Channel Islands spotted skunk, *Spilogale putorius amphiala*

Paul W. Collins

Description: This is a medium-sized mustelid with a complex pattern of white markings on a black background consisting of four to six broken white stripes, a triangular white forehead patch, a series of shorter white stripes resembling spots, and white on part of the ventral surface and tip of the tail (Van Gelder 1959). It is distinguished from spotted skunk subspecies on the mainland by its shorter tail (95-175 mm) with less white ventral coloration (45% white compared to 55% white in mainland skunks), slightly larger size (222-317 mm BL), broader skull (38 mm facial breadth), and proportionately less white and more black in the pelage color (Dickey 1929, Van Gelder 1959, 1965, von Bloeker 1967). Like mainland subspecies, Channel Islands spotted skunks exhibit sexual dimorphism, with males averaging 642 g (range 566-793 g) and females averaging 500 g (Van Gelder 1959, Crooks 1994a). This skunk is considerably smaller (355-466 mm TL) than striped skunks (*Mephitis mephitis*) on the mainland and has softer, glossier pelage (Van Gelder 1959, Jameson and Peeters 1988).

Taxonomic Remarks: Grinnell (1933) considered *amphiala* a subspecies of *S. gracilis*, the western spotted skunk. Van Gelder's (1959) revision placed it in *S. putorius*, followed by recent treatments (Hall 1981, Wilson and Reeder 1993). Some workers recognize two species of spotted skunks on the mainland, *S. gracilis* and *S. putorius* (Hall and Kelson 1959; Mead 1968a; 1968b; Jones et al. 1975, 1992; Williams 1979). Resolution of this issue awaits further genetic and morphologic analyses.

Distribution: Channel Islands spotted skunks currently occur only on Santa Cruz and Santa Rosa islands where they are widely distributed (Crooks and Van Vuren 1994, C. Drost unpubl. data). Spotted skunks occurred on San Miguel Island, probably until the late nineteenth century. Fossil material was collected on San Miguel Island (Walker 1980) and a spotted skunk was reportedly collected from San Miguel Island sometime during the 1870s (Henshaw 1876). Intensive live-trapping of island foxes on San Miguel Island during the 1980s and 1990s failed to capture a single spotted skunk, which suggests that this taxon is extirpated from San Miguel Island.

Life History: Channel Islands spotted skunks are nocturnal. Activity begins at dusk, peaks during the early evening, and continues intermittently until dawn (Crooks 1994a, 1994b). On Santa Cruz Island, spotted skunks nest in cavities, burrows, and other natural crevices, as they do on the mainland. Dens are constructed in roots and earth under shrubs, cavities in rocks, open grassy areas, road cuts, human-made structures, and trunks and roots of oaks (Crooks 1994b, 1994c). Individuals use several dens distributed throughout their home range; some dens are used by two or more individuals either sequentially, or for females, simultaneously (Crooks 1994c).

The breeding season for spotted skunks on the islands is probably similar to spotted skunks on the mainland. Western spotted skunks mate in September and October, and following delayed implantation and a 210-310 day gestation, give birth in April and May to 2-6 young (Mead 1968b). Counts of three and five uterine scars have been recorded from two skunks collected at Santa Cruz Island in September (Pearson 1948 unpubl. field notes, Van Gelder 1959).

On the mainland, spotted skunks eat primarily insects and small mammals, as well as reptiles, birds, eggs, carrion, fruits and grains (Howard and Marsh 1982). Spotted skunks on the Channel Islands have similar diets as those reported on the mainland. Scat analyses of Channel Island spotted skunks on Santa Cruz Island showed they are carnivorous, consuming primarily deer mice (*Peromyscus maniculatus*) and insects along with occasional lizards (Crooks 1994b). Jerusalem crickets were the most frequent prey, but other prey included grasshoppers, crickets, beetles (scarab, darkling and

long-horned beetles), caterpillars, earwigs, and ants. Seasonally available fruits and berries were apparently absent from spotted skunk scats examined by Crooks (1994b). However, stomach contents from five skunks collected on Santa Cruz Island consisted of insects (Jerusalem crickets), deer mice, carrion, grapes (*Vitis* sp.), and summer holly (*Comarostaphylis diversifolia*) stems and berries (Pearson 1948, unpubl. field notes). Stomach contents from eight spotted skunks collected on Santa Rosa Island in 1927 contained 75% orthopterans (grasshoppers, crickets and Jerusalem crickets) and 25% cactus (*Opuntia* sp.) fruits (Sheldon 1927).

