ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract **Element Code:** AAABB01140
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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Anaxyrus retiformis*
COMMON NAME: Sonoran Green Toad, Sonora Green Toad, and Pima Green Toad
SYNONYMS: *Bufo debilis retiformis* Sanders and Smith, *Bufo retiformis* Bogart
FAMILY: Anura: Bufoidae

AUTHOR, PLACE OF PUBLICATION: Frost, D. R., R. W. McDiarmid, and J. R. Mendelson III. 2008. Anura: Frogs. IN B. I. Crother (ed.), Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, pp. 2-12 SSAR Herpetological Circular 37.

TYPE LOCALITY: 14.4 miles south of Ajo, Pima County, Arizona, U.S.A.

TYPE SPECIMEN: HT: UIMNH-5847. Hensley & W.L. Burger, Field #449, 1 Aug 1948.

TAXONOMIC UNIQUENESS: Species *retiformis*, is 1 of 21 in the genus *Anaxyrus* in North America, and 1 of 6 in Arizona. Other species of *Anaxyrus* in Arizona include *A. alvarius*, *A. cognatus*, *A. debilis*, *A. microscaphus*, *A. punctatus*, and *A. woodhousii*.

DESCRIPTION: Small flat toad, 1.13-2.25 in (2.85-5.7 cm). Dorsum bright green with a network of black or brownish markings that set off oval spots of green to greenish-yellow. The ventral surface is white and is covered with small, dark-tipped granules. Males have a dark or dusky throat. The large, elongate parotoid glands extend onto the sides; one gland also occurs behind each eye. The dorsal surface is covered with low, black-tipped warts. Larger warts are found along the sides of the body. Warts on the parotoid glands are greatly reduced and tipped with black. The cranial crest is weak or absent. Eggs are yellow with a band of melanin, and are 1.15 mm in diameter (AmphibiaWeb, accessed 2005). (Stebbins 1985, Bebler and King 1992).

AIDS TO IDENTIFICATION: *Anaxyrus retiformis* is similar to the green toad (*A. debilis*), but is bright green above with a network of black or brownish markings that set off oval areas of greenish yellow ground color, where the green toad is mostly green with small black spots. Areas of green within dark network about twice as large as those of *A. debilis*.

ILLUSTRATIONS:
Color drawing (Stebbins 1985: plate 10)
Color photo (Behler and King 1979: plate 251)
Color photo (Collins *in* http://www.livingunderworld.org/gallery/photos/anura/bufonidae/bufo/retiformis/).
Color photo (Nafis *in* http://www.californiaherps.com/noncal/southwest/swamphibians/pages/b.retiformis.html)

Color photo (Enderson and Schwalbe *in* http://www.arts.arizona.edu/herp/BURE.html).
Color photo (Paselk *in* http://www.humboldt.edu/~rap1/Herps/Frogs/043.jpg).

TOTAL RANGE: From south-central Arizona south to west-central Sonora (just north of Guaymas), Mexico.

RANGE WITHIN ARIZONA: South-central Arizona: From Organ Pipe Cactus National Monument east across the Tohono O'Odham Reservation to San Xavier Mission, throughout Pima County, to 9 miles north of Pima/Pinal County line in Santa Rosa Valley, Pinal County. Probably also in Vekol Valley.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: A secretive nocturnal species, the male usually begins calling at nightfall after summer rains. Calls are wheezy sounding and generally last 1 to 3 seconds. Toads have enlarged glands (called the Paratoid glands) on the side of the neck, one behind each eye. These glands secrete a viscous white poison that is smeared in the mouth of any would-be predator, inflaming the mouth and throat causing nausea, irregular heart beat, and in extreme cases, death (National Wildlife Federation 2005). They are inactive in cold temperatures and hot, dry weather. Male Sonoran green toads, like all *Anaxyrus* species, have rudimentary ovaries that can become functional if the testes are damaged or removed.

REPRODUCTION: Breeds with the onset of summer rains, through July-August in rain pools and wash bottoms. Males call at nightfall, usually from grass areas that are close to water sources, but occasionally, from areas farther from water (Stebbins, 2003). Tadpoles hatch at later stage than most *Anaxyrus* spp.

FOOD HABITS: Arthropods.

HABITAT: In Arizona, inhabits rain pools, wash bottoms, and areas near water in semi-arid mesquite-grassland, creosotebush desert, and upland saguaro-paloverde desert scrub.

ELEVATION: In Arizona, 500 - 3,225 ft. (153- 983 m).

PLANT COMMUNITY: Sonoran Desert scrub, in the Arizona upland and lower Colorado subdivisions. In mesquite-grassland, creosotebush desert, and upland saguaro-paloverde desert scrub.

POPULATION TRENDS: Unknown. There are no censuses or surveys estimating population numbers in the United States. Ashton (1976) reported that Arizona populations were stable. In 1993-1994, Sullivan et al. (1996) found this species at almost all historic localities and some new sites in the United States, although surveys were somewhat limited due to access to tribal lands (CITES 2000). Total adult population size is unknown but likely is at least 10,000; information from Mexico is needed to assess current population. Less common on periphery of range: near Organ Pipe National Monument in the west, near Mobile in the north,

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and in the Altar Valley in the east (NatureServe 2005). Habitat manipulation due to agriculture has resulted in this species replacing *B. kelloggi* to the south and west of Hermosillo, Mexico.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996)
[3C USDI, FWS 1989]

STATE STATUS: None

OTHER STATUS: None (USDA, FS Region 3,1999)
Forest Service Sensitive [USDA, FS Region 3, 1988].
Determined Subject to Special Protection (Secretaria de Medio Ambiente 2000)
Rare [Mexican Fed. End. Species list 1994].

MANAGEMENT FACTORS: There are no known or documented immediate threats to this species. However, other anurans (e.g., ranids) in southern Arizona are experiencing declines due to competition with exotic species (e.g. bullfrogs, sport fish), pathogens (e.g., chytrid fungus), habitat degradation, and possibly airborne toxins (CITES 2000). Also, some consider over-collecting to be a chief threat (especially for females). This species naturally hybridizes with *A. punctatus*, but it is unlikely that this presents a significant concern for the population status.

PROTECTIVE MEASURES TAKEN: Arizona fishing license is required to take any amphibians.

SUGGESTED PROJECTS: Distribution, habitat, population and life history studies needed.

LAND MANAGEMENT/OWNERSHIP: BIA - San Xavier and Tohono O'Odham Reservations; BLM - Phoenix Field Office; FWS - Buenos Aires and Cabeza Prieta National Wildlife Refuges; NPS - Organ Pipe Cactus National Monument; State Land Department; Private. A large number of the occurrences occur on the Tohono O'Odham Reservation.

SOURCES OF FURTHER INFORMATION

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ADDITIONAL INFORMATION:

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