

## Arctic Fox, *Alopex lagopus*, Predation on Lesser Snow Geese, *Chen caerulescens*, and their Eggs

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At Egg River Colony on Banks Island, we observed previously undocumented predation by Arctic Fox on Lesser Snow Geese and their eggs. On separate occasions, we observed (1) an Arctic Fox attack and kill a nesting Lesser Snow Goose and (2) an Arctic Fox take eggs from Lesser Snow Geese as birds were pushed off nests by a charging Muskox. Despite several studies on interactions between Arctic Foxes and nesting geese, there is, to our knowledge, no documented observation of an Arctic Fox killing a nesting goose. Thus, we suggest such mortality to be relatively uncommon and most goose parts in Arctic Fox diets to be the result from scavenging of goose carcasses, or killing of goslings and molting adults during the brood-rearing season. The observation of the fox taking eggs from geese as they were pushed off nests by a Muskox illustrates the opportunistic nature of Arctic Foxes not only in choice of diets, but also in how foods are acquired.

**Key Words:** Arctic Fox, *Alopex lagopus*, Lesser Snow Goose, *Chen caerulescens*, Muskox, *Ovibos moschatus*, foraging behaviour, opportunistic behaviour, predation, disturbance, scavenging, Banks Island.

Arctic Foxes (*Alopex lagopus*) are opportunistic predators and scavengers that rely heavily on small mammals throughout most of their range (Chesemore 1968; Macpherson 1969; Speller 1972; Kennedy 1980; Garrott and Eberhardt 1987; Fay and Stephenson 1989). However, other prey items, such as birds and their eggs, and carrion from sea mammals and marine invertebrates, can be important in years and areas of low lemming numbers (Chesemore 1968; Garrott and Eberhardt 1987; Fay and Stephenson 1989; Stickney 1991; Prestrud 1992; Hersteinsson and MacDonald 1996). In fact, Prestrud (1992) suggested that ability to learn new hunting skills and exploit local variation of foods are crucial factors for survival of Arctic Foxes.

In some areas, geese constitute an important part of Arctic Fox diets (Stickney 1991; Prestrud 1992; Hersteinsson and MacDonald 1996; Bantle and Alisauskas 1998). However, despite several studies on interactions between Arctic Foxes and nesting geese (e.g., Speller 1972; Stickney 1991; Syroechkovskiy et al. 1991; Prestrud 1992), there are no reported observations of Arctic Foxes killing nesting geese. To our knowledge, Speller's (1969) report of an Arctic Fox killing a molting flightless goose is the only documentation of an Arctic Foxes killing an adult goose.

Observations reported here were made at Egg River Colony on Banks Island (72°25'N, 124°32'W) and was part of a study on productivity of Lesser Snow Geese (*Chen caerulescens*) on Banks Island, Northwest Territories. Egg River Colony is the largest Lesser Snow Goose colony in the Pacific Flyway (Kerbes 1994) and consisted of about 400 000 nesting Lesser Snow Geese in 1996 (Samelius and Alisauskas 1997\*).

On 26 June 1996, GS observed an Arctic Fox attack and kill an incubating Lesser Snow Goose. This observation was made in late incubation and occurred about 05:20. It was observed with a spotting scope (15–45×) from a large hill at a distance of approximately 0.5 km. The bird that was killed was a female whose mate was temporarily absent (but see below). As the female was attacked, she came out about 1–2 m from her nest to defend against the fox and was killed by the fox jumping on to her, holding her, and biting her to death. The fox fed on the bird for about 1–2 minutes, then took an egg from the nest and left to cache the egg. When the fox got back from caching the egg, a Glaucous Gull (*Larus hyperboreus*) had landed by the nest and removed two eggs out of the nest bowl. The fox fed on one of these eggs for about 2 minutes, then took another egg out of the nest and left with the egg in its mouth. The male goose returned to the nest about 10 minutes after the fox had left. By then, the gull was feeding on the carcass of the dead female.

On 28 June 1996, ML observed an Arctic Fox take eggs from two different Lesser Snow Goose nests as parents were pushed off nests by a charging Muskox (*Ovibos moschatus*). This occurred on separate occasions and each time each pair lost one egg. This observation was made in late incubation and occurred between about 02:00 and 03:00. It was observed with a spotting scope (15–45×) from a large hill at a distance of approximately 0.5–1.0 km. The charging Muskox was a subadult animal that was part of a herd of 9–10 animals that slowly moved through the colony. The fox was observed following the herd for 1 hour and 12 minutes and was never more than 0.5 km away from the herd. Muskoxen were seen in the colony on several occa-

\*See Documents Cited section



sions, but the incident reported here was the only time that Muskoxen charged birds.

The observation of the fox killing the goose illustrates that Arctic Foxes occasionally kill nesting geese (as suggested by Syroechkovskiy et al. 1991 and Prestrud 1992). However, considering how seldom this is observed, it appears to be relatively uncommon and most interactions between Arctic Fox and nesting geese are likely non-fatal. This suggests that the high occurrence of goose parts in Arctic Fox diets in some areas (Stickney 1991; Prestrud 1992; Hersteinsson and MacDonald 1996; Bantle and Alisauskas 1998) is mostly the result from scavenging of goose carcasses, or killing of goslings and molting adults during the brood-rearing season.

The observation of the fox taking eggs from geese as they were pushed off nests by a Muskox further illustrates the opportunistic nature of Arctic Foxes and shows that they can learn to associate disturbance with food. Arctic Foxes occasionally take eggs from geese disturbed by human activity (suggested in Prestrud 1992; GS and ML personal observation; R. T. Alisauskas, Canadian Wildlife Service, Saskatoon, personal communication; S. M. Slattery, University of Saskatchewan, Saskatoon, personal communication). However, to our knowledge, this is the first documentation of an Arctic Fox opportunistically taking advantage of disturbance caused by Muskoxen to facilitate its foraging. Thus, it appears as though Arctic Foxes are opportunistic not only in their choice of diets, but also in how foods are acquired.

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