

# **Identidad específica de la carpa del desierto (*Gila eremica* DeMarais, 1991) en las cuencas de los ríos Sonora y Mátape, Sonora.**

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## **ABSTRACT**

The desert chub *Gila eremica* is an endemic species to the State of Sonora for the Sonora, Mátape and Upper Yaqui River basins. Recently two populations of *Gila* were recorded in the Arroyo El Tigre subbasin of the Mátape River basin apparently related to *G. eremica*. Because the geographic isolation of the new populations recorded with respect to *G. eremica* may promote a speciation event it is necessary to confirm their specific identity by several biological criteria. The objective of this study was to characterize populations of the *G. eremica* lineage in their known distribution. Morphometric analyzes and molecular analyzes with several mitochondrial markers were performed to carry out this objective. The results of the morphometric analysis by the box-truss Protocol showed *G. cf. eremica* as a morphologically and meristically distinguishable unit of *G. eremica*. Analyzes of phylogenetic inference (*Cyt-b*) indicated monophyly between *G. cf. eremic* and *G. eremica* from the Mátape River subbasin and additionally the analysis of the molecular clock (*Cyt-b*) showed a divergence time of 5.60 Mya between them, which agrees with local geological events. The DNA barcoding technique (*COXI*) discriminated *G. cf. eremica* from *G. eremica* by a fixed change in the position 505 of its sequence. Genetic variability analyzes for populations of the *G. eremica* lineage indicated differentiation between populations of the Sonora and Mátape River basins and The Arroyo El Tigre subbasin, suggesting that they should be managed as independent units. The morphological and molecular analyzes reveal *Gila cf. eremica* as an evolutionary biological unit independent of *Gila eremica* that should be considered a new species within the *Gila eremica* lineage.