

Palm Springs ground squirrel, *Spermophilus tereticaudus chlorus**Philip V. Brylski*

Description: This is a small gray-olive or cinnamon ground squirrel with a long, round tail. The pelage is pale, without spots, and blends with sandy desert soils. TL 204-278 mm, tail length 60 to 112. Body mass varies with season, but ranges from 110 to 170 g. The head is small, rounded, ear pinnae are reduced, eyes are large, and forefeet claws are heavy and recurved. There are two annual molts, once in spring, the other in late summer. The skull of *tereticaudus* is usually smaller than that of *mohavensis* (34 to 39 mm versus 38 to 40 mm, respectively) (Ernest and Mares 1987).

Taxonomic Remarks: This species was first described by Elliot (1901) based on specimens collected in Palm Springs. *S. tereticaudus* and *S. mohavensis* differ karyotypically and genetically, but hybridize where their ranges overlap in the western Mojave Desert (Hafner and Yates 1983). The intergradation between *S. t. chlorus* and *S. mohavensis* was recognized by Elliot (1904). They are considered separate species (Grinnell and Dixon 1918, Hafner and Yates 1983). No genetic research or recent taxonomic revisions have been undertaken for *chlorus* and other races of *tereticaudus*.

Distribution: This species occurred historically in Riverside County in the Coachella Valley from the San Geronio Pass area at Whitewater Station and Windy Point, east and south through the Coachella Valley to Mecca.

Life History: This discussion is based on various studies of the natural history of *S. tereticaudus*, few aspects of which have addressed in *chlorus*. With regard to annual patterns, animals are inactive from August until about January, during which time they remain in their burrows most of the time. The species probably does not hibernate, but enters torpor (inactivity with reduced body temperature). *S. mohavensis* differs in the respect that it is a true hibernator. With regard to daily patterns, activity in *S. tereticaudus* peaks during the morning and late afternoon, apparently with more activity on overcast afternoons (references in Ernst and Mares 1987).

The Palm Springs ground squirrel and other round-tailed ground squirrels are omnivorous. Diet has been reported to include leaves, flowers, bark and bean pods of mesquite (*Prosopis* sp.), creosote fruits (*Larrea tridentata*), cultivated plants, seeds of annuals, carrion, ants, termites, grasshoppers. The diet of *S. tereticaudus* in Death Valley consisted of mostly of green vegetation, with lesser amounts of seeds and insects. The proportion of green vegetation in the diet was highest in summer (100%); the proportion of seeds was highest in winter (35%). They are agile climbers. Like other herbivores, they spend a large amount of their time foraging (approximately 50% according to Dunford (1977). *S. tereticaudus* probably obtains its physiological water requirements from leafy and succulent vegetation, and, in the absence of vegetation, apparently requires water.

Breeding occurs from early spring through June (pregnancy in early March, parturition in April/May, lactation through June) (Ernst and Mares 1987). Average reported litter size is 6.5 (range, 1-12). In one study, most litter size variation was correlated with rainfall (Reynolds and Turkowski 1972); increases in winter rainfall were accompanied by increases in litter size. The gestation period is from 25 to 35 days (the exact gestation is uncertain). In *S. t. neglectus* in southern Arizona, juveniles molted to adult-like pelage in late June (Dunford 1975).

In Arizona, densities of *S. t. neglectus* averaged 5.3/ha and 40/ha in two study sites, with a peak post-weaning density of 210/ha (Drabek 1973, Dunford 1977). Such densities are not sustainable, but they indicate the species is capable of large population sizes. At the same Arizona population,

juvenile females generally stayed in their natal territory and juvenile males dispersed.

Habitat: *S. tereticaudus* inhabits sandy arid regions of Lower Sonoran Life Zone. Its scrub and wash habitats include mesquite- and creosote-dominated sand dunes, creosote bush scrub, creosote-palo verde and saltbush/alkali scrub (Ryan 1968). Substrates include wind-blown sand, coarse sand, and packed silt with desert pavement (Ryan 1968). In areas of overlap with *Ammospermophilus leucurus*, *S. t. chlorus* occurs in the sandier floodplain and *leucurus* occurs in rockier habitats. Burrows are dug at bases of shrubs, often creosote bushes. They may also use the burrows of other rodents. They show semi-colonial social organization, but maintain burrows much of the year. Burrows may be shared from winter to early spring, but not while females are pregnant or after young are weaned.

