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Short communication

WOLF AND FOXES REJECT DISEASED REINDEER CALF

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Pasvik in South Varanger Municipality, Finnmark County, in extreme NE Norway (69°10'N, 29°05'E) is an area which still has considerable domestic reindeer *Rangifer tarandus* L. herding, but where grazing with sheep *Ovis aries* L. has been abandoned because of severe predation by large carnivores (especially brown bears, *Ursus arctos* L.) (Wikan et al. 1980). South Varanger is a relatively flat area covered mostly with pine — lichen forests, and used primarily for reindeer herding by the local people. The area has several times been visited by wolves *Canis lupus* L. during the 1980s. In 1979—80 (Wikan and Ivar Mysterud unpubl.) and in 1981—82 (Wikan and Mysterud 1982) the area was visited by lone wolves that were implicated in predation incidents and later shot. The 1979—80 wolf was the first individual that had been shot in the area since 1941 (Wikan and Mysterud 1981). Pasvik was visited by a third canid individual in 1983, however, it was not positively identified to be a wolf and its activity in the area was not examined any further.

During the winter 1986—87 the area was visited by the third identified lone wolf. This individual was repeatedly seen and more or less continuously tracked on snow (ca. 627 km) for two months. A detailed investigation of the wolfs's movement pattern and behavior was conducted during this period (Mysterud 1992). During a short period it was accompanied by another canid which had significantly smaller tracks, and could well have been another wolf, but was never identified. This unknown canid could have been a free-roaming «Russian dog», a local term for free-roaming dogs from Russia (sometime mistaken for wolves), most of which have proved to be animals that have escaped from Soviet Border Patrol Stations. The 1986—87 wolf entered the area from the Soviet Union, annd repeatedly made exploratory excursions between Norway, Finland and the USSR. Trackers mapped information on the wolf's landscape use and collected behavioral data.

At one instance tracks showed that the wolf had circled a diseased domestic reindeer calf, which lay helpless in the snow. It was identified only by tracks during the incident of calf inspection, but was four days later sighted for the first time. The wolf approached the calf three times without any attempt to attack or kill it (Fig. 1). The minimum distance measured between the calf and the wolf tracks was 8—10 m. The observation was puzzling because the same wolf actively hunted reindeer during that winter, killing and to different degrees consuming at least 8 other individuals. No people had visited the injured calf prior to the wolf's inspection of the site so the described incident was not affected by humans.

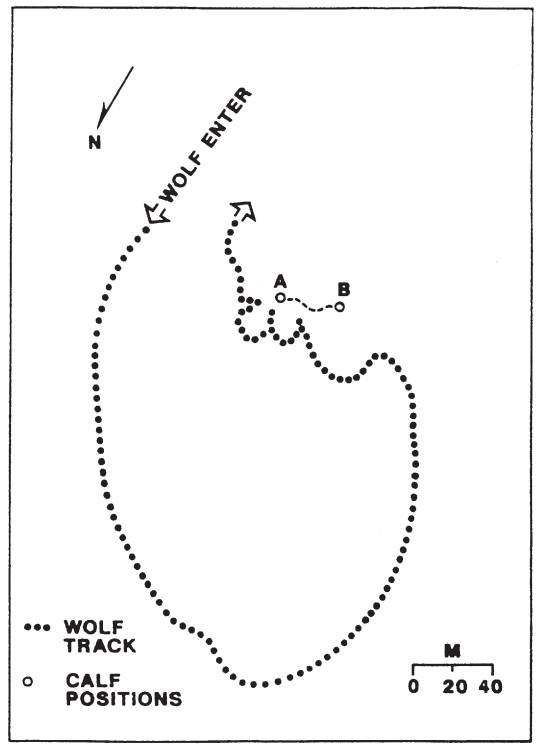

Fig. 1. Wolf tracks during inspection of the diseased calf in South Varanger, northern Norway. After the wolf left the site the calf had moved from A to B.

The diseased calf was killed and removed from the site together with the carcasses of two additional wolf-killed reindeer from adjacent areas. The calf smelt strongly when found. The field personnel observed a crunched lower jaw and blood on the neck. The diseased calg carcass was inspected by a veterinarian, but the project did not received any necropsy report. However, the veterinarian told us that it was emaciated and dehydrated, and with abdominal accumulation of fluids. No inflammation was verified and failure in the circula-

tory system was suggested as an important contributary cause of the calf's illness (Kolbjørn Grøndalen, personal correspondence 1992).

After inspection the diseased calf and the addition two reindeer carcasses from healthy animals were left outside the field assistant's house allowing Red foxes *Vulpes vulpes* L. and other scavengers to exploit them.

It was observed that Red foxes visited and ate readily from the two carcasses of healthy animals, but rejected the diseased calf carcass, leaving it untouched for at least several weeks.

Red foxes are commonly killed for pelts during winter in Norway by hunters posting in barns or houses, watching baits during the night. Such hunters in South Varanger reported that diseased carcasses are not good as baits because predators and scavengers are more hesitant in eating from them. Injured animals killed (i.e. after traffic accidents etc.) or remains from slaughtered animals are reported to be much more effective as baits.

Why did the predator not kill the calf, and the scavengers not readily utilize it? Could a lack of normal flight response from the calf make the wolf suspicious? It must be acknowledged that for both the wolf and fox interactions with the devoured calf there were apparantly relatively abundant alternative food sourves to choose from. Still, the literature on carnivores generally supports the notion that such predators readily attack, kill and eat any diseased prey animal (e.g. Ewer 1973, p. 149). Since this is now obviously not always the case, we raise questions as to how frequently such rejections occur, under what conditions and why?

From the standpoint of evolutionary ecology and natural selection of behaviour, this rejection of the diseased calf is an interesting observation. It is possible that certain diseases produce chemical agents, or certain bacterial metabolites produce odors that trigger aversive reactions in predators? Do scavengers differentially utilize carcasses dependent upon cause of death? As little seems to be known concerning cost and benefit of utilizing diseased carrion, we believe closer investigation is warranted and recommend that field workers make efforts to document the frequency of behaviour such as that described here.

ACKNOWLEDGEMENTS

We are indebted to an anonymous referee for several useful comments to two earlier drafts of this note.

SAMMENDRAG

En enslig ulv *Canis lupus* L. besøkte Pasvik i Sør-Varanger kommune, Finnmark fylke i to måneder vinteren 1986—87, der den periodevis ble sporet som ledd i atferdsstudier. Her rapporteres en hendelse her denne ulven fant en syk, levende reinskalv det luktet sterkt av, og som den ikke rørte. Kalven ble seinere avlivet og plassert nær bebyggelse sammen med kadavrene av to friske rein ulven hadde drept. Rødrev i området spiste villig av de sistnevnte kadavrene, men ikke av den syke reinen. Feltforskere oppfordres til å undersøke og gi rovdyrs atferd overfor kadavre av syke dyr økt oppmerksomhet.

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