ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract **Element Code:** ARACD01030
Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Coleonyx variegatus*
COMMON NAME: Western Banded Gecko
SYNONYMS:
FAMILY: Eublepharidae: Eublepharinae

AUTHOR, PLACE OF PUBLICATION: Baird, S.F. 1859. Description of new genera and species of North American lizards in the museum of the Smithsonian Institution. Proc. Acad. Nat. Sci. Philadelphia 10: 253-256 [1858].

TYPE LOCALITY: Rio Grande and Gila Valleys.

TYPE SPECIMEN: Holotype: USNM 3217 (lost fide KLAUBER 1945, although Dixon 1970 does not mention a missing type)

TAXONOMIC UNIQUENESS: *Coleonyx variegatus* is 1 of 7 species of the genus *Coleonyx*. Two subspecies recognized as valid, *C.v. abbotti* and *C.v. variegatus.* Leavitt (2015) presented evidence, based on mt and nuDNA sequences, that *C. v. variegatus* and *C. v. abbotti* constitute lineages with limited bi-directional nuclear gene flow and that *C. v. bogerti* and *C. v. utahensis* are not differentiated from *C. v. variegatus* (Crother 2017).

In 1987, Kluge conducted a cladistic analysis of the family Gekkonidae, placing the genus *Coleonyx* in the family Eublepharidae (subfamily Eublepharinae), recognized as distinct from the Gekkonidae. Bartlett and Bartlett (1999), Grismer (2002), and Stebbins (2003) likewise placed *Coleonyx* in the family Eublepharidae, whereas Dixon (2000) retained *Coleonyx* in Gekkonidae. (NatureServe 2007).

DESCRIPTION: A medium-sized gecko with lengths up to 12.7 cm (5.0 in) STL (snout-tail length), with almost half this length from the tail. Average SVL lengths in Hidalgo Co., New Mexico (Degenhardt et al. 1996) were 5.2-6.4 (5.6) cm for 40 males and 5.2-6.7 (58.5) cm for 24 females. Average lengths reported (unknown if STL or SVL) for the species varies widely from 4.5-6.0 inches in Behler and King (1979) to 2.0-3.0 inches in Stebbins (2003) and Brennan and Holycross (2006). The skin is soft, somewhat translucent, and covered in granular scales; tubercles absent. The coloration ranges from pinkish tan or tan to cream, with dark reddish brown crossbars or reticulations; the underside is usually a plain pale yellow to cream color. The head has dark brown to black spots, and a light-cream color line starts from under each eye passing just above the ear opening and ends in a loop on the back of the neck. They have a

pointed snout, protruding moveable eyelids and large eyes with vertical pupils. The tail is usually plump and becomes constricted where it meets the body; if unregenerated, it is about as long as the body and has bar markings. The legs are small and the toes are slender with no pads or villi. The color pattern in adults ranges from broad unbroken bands to large spots in adults, but juveniles are always banded (Dixon 1970).Males develop large hemipenal bulges and posses a pair of spurs at the base of their tails. (Behler and King 1979; Degenhardt et al.1996; Stebbins 2003; Brennan and Holycross 2006).

AIDS TO IDENTIFICATION: The Reticulated Gecko or Big Bend Gecko (*C. reticulates*) has enlarged tubercles scattered among granular scales on its neck and sides, and is found in southeastern New Mexico and western Texas (Finding Species 2007). In urban areas, an introduced species, the Mediterranean Gecko (*Hemidactylus turcicus*), is common around homes and yards, and can be recognized by the presence of white tubercles (warts) on the dorsum, presence of toe pads, and lack of moveable eyelids.

ILLUSTRATIONS:

Color photo (Arizona Wildlife Views Special Edition, p. 109)
Color photo (Brennan and Holycross 2006: p. 90)
Line drawing (Stebbins 2003: Plate 24)
Color photos (Behler and King: Plate 395)
Color photo of juvenile (Degenhardt et al. 1996: Plate 58)

TOTAL RANGE: In the United States the range includes southern California, southern Nevada, southwestern Utah, western and southern Arizona, and extreme southwestern New Mexico. In Mexico, occurs throughout Baja California and western Sonora (Grismer 2002, Stebbins 2003).

