Parasitic disease was density-related since the abundance of grouse in late-winter was found to be directly related to the extent of infection with *Ascaridia bonasae* in young birds the following summer. Parasitic nematodes and cestodes were commonly encountered, the incidence dependent upon the age of the bird and the time of the year.

Fluctuations in numbers did not appear to have been caused by hunting losses. The decline noted was caused by increased winter and summer-brood mortality. Once the population reached a low ebb, high reproductive gain and decreased overwinter losses tended to bring about a recovery. Parasitic disease and May temperatures appear to play a role in these population responses noted.

Hunting, by artificially reducing density, should serve a useful purpose by removing or decreasing some of these density-dependent factors affecting production and survival. A spring hunting season on drumming cocks in northern Wisconsin may be possible because the harvest of this segment of the population during the fall season is disproportionately low.

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