



COASTAL WHIPTAIL

Aspidoscelis tigris stejnegeri (Van Denburgh 1894)

Status Summary

Aspidoscelis tigris stejnegeri is a Priority 2 Species of Special Concern, receiving a Total Score/Total Possible of 54% (59/110). It was not considered a Species of Special Concern during the previous evaluation (Jennings and Hayes 1994a).

Identification

Aspidoscelis tigris stejnegeri is a member of the *A. tigris* species complex, a group of 8–13 species that are all similar in appearance (Grismer 2002, Reeder et al. 2002, Stebbins 2003). This is a large (6–12.7 cm SVL), extremely active, diurnal lizard with a slim body and a long tail. The dorsal ground color is dark, with a series of lighter tan or beige spots forming stripes down the sides. These stripes may be broken and irregular, suggesting a checkered appearance (Stebbins 2003, Lemm 2006). The ventral coloration is whitish to cream with scattered black spotting which sometimes forms longitudinal lines between the scale rows (Stebbins 2003). The dorsal scales are granular, while the ven-

tral scales are relatively large, rectangular plates (Lemm 2006). The scales on the head are also enlarged dorsally and ventrally, forming plates in front of the gular fold (Lemm 2006). In the San Diego area, juveniles develop a distinctive

Coastal Whiptail: Risk Factors

Ranking Criteria (Maximum Score)	Score
i. Range size (10)	10
ii. Distribution trend (25)	20
iii. Population concentration/ migration (10)	0
iv. Endemism (10)	3
v. Ecological tolerance (10)	3
vi. Population trend (25)	10
vii. Vulnerability to climate change (10)	3
viii. Projected impacts (10)	10
Total Score	59
Total Possible	110
Total Score/Total Possible	0.54

