Middle Rio Grande Endangered Species Collaborative Program
Joint Monitoring Plan Team/Habitat Restoration/Science Work Group Meeting

December 14, 2010, 9:15 a.m. to 11:45 a.m.
New Mexico Interstate Stream Commission Offices
Albuquerque, NM

Actions

- Potential dates/time for a meeting early next week of individuals working on the scope of work (SOW): Monday, Tuesday or Wednesday. Ondrea will send out final dates to the drafting group.
- Draft SOW will go out to the full workgroups for review
- Anders will send out SOW for vegetation (veg) and geomorph (geo) designed study

Decisions

- Co-chairs and volunteers will meet to draft a scope of work (SOW) to put out as a request for proposal (RFP) to address monitoring/research needs (low-flow recruitment in particular)

Meeting Summary

- Call to order, and introductions by meeting participants were made
- **Purpose of the meeting**
  - To discuss how to cross pollinate and determine common objectives for developing a scope of work to put out as a request for proposal (RFP) to address agreed upon monitoring/research needs (See handout "Topics for Discussion")

- **Anders Lundahl presented an overview of monitoring team efforts, "Monitoring Plan Team Low Intensity Monitoring for 2010"**
  - Two tier approach to monitoring in the current Effectiveness Monitoring Plan (EMP)
    - Effectiveness: Low Intensity--very qualitative, so statistical analysis is problematic
      - Check compliance box (BiOP and project specific)
      - Presence/ absence
      - Qualitative (vegetation differences, deposition/erosion, etc.)
    - High Intensity
      - Life history, habitat preference
      - Veg and geo, designed study (SOW was sent out; if not, it will be sent again)
      - Quantitative studies
  - High intensity monitoring was not conducted during MPT monitoring this past year
  - Slides showed aerial shots of Albuquerque sites that are being monitored
  - Graph of existing MRG project attributes: HR Inundation Curve with cumulative area of HR (y axis) and River Discharge (x axis). Current data only.

- Hydrograph showing monitoring days - cfs over time and number of sites
- Discussion about what is effective, what is the minimum days of inundation needed for recruitment
  - Explanation of "acre/days" as a new concept and whether or not it's a valid measure.
  - 2000 cfs is where most habitat is at (most days of inundation)
  - Most habitat restoration targets creation of floodplain features
- Observed the need for early life history of fish in order to determine goals.
- Confounding issue is that so few eggs are found during monitoring
- Hydrological monitoring: depth, velocity, temp - floodplain slow shallow warm versus channel which tends to be deeper, faster and colder
- Available Habitat Time Series: Showed favorable adult RGSM areas based on cfs from 50 to 1000.
  - HR sites have a good propensity to have preferred velocity for minnows
- Effectiveness monitoring plan looks at types and preferred veg protocol as well as hydro details
- Flycatcher populations were not monitored, but certain markers for flycatcher habitat are included in the EMP
  - "If this flycatcher habitat, should it be monitored next year?"

- **Science LTP Overview, led by Alison Hutson** [see handout: Long Term Plan Section/Subsection]
  - All studies relate to habitat restoration project (EMP). How do we not make the research question huge?
  - Discussed how some of the studies can be combined across units while maintaining simplicity and rigor.
    - First need to know what questions must be answered and whether or not to start big or small
    - How useful info is acquired and applied
    - Pick and choose what can be done
    - Minimize # of questions at one time
  - Quickly went over the bullets in the Project Description section for future activity, "Increase understanding of RGSM life history and habitat needs, including in-channel refugial habitat, through focused scientific studies." (bullets below copied from that document):
    - *Conduct studies to improve understanding of food habits for all life stages of RGSM (Priority 1). This directly effects where they live and survival.*
    - *Conduct studies and evaluate data to improve understanding of physical habitat requirements for all life stages of RGSM (stream flows (including velocity and duration), velocity, depth, temperature, substrate, cover, water quality refugial habitat including habitat restoration) (Priority 1). Efforts should also focus on the characteristics of the habitat areas and their importance relative to each other (effective size, geographic distribution, water quality, longevity, etc…). Come up with relationships that can be used by water managers and habitat restoration planners such that refugial habitat can*

