The National Wild Pheasant Conservation Plan

Key Literature:
Pheasant interactions with other species

Last Updated: December 18, 2016

Note: The literature cited below represents a subset of the information used when making pheasant management decisions related to this topic. It is intended to provide a general sense of the primary research available on the subject, but is not comprehensive. Other information on the topic may also be available in books and technical bulletins that do not lend themselves well to this form of summarization. The list will be periodically updated upon request by National Wild Pheasant Technical Committee members.

Sharp, W. M. 1957. Social and range dominance in gallinaceous birds: pheasants and prairie grouse. Journal of Wildlife Management 21:242-244.

Abstract: Observations were made on strife and intolerance within a mixed population of ring-necked pheasants, greater prairie chickens, and sharp-tailed grouse in the Nebraska Sandhills from 1937 to 1943. These species were observed during the winter and early spring months. Techniques used in fighting were observed and the results of such conflict were recorded. Sharp-tailed grouse were able to dominate both pheasants and prairie chickens, and their success was due to a fighting style unlike that of pheasants or prairie chickens. Pheasants could dominate prairie chickens but the prairie chicken was unable to cope successfully with either the sharp-tails or the pheasants. Fighting form in pheasants and prairie chickens was identical. Sharp-tailed grouse, although socially dominant, were tolerant toward the prairie chicken. Severe competition existed between pheasants and prairie chickens, especially during the spring and early summer months when male pheasants were defending their territories. This competition could eventually eliminate isolated pockets of prairie chickens in the states where they exist.

Tompkins, D. M., D. M. B. Parish, and P. J. Hudson. 2002. Parasite-mediated competition among red-legged partridges and other lowland gamebirds. Journal of Wildlife Management 66:445-450.

Abstract: Evidence suggests that the transmission of shared parasites from ring-necked pheasants (*Phasianus colchicus*), specifically the caecal nematode *Heterakis gallinarum*, may be 1 cause of the decline of the gray partridge (*Perdix perdix*) in the United Kingdom (UK) over the past 50 years. It may also be a factor preventing the recovery of the remaining wild gray partridge populations. Trials were undertaken to investigate whether the red-legged partridge (*Alectoris rufa*) is involved in this interaction, by exposing individuals of all 3 host species to infection on 7 gamebird estates. The low rate of parasite establishment in the red-legged partridge demonstrated that, as with the gray partridge, the parasite cannot persist in this host species. The lack of a relationship between *H. gallinarum* intensity and red-legged partridge condition indicated that, as with the ring-necked pheasant, the parasite does not seriously affect this host species. Hence, red-legged partridges play little or no role in the interaction

mediated via *H. gallinarum* that occurs among UK lowland gamebirds, since they are unlikely to be either another source of deleterious infection to the gray partridge or adversely affected by the transmission of *H. gallinarum* from ring-pheasants. Ring-necked pheasants are thus implicated as being solely responsible for maintaining infections of *H. gallinarum* in other lowland gamebirds in the UK and any associated effects.

Vance, D. R., and R. L. Westemeier. 1979. Interactions of pheasants and prairie chickens in Illinois. Wildlife Society Bulletin 7:221-225.

Abstract: A small population of pheasants (*Phasianus colchicus*) developed in the area of Jasper County prairie chicken (*Tympanuchus cupido pinnatus*) sanctuaries, although this area is outside the contiguous range of pheasants in Illinois. Interactions observed between these 2 species included aggressive harassment of prairie chickens by cock pheasants and parasitism of prairie chicken nests by hen pheasants. Both harassment and parasitism could adversely affect small remnant flocks of prairie chickens and preclude successful attempts to preserve or reintroduce prairie chickens in areas within pheasant range.

Westemeier, R. L., J. E. Buhnerkempe, W. R. Edwards, J. D. Brawn, and S. A. Simpson. 1998. Parasitism of greater prairie-chicken nests by ring-necked pheasants. Journal of Wildlife Management 62:854-863.

Abstract: We studied nest parasitism of greater prairie-chickens (*Tympanuchus cupido pinnatus*) by ring necked pheasants (*Phasianus colchicus*) as a possible contributing factor in the decline of an isolated population of prairie-chickens in Jasper County, Illinois. Both species nested in small, scattered grasslands maintained on prairie-chicken sanctuaries. Incidence of parasitic laying by pheasant hens in prairie-chicken nests increased from 2 to 43% between 1970 and 1983 and remained high through 1987. Nest success ($\geq$1 host-egg hatching) did not differ ($P = 0.33$) between 60 unmanaged parasitized nests (43%) and 602 unparasitized nests (51%). However, success of 14 parasitized prairie-chicken nests managed by removal of pheasant eggs (86%) was greater ($P = 0.02$) than for 24 unmanaged parasitized nests (46%) during 1983 and 1985-87. Hatchability of fertile prairie-chicken eggs was less ($P < 0.01$) in parasitized nests (77%, conservatively) than in unparasitized nests (94%), because of earlier hatching of pheasant eggs, increased embryo mortality of prairie-chickens, or increased nest abandonment. Large clutches of prairie-chicken eggs typical of early nests were more likely ($P < 0.001$) parasitized than small clutches laid later. Factors correlated with rate of nest parasitism included numbers of pheasant cocks ($P = 0.01$) and numbers of pheasant nests ($P < 0.001$) found each year. Although pheasant control apparently eliminated nest parasitism during 1988-94, prairie-chicken numbers continued to decline. Without management intervention to control pheasants on sanctuaries, the survival of this isolated, remnant flock of prairie-chickens may be in greater jeopardy.