



Sensitive Species of the Santa Ana Watershed

San Diego Horned Lizard (*Phrynosoma coronatum blainvillii*)



The San Diego Horned Lizard (*Phrynosoma coronatum blainvillii*) is a strange looking and yet adorable enough creature to elicit a smile on the face of most anyone coming across it in the wild. Seen along some isolated trail or vacant lot, this lizard's bizarre appearance and slow motion ways has captured the affection of many in coastal Southern California. Unfortunately, this captivation has contributed to the decline of the horned lizard because many people wanted them for pets, and either caught them or bought them on the black market; either way is illegal (Stienstra, 2000). But, this is only one of several reasons that led to the inclusion of this reptile on California's list of Species of Special Concern. The diet of the San Diego Horned Lizard is very specific and partly responsible for its severe decline. It is an ant-specialist and its preferred food, the harvester ant (*Pogonmyrmex* spp) (Ingles 1929, Pianka and Parker 1975), can make up 90% of its diet.

Unfortunately, harvester ants are being progressively eliminated by the non-native Argentine ant (*Linepithema humile*) (Jennings and Hayes, 1994), and the San Diego Horned Lizard has not been able to adapt to other ant food sources like the Argentine ant.

The San Diego Horned Lizard is a subspecies of the Coast Horned Lizard (*Phrynosoma coronatum*) and is the redominant subspecies found in southern California and in the Santa Ana River Watershed. Horned lizards, as a group, are the most distinctive of all North American lizards, and the San Diego Horned Lizard is no exception. They have a flattened, wide toad-shaped body with a tail that is broad at the base and short. The back of the head and temples are crowned with a prominent row of sharp pointed horns. The tail and sides are fringed with sharp spines. The sides on the San Diego Horned Lizard have a double row of spines and the head scales are smooth and convex, larger toward the center (Behler and King, 1979). Its color is usually matched to the soil color ranging from gray, tan, and reddish-brown to yellowish. Horned lizards can change color from light to dark, or back, in minutes (Stienstra, 2000).

The San Diego Horned Lizard comes out of hibernation in late March and is active in April through July when most of the adults begin aestivation (summer torpor akin to winter hibernation) (Hager, 1992). The adults become active again above-ground, usually in August for a short period of time and then return to over-wintering sites between August and early October depending upon local conditions and elevation (Klauber, 1939; Howard, 1974; Hagar, 1992).

Habitat

The San Diego Horned Lizard lives in open areas of sandy soil with low vegetation. It can also be found in denser shrublands where it uses the cover and its camouflage for protection. Individuals bask in the sun in the open for body temperature regulation. Ant colonies are usually found in these same open areas. Given these parameters and habitat needs, horned lizards are found in a wide variety of habitats including coastal sage, annual grassland, chaparral, oak woodland, riparian woodland, and coniferous forest (Grinnell and Grinnell 1907, Klauber 1939, Stebbins 1954). These lizards forage on the ground in open areas, in and around the plant life. In addition to harvester ants, they are known to eat other insects such as small beetles, wasps, grasshoppers, flies and caterpillars (Stebbins 1954).

Status and Distribution

The San Diego Horned Lizard was found historically from the Transverse Ranges in Kern, Los Angeles, Santa Barbara, and Ventura Counties southward throughout the Peninsular Ranges of southern California to Baja California, Mexico as

far south as San Vicente (Jennings 1988). The San Diego horned Lizard is thought to have disappeared from about 45 percent of its former range in southern California, where it was once common (Hayes and Guyer, 1981) in riparian and coastal sage scrub habitats on the old alluvial fans of the southern California coastal plain (Bryant, 1911, Van Denburgh, 1922).

These lizards are found throughout the Santa Ana Watershed except adjacent to the more heavily developed areas, particularly urban neighborhoods. SAWA staff and monitors for the Multiple Species Habitat Conservation Plan in western Riverside County (Dudek, 2002) have records of occurrence that span the watershed including in San Timoteo Canyon (Tim Romo), Temescal Canyon (Kerwin Russell, pers. com.), the Santa Ana Canyon (Terry Reeser), and in the Santa Ana Wildlife Area (Terry Reeser, Sue Hoffman).

Threats

The San Diego horned lizard is threatened by habitat loss and fragmentation. Studies have shown that this animal is unable to survive habitats altered by, or in close proximity to agriculture or urbanization (Jennings and Hayes, 1994). Other factors such as fire, grazing, off-road vehicles, and flood control structures have further degraded the dwindling and increasingly fragmented habitat (Jennings and Hayes 1994, Goldberg 1983). Predation by domestic cats also threatens the survival of this lizard. Equally as destructive as the development and urbanization is the encroachment into the habitat of the Argentine ant, moving in with the urbanization and then into the habitat and out-competing the native ants. Once the native ants are displaced a large (90%) portion of the diet of the horned lizard is gone.

Research and Management Needs

Although more study is needed in understanding the effects of exotic species on the Horned Lizard's diet, we do know the negative effects that development and various land uses have played in the decline of many of its populations. Understanding these effects and counter-managing them is probably the best we can do at this time. All of us can help by staying out of known occupied habitat and treading lightly in potential habitat of this lizard. In addition, avoidance or extreme care in the use of pesticides is important in preserving populations of the native ants. On a more general level, education of the public to respect this animal's place in the wild should be undertaken.

SAWA Contact

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