

GROUND-CACHING AND COVERING OF FOOD BY A RED-BREASTED NUTHATCH

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Abstract.—A male Red-breasted Nuthatch (*Sitta canadensis*) was observed caching and covering a pine seed in the ground in Montana, apparently the first reported act of ground-caching for a North American nuthatch. It is suggested that (1) covering of caches is widespread in this species, (2) ground-caching by nuthatches may occur more frequently than previously indicated in earlier reports and (3) such activity could contribute to the successful dispersal and germination of tree seeds.

DEPÓSITO Y CUBIERTA DE COMIDA EN EL SUELO POR PARTE DE *SITTA CANADENSIS*

Sinopsis.—Un individuo de *Sitta canadensis* fue observado depositar en el suelo y luego cubrir una semilla de pino. Aparentemente, este es el primer informe de depósito y cubierta de semillas por parte de la especie en discusión. Se sugiere que (1) el depósito y cubierta de comida es una práctica común en la especie, (2) el depósito y cubierta de comida en los suelos muy bien pudiera ser una práctica más común que lo previamente informado y (3) esta actividad puede contribuir a la dispersión y germinación de semillas.

Caching of food stores is a common, widespread behavior of North American nuthatches (e.g., Grubb and Waite 1987, Kilham 1974, Petit et al. 1989, Pravosudov and Grubb 1993, Sealy 1984, Skutch 1969); reported cache sites are trunks and limbs of various species of trees. Apparently, ground-caching by North American nuthatches has not been reported previously, which prompts this report.

OBSERVATIONS

On 3 Oct. 1994 in Marshall Canyon, Missoula County, Montana (46°54'N, 113°55'W) I encountered a group of four Red-breasted Nuthatches (*Sitta canadensis*) actively foraging on trunks and limbs of ponderosa pine (*Pinus ponderosa*). My attention was drawn to the closest individual, a male, when at 1537 hours MDT he flew to the ground near the base of the tree in which he had been foraging (about 8 m from me) and began flipping through needle litter. After 30 s he flew 2 m to the upper portion of a steep (45°) dirt cutbank, carrying an "unwinged" pine seed (all or part of the wing was missing) in his beak. In the next 20–30 s he probed half a dozen times in the dirt in an area <0.5 m² before he placed the seed in the ground at beak-depth (about 1.5 cm). He then picked up a small pebble (0.2–0.3 cm diameter) and tamped it into the hole with a few beak-jabs, repeated the process with a second pebble of equal size, then flew to another pine nearby and continued foraging up the trunk.

DISCUSSION

The above incident is noteworthy for at least three reasons. First, although covering of food caches is a widespread behavior in the White-

breasted Nuthatch, *S. carolinensis* (Kilham 1974, Petit et al. 1989, Skutch 1969), apparently only Kilham (1974) has noted it previously for Red-breasted Nuthatches (in New Hampshire and Maryland). Thus my observations indicate that covering of food caches is a trait not restricted to a few populations or a single region within the range of this species. Furthermore, covering of caches is not behavior peculiar to one individual in this area. Subsequent observations of caching ($n = 17$) included seven additional cases, by as many individuals of both sexes (in three different flocks), where cached food was covered; food was cached under trunk and limb bark of pines and covered with small fragments of bark. In each case, including the ground cache, material used to cover the cache was obtained without causing the bird to move to a new position (see Kilham 1974). Frequency of covering food caches (44%) by Red-breasted Nuthatches in Montana was similar to that reported in a larger sample for White-breasted Nuthatches in Ohio and Arkansas (Petit et al. 1989). Why nuthatches do not cover most or all food caches remains unknown; individuals that cover one cache may fail to do so the next time they cache an item (pers. obs.).

Second, caching of food stores in the ground may occur more commonly than current reports would suggest. It is easy to overlook foraging nuthatches when they are on the ground, and often difficult to see what they are doing when noticed. I am unaware of quantitative data showing the frequency of visits to the ground by nuthatches, but in certain circumstances, such as that observed by Kilham (1975) when an accumulation of tree seeds became available on the ground, ground-foraging was a regular occurrence. In addition to the male described previously, I saw six individual nuthatches make visits to the ground during 40 min of direct observation. In one case I saw a bird flip through needle litter, pick up a pine seed, and carry the seed to a tree, but I was unable to determine what the other five nuthatches on the ground were doing, my view being obstructed by vegetation or deadfall.

Third, caching seeds in the ground could contribute to the successful dispersal and subsequent germination of forest tree seeds. Nuthatches reject some seeds (pers. obs.) for unknown reasons; the seeds chosen for caching may have a higher probability of being viable. For the ground-caching reported above, the pine seed was buried in the bank of a roadcut, a microhabitat that appears to favor the germination of conifer seeds, judging from the high density of seedlings in these sites in this region (pers. obs.).

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