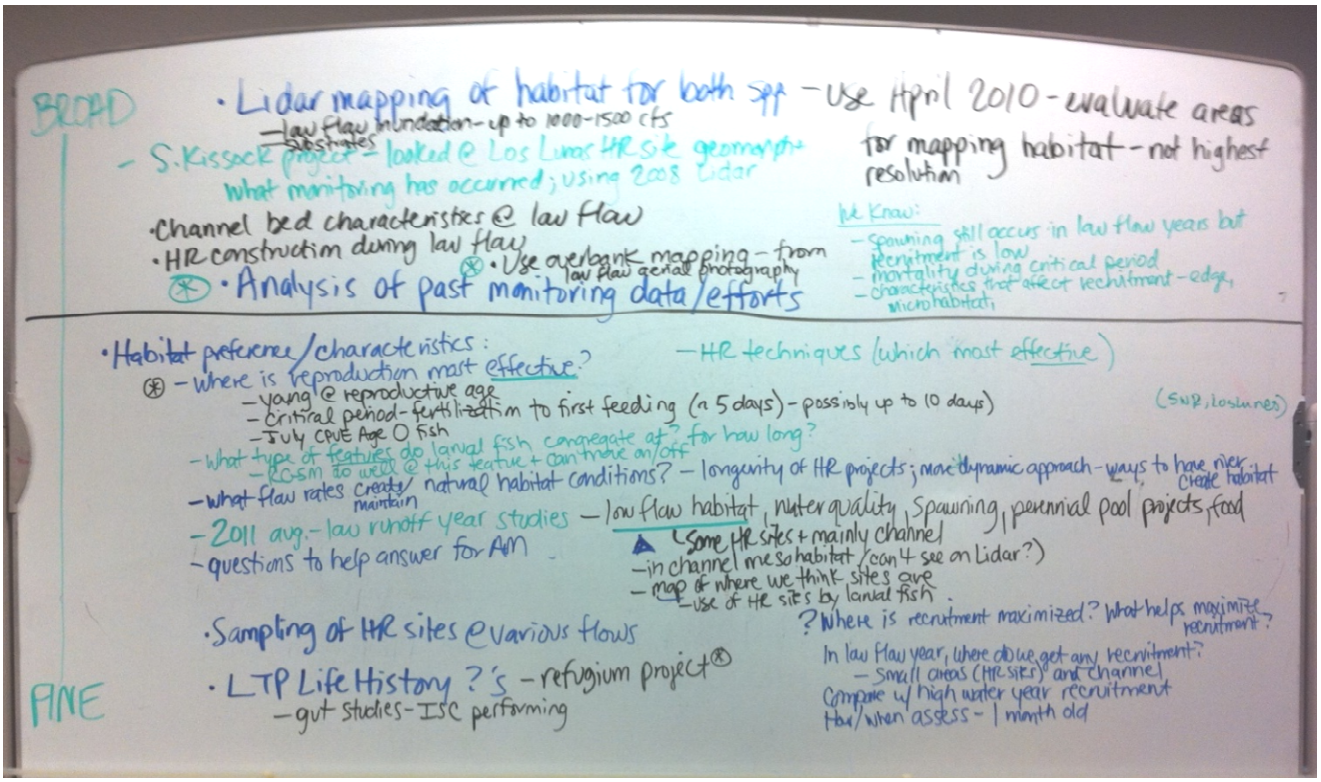
be created and/or maintained in sufficient amounts to produce stable population numbers sufficient to met BO recovery standards.

