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Disturbance of Small Mammal Live Traps by Spotted Skunks²

Abstract

In 1975, during a study of the effects of controlled slash burning on small mammal communities in the Coast Range of western Oregon, traps were disturbed, and trapped animals experienced unusual predation. During mark-recapture trapping in October, 34 percent of the live traps were disturbed, and mice had been partially eaten in an additional 6 percent of the traps. Although some traps had been pulled to mountain beaver burrows, the capture of two spotted skunks (*Spilogale putorius*) in large traps at the site suggested that this species could have caused the disturbance and predation.

Introduction

Skunks occur throughout Oregon, particularly west of the foothills of the Cascade Mountains. Spotted skunks (*Spilogale putorius*) are important predators of small mammals (Bailey, 1936; Selko, 1937), further evidenced by mammal remains in scats of prairie spotted skunks (Crabb, 1941).

Disturbance of small mammal traps and unusual predation on the trapped animals occurred in 1975 during an investigation to study how controlled slash burning affected small mammal communities in the Coast Range of western Oregon. Ground squirrels (chiefly *Spermophilus beecheyi*) and other animals commonly disturb traps, and weasels (*Mustela* sp.) kill and infrequently eat trapped mice. However, we never observed traps disturbed in this way during similar studies, and evidence suggested that spotted skunks may have caused the disturbance.

Methods and Materials

Logged in 1955, the study area (56 km west of Corvallis at T 11 S, R 9 W, S5, Willamette Meridian) had reverted to a brushfield. Red alder (*Alnus rubra* Bong.), cascara (*Rhamnus purshiana* DC.), and Douglas-fir [*Pseudotsuga menziesii* (Mirb.) Franco] became the dominant overstory species, with a dense understory composed mainly of salmonberry (*Rubus spectabilis* Pursh), vine maple (*Acer circinatum* Pursh), and swordfern [*Polystichum munitum* (Kaulf.) Presl.].

To live trap small mammals, we located circular trap lines about 100 m in diameter on treated (burned) and adjacent untreated areas. Each line consisted of 40 stations

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spaced 8 m apart with two Sherman type live traps (8 x 9 x 25 cm) at each station. In addition, a welded wire live trap (23 x 23 x 80 cm) was placed at every other station. Bait was a mixture of whole rolled oats and Douglas-fir seed in the small traps and apples in the larger traps. Censuses of the small mammal populations were taken by removal trapping in June, then by mark-and-recapture trapping for three days in each of four periods—two in August (before and after burning), and one each in September and October.

During removal trapping on the untreated area, we captured 154 small mammals of 11 species, primarily *Peromyscus maniculatus* (55 percent), *Sorex* sp. (20 percent), *Microtus oregoni* (10 percent), and *Eutamias townsendii* (8 percent). Although mountain beavers were abundant, none was caught.

On the untreated area, one trap was sprung at each of two stations during the first trapping period in August and at each of eight stations during the second period. In September, 28 traps were disturbed at 20 stations (both traps at eight consecutive stations).

On 28 October, 11 traps at 8 stations were sprung, and 16 traps with *Peromyscus*, one with *Eutamias*, and one with *Microtus* were disturbed. The small mammals in these traps either were caught in the doors or their partially eaten remains were found inside the traps. On 29 October, 28 traps at 18 stations were sprung, and 11 of those traps had been pulled from 1-3 m to mountain beaver burrows. To determine what predators might be attacking the trap line, we baited the welded wire traps with mice. On 30 October, 27 traps at 22 stations were sprung, and 11 other traps held mice that had been killed and partially eaten. In addition, we caught two spotted skunks.

On the treated area, no traps were disturbed and no skunks were caught during these sampling periods, although small mammals were abundant before and after burning.

Discussion

Apparently, small mammal traps on the untreated area were disturbed in October 1975 by determined predators that had learned how to open the trap door and prey upon the trapped animals; yet these predators were large enough to avoid being captured themselves. Kale (1969) reported similar disturbance of small mammal traps. After 45-65 percent of 288 traps had been disturbed in four nights, he caught eight spotted skunks in larger traps set between trapping stations. Myton (1971) captured three striped skunks (*Mephitis mephitis*) in large live traps set after small mammal traps were repeatedly disturbed.

Pfeiffer (1953) caught 13 other mammalian species in unbaited steel traps set for mountain beavers, and 9 of the 36 animals caught were spotted skunks. Spotted skunks frequent the runways of mountain beaver, and Lovejoy (1972) reported spotted skunks as the most common burrow associate of mountain beavers. In this study, the transfer of 11 traps to the runways of mountain beaver burrows incriminates spotted skunks as the predators. During other studies, we occasionally caught both spotted and striped skunks in welded wire traps baited with apples and set in sites that ranged from recent clearcuttings to mature coniferous stands. In one unusual night we caught five spotted skunks in a group of 20 traps set in burrows to catch mountain beavers. Con-

sidering the two spotted skunks caught in our larger traps during this study, we believe that those animals were the predators disturbing our traps.

Thirty-four percent of the traps were disturbed each of the three trap nights in October. In addition, 6 percent more of the traps had small mammals that were partially eaten. The data from many trapped animals were lost to the predators.

By disturbing traps and preying on trapped animals, spotted skunks may cause unexpected interference with small mammal studies. Such disturbances may be avoided by using a device that will prevent the spotted skunks from getting access to the small mammal traps (Getz and Batzli, 1973).

Literature Cited

- Bailey, V. 1936. The Mammals and Life Zones of Oregon. U.S. Dept. of Agric., N. Am. Fauna 55. 416 pp.
- Crabb, W. D. 1941. Food habits of the prairie spotted skunk in southeastern Iowa. J. Mammal. 22:349-364.
- Getz, L. L., and G. O. Batzli. 1973. A device for preventing disturbance of small mammal live traps. J. Mammal. 55:447-448.
- Kale II, H. W. 1969. An Evaluation of the International Census of Small Mammals. Entomological Research Center, Florida State Board of Health, Vero Beach. Unpublished manuscript.
- Lovejoy, W. 1972. A Capture-Recapture Analysis of a Mountain Beaver Population in Western Oregon. Oregon State Univ., Corvallis, Ph.D. thesis. 105 pp.
- Myton, B. 1971. Utilization of space by *Peromyscus leucopus* and other small mammals. Ecology 55:277-290.
- Pfeiffer, E. W. 1953. Animals trapped in mountain beaver (*Aplodontia rufa*) runways, and the mountain beaver in captivity. J. Mammal. 34:396.
- Selko, L. F. 1937. Food habits of Iowa skunks in the field. J. Wildl. Manage. 1:70-76.

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