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Band, H. T. Michigan State University, East Lansing, Michigan. Was there a drought in the northern U.S. in the 1960's?

Genetic changes in the South Amherst, Mass. D. melanogaster population in the 1960's appear to have been initiated after the onset of a severe decline in rainfall, July, 1961, which lasted to

June, 1966. In a study of meteorological drought in Michigan, Strommen, van den Brink and Kidder (1969) commented that drought had been an increasing problem in the Northeast in the 1960's. Their study over the past 4 decades indicated prolonged drought effects in both the 1930's and 1960's in many areas of the state. The 1930's drought appears more evident in Michigan data than in Amherst, Mass. data.

Kendeigh (1961) indicates a low rainfall cycle has been observed and effects on duck numbers noted. Bruckner (1890) detected a cycle approximately every 35 years in data back to the 1700's. Rowan (1954) correlated low duck numbers in the 1820's, and 1860's, and 1890's and 1930's with this cycle. Rowan had been at the University of Alberta, Edmonton. A study recently compiled by the U.S.D.I. (1971) indicates that drought was widespread in the prairie provinces of Manitoba, Saskatchewan and Alberta in Canada and upper Great Plains states of Montana, the Dakotas and western Minnesota in the late 1950's and early 1960's, and again in the summer and fall of 1967. About 50-75% of the important game ducks come from this region. Duck numbers, 1955-1970, appear to follow the effects of the drought on numbers of suitable prairie pothole habitats. The following table has been compiled from the survey of breeding size of populations reported annually for the past 15 years and included in the report.

Mean breeding size of duck populations for the past 15 years. Numbers in millions.

1955-1960	1961-1965	1966-1968	1969-1970
42462.3	31254.6	34605.3	42355.0

Duck breeds surveyed include mallards, gadwall, American widgeon, green winged teal, blue winged teal, shoveler, pintail, redhead, canvasback and scaup.

The continuing relationship between drought cycle and duck numbers in that area indicates that population numbers do not fluctuate at random, somewhat at variance with the conclusions of Cole

(1954). It also raises the question, was there a widespread reduction in rainfall throughout the northern United States in the 1960's?

References: Bruckner, E. 1890. Klimaschwankungen seit 1700. Vienna; Cole, L.C. 1954. J. Wildl. Mgt. 18:2-24; Kendeigh, S.C. 1961. Animal Ecology (Prentice-Hall, Inc., Englewood Cliffs, N.J.); Rowan, Wm. 1954. J. Wildl. Mgt. 18:52-60; U.S. Department of the Interior, Bureau of Sport Fisheries and Wildlife. Migratory Game Bird Briefing Book. Prepared by the Division of Management and Enforcement. Jan. 1971.