- *Conduct studies to determine characteristics and effects of nursery habitat on RGSM survival to first feeding and overall effects on recruitment, including natural and restored floodplains. (Priority 1).*
- *Complete evaluation of age class distribution within each reach (Priority 1). Is this what is currently being done in the otolith/age study?*
- *Determine preferred spawning habitat for RGSM, including natural and restored floodplains. (Priority 1).*
- *Determine habitat availability on the river and identify habitat needs (Priority 1). Critical, but needs to be done after the habitat requirements of the fish is known.*
- *Determine which habitats support RGSM survival during river drying (backwater, pools, refugia, artificial refugia) (Priority 1).*
- *Identify relationships between quality of habitat conditions and RGSM spatial distribution (correlate high density areas with suite of habitats) (Priority 2).*

- **PVA Overview of Contractor acquired info, led by Peter Wilkinson and Ad-Hoc Committee members**
  - Miller's presentation
    - Mean discharge vs recruitment: how does flow tie to recruitment
    - Strongest correlation: inundation and flow contribute to RGSM recruitment
  - Goodman's presentation
    - Population trend data does not have resolution to detect effects of habitat projects
    - Noted that in January a data request would be sent from PVA to PHVA
    - Cyclic nature of climate [wet and dry] presents some challenge since it's a 20-year cycle. There was discussion around various cycles and how to capture climate in 10-year runs or other time frame.
  - One of the things on table for out-years is to look at predation issue: predator survey (by area) and composition. Haven't been many surveys on predators.
  - More important: inundated habitat and spring flows
  - Other kinds of monitoring in addition to floodplain, including perennial pools and cottonwood snags.

- **Discussion of potential topics for monitoring/research**
  - Purpose of the balance of the meeting is to determine common objectives for developing a SOW to put out a RFP to address monitoring and research needs.
    - Given the average to low flow predictions for 2011, it was discussed that the goals should be designed to capture data associated with this challenge [low flow habitat, water quality, spawning, perennial pool projects, and food] and to take off the table any projects that require high flow data.

A white board discussion followed. A photo of the board follows:



Issue Level	Issue/Question/Goal
Broad	• Lidar mapping of habitat for both spp. ▪ Use April 2010 data to evaluate areas for mapping habitat. One concern with Lidar is that it is not highest resolution and may not provide information on microhabitat structure ▪ There is 2007 data also ▪ Map the areas inundated at low flows between 1000 to 1500 cfs and choose study locations ▪ Substrates • S. Kisser project looked at Los Lunas HR site geomorph and what monitoring has occurred using 2008 Lidar ▪ Channel bed characteristics at low flow ▪ HR Construction during low flow (make plans for) ▪ Use overbank mapping from low flow aerial photography • Analysis of Past Monitoring Data/Efforts needed • We Know: ▪ Spawning still occurs in low flow ears but recruitment is low ▪ Mortality during critical period ▪ Characteristics that affect recruitment (edge, microhabitat, etc.)

Mid-Range	• Habitat preference and the associated characteristics • HR techniques - which are most effective ▪ Where is reproduction most effective? o Young at reproductive age o Critical period--from fertilization to first feeding (number of days between 5 and 10) o July CPUE age O fish ▪ What type of features do larval fish congregate at? For how long? o RGSM do well at this feature and can move on or off o Collection of larval fish does not allow a determination of where/location and timing of spawning that generated those fish ▪ What flow rates create/maintain natural habitat conditions? Longevity of HR projects; more dynamic approach; ways to have river create habitat ▪ 2011 Average: Low runoff year studies o Low flow habitat (some HR sites and mainly channel), water quality, spawning, perennial pool projects, food o In-channel mesohabitat--can't see on Lidar? o Map of where we think sites are o Use of HR sites by larval fish • Questions to help answer for Adaptive Management (AM)
Fine/Narrow	• Sampling of HR sites @ various flows ▪ Where is recruitment maximized? ▪ What helps maximize recruitment ▪ In low flow year, where do we get any recruitment? o Small areas (HR sites) and channel? ▪ Compare with high water year recruitment ▪ How/when to assess? (1 month old) • LTP Life History questions ▪ Refugium project ▪ Gut studies performed by ISC – request in with Becky Bixby to collaborate on gut analyses ▪ Group discussed prior studies on food availability

