March 14, 2018

Documents:

Meeting Agenda

Meeting Minutes

ReadƵAheads and Presentations

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Middle Rio Grande Endangered Species Collaborative Program

Est. 2000

Data Analysis Team Meeting
Meeting Agenda

March 14, 2018 1:00 PM – 4:00 PM
Location: WEST, Inc. 8500 Menaul NE Suite B-342

Conference Call Information:
Phone: (712) 451-0011 Passcode: 141544

1:00-1:10	Welcome, Introductions and Agenda Review ➢ **Decision**: Approve meeting agenda	*Ashley Tanner*
1:10-1:20	Review of February 20, 2018 DAT meeting • Action items update ➢ **Decision**: Approve February 20, 2018 meeting minutes	*Ashley Tanner*
1:10-1:25	Database overview and questions • How would the group like individual-specific data to be aggregated in the station data-set? ➢ **Decision**: Approve formatting of final dataset	*Ashley Tanner*
1:25-2:10	Presentation of mesohabitat analysis	*Rich Valdez*
2:10-2:25	*Break*	
2:25-3:30	Continue review of panel recommendations • Prioritize recommendations • Assess the skills required ➢ **Action Item**: Assign analyses and set deadlines	*Jared Studyvin*
3:30-4:00	Next Steps and Adjourn • Charles Yackulic • Jared's availability/travel budget ➢ Set next meeting date(s)	*Ashley Tanner*

Middle Rio Grande Endangered Species Collaborative Program

Est. 2000

Data Analysis Team (DAT)
Meeting Minutes

March 14, 2018 1:00 PM – 4:00 PM
Location: WEST, Inc. 8500 Menaul NE, Suite B-342

Decisions

- ✓ The minutes of the February 20, 2018 DAT meeting were approved with no objections.

WHO	NEW ACTION ITEMS	BY WHEN
WEST	Send group the Mollenhauer, et al., article.	ASAP
Jared Studyvin	Summary statistics on CPUE with all habitat; then, drop main channel runs, drop all runs.	4/20/18
WHO	**ONGOING ACTION ITEMS**	**BY WHEN**
Ashley Tanner	Send out the data set, revised based on input at the 3/14/18 DAT meeting.	Ongoing
Ashley Tanner	Develop a list of questions for ASIR, including questions from 2/1/18 and 2/20/2018 DAT meetings and discuss these questions with ASIR. Ask ASIR to explain Hybama, Larval vs. Age 0 count.	Ongoing
Eric Gonzalez	Assess application of Braun (2015) study whether stratum weights can be calculated by mesohabitat type.	Ongoing
Rich Valdez	Draft a parking lot question related to Panel Recommendation #8 and send to Ashley Tanner.	ASAP

Next Meeting

- TBD. Jared Studyvin will likely teleconference rather than attend in person.

Introductions and Agenda Review

- Agenda approved with no objections.

Review of February 20, 2018 DAT meeting

- Action items update from February 20, 2018 DAT meeting:
  - Ashley Tanner will send the Braun (2015) study to Eric Gonzalez to assess whether stratum weights can be calculated by mesohabitat type. *Complete*
  - ➢ Rich Valdez will revisit DAT 2/20/2018 meeting minutes and draft an analysis parking lot question related to Panel Recommendation #8 and send to Ashley Tanner. *Ongoing*
  - Ashley Tanner to develop a list of questions for ASIR, including questions from 2/1/18 and 2/20/2018 DAT meetings and discuss these questions with ASIR.
    - Ashley Tanner and Jared Studyvin met with ASIR on Thursday, March 8.

        - The group discussed basic onboarding and history, but did not get to a database conversation.
        - Ashley Tanner will meet with Robert Dudley the week of 3/19/2018.
        - *Incorporated into Ongoing Action*
    - Rich Valdez to calculate CPUE, variance, and N for October each year from 2002 to 2016 for the 5 mesohabitat types as well as combinations, and consider alternatives to the mixture model for improving precision. *Complete*
        - Shared with Jared on Monday, March 12th for review. *Complete*
        - Discussion with group is included below: see Presentation of Mesohabitat Analysis.
    - Ashley Tanner to perform a short literature review of studies/reports that have mapped and analyzed mesohabitat areas and their potential impact on CPUE. *Complete*
        - Thomas Archdeacon did the same.
        - They both agree that Mollenhauer, et al. article was applicable to methods in the Rio Grande.
        - ➢ WEST to send article to group.
    - Ashley Tanner will send out the data set, revised based on input at the 2/20/18 DAT meeting.
        - Other questions came up and will be discussed as an agenda item below: see Database Overview and Questions.
        - *Incorporated into Ongoing Action*
- ➢ The minutes of the February 20, 2018 DAT meeting minutes were approved with no objections.

Database Overview and Questions

- How would the group like individual-specific data to be aggregated in the station data-set?
    - Larval and Age 0 fish classes appear to contain duplication where records of larval fish are also classified as Age 0.
    - Agreed: Have two different Station tables; one for larval (fine mesh), one for regular. Leave Haul as is.
    - Agreed: Move all "Dry Sites" together in Station data as a binary column. Haul data will be left as is.
    - Agreed: If the "Species" column was left blank, no fish were recorded and this would become a "0" to indicate absence.
    - Agreed: Separate Larval and Age 0 Hybama.
- ➢ Ashley Tanner will send out the revised dataset based on input at this meeting.
- ➢ Ashley Tanner to ask ASIR to explain Hybama, Larval versus Age O count. (Incorporate as part of the ongoing conversation with ASIR).

