The National Wild Pheasant Conservation Plan

Key Literature:
Winter habitat effects on pheasant abundance and demographics

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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.

Gabbert, A. E., Leif, A. P., Purvis, J. R., and Flake, L. D. 1999. Survival and habitat use by ring-necked pheasants during two disparate winters in South Dakota. Journal of Wildlife Management 63:711-722.

Abstract: Severe winter weather in the Northern Great Plains of North America can alter availability of winter cover and cause increased mortality of ring-necked pheasants (*Phasianus colchicus*). We monitored pheasant survival and habitat use via radiotelemetry during the second most severe winter in eastern South Dakota since 1892. We captured and radiomarked 48 female ring-necked pheasants at the onset of the 1996- 97 winter and monitored survivors through spring at 3 sites in eastern South Dakota. We also monitored 58 female ring-necked pheasants at the same sites during the 1995-96 winter, a winter characterized by below average temperature and average snowfall (winter severity rank: 35th). Survival of radiomarked hens in 1995- 96 (0.61 [SE = 0.07]) was higher ($P < 0.001$) than that in 1996-97 (0.03 [SE = 0.02]). Mortality due to predation was higher (P - 0.042) than mortality due to weather in both winters. Mortality due to weather did not differ ($P = 0.787$) between winters. However, 31 of 41 deaths occurred during blizzard periods in 1996-97, indicating severe weather increased the vulnerability of pheasants to predation. Radiomarked hens showed the highest preference for tall grass (>75 cm), cattail (*Typha* spp.) wetland, and corn food plot habitats in winter 1995-96, and early winter 1996-97. Shelterbelt and corn food plot ranked highest for pheasants that survived to the second half of the 1996-97 winter. We conclude that shelterbelt and food plot habitats are essential to the survival of pheasants in eastern South Dakota during extreme winter weather conditions.

Larsen, D. T., P. L. Crookston, and L. D. Flake. 1994. Factors associated with ring-necked pheasant use of winter food plots. Wildlife Society Bulletin 22:620-626.

Abstract: Our objective was to relate food plot use by ring-necked pheasants to characteristics of food plots and peripheral habitats. In our study, food plots adjacent to stands of cattail, sometimes including cover such as river bulrush, common reed, and dense patches of willow, had the greatest average flush counts (up to 143 pheasants). Even small stands or narrow corridors of cattail, as often occurred around

some wetland peripheries or along low seepage areas, assured use of food plots by pheasants. Food plots near herbaceous cover that commonly attract pheasants throughout average winter conditions may be unusable during winters with deep snows. On Conservation Reserve Program (CRP) fields in the winter of 1992-1993, we observed that accumulations of approximately 30 cm of snow destroyed or greatly reduced the cover value of most fields of smooth brome, intermediate wheatgrass, or tall wheatgrass in eastern South Dakota. Food plots in or near such CRP fields may receive little or no pheasant use during moderate or heavy snowfall accumulations due to flattening of grasses under snow. CRP fields of 1.5- to 2.0-m switchgrass, however, did provide cover for pheasants despite snow depths >30 cm and would be suitable locations for food plots in most winters. Presence of peripheral wetland or grass cover was more important in determining food- plot use by pheasants than food-plot size or food-plot weed abundance.

Leptich, D. J. 1992. Winter habitat use by hen pheasants in southern Idaho. Journal of Wildlife Management 56:376-380.

Abstract: Pheasant (*Phasianus colchicus*) winter habitat use of shrub steppe and irrigated agriculture the inter-mountain west has been poorly studied. Consequently, I used radio telemetry to study winter use of 76 female ring-necked pheasants in southern Idaho from early December to March in 1986. Pheasants were relocated 688 times during diurnal and nocturnal time periods. Pheasants preferred 0.01) sagebrush (*Artemisia* spp.), wetland, and herbaceous cover types and avoided ($P < 0.01$) grassland agricultural cover types. Livestock grazing decreased ($P < 0.065$) pheasant use of the sagebrush cover Habitat preference varied with time of day; birds used woody cover during the day and herbaceous at night. Fields of small grain showed peaks of use at dawn and dusk. Resource managers should preserve or enhance wetlands, maintain an interspersion of large blocks (1 km^2) of sagebrush, eliminate or grazing, and maintain tall, dense herbaceous cover on the uncultivated portions of farming units to improve pheasant winter habitat in shrub steppe and irrigated agricultural ecosystems.

Warner, R. E., and L. M. David. 1982. Woody habitat and severe winter mortality of ring-necked pheasants in central Illinois. Journal of Wildlife Management 46:923-932.

Abstract: Ring-necked pheasant (*Phasianus colchicus*) populations declined 44-82%, primarily from exposure to precipitation and severe wind chill, in the severe winters of 1976-77 and 1977-78 on 5 study areas in east central Illinois. Pheasant abundance, estimated by cock-call counts, and woody vegetation were measured on 45 1,036-ha subunits during 1976-78. Multiple regression analyses indicated no relationship between pheasant abundance on the 45 subunits before or after severe winter weather, and the abundance, growth forms, or arrangement on the landscape of woody vegetation. Declines in cock calls, 1976-78, were a mathematical function of pheasant densities prior to severe winter weather ($r = 0.94$, $P < 0.001$).