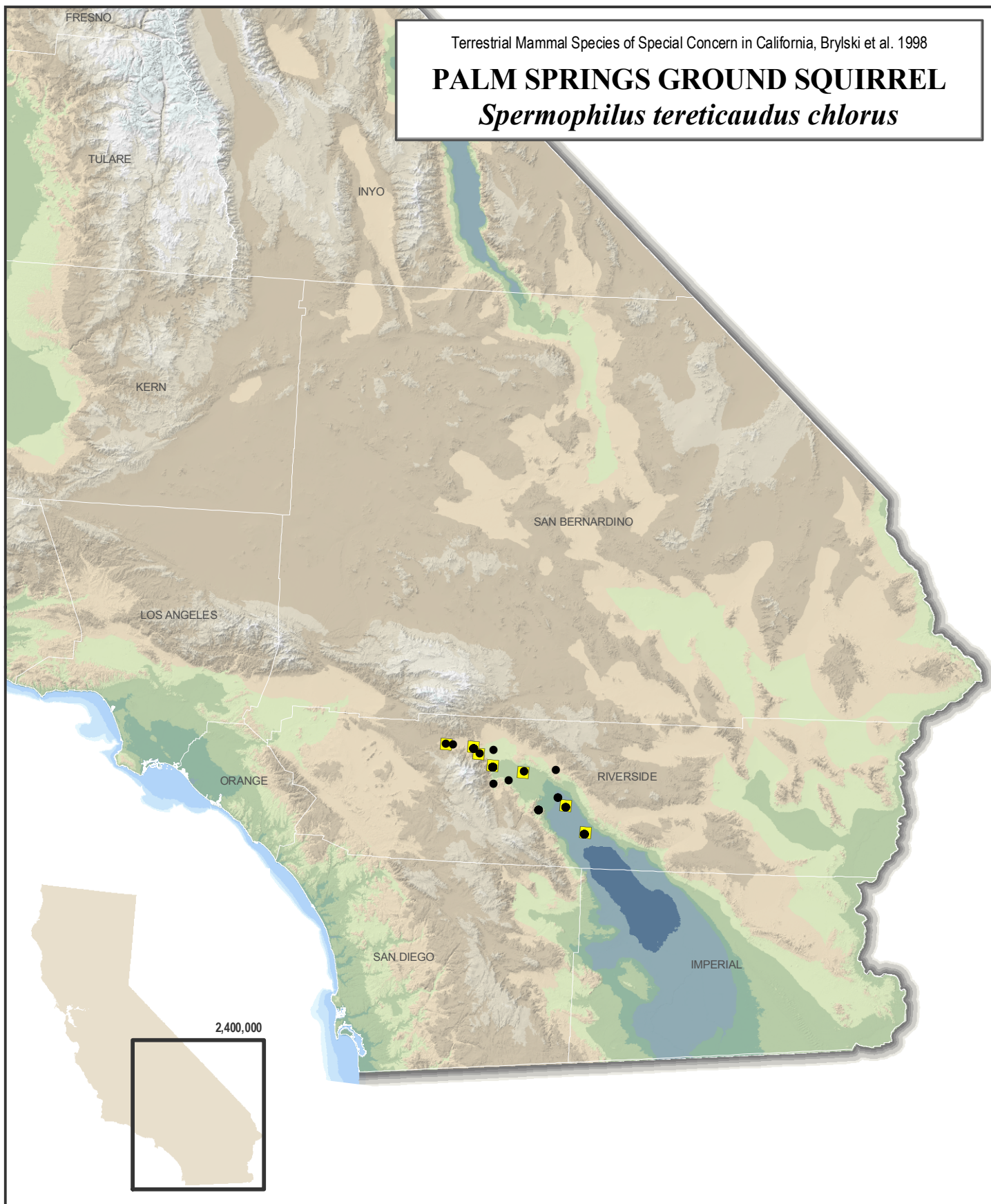
Status: Class II. Substantial loss of habitat to agricultural, suburban, and urban land uses has occurred within the species' historic range. Habitat loss has been high in historic sandy habitats in the western half of the valley, generally west of Highway 10 and from Indio south through Coachella, Thermal, and Mecca to the north end of the Salton Sea. Suitable habitat remains along the Whitewater River northeast of Palm Springs and east of Highway 10 from north of Indio to Desert Hot Springs and North Palm Springs.

Management Recommendations: Habitat protection is of the highest priority but currently, the species' distribution is poorly known. *S. tereticaudus chlorus* should be a priority target species in the Coachella Valley habitat conservation planning effort, now in the early stages of preparation. For this species to be effectively addressed under the HCP, studies are needed on the squirrel's distribution, abundance, and habitat requirements. It is likely that the cobbly soils and associated vegetation on the margins of the valley floor provide low to moderate habitat quality for the Palm Springs ground squirrel. The results of such studies are basic to designing regional conservation plans. A standard survey protocol should be adopted for *chlorus*, based on results of a field study comparing live-trapping and visual/auditory surveys techniques for providing indices of presence/absence and relative abundance.

Terrestrial Mammal Species of Special Concern in California, Brylski et al. 1998

PALM SPRINGS GROUND SQUIRREL

Spermophilus tereticaudus chlorus



- Locations verified by authors
(captures, observations, museum records)

■ CNDDDB 1978 and before