

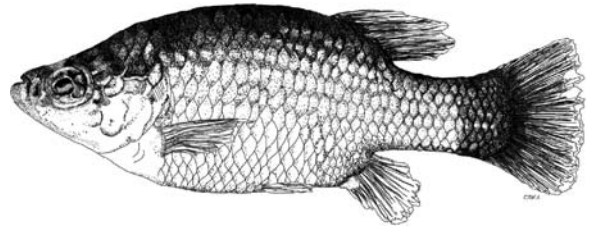
## Threatened fishes of the world: “*Xenotoca*” *eiseni* Rutter, 1986 (Goodeidae)

Carys S. Kenway-Lynch · Caleb D. McMahan ·  
Aaron D. Geheber · Malorie Hayes · Kyle R. Piller

Received: 17 March 2009 / Accepted: 7 January 2010 / Published online: 2 February 2010  
© Springer Science+Business Media B.V. 2010

**Keywords** Goodeidae · Mexico · Redtail splitfin ·  
*Xenotoca*

**Common names:** Redtail splitfin, redbtail goodeid, mexicalpique cola roja (Miller et al. 2005). **Conservation status:** Listed as endangered by Jelks et al. (2008) and Domínguez-Domínguez et al. (2005), but not by IUCN (IUCN 2009) or SEMARNAT (NOM 2001). **Identification:** Possesses a single posteriorly positioned dorsal fin, orange to red-orange pigmentation on the caudal peduncle extending to the caudal fin, most prominent in males; fins without dark pigment; dorsal surface dusky; females lighter ventrally without irregular spotting on body; maximum size 75 mm SL (Miller et al. 2005). Illustration by CSK-L (male, 43 mm SL). Phylogenetic and phylogeographic analyses conducted by Webb et al. (2004), Doadrio and Domínguez (2004), and Kenway (2008). **Distribution:** Tributaries of the Ríos Grande de Santiago, Ameca, Ayuquila, Compostela, and Coahuayana and endorheic Lago de Magdalena basins, Mexico. **Abundance:** Domínguez-Domínguez et al. (2008), De la Vega-Salazar (2006), Domínguez-Domínguez et al. (2005)



and our own sampling (2006 & 2008) indicated that many populations are extirpated, or have become small and localized. It was common in the Santiago and Magdalena basins, and present, but not abundant in the Ríos Ameca and Compostela. Decreases in abundance occurred at Río Compostela from 2006–2008 despite similar environmental conditions. In 2008, *Poecilia butleri* was more abundant than previously; possibly indicating competition between these two species. **Ecology:** Occurs in spring-fed pools, streams, and lakes to depths of 1 m, aquatic vegetation is occasionally present. Produces young in March and April (Miller et al. 2005). **Threats:** Habitat degradation, specifically water pollution and extraction of water for irrigation, and introduction of non-natives. **Conservation action:** “*Xenotoca*” *eiseni* receives no governmental protection. **Conservation recommendation:** Additional surveys are needed to investigate environmental conditions and population sizes of extant populations. Institution of a monitoring program and

C. S. Kenway-Lynch · C. D. McMahan · A. D. Geheber ·  
M. Hayes · K. R. Piller (✉)  
Department of Biological Sciences,  
Southeastern Louisiana University,  
Hammond, LA 70402, USA  
e-mail: Kyle.Piller@selu.edu

improvement and protection of habitat quality will be crucial in maintaining extant populations.

## References

- De la Vega-Salazar MY (2006) Estado de conservación de los peces de la familia Goodeidae (Cyprinodontiformes) en la mesa central de México. *Revista de Biología Tropical* 54 (1):163–177
- Doadrio I, Domínguez O (2004) Phylogenetic relationships within the fish family Goodeidae based on cytochrome *b* sequence data. *Mol Phylogenet Evol* 31:416–430
- Domínguez O, Mercado-Silva N, Lyons J (2005) Conservation status of Mexican goodeids: Problems, perspectives, and solutions. In: Uribe M, Grier HJ (eds) *Viviparous Fishes: Proceedings of the I. and II. International Symposium on Livebearing Fishes*. New Life Publications, Homestead, FL, pp 495–504
- Domínguez-Domínguez O, Zambrano L, Humberto Escalera-Vázquez L, Pérez-Rodríguez R, Pérez-Ponce de León G (2008) Cambio en la distribución de goodeidos (Osteichthyes: Cyprinodontiformes: Goodeidae) en cuencas hidrológicas del centro de México. *Revista Mexicana de Biodiversidad* 79:501–512
- IUCN (2009) IUCN red list of threatened species. Version 2009.1. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Downloaded on 09 October 2009
- Jelks HL, Walsh SJ, Burkhead NM, Contreras-Balderas S, Díaz-Pardo E, Hendrickson DA, Lyons J, Mandrak NE, McCormick F, Nelson JS, Platania SP, Porter BA, Renaud CB, Schmitter-Soto JJ, Taylor EB, Warren ML Jr (2008) Conservation status of imperiled North American freshwater and diadromous fishes. *Fisheries* 33:372–407
- Kenway CS (2008) Phylogeography of the Imperiled Redtail Splitfin (*Xenotoca eiseni*) in Mexico: Implications for Taxonomy and Conservation. American Society of Ichthyologists and Herpetologists, Montreal, Published Abstract
- Miller RR, Minckley WL, Norris SM (2005) *Freshwater Fishes of México*. The University of Chicago, Chicago
- NOM (2001) Norma Oficial Mexicana de Ecología NOM-059-ECOL-2001. Protección Ambiental, especies nativas de México de flora y fauna silvestres-categorías de riesgo y especificaciones para su inclusión, exclusión o cambio-Lista de especies en riesgo. Secretaría de Medio Ambiente y Recursos Naturales y Pesca. Diario Oficial, 06 de marzo de 2002, Distrito Federal, México
- Webb SA, Graves JA, Macías-García C, Magurran AE, Foighil DÓ, Ritchie MG (2004) Molecular phylogeny of the livebearing Goodeidae (Cyprinodontiformes). *Mol Phylogenet Evol* 30:527–544