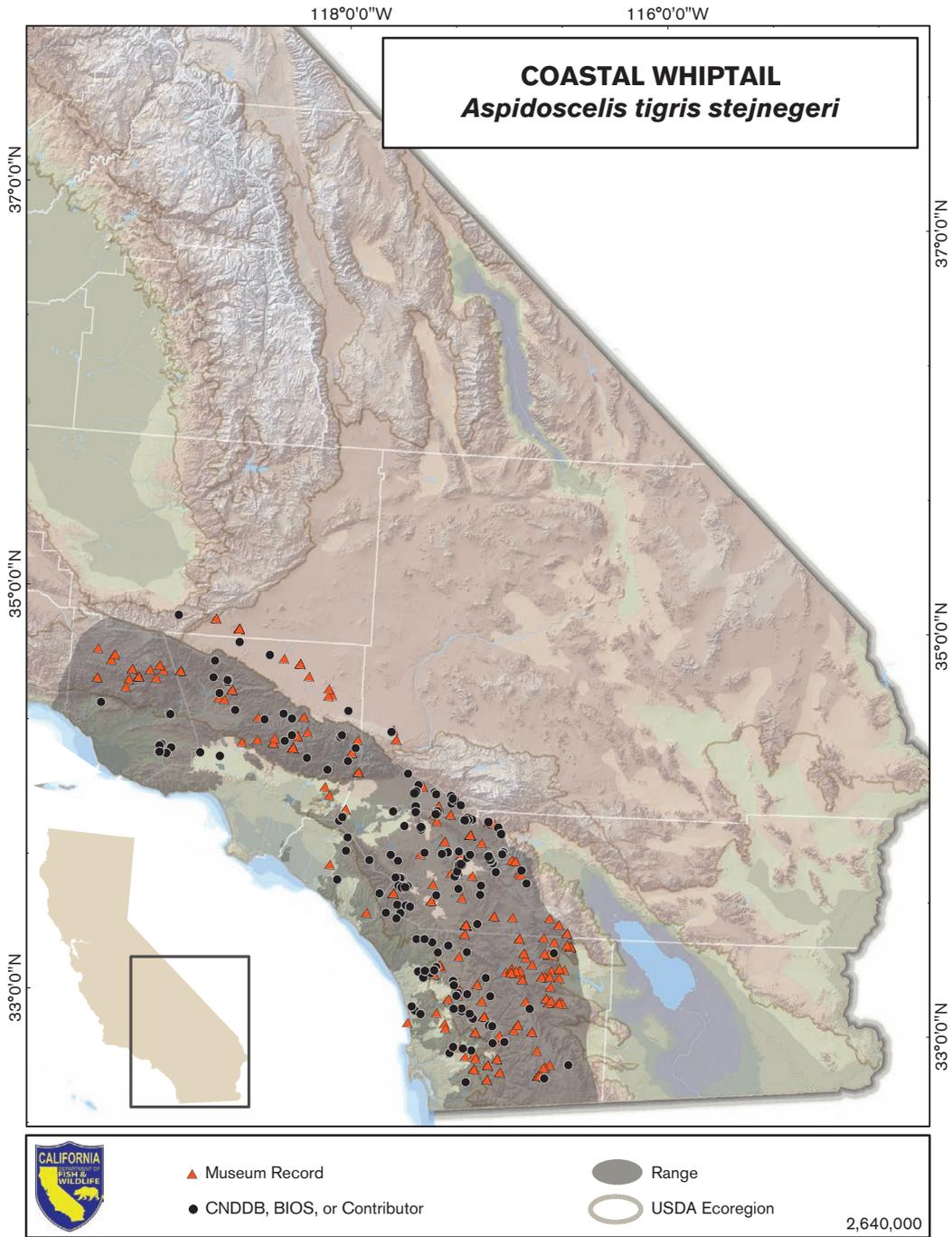


PHOTO ON PREVIOUS PAGE: Coastal whiptail, Los Angeles County, California. Courtesy of Robert Hess.

spotted pattern (Stebbins 2003; R. Fisher, pers. comm.).

Within its range, *A. t. stejnegeri* is only likely to be confused with its congener, the orange-throated whiptail (*A. hyperythra*). Both lizards have similar body shapes and scalation, though *A. hyperythra* is usually smaller (5–7.2 cm SVL) and is marked with well-defined light stripes and an intervening dark ground color (Stebbins 2003). In addition, the males of *A. hyperythra* develop a conspicuous bright orange coloration on the throat and underside of the body and juveniles have bright blue on the tail (Stebbins 2003, Lemm 2006).

Taxonomic Relationships

No modern studies of phylogenetics, phylogeography, or species boundaries exist within the *Aspidoscelis tigris* species complex, although the validity of this subspecies has not been questioned. Reeder et al. (2002) presented a phylogenetic analysis of whiptail lizards of the genus *Cnemidophorus* (sensu lato) and showed that the genus, as historically defined, was not monophyletic. To remedy this, they moved North American whiptails to the genus *Aspidoscelis*, an arrangement that is now widely accepted.

Some confusion surrounds the application of the name *A. t. stejnegeri* in the literature. A closely related whiptail occurs as an insular endemic on Isla Cedros, Baja California, Mexico, which most authors refer to as the subspecies *A. t. multiscutata* (previously, *Cnemidophorus tigris multiscutatus*). However, others have treated *A. t. stejnegeri* as a junior synonym of *A. t. multiscutata* and refer both the insular endemic and the coastal southern California forms to this latter name. Thus, some literature referring to the *A. tigris* subspecies in southern California uses *A. t. multiscutata*. This has sometimes led authors to consider the two names to refer to two separate biological taxa that both occur in southern California (Maslin and Secoy 1986). To clarify, there is only a single member of the *A. tigris* complex in coastal

southern California, and its currently accepted name is *A. t. stejnegeri*.

Life History

The life history of *Aspidoscelis tigris stejnegeri* is poorly studied, particularly within its California range, although it is probably similar to other subspecies within the *A. tigris* species complex. This is a diurnally active, wary lizard, which rarely stops moving during its activity period. *Aspidoscelis tigris stejnegeri* is a generalist predator that actively searches for insects, spiders, scorpions, and other small arthropods, including larvae (Grismer 2002, Lemm 2006). Some subspecies in the complex are known to prey upon small lizards, though this has not been documented in *A. t. stejnegeri* to our knowledge. *Aspidoscelis tigris stejnegeri* is a relatively high-temperature specialist that emerges to begin foraging in late morning as the air temperature rises. It can become active as early as mid-March and remain so until early October, although juveniles can remain active into November (Grismer 2002). When active, *A. t. stejnegeri* moves with a distinctive gait, taking a step, halting briefly, then moving again in rapid succession.

Reproduction takes place in spring and summer. Grismer (2002) documented gravid females and courtship behavior in mid-July in Baja California. Courtship may occur earlier in the California populations (Lemm 2006), although few data exist. Hatchlings begin to appear in late July and August in Baja California; again, this may occur earlier in California (Grismer 2002, Lemm 2006).

Habitat Requirements

Aspidoscelis tigris stejnegeri can be found in a wide variety of habitats within the California portion of its range, including coastal sage scrub, chaparral, riparian areas, woodlands, and rocky areas (Lemm 2006). Early observations of this subspecies in California, as well as data from the Baja California portion of the range, indicate that the species prefers sand-

and/or gravel-bottomed habitats and brushy areas associated with washes—habitats that have largely been destroyed by development in southern California (J. Grinnell, pers. comm. reported in Van Denburgh 1922). The species continues to persist outside of these preferred habitats, particularly in open chaparral and coastal sage with a gravelly substrate (Grismer 2002, Cooper and Matthewson 2008), although possibly at reduced densities. *Aspidoscelis tigris stejnegeri* requires large blocks of contiguous habitat and is rarely encountered where development and roads have fragmented the available habitat (Case and Fisher 2001, Brehme 2003, Cooper and Matthewson 2008).

