
Direct and indirect effects of ungulates on forest birds' nesting failure? An experimental test with artificial nests

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Résumé

Increasing deer and wild boar populations in North America and Western Europe are suspected of threatening low-nesting forest birds. Ungulates may directly affect these birds by predateding eggs or chicks, or indirectly attract other mammalian or avian predators or reduce nesting site availability and habitat quality. To test some of these various mechanisms in two French forests, 528 artificial nests, 77 of which (14.6%) were monitored with camera traps, were set up in 44 plots which were either unfenced or fenced to respectively include or exclude ungulates. We used generalized linear mixed models to relate the nest failure rate to indices of plot frequentation by ungulates and other nest predators, to vegetation structure and to local bird community richness indices. Nest failure rate was significantly higher in the unfenced plots (39%) than in the fenced plots (32%) but this was related neither to red deer nor to wild boar frequentation of the plots. Furthermore, levels of frequentation for other mammalian and avian predators tended to be positively correlated to ungulate frequentation but not to nest failure rate. Nest failure rate depended on both nest height and shrub cover: nests on the ground (31% failure rate) were less predated or disturbed than nests in low shrubs (41% failure rate). Nests surrounded by low shrub cover experienced a slightly higher predation risk. We conclude that ungulates have a limited influence on nest failure for low-nesting forest birds; in particular, they seem to contribute very little to egg predation compared to other predators.

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