



DISPERSAL AND MIGRATION OF GROUSE IN BOREAL FORESTS

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Grouse (*Tetraonidae*) are resident game birds that mostly show their longest movements during dispersal. Natal dispersal is the permanent movement of an individual from its birth site to a breeding site, and the ultimate causes of dispersal include competition for mates or resources and avoidance of inbreeding. Dispersal may have large-scale synchronizing effect on grouse population dynamics, however, habitat fragmentation may weaken the synchrony by hindering dispersal. In addition, grouse numbers on heavily hunted areas are maintained by dispersal from adjacent areas.

Data on grouse wing-tagged as chicks in 1947–61 in Finland and Sweden show that the median dispersal distances of young female capercaillie *Tetrao urogallus* and black grouse *T. tetrix* were more than 10 km, while males mostly dispersed much less. I studied the movement patterns of female black grouse radio-marked during 1990–93 in eastern central Finland. The median net distance between the winter range and nest site was 9.2 km for yearlings and 2.6 km for adults, and the maximum distances recorded were 33.2 and 29.6 km, respectively. Females that moved less than the median distance 9.2 km in spring as yearlings tended to show fidelity to their first winter range. In contrast, females that moved more than 9.2 km as yearlings mostly switched to using a new winter range. Adult females showed fidelity both to breeding and winter range. The longest migratory distance of an adult female between winter and breeding range was 19 km. I conclude that female black grouse had no movement problems in the study area fragmented by forestry. On the other hand, individual females showed various movement patterns within the same general area, which



suggests that some other factors than the spatial arrangement of seasonal habitats were more likely to cause differential movement patterns. The local density of breeding yearling females may depend on breeding success over a large area the previous year.



EXPERIENCE OF USING HUNTING DOGS IN THE STUDY OF WINTERING AND BREEDING OF LADOGA RINGED SEAL

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Using hunting dogs in counts of various animal species is an old, traditional method of zoological research. This method has proven effective also in the study of the biology of some marine mammal species, first of all pinnipeds.

On the ice of the Canadian Arctic, researchers employed dogs to find ringed seal breathing holes hidden under snow (Hammill and Smith 1990). Zheglov and Chapskiy (1971) used dogs in similar studies in bays of the Baltic Sea. Dogs were involved in surveys of the White Sea ringed seal on land-fast ice of Solovetsky Islands in the 1970s (Lukin et al. 2006). Finnish researchers have attempted to use dogs in studying the wintering of the Baltic ringed seal on the Gulf of Bothnia ice (Kunnasranta, oral communication).

The patterns of wintering and breeding of the Ladoga ringed seal were first investigated with the help of dogs in the northern part of the lake in the first half of April 2009. The technique we have used previously was employed (Kunnasranta et al., 2001). In addition, we brought hunting dogs in to find seal lairs in the spring of 2009. We used