ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract **Element Code:** ARADB24010
Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Oxybelis aeneus*
COMMON NAME: Brown Vinesnake, Brown Vine Snake, Mexican Vinesnake
SYNONYMS: *Dryinus aeneus, Oxybelis microphthalmus, Coluber acuminatus, Oxybelis acuminatus*
FAMILY: Colubridae

AUTHOR, PLACE OF PUBLICATION: J. Wagler, Franc. Seraph. Hubschmanni, Manachii. 1824.

TYPE LOCALITY: Isla Taboga, Panama Province, Panama.

TYPE SPECIMEN: USNM 7315. Unknown date. Unknown Collector.

TAXONOMIC UNIQUENESS: There are four species within this genus (ITIS 2022). Diversity within *O. aeneus* has been debated, with Bogert and Oliver (1945) recognizing two subspecies based on morphological characteristics; namely eye size related to internasal length. Keiser (1967, 1974) argued that the variation of this trait exists on a regional cline and the species is monotypic. More recently, genetic work has been used to describe cryptic diversity in the species, and has identified four lineages which likely represent unique species (Jadin et al. 2019).

Nomenclatural confusion surrounded the specific name of this taxa for many decades, with various authorities using *O. microphthalmus, O.acuminatus,* or *O. aeneus* in publications from 1933-1965 (Holycross and Mitchell 2020).

DESCRIPTION: This species is long and thin with a very long and distinctly pointed snout (Holycross and Mitchell 2020). Snout-vent length (SVL) typically averages between 605-920 mm (23.81-36.22 in) in males and 613-975 mm (24.13-38.38 in) in females (Goldberg 1998b; Henderson 1974). The longest recorded individuals were an 1885 mm SVL (74.21 in) male, and 1220 mm SVL (48.03 in) female (Keiser 1974). On average, females tend to be longer and heavier than males (Clark 1966; de Mesquita et al. 2010b). This species has a large geographic range, and exhibits considerable range-wide variation. Keiser indicated that snakes within the northern end of the range, which includes Arizona, tend to have smaller eye and longer snouts (1974). Dorsally, this species is gray to gray-brown and may exhibit bronzish coloration on the head (Holycross and Mitchell 2020). The chin and throat region are typically white, with a yellowish to bright yellow coloration which extends onto the venter (Holycross and Mitchell 2020). A fine, dark-colored preocular stripe is present, which can appear faint or pronounced, and runs through the eye to the neck, and sometimes past (Holycross and Mitchell 2020). Flecks

of black or red are frequently distributed on the dorsum and venter (Holycross and Mitchell 2020). The mouth of this species has a dark blue-to-black appearance (Holycross and Mitchell 2020). There is no evidence that this species is sexually dimorphic (Keiser 1974). Dorsal scales are mostly smooth but can be slightly keeled, and are in rows of 17 at the mid-body (Holycross and Mitchell 2020). Individuals within the northern end of their range, including Arizona, have the highest ventral scale count, averaging 194 in males and 199 in females (Holycross and Mitchell 2020).

AIDS TO IDENTIFICATION: This species is unlikely to be confused with any other in Arizona, but two species it could be mistaken for are *Masticophis bilineatus* and *Senticolis traispis*. *M. bilineatus* is also slender, long, and is gray in coloration (Holycross and Mitchell 2020). *S. traispis* differs by being olive-green, but is also long and slim (Holycross and Mitchell 2020).

ILLUSTRATIONS: Black and white drawing (Stebbins 1966: plate 34; 1985: plate 40)
Color photo (Lowe et. al. 1986: 83)
Color photo (Jones, in Holycross and Mitchell 2020, pg.278)
Color photo (Love, in Holycross and Mitchell 2020, pg. 281)
Color photo (Babb, in Holycross and Mitchell 2020, pg. 284)

TOTAL RANGE: This species has the largest latitudinal distribution of any snake in Arizona, and ranges from "northern Argentina north through Central American and Mexico to extreme southern-central Arizona" (Holycross and Mitchell 2020; Keiser 1982).

RANGE WITHIN ARIZONA: Within Arizona, this species is found south-centrally in Santa Cruz County and southern Pima County (Holycross and Mitchell 2020, iNaturalist 2022). It has been documented at Arivaca Lake, and the Atascosa, Pajarito, Patagonia, and Tumacacori Mountains (Keasey 1973; Van Devender et al. 1994).