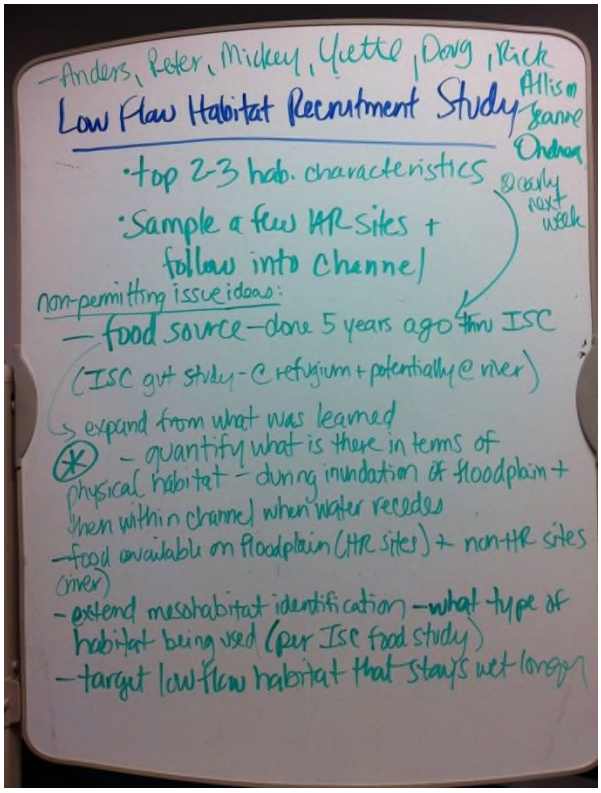
- A question was raised in the above discussion: What does "effective" mean?
  - Adults that produce young who survive to reproduce?
  - Critical period is fertilization to first feeding (5-10 days) - starting point for effectiveness. Next stage is July CRUE age O fish.
- What is the question and hypothesis for low flow focus?
  - Where do fish go at low flow level?
  - Are they going to habitat?
- Do they continue to spawn?

- Alison stated we know they continue to spawn and we see recruitment even in the worst of times, but this doesn't mean it overcomes loss
- The better question is: What can we do to help maximize recruitment?

- It was recommended that we answer the questions there is money for
- With successful runs, how can you do replicates?

➢ **Detailed discussion around low flow issue:**

Another white board discussion followed. A photo of the board follows:



- Low Flow Habitat Recruitment Study:
  - Top 2-3 habitat characteristics
  - Sample a few HR sites and follow into channel
  - Non-Permitting Issue Ideas:
    - Food Source - done five years ago through ISC (ISC Gut Study at refugium and potentially at river). Expand from what was learned.
    - Quantify what is there in terms of physical habitat during inundation of floodplain and within channel when water recedes
    - Food available on floodplain HR sites and non HR sites (river)
    - Extend mesohabitat identification: what type of habitat is being used (per ISC Food Study)
    - Target low flow habitat that stays wet longer

- **Decision:** Ondrea asked for volunteers, in addition to the co-chairs, to help draft a scope of work (SOW) based on the detailed discussion (low flow habitat recruitment studies): Anders Lundahl, Peter Wilkinson, Michael Porter, Yvette Paroz, Douglas Tave, Rick Billings, Alison Hutson, Jeanne Dye, Ondrea Hummel.
  - Important topics for the SOW from the detailed discussion include:
    - Quantifying what physical habitat is present during inundation of floodplain and within channel when water recedes
    - Using overbank mapping from low flow aerial photography
  - Potential dates/time for a meeting early next week of individuals working on the SOW. Monday, Tuesday or Wednesday dates will be sent out to that group.
  - Draft SOW will go out to the full workgroups for review.

In Attendance:

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