

California Wildlife Habitat Relationships System
California Department of Fish and Game
California Interagency Wildlife Task Group

MOJAVE FRINGE-TOED LIZARD

Uma scoparia

Family: PHRYNOSOMATIDAE
R015

Order: SQUAMATA

Class: REPTILIA

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DISTRIBUTION, ABUNDANCE, AND SEASONALITY

The Mojave fringe-toed lizard occurs in desert regions of Inyo, San Bernardino, Los Angeles, and Riverside cos. Elevational range extends from near sea level up to (3000 ft) (Stebbins 1985). It is restricted to fine, loose, wind-blown deposits in sand dunes, dry lakebeds, riverbanks, desert washes, sparse alkali scrub and desert shrub habitats (Heifetz 1941, Stebbins 1944, 1972, 1985, Norris 1958).

SPECIFIC HABITAT REQUIREMENTS

Feeding: Fringe-toed lizards are primarily insectivorous and their diet includes ants, beetles, grasshoppers, sand-dwelling cockroaches, hemipterans, spiders, antlion larvae, and caterpillars. Flower buds, stems, leaves and seeds of plants are also eaten (Miller and Stebbins 1964, Kaufmann 1982). Occasionally conspecifics and other species of lizards are eaten (Carpenter 1963, Sugarman and Applegarth 1980). Kaufmann (1982) found differences in the diets of adult male and female fringe-toed lizards during the breeding season. Males primarily fed on ants and plant material in the mornings, whereas females and juveniles ate ants and other insects throughout the day.

Cover: Fringe-toed lizards usually hid from enemies by burrowing in the sand ("sand swimming"), within 5-6 cm (2-2.4 in) of the surface. They are usually buried on the lee side of dunes to prevent excavation by winds (Cowles 1941, Stebbins 1944). Rodent burrows and the bases of shrubs are also used for cover (Stebbins 1944) and thermoregulation (Pough 1970). Adults hibernate in sand 0.3 m (12 in) deep, but juveniles are often found closer to the surface. Juveniles may not be completely torpid during the winter, having surface activity in response to fluctuating temperatures (Cowles 1941).

Reproduction: Eggs are probably buried in the sand. Reproduction varies from year to year depending on the amount of rainfall. More young are produced following wet winters, probably reflecting greater abundance of spring annuals and available insect food (Mayhew 1964).

Water: Water is probably obtained from food (Mayhew 1968).

Pattern: Fine, loose, windblown sand is required. Shrubs or annual plants may be necessary for arthropods found in the diet.

SPECIES LIFE HISTORY

Activity Patterns: Diurnal, daily activity patterns are temperature-dependent. During the breeding season males forage in the early morning, then move throughout their home ranges ("perimeter walk"). Females and juveniles forage until the late afternoon, even

when surface sands began to blow (Kaufmann 1982). In the early spring and fall, lizards are active mid-day. From May to September, they move about in the mornings and late afternoons, but retreat underground when temperatures are high. During March and April, they are active fewer hours than other species of fringe-toed lizards due to cooler temperatures in the Mojave desert. Hibernation occurs from November to February (Mayhew 1964).

Seasonal Movements/Migration: No data.

Home Range: Home ranges of large adult males were nonoverlapping and averaged 0.10 ha (0.25 ac), estimated by the minimum convex polygon method. Home ranges of subadult males averaged 0.02 ha (0.05 ac) and overlapped with those of larger males. The mean size of female home ranges was 0.034 ha (0.08 ac), which overlapped with adult male home ranges (Kaufmann 1982). A population density of 25.6 lizards per ha (10.4 per acre) was estimated, based on individuals captured at least twice. There was a sex ratio of 1:7 reproductive males to females (Kaufmann 1982).

Territory: Males walk the perimeters of their home ranges and exhibit frequent assertion displays (Carpenter 1963, Kaufmann 1982). Home range defense is believed to be associated with reproduction rather than resource protection. Females do not defend their home ranges, but exhibit specific site territoriality (Kaufmann 1982).

Reproduction: Males exhibit breeding colors from April to July. Females possess breeding color from April through September, with maximum color May through July. Oviductal eggs are present mid-May to mid-July and hatchlings appear by September (Miller and Stebbins 1964). Clutch size ranges from 2 to 5 eggs, but most average 2 or 3 eggs. Some females may produce more than one clutch per year. Most males and females reach sexual maturity their second summer after hatching, at lengths of 70 mm (2.8 in) and 65 to 70 mm (2.6 to 2.8 in), respectively.

Niche: The fringe-toed lizard is highly adapted for life in fine, loose sand. Adaptations are described in Stebbins (1944, 1954). Lizards escape predation by running bipedally at high speed and plunging into sand (Stebbins 1944, 1985). Predators include roadrunners, badgers, loggerhead shrikes, American kestrels, and coyotes. Snakes that prey on fringe-toed lizards include side winders, glossy snakes, and coachwhips (Stebbins 1944, Norris 1958, Funk 1965).

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