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: This cryptic species is diurnal and mostly arboreal (Holycross and Mitchell 2020; Henderson and Nickerson 1977). These snakes mimic the motion of wildblown vegetation to better blend in with their surroundings (Holycross and Mitchell 2020; Fleishman 1985). This species glides fairly rapidly across the ground with head and forebody elevated (Holycross and Mitchell 2020). Although active through much of the year, activity levels appear to increase before and during monsoons (Holycross and Mitchell 2020). Overwintering biology of the species in Arizona is unknown, though the species may use terrestrial refugia at the northern extent of its geographic range (Holycross and Mitchell 2020). Predation on this species is relatively unknown, but likely predators include raptors, *Geococcyx californianus* (Greater Roadrunner), and other diurnal predators (Holycross and Mitchell 2020;). This species has been documented as being a host to cystacanths of echinorhynchid, oligacanthorhynchid acanthocephalans (spiny-head worms), and ticks (Goldberg and Bursey 2001b, 2004a; Beebe

1946). When threatened, this species displays its dark blue-black mouth it an attempt to deter predators and will strike, although is usually reluctant to do so (Gehlback 1981; Scott 1983; Henderson 1974; Martin 1996; Vorhies 1926a). As a venomous species, bites cause itching, burning, numbness, and occasionally swelling or blistering in humans (Crimmins 1937; Keiser 1967; Savage 2002; McConnell 2008). Lifespan of this species is unknown, although one reported captive snake lived 11 years (Snider and Bowler 1992).

REPRODUCTION: Oviparous. Throughout the range of the species Oviposition appears to be linked to the local rainy season (Censky and McCoy 1988 Goldberg 1998b). Suspected breeding season in Arizona is February through July, which is evident by spermiogenesis in males and vitellogenesis and ovulation in females (Goldberg 1998b; Holycross and Mitchell 2020). It is believed that eggs are laid from July to mid-September (Holycross and Mitchell 2020). Clutch size is 2-9 eggs (Campbell 1934; Stebbins 1954; Sexton and Heatwole 1965; Scott 1962; Censky and McCoy 1988; Goldberg 1998b, 2005; de Mesquita et al. 2010a). Although no data about hatching dates is available, it is believed hatching occurs in September (Lowe et al. 1986).

FOOD HABITS: Carnivorous. This snake uses venom to immobilize its prey, and is a visually-oriented, arboreal ambush predator" (Keiser 1967; Holycross and Mitchell 2020). It has a versatile diet comprised mostly of lizards, but also takes amphibians, birds, mammals and rarely insects and fish (Beebe 1946; Keiser 1967; Hetherington 2006). In Arizona, all known predation has been on lizards (Holycross and Mitchell 2020).

HABITAT: In Arizona, this species can be found on brushy hillsides and canyon bottoms containing oak walnut, sycamore, and wild grapes (Keiser 1967; Behler and King 1979; Stebbins 2003). It also occurs in riparian areas (Holycross and Mitchell 2020).

ELEVATION: In Arizona, this species occurs from1150-1450 m (3772-4757 ft) (Holycross and Mitchell 2020). Throughout its range occurs from sea level to 2600 m (8530 ft) (Dunn 1944). In Arizona this species may be limited by freezing temperatures in winter above 1,650 m (5,400 ft) and arid conditions in summer below 1,160 m (3,800 ft) (Van Devender et al. 1994).

PLANT COMMUNITY: In Arizona, this species is found within Madrean Evergreen Woodlands or Semidesert Grasslands with a significant mesquite component (Holycross and Mitchell 2020). Plants associated with this species include *Fouquieria splendens* (Ocotillo), *Eysenhardita orthocarpa* (Kidneywood), *Mimosa* spp., and *Quercus emoryi* (Emory oak) (Holycross and Mitchell 2020). In Sonora, this species occupies Sonoran Desertscrub, Madrean Evergreen Woodland, Sinaloan Thornscrub, and Sinaloan Tropical Deciduous Forest (Bogert and Oliver 1945; Zweifel and Norris 1955; Rorabaugh 2008; Rorabaugh and Lesmos Espinal 2016).

POPULATION TRENDS: Appears stable in Arizona, quite abundant in tropical regions of the range (Holycross and Mitchell 2020).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: 2 (AZGFD, AWCS 2022)
[1B (AGFD SWAP 2012)]
[WSC (AGFD, WSCA 1996 in prep)]
[State Candidate (AGFD, TNW 1988)]
OTHER STATUS: Forest Service Sensitive (USDA, FS Region 3 2013, 1988)
[Not Forest Service Sensitive (USDA, FS Region 3 1999)]

MANAGEMENT FACTORS: Threats include brush clearing and wood cutting. Habitat in Arizona is accessible by few roads, offering some protection from over collection. Habitat is largely on Coronado National Forest land, and somewhat protected from many forms of large-scale habitat destruction (Holycross and Mitchell 2020).

PROTECTIVE MEASURES TAKEN:

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

LAND MANAGEMENT/OWNERSHIP: USFS – Coronado National Forest.

SOURCES OF FURTHER INFORMATION

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ADDITIONAL INFORMATION: The subspecies *aeneus* and *auratus* have been synonymized (see Keiser 1982).

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