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AUTUMN DISPERSAL AND WINTER RESIDENCY DO NOT CONFER REPRODUCTIVE ADVANTAGES ON FEMALE SPRUCE GROUSE

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Abstract. Many, but not all, juvenile Spruce Grouse (*Falci pennis canadensis*) disperse from their natal range in autumn. In spring shortly before breeding, some of these autumn dispersers will disperse a second time from their winter range, whereas others make their first dispersal from natal range. I postulated that dispersing first in autumn provides greater experience on a potential breeding area than immigrating to the breeding area in spring. I predicted that autumn-immigrant females would show a higher percentage of females nesting, would nest earlier, and would produce more juveniles into late summer than would immigrants in spring. Data were available for females on three areas widely spaced across their geographic range. Immigrants contributed most to production. Parameters did not vary greatly among study areas. Combining all areas, 68% of autumn immigrants and 69% of spring immigrants were known to nest, mean hatch dates relative to the annual median differed by less than 1 day, and spring immigrants produced more juveniles surviving into late summer than did autumn immigrants (1.1 versus 0.7 juveniles per female). Hence, there is no evidence yet that autumn dispersal directly confers a reproductive advantage for female Spruce Grouse. Results underscore a perplexing question: if site-specific conditions stimulate winter residents to emigrate, why do the spring immigrants that replace them fare so well?

Key words: dispersal, *Falci pennis canadensis*, reproduction, Spruce Grouse, winter residency.