Presentation of Mesohabitat Analysis

- Rich Valdez presented results of calculating CPUE, Variance, and N in the write up, DAT—RS E3-Mesohabitat Analysis dated 3-8-2018. The outputs are available in the Excel spreadsheet of the same title). He calculated CPUE by mesohabitat type from 1993 to 2016.
    - The calculation should be for October for each year from 2002 to 2016 for 5 mesohabitat types and combinations.
- The mean pooled CPUE by mesohabitat in "October" for all years, 1993-2016. However, concentrating on CPUE Means Comparisons--1993-2016, the descriptive statistics for eight selected mesohabitat types are affected by the large percentage of zeros which gives non-normal distribution to the data. It is difficult to apply more standard statistics.
    - Shows these data are not well-suited for parametric analysis and concludes that the 1) data highly variable, 2) highly zero skewed, and 3) not suitable for standard statistics.

- Participants commented: Sampling is also biased towards particular mesohabitats. A third of the sampling effort is within backwaters.
- A Kruskal-Wallis one-way nonparametric analysis of variance (ANOVA) was used to compare mean by mesohabitat in October, 2002-2016. The outputs can be found in the Excel file, cell O707 and supplies.
    - Some concerns were raised about one analysis indicating there were differences in means where another did not find these differences.
    - The variance around backwaters is large. It is not the main channel run (MCRU) driving it but the variance in backwaters.
    - Also noted by a participant that some of the backwater area seined numbers, such as 1569.75 m^2, appeared abnormally large. Generally, 400-600 m^2 is ambitious.
- Getting down to hypotheticals: say we accept the analysis, how does the DAT take it and make a recommendation?
    - No direct answer to this question was given.
    - Suggestion: take additional steps, look at mesohabitat types and look at CPUE, "Where am I most likely to catch the most fish?" then, variance can be controlled.

Continued Review of Panel Recommendations

- The discussion to prioritize recommendations resulted in many ideas from avoiding sampling in main channel runs to not selecting rare habitats, but rather sampling a couple of habitats for comparison such as a backwater comparison to shoreline pool. The current data contains many habitats and a lot of data that is not used.
    - However, some would say the purpose of monitoring is to gather CPUE trend information, not density. Another school of thought is you can target backwaters so you decrease variability. Going simply to where the fish are can skew data.
    - The question was raised, are those mesohabitats the habitats that can be used for analysis? Because the purpose of this group is to do analysis to be able to make recommendations to the way monitoring is being done.
    - Are we asking ASIR to change their reporting? No.
- The question was again brought up on how doing an analysis with combined mesohabitats will lead to a recommendation change for the population monitoring?
    - No direct answer was given but this raised another discussion as to what further analysis could be done which ranged from subset analysis of the data set to see specifically which subset across this data results in the tightest regression. However, it was remarked that fish are randomly distributed.
- The rest of this discussion moved along in the same vein resulting in analysis recommendations which would not result in making recommendations to monitoring.

Action Items: Assign analyses and set deadlines, choices:

1. Just use backwater in CPUE calculation.
2. Do an analysis to show what we gain by removing main channel runs, and replace them with non-main channel runs. Keeping hauls the same and comparing them to other runs.
    - Note: Replace cannot infer replacing it with anything else.
    - There may be ways to allocate the effort i.e. high abundance years and low abundance years; or perhaps drop out runs and compare to see what comes out of it?
3. CPUE with all habitats.
    - Drop main channel runs.
    - Drop all runs.
4. Determine habitat with highest CPUE.
    - Account for year.

    - October from 2002-2017.
- Group voted on which one to do, 4 votes (of 7) went to number 3.
    - Jared Studyvin will do summary statistics on CPUE with all habitats; then, drop main channel runs and drop all runs.

Next Steps and Adjourn

- Next steps were discussed as to timeline for doing analysis and the next meeting and what it means to Jared Studyvin's travel.
    - One suggestion was no earlier than June but there was no consensus on how and when to move forward.
- Another suggestion was to ask the Population Monitoring Work Group to review panel recommendations and make recommendations to changing the monitoring and to eliminate DAT and form a new group under Adaptive Management (AM) that can take up analyses that help with management issues.
    - The suggestion was put out that in two months the group comes up with three tasks to do for the rest of the year but also received no clear response.
- Charles Yackulic is on pause and Lynette Giesen at U.S. Army Corps of Engineers (USACE) was updated on this. Basically, he cannot be brought in without specific objectives and USACE will not support it without a detailed scope of work (SOW).
    - Objections were raised and general scopes were given; however, none were thought specific enough to foster further discussion.

Meeting adjourned at 4:36 PM with no date set for next meeting.

Meeting Participants

Participant		Organization
Thomas	Archdeacon	U.S. Fish & Wildlife Service
Rick	Billings	Albuquerque Bernalillo County Water Utility Authority
Eric	Gonzales	U.S. Bureau of Reclamation
Grace	Haggerty	New Mexico Interstate Stream Commission
Mike	Marcus	Assessment Payers' Association of the MRGCD
Kate	Mendoza	Albuquerque Bernalillo County Water Utility Authority
Lana	Mitchell	WEST, Inc.
Michael	Porter	U.S. Army Corps of Engineers
Jared	Studyvin	WEST, Inc.
Ashley	Tanner	WEST, Inc.
Rich	Valdez	SWCA Environmental Consultants, for NMISC