



City of San Antonio

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In control: Southern Edwards Plateau Habitat Conservation Plan Coordinating Committee

On agenda: 10/9/2018

Title: Briefing on the Cicurina Genetics Research Study Findings and Impact.

Sponsors:

Indexes:

Code sections:

Attachments: 1. Cicurina Genetics Study Article

Date	Ver.	Action By	Action	Result
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DEPARTMENT: Development Services

SUBJECT: SEP-HCP Initial Conservation Actions - Cicurina Genetics Research Study Findings

BACKGROUND INFORMATION:

Per condition “T” of the SEP-HCP Incidental Take Permit (ITP) from the U.S. Fish and Wildlife Service (USFWS) and Section 4.5.3 of the SEP-HCP, Karst Participation Certificates were not to be offered until the Permittees had secured some level of up-front mitigation for all of the Covered Karst Invertebrate Species. The level and type of mitigation obtained for each species varied. The Permittees worked with the Service in determining when the appropriate level of up-front mitigation had occurred. For species like *C. venii*, with only two known but heavily impacted localities, the options were limited to satisfy the up-front mitigation requirements of the ITP and the HCP. Therefore, other conservation measures and/or recovery efforts which provided for some increased level of conservation were the only options to help satisfy up-front mitigation requirements. As such, the SEP-HCP Permittees contracted with Dr. Marshal Hedin of San Diego State University to conduct a genetics study of the *Cicurina* spiders of Bexar County, Texas.

The research proposal and supporting information documented the conservation value of the proposed initial conservation action and proposed an initial conservation action for the Covered Karst Invertebrates within the *Cicurina* genus, more particularly for *Cicurina venii*, that was consistent with the terms and conditions of the SEP-HCP and accompanying ITP. The USFWS approved the Permittees request that the research project would satisfy the initial conservation action as the required up-front mitigation for *Cicurina venii*. Additionally, approval of this initial conservation action also contributed to further understanding of the *Cicurina* genus within Bexar County, Texas, including *Cicurina madla* and *Cicurina vespera* (SEP-HCP Covered Karst Invertebrates), as well as *Cicurina baronia* and *Cicurina loftini*, which although not included as a SEP-HCP Covered Species or Voluntarily Conserved Species, also benefit from the upfront mitigation action.

Upon USFWS approval of the proposed up-front mitigation action, the Permittees initiated and fully funded the *Cicurina* research study on August 17, 2016. The funding and initiation of the *Cicurina* research study

satisfied the required up-front mitigation actions for *Cicurina venii*, as well as benefited *Cicurina madla* and *Cicurina vespera*, allowing the SEP-HCP to begin enrollment over Karst Zones 3 and 4 upon completion of the establishment of the Government Canyon State Natural Area KFAs.

The *Cicurina* research study was completed in April 2018, peer reviewed, and subsequently published on June 26, 2018 (Hedin, M., S. Derkarabetian, J. Blair, and P. Paquin. 2018. Sequence capture phylogenomics of eyeless *Cicurina* spiders from Texas caves, with emphasis on US federally-endangered species from Bexar County (Araneae, Hahniidae). *ZooKeys* 769: 49-76. (Attached to this memo.)

The SEP-HCP received feedback from the USFWS regarding their acceptance of the findings on August 29, 2018, which are summarized below:

The paper establishes new taxonomic synonymies and range extensions for listed and non-listed *Cicurina* species in Bexar County as follows:

1. Species Synonymies
 - ***Cicurina venii* Gertsch, 1992 = *Cicurina madla* Gertsch, 1992** - The Braken Bat Cave meshweaver (*Cicurina venii*) is no longer a distinct taxonomic entity with specimens now assigned to Madla's Cave meshweaver (*Cicurina madla*). The former was a single site endemic and Madla's Cave meshweaver would now occupy that location.
 - ***Cicurina loftini* Cokendolpher, 2004 = *Cicurina vespera* Gertsch, 1992** - *Cicurina loftini* (no common name) is no longer a distinct taxonomic entity with specimens now assigned to the Government Canyon Bat Cave meshweaver (*Cicurina vespera*). The latter was a single site endemic but with revised taxonomy it subsumes all locations previously assigned to *C. loftini* in northwestern Bexar County.
2. II. Range Extensions
 - Madla's Cave meshweaver, *C. madla*: Based on revised taxonomy this species now occurs in the Culebra Anticline Karst Fauna Region.
 - Government Canyon Bat Cave meshweaver, *C. vespera*: Based on revised taxonomy its range is extended to 10-15 caves, formerly assigned to *C. loftini* in the Culebra Anticline Karst Fauna Region. This species has also now been documented to co-occur with Madla's Cave meshweaver in two caves. It was originally believed that blind *Cicurinas* did not co-occur.

The USFWS plans to conduct a five-year review of the Madla Cave meshweaver and the Government Canyon Bat Cave meshweaver incorporating the additional localities and will be seeking input from the public regarding any new information on these two species during that process. In addition, the Service intends to propose delisting for the Braken Bat Cave meshweaver as workload allows.

The findings of this research have the following implications on enrollment and participation in the SEP-HCP:

- Projects located in the Culebra Anticline KFR (southwest Bexar County) that have previously identified localities occupied by *C. loftini* will be required to avoid impacts to those localities, in accordance with the enrollment requirements for the SEP-HCP until such time as the conservation baseline for the species is achieved. Additionally, this species range has been expanded into Medina County.

SEP HCP Staff will develop strategies to communicate this information to the biologists that do species surveys.

RECOMMENDATION: This item is for briefing purposed only.