or ScW meeting. It was also

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suggested that the meeting be advertised to the other technical work groups, especially the Species Water Management work group.

*Action:* Gina will check back with Stacey of Tamarisk Coalition to see if she will available to have the Tamarisk beetle discussion on September 20<sup>th</sup>.

- Steve Harris will be attending a meeting in Alpine, Texas on the control of the southern type of Tamarisk beetle on October 4<sup>th</sup> and 5<sup>th</sup>.
- It was discussed that the beetle has been found in San Juan and areas close to Cuba, in Sandia, and it may have been seen in the Corrales bosque; rural flycatcher surveys were completed by Reclamation in the bosque and the beetle was not reported. It's not known if anyone has looked for the beetle in the Puerco.
  - o It was suggested that the Program get an update from the Pueblos on where they have been seeing the beetle. Nathan Schroeder or Glen may be an appropriate contact.
  - o It was shared that Reclamation may be writing a grant proposal to monitor the beetle as there are years of pre-data for stands that are now defoliated.
- It was discussed that the beetle can reproduce multiple times a year and that all larval stages of the beetle are being seen in all areas. It's speculated that the beetle moves location after reproduction and that the length of day is a factor in reproduction; if this is correct then there is still about a month that the beetle can move further before the days begin to shorten.

#### **Santo Domingo Update**

An update from Santo Domingo was tabled for the September HRW meeting.

#### Update on SAR ad hoc work group Floodplain Encroachment Roundtable

• Gina Dello Russo updated the workgroup that the San Acacia Reach (SAR) work group hosted a roundtable forum on July 28<sup>th</sup> to discuss floodplain encroachment with stakeholders in the SAR. Landowners and representative from the county and city were in attendance and a good amount of feedback was received. The SAR work group plans to use feedback from the roundtable to create a white paper with technical suggestions from the SAR work group; the white paper is expected to be completed by the end of the 2011 calendar year.

#### San Acacia Diversion Dam Fish Passage Peer Review Discussion

• Attendees briefly discussed the two draft San Acacia Diversion Dam (SADD) Fish Passage HRW statements. As there were no further comments or edits to the 2 drafts Anders Lundahl and Rick Billings will integrate the 2 drafts and distribute to the HRW for review.

*Actions:* Anders Lundahl and Rick Billings will integrate the 2 draft San Acacia Diversion Dam Fish Passage statements and distribute to the HRW for review.

• Gina Dello Russo updated the work group that she has been reviewing the SADD Peer Reviewer Recommendation document and the SADD Fish Passage Peer Review to develop a HRW response to Recommendation #7. Gina reported that she has had issues reconciling the two documents as she cannot find the direct language from the report regarding development of an integrated strategic plan for one reach; however she was able to find language from the reviewers suggesting that the Program determine, for the MRG, what the connectivity is in a reach before looking at what longitudinal benefits are.

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- o In response to a question of how the SADD Peer Reviewer Recommendation document was developed it was said that it is believed that the document was summarized from the actual peer review report. Rick Billings, Grace Haggerty, and Brooke Wyman offered to try to find out how the SADD Fish Passage Peer Reviewer Recommendations document was developed (if it was a summarized from the report) and will try to get more clarifying information from the Coordination Committee.
- o Gina plans for the HRW response to Recommendation #7 to start with a system wide analysis.
  - It was discussed that a system wide analysis should be an initial step towards an end goal of developing a tool that can be used to find the most effective location for future habitat restoration work.

Action: Gina Dello Russo will send a draft response to Recommendation #7 to the HRW for review.

- The work group was reminded that the draft SOW for a system wide analysis that was completed by the work group included: 1) a snapshot of where the system is now; 2) a historical look of where the system has been; and 3) a modeling of where the system will be at in the future with habitat availability laid out on top of that.
- It was explained that though a systems wide analysis would utilize the reach maps and reach A&Rs, the analysis would utilize more information as well.
- O Attendees were reminded that the Task List of the HRW's priority tasks was distributed to the work group and any comments should be sent to Gina Dello Russo.

#### **Revisit of HRW Co-Chair Discussion**

- Gina Dello Russo and Danielle Galloway volunteered to jointly fill the federal co-chair position;
   Gina will be the primary co-chair and Danielle will act as a "co-chair in training" to fill in when
   Gina is unable to attend a meeting and with the expectation that she will be the federal co-chair next year.
- The HRW voted and agreed to have Gina and Danielle jointly fill the HRW federal co-chair position.
- Rick Billings will continue to fill the non-federal co-chair position.

#### **Program Update**

• A full Program update was provided with the agenda; however attendees were reminded to review the Long Term Plan (LTP) future activity summaries as this will be the last work group review before they are included in the draft LTP.

**Action:** Comments on the future activity summaries are due to Monica Sanchez by August 25<sup>th</sup>.

#### **July Action Item Review**

Attendees briefly reviewed that all July action items have been completed.

## Next Meeting: September 20<sup>th</sup> from 12:30 PM to 3:30 PM at ISC

• Tentative agenda items to include: (1) San Acacia A&R Peer Review Discussion of next steps (Gina); (2) Discussion of CC request from 8/3 CC meeting - "The CC requests that the ScW and HRW work to modify the ScW activity 'Better understand fish movement' (RGSM)

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longitudinal movement) to include research of minnow movement below San Acacia diversion dam and other diversion structures during the critical low flow summer months."; (3) Santo Domingo Update; (4) MRG Bernalillo to Belen Flood Risk Management Presentation (Jerry Nieto); (5) Approval of 7/19 and 8/16 meeting notes

Joint HRW/ScW/SWM Tamarisk Coalition Presentation: September  $20^{\text{th}}$  or September  $22^{\text{nd}}$ 

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# Habitat Restoration Work Group Meeting 16 August 2011 Meeting Attendees

NAME	POSITION	AFFILIATION	PHONE NUMBER	EMAIL ADDRESS
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