RANGE WITHIN ARIZONA: Western and southern Arizona, occurring in Coconino, Cochise, Gila, Graham, La Paz, Maricopa, Pima, Pinal, Santa Cruz, Yavapai, and Yuma Counties.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Inactive in cold temperatures and hot, dry weather. Nocturnal; most active just after dark, with activity declining gradually until ceasing at dawn (Cooper 1985). Hibernate during the winter months between November and March when temperatures drop too low, and live off the fat stored in their tail. Banded geckos at the northern extents of the range may be active in daylight hours more often than individuals from more southern populations. During warmer months, Western Banded Geckos avoid the heat of the day by hiding in rock crevices or under logs, fallen limbs, or trash. This species spends winter months in hibernation, relying on the fat stored in their thick, fleshy tail to support them. When inactive, banded geckos sometimes take shelter in desert tortoise burrows, or under rocks, debris, in crevices or underground. Defensive tactics observed by *Coleonyx variegatus* include squeaking, ejecting viscous liquids, and limb extension (SDNHM, 2007). When threatened, banded geckos usually use specific behaviors that

draw the predator's attention to the wiggling tail instead of the body. If caught by the tail, they will readily shed it; the tail may be regenerated but this can be costly physically for the geckos during the winter, since the tail holds their main fat reserve. Geckos are able to detect and identify potential snake predators by chemical means (Dial et al., 1989 *in* Degenhardt et al. 1996). Banded geckos are known to mark out discrete locations some distance away from their daytime retreats for defecation. The scent of chemicals in the feces may serve as a social "signpost" to other geckos, notifying them of the resident's occupancy.

REPRODUCTION: In Arizona, the reproductive season generally runs from April through September, but may be shortened depending upon seasonal environmental conditions. Peak egg-laying occurs during May and June, although it may extend to September. The female lays 1 to 3 clutches (average 2) of 2 eggs, with hatchlings emerging in 45 days (about 6 week incubation); females may store sperm from early mating to produce clutches later in the year. Hatchlings are 25-30 mm SVL and reach adult size by the following spring. (Degenhardt et al., 1996; Stebbins, 2003).

FOOD HABITS: The species is an insectivore, consuming insects and arachnids such as beetles, grasshoppers, insect larvae, termites, and solpugids and spiders.

HABITAT: This lizard occurs in a wide range of habitats, including creosotebush and sagebrush desert, pinyon-juniper woodland, and catclaw-cedar-grama grass associations in the eastern part of range and chaparral areas in the west; it occurs in both rocky areas and barren dunes (Grismer 2002, Stebbins 2003). Refuges during inactivity include rocks, burrows, and spaces beneath vegetative debris or trash.

ELEVATION: From below sea level in desert sinks to about 6,550 feet (2,000 m).

PLANT COMMUNITY: Occurs in wide range of plant communities across range.

POPULATION TRENDS: Unknown. NatureServe (2007), reports the global trend for the species as stable. They go on to say, the "Extent of occurrence, area of occupancy, and abundance probably are relatively stable from a range-wide perspective. Abundance and perhaps area of occupancy may be declining somewhat in the more populated portions of the range (e.g., California, parts of Arizona)."

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: None
OTHER STATUS:

MANAGEMENT FACTORS: Locally, in the northern part of the range, threats include conversion of habitat to human uses (e.g., development of retirement communities and associated infrastructure), but overall the species is not threatened (NatureServe 2021).

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS:

LAND MANAGEMENT/OWNERSHIP:

SOURCES OF FURTHER INFORMATION

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

Scientific name description: *Coleonyx* comes from the Greek *koleos*, meaning a sheath and *onych*, meaning nail or claw, while *variegatus* comes from the Latin *vario*, meaning variegated (www.sdnhm.org).

Banded geckos are most often encountered on the roads at night. They utilize the heat of the roads to warm themselves before searching for food.

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