Although no density estimates are available for spotted skunks on the islands, they are relatively rare on Santa Cruz Island (Crooks 1994a), and apparently more abundant on Santa Rosa Island (Sheldon 1927). Mean home range size for spotted skunks on Santa Cruz Island during the wet season was 26.3 ha, and 61.1 ha during the dry season. Channel Island spotted skunks and island foxes have similar-sized and overlapping home ranges (Crooks 1994a, 1994b). However, these two taxa differ dramatically in their population densities, with spotted skunks being rare and island foxes being abundant (Crooks 1994a). This difference in density may be a result of the more specialized carnivorous diet of the spotted skunk compared to the more omnivorous diet of the island fox.

Habitat: Spotted skunks on the Channel Islands show habitat preferences similar to those reported for the mainland subspecies (Grinnell et al. 1937, Zeiner et al. 1990). Based on radiotelemetry studies, spotted skunks on Santa Cruz Island showed a preference for chaparral-grassland, open grassland, fennel-grassland, and ravines (Crooks 1994b, Crooks and Van Vuren 1994). On Santa Rosa Island, spotted skunks were found to be associated with rocky canyon slopes, cactus patches (Sheldon 1927), chaparral, coastal sage scrub, open woodland, other scrub-grassland communities, and riparian habitat along streams (C. Drost pers. comm.). On both islands, the species has also been recorded in or under human dwellings and ranch outbuildings (von Bloeker 1967, Laughrin 1982, C. Drost pers. comm.). The elevational range of the Channel Islands spotted skunk extends from sea level to approximately 600 m.

Status: Class II. The status of the Channel Islands spotted skunk is of concern due its restricted distribution, small population size (Crooks and Van Vuren 1994), and the loss and degradation of habitat resulting from more than a century of overgrazing by domestic stock (cattle and horses) and feral, nonnative herbivores (sheep, deer, and elk), and rooting by feral pigs. Other threats to this taxon come from the possible introduction of diseases, to which skunks are susceptible, from domestic cats and dogs brought to the islands as pets. The species occurs widely on Santa Cruz Island, but is uncommon to rare (Crooks 1994b), and apparently is more common on Santa Rosa Island. The capture of a single skunk during twelve years of intensive island fox trapping and fifteen years of observation led Laughrin (1982) to conclude that the skunk population on Santa Cruz Island was at a "low level." Crooks and Van Vuren (1994) recommended that this taxon be listed as a Threatened subspecies due to its rarity on Santa Cruz Island. The species may have been abundant in the past (Sheldon 1927). Spotted skunks on Santa Rosa Island also occur in low numbers, are widely scattered around the central portion of the island, and are most abundant in canyons along the north and northwest sides of the island (Crooks 1994b, C. Drost pers. comm.).

Despite the removal of nearly 38,000 feral sheep from Santa Cruz Island in the early 1980s (Schuyler 1993) and the termination of cattle ranching operations in 1988, spotted skunk habitat on Santa Cruz Island continues to be degraded by feral pigs and sheep grazing on the eastern third of the island. The rooting activities of feral pigs destroy skunk dens, and skunks are sensitive to competition with feral pigs for invertebrate foods.

Until The Nature Conservancy eliminates feral pigs from Santa Cruz Island, the spotted skunk

population on this island will continue to be threatened with possible extinction. The outlook for spotted skunks on Santa Rosa Island is somewhat brighter since the National Park Service eradicated feral pigs there in the 1980s (Halvorson 1994).

Management Recommendations: Studies are needed on the distribution and abundance of Channel Island spotted skunks, their natural history, and the impact of feral pigs and feral herbivores. These studies will provide a basis for the preparation of conservation and management guidelines for this taxon. The Nature Conservancy on Santa Cruz Island and the National Park Service on Santa Rosa Island should continue with feral animal eradication programs. The most immediate need is to remove feral pigs from Santa Cruz Island.


Terrestrial Mammal Species of Special Concern in California, Brylski et al. 1998
CHANNEL ISLANDS SPOTTED SKUNK
Spilogale putorius amphiala
SAN LUIS OBISPO
KERN
SANTA BARBARA
SAN BERNARDINO
VENTURA
LOS ANGELES
San Miguel Island
Santa Cruz Island
Anacapa Island
Santa Rosa Island
ORANGE
RIVERSIDE
Santa Barbara Island
Santa Catalina Island
San Nicolas Island
SAN DIEGO
San Clemente Island
1,800,000
RESOURCES AGENCY
CALIFORNIA
DEPARTMENT
FISH & GAME
Locations verified by authors
(captures, observations, museum records)
CNDDB 1979 - 1998
CNDDB 1978 and before
Wildlife Branch:KFien12109