

THE SOUTHWESTERN NATURALIST 59(3): 431–434

## AFRICAN CLAWED FROG (*XENOPUS LAEVIS*) IN BAJA CALIFORNIA: A CONFIRMED POPULATION AND POSSIBLE ONGOING INVASION IN MEXICAN WATERSHEDS

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**ABSTRACT**—The African clawed frog (*Xenopus laevis*) is an invasive amphibian in at least 15 countries. In Mexico, only occasional records have documented it in the state of Baja California. In May 2013, we discovered a population at Puente el Morro in Rosarito. In a 1-h session of trapping, we captured 106 individuals (adults and juveniles) at a small pond. We did not see eggs, tadpoles, or reproductive activity, but lengths of frogs indicate that some have reached sexual maturity. This discovery indicates the need for conservation plans and action against *X. laevis* dispersion, especially in Mediterranean zone climates.

**RESUMEN**—La rana de garras africana (*Xenopus laevis*) es un anfibio invasor en al menos 15 países. En México, sólo se ha documentado por medio de registros ocasionales en el estado de Baja California. En mayo del 2013, descubrimos una población en el Puente el Morro, Rosarito. En una hora de trampeo capturamos 106 individuos (adultos y juveniles) en una pequeña poza. No observamos huevos, renacuajos o actividad reproductiva, pero la longitud de las ranas indica que algunas han alcanzado la madurez sexual. Este descubrimiento indica la necesidad de adoptar planes de conservación y acciones en contra de la dispersión de *X. laevis*, especialmente en zonas con clima Mediterráneo.

The African clawed frog (*Xenopus laevis*) is a smooth-skinned frog with a flattened body, small head, blunt snout, and small upturned eyes with no lids (Stebbins, 2003; Dodd, 2013). This frog is well known as a model organism in laboratories for ecotoxicological studies and cellular, molecular, and developmental biology and has long been the most widely used amphibian in research (Gurdon, 1996; Measey et al., 2012; Dodd, 2013). Research and pet trade activities have been the main causes of the spread of *X. laevis* worldwide (Gurdon and Hopwood, 2000; Dodd, 2013). Along with the American bullfrog (*Lithobates catesbeianus*) and cane toad (*Rhinella marina*), the African clawed frog is probably one of the most invasive amphibians, and has the greatest worldwide nonindigenous distribution (Kraus, 2009; Measey et al., 2012). Its fecundity and physiological adaptations allow it to colonize different types of water bodies, resulting in its success, particularly in Mediterranean climatic regions (Tinsley and McCoid, 1996; Lobos and Measey, 2002; Lillo et al., 2011; Measey et al., 2012). Populations or individuals have been reported in Germany, the Netherlands, France, Spain, Portugal, Italy, United Kingdom, Japan, Indonesia, Ascension Island, Israel, Sweden, United States, Chile, and Mexico (Kraus, 2009; Measey et al., 2012). Within its native range in southern Africa,

this species rapidly invades human-made water bodies and anthropogenically disturbed areas, aided by its high adaptability and high reproductive success. It can reproduce in massive numbers in favorable habitats ( $\cong 0.25$  individuals  $m^{-2}$ ; McCoid and Fritts, 1993; Lobos and Measey, 2002; Dodd, 2013). In Mexico, researchers have documented *X. laevis* only in the state of Baja California (Fig. 1), dispersing from nearby California, USA (Stebbins, 2003), although its current status has been questioned (Measey et al., 2012). The first record was an observation on the Tijuana River (Murphy, 1983; Flores-Villela, 1993; Tinsley and McCoid, 1996). Mahrtdt et al. (2003) observed an adult from Río Las Palmas in Cañon El Alamo. It was not until 2012 that Ruiz-Campos and Valdez-Villavicencio collected the first voucher specimen at Cantamar, Baja California (Ruiz-Campos and Valdez-Villavicencio, 2012).

In May 2013, we discovered a population of the African clawed frog at Puente El Morro, Cañada El Morro, ( $32^{\circ} 15.74'N$ ,  $116^{\circ} 59.418'W$ ; elevation 5 m) in the municipality of Rosarito (Fig. 1). The site is located about 7.5 km northwest of the nearest record at Cantamar (Ruiz-Campos and Valdez-Villavicencio, 2012). Cañada el Morro is a small watershed with intermittent drainage and water flowing only in winter. However, a small pond located 115