WHAT IS THE TROPHIC LEVEL STATUS, FUNCTIONAL FEEDING GROUP CATEGORIZATION AND FOOD SOURCE(S) OF COMAL SPRINGS RIFFLE BEETLE ADULTS AND LARVAE IN THEIR NATURAL HABITAT?

PRELIMINARY SCOPE OF WORK

Task 1. Literature Review

Consultant will conduct an extensive literature review on Comal Springs riffle beetle (CSRB) trophic level status, functional feeding group and food sources in their natural habitat. In addition, the literature review should include fixed isotope food source studies for the CSRB. The literature review will serve as the basis for developing the methodology and parameters for the study.

Task 2. Methodology Development

This task is divided into subtasks consisting of methodology development and Science Committee review. The Consultant shall discuss the process, approach, oversight, strategies, and budget requirements to complete each of the subtasks listed below:

Subtask 2.1 Develop Experimental Design and Detailed Methodologies

The trophic level, functional feeding group and food source(s) of the CSRB needs to be established for both the larvae and the adults. This will require study of the stable isotope concentrations in the gut of larvae and adult CSRB and then establishing empirical relationships between those concentrations and various food sources to identify what larvae and adult CSRB eat in their natural habitat.

The Consultant will develop a statistically valid study to answer the study question and will be required to provide justification for the selection of the environmental variables and the methodologies selected to conduct the study.

Subtask 2.2 Present Literature Review and Methodologies to the Science Committee

Once proposed methodologies have been developed, the Consultant will present these methodologies to the EAHCP Science Committee for review prior to the implementation of any activities in the field. The Consultant will give a 30 minute presentation and must be prepared to answer any questions that the members of the Science Committee have. Recommendations provided by the Science Committee should be considered for inclusion in final research methodologies. The Consultant will provide detailed written justification to the EAA for any recommendations they do not incorporate into their final methodology.

Task 3. Conduct Applied Research

The Consultant will carry out experimentation consistent with the methodologies proposed in Task 2 and approved by the Science Committee. The Consultant will keep a project notebook containing a description of the assumptions and methodologies used in the study analysis. The notebook shall be organized in such a way as to allow replication of the steps, calculations, and

procedures used by the Consultant to reach conclusions, described in the draft final report. The project notebook shall include a "flashdrive" or other suitable electronic media of all raw data collected during the project and will be submitted with the draft final report. In addition, the Consultant will take photographs of the experimentation (if applicable) throughout its various phases and make these photos available on the data "flashdrive" or other suitable electronic media and utilized in reports submitted to the EAA (where applicable).

Task 4. Draft and Final Reports

The Consultant will include in the Draft and Final Report a section describing the assumptions and methodology used by the Consultant in generating the data, analysis and conclusions. The reports will summarize statistical analysis, and conclusions, and will provide recommendations to the EAA for potential future research (if applicable). The Final Report, along with all data and the project notebook, must be submitted in hard copy and on a "flashdrive" or other suitable electronic media in a Microsoft Office, or other agreed upon format.

Task 5. Meetings and Presentations

The Consultant should budget for a minimum of two meetings with the Science Committee and when requested by the EAHCP Program Manager (1) to present the project methodologies, and; (2) to present the project results.