Distribution (Past and Present)

Aspidoscelis tigris stejnegeri was formerly present in California from the southern slopes of the Transverse Ranges south to the United States–Mexico border and east to the Peninsular Ranges (Van Denburgh 1922). In Mexico, it ranges farther south between the coast and the western slopes of the Peninsular Ranges, eventually intergrading with the reddish whiptail (*A. t. rubida*) in the Vizcaino region of the central Baja California peninsula. In California the species occurs from sea level to about 1500 m (Lemm 2006).

The species is apparently extirpated, or nearly so, from large areas of the Los Angeles basin and the San Diego region due to habitat loss. By 1922, the species was already scarce in the vicinity of Pasadena, reportedly as a result of habitat loss due to development (J. Grinnell, pers. comm. reported in Van Denburgh 1922). Further declines have occurred throughout the Los Angeles basin and in coastal San Diego County (Stebbins 2003; R. Fisher, pers. comm.). Much of the inland range is still intact, though increasing wildfires may pose a threat (Rochester et al. 2010).

Trends in Abundance

Few data exist regarding historical abundance of this species, although it is susceptible to habitat fragmentation and development.

Cooper and Matthewson (2008) reported that the species is rarely encountered in small habitat patches and is an indicator species for large blocks of unfragmented coastal sage and chaparral habitat. Grinnell (1908) reported seeing “many of them” along the lower Santa Ana canyon, San Bernardino County, California, in 1905. This area is now heavily modified and does not provide ideal habitat for this taxon. By 1922, the lizard was reportedly “rare” in the vicinity of Pasadena because of habitat fragmentation and loss (J. Grinnell, pers. comm. reported in Van Denburgh 1922), although Bogert (1930) reported it as being moderately common throughout the southern foothills of the San Gabriel Mountains and most of the Santa Monica Mountains. Atsatt (1913) reported that it was frequently encountered throughout several areas of the San Jacinto Mountains, Riverside County, California. Because habitat fragmentation and loss have continued to occur throughout its range, it is reasonable to assume that declines are continuing.

Nature and Degree of Threat

The primary threat facing *Aspidoscelis tigris stejnegeri* is habitat loss and fragmentation due to development. This species occurs in some of the largest population centers within California and requires relatively large habitat blocks, making it particularly susceptible to urbanization. Further, the increasing frequency and intensity of wildfires in southern California may convert large portions of its remaining habitat to suboptimal grassland, causing further declines in range and/or abundance (Lemm 2006, Rochester et al. 2010, R. Fisher, pers. comm.). Projections from several climate models suggest that the frequency and intensity of wildfires in southern California could increase, although these results appear to be strongly dependent on the model that is employed (Cayan et al. 2008b, Franco et al. 2011, PRBO 2011). If this occurs, additional habitat destruction is likely to occur, negatively impacting this species.

Status Determination

Documented and ongoing declines in the distribution of this species, coupled with ongoing suspected declines in abundance, are the primary contributors to this status. *Aspidoscelis tigris stejnegeri* also has a relatively small range in California. Projected impacts from wildfire (which may increase with future climate change) coupled with the above impacts justify a Priority 2 status.

Management Recommendations

Conservation of remaining habitat is essential for the long-term protection of this species. Habitat protection efforts should focus on maintaining large, unfragmented blocks, and this species should be included in large-scale planning efforts like Natural Community Conservation Planning where the process permits. Establishing the minimum size of habitat blocks is a critical research need. Until these data become available, additional fragmentation and degradation should be prevented in habitat patches that currently support this taxon, and corridors of suitable habitat that con-

nect occupied patches should be identified, protected, and/or restored as necessary.

Monitoring, Research, and Survey Needs

Additional data on this taxon's home range size, habitat requirements, and movement ecology are required to determine the minimum patch sizes and maximum amount of fragmentation that can support viable populations. As for many active, wide-ranging species, the effects of road traffic on mortality would be valuable information for future management efforts. Abundance surveys should be conducted in remaining populations of *Aspidoscelis tigris stejnegeri*. Information on abundance should be correlated with the local habitat patch size to better understand the minimum patch size required for population persistence. Further research should examine the effect of moderate habitat fragmentation on existing populations if habitat corridors between patches can be maintained. Given the patchy nature of the species, a landscape genetic approach that quantified both connectivity and effective population sizes of remaining populations would be valuable.