The National Wild Pheasant Conservation Plan

Key Literature:
Weather effects on pheasant habitat, abundance, and demographics

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.

Kozicky, E. L., G. O. Hendrickson, P. G. Homeyer, and R. Nomsen. 1955. Weather and fall pheasant populations in Iowa. Journal of Wildlife Management 19:136-142.

Abstract: 1. An attempt was made to determine the relationship of the fall roadside census from 1936 through 1952 within Iowa's primary pheasant range and winter and spring mean temperatures and mean total precipitation. 2. The rate of pheasant production was apparently related to changes in habitat and population level. 3. Two months of continuous sub-normal temperatures from December through February apparently influenced the subsequent fall pheasant population. 4. Cold temperatures in May and/or June were not conducive to an increase in fall pheasant populations. 5. A warm March and/or April did not have any discernible benefits to pheasant production over a normal and/or cold corresponding bimonthly period. In fact, a warm March and April accompanied by a cold May, 1946, was followed by a decrease in the fall pheasant population. 6. Above normal mean total precipitation in conjunction with low temperatures were only evident in years of decreasing fall pheasant populations; with high temperatures, precipitation had no apparent adverse effect on fall pheasant populations. 7. Normal spring weather prevailed during years in which the fall pheasant population remained the same or increased, depending to an undetermined extent on the level of the pheasant population. 8. The present analysis merely represents the weather-pheasant relationships for the past 17 years. Some permutations of temperature and precipitation have been examined only once, and many not at all.

Martinson, R. K., and C. R. Grondahl. 1966. Weather and pheasant populations in southwestern North Dakota. Journal of Wildlife Management 30:74-81.

Abstract: High productivity and survival of ring-necked pheasants (*Phasianus colchicus*) were correlated with high rainfall and cool temperatures in May and June during an 8-year period in southwestern North Dakota. These findings differed markedly from those of several earlier studies in the less arid mid-western United States where cool, wet weather in the spring generally affected pheasant populations adversely. General trends in the pheasant population could be explained on the basis of precipitation in May and June. The population was relatively high during the mid-1950's when wet and dry May and

June periods occurred in alternate years but declined markedly after 2 consecutive years of spring and summer drought. The population remained at a static low during 1960 through 1963 when wet and dry spring and summer periods again occurred alternately.

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 ($r = 0.94$, $P < 0.001$).