

Prevalence of Poxvirus in a Population of Merriam's Wild Turkeys in Oregon

Authors: Lutz, R. S., and Crawford, J. A.

Source: Journal of Wildlife Diseases, 23(2) : 306-307

Published By: Wildlife Disease Association

URL: <https://doi.org/10.7589/0090-3558-23.2.306>

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

SHORT COMMUNICATIONS

Journal of Wildlife Diseases, 23(2), 1987, pp. 306–307
© Wildlife Disease Association 1987

Prevalence of Poxvirus in a Population of Merriam's Wild Turkeys in Oregon

R. S. Lutz and J. A. Crawford, Department of Fisheries and Wildlife, Oregon State University, Corvallis, Oregon 97331, USA

ABSTRACT: An introduced population of Merriam's wild turkeys (*Meleagris gallopavo*) was examined for poxvirus when birds were trapped from January through April in 1981 and 1982. Poxvirus lesions were found in three of 113 (2.6%) turkeys. All infected birds were immature males.

Key words: Poxvirus, Merriam's wild turkey, Oregon, *Meleagris gallopavo*.

Poxvirus has been reported from wild turkey (*Meleagris gallopavo*) populations in nine southeastern states of the United States (Latham, 1956; Powell, 1965; Prestwood et al., 1973; Akey et al., 1981; Davidson et al., 1985). Davidson et al. (1985) considered poxvirus one of the most important diseases of wild turkeys in this geographic region and noted that 22% of birds submitted for examination were infected. There is little available information on the prevalence of poxvirus in wild turkey populations from the western states, although Thomas (1964) found that one of 330 Rio Grande wild turkeys (*M. gallopavo intermedia*) in Texas was afflicted with poxvirus. Consequently, a study was initiated in 1981 to determine the prevalence of poxvirus in an introduced population of Merriam's wild turkeys (*M. gallopavo merriami*) in Oregon.

The study was conducted in Wasco County, Oregon, on the White River Game Management Area (Oregon Department of Fish and Wildlife) and the Mount Hood National Forest (U.S. Forest Service). Merriam's wild turkeys were introduced into this area in 1961 with stocks from Colorado, Arizona, and New Mexico (Mace,

1965). From 1 January to 5 April in 1981 and 1982, 113 Merriam's wild turkeys (16 adult males, 12 adult females, 54 immature males, and 31 immature females) were captured with baited walk-in traps and equipped with numbered leg bands. All birds were examined for the presence of poxvirus lesions. If lesions were present, a sample of the lesion was supplied to D. H. Helfer, Oregon State University Veterinary Diagnostic Laboratory, to verify field diagnosis. Lesion samples were fixed in 10% buffered formalin for 24 hr, sectioned at 5 μ m, and stained with hematoxylin and eosin for histopathologic evaluation. Bollinger bodies characteristic of poxvirus were observed microscopically. The virus was not isolated.

During the study, three immature male turkeys displayed active cases of poxvirus infection. One bird was captured initially on 14 February 1981 and poxvirus lesions were not observed. However, when this individual was retrapped on 17 March 1981, lesions were present on the head, neck, and wings. Lesions were present on the leading edge of the wings near the alula. The right eye was almost completely occluded and the left was approximately 50% occluded. The infection was sufficiently severe to potentially impair the survival of this bird. Another immature male with poxvirus lesions on the head and neck was captured on 15 February 1981. A third immature male caught on 15 February 1982 had three poxvirus lesions on the skin immediately under the lower mandible.

These birds were not retrapped again, and all three birds were members of a large flock of turkeys (40–60 individuals) that wintered along the south side of White River Canyon. Previous work with avian pox in gallinaceous birds in Oregon (Crawford et al., 1979; Crawford, 1986) indicated a possible connection between game farm operations and the occurrence of this disease in California quail (*Callipepla californica*) and ring-necked pheasants (*Phasianus colchicus*). Turkeys in our study were neither raised nor housed at game farm facilities, although some infected birds may have been present among the original 38 turkeys released. It is also possible the poxvirus was transmitted to turkeys from another species of wild bird or that turkeys were infected from domestic poultry. Karstad (1971) noted that poxvirus strains were often pathogenic for several species. The study area was remote and sparsely populated by humans, but turkeys descended to lower elevations in winter and occasionally foraged near farmsteads.

Interestingly, all infected birds in the study were immature males. Although some studies (Davidson et al., 1980) have shown no difference in prevalence among sex and age groups of gallinaceous birds, Crawford (1986) found that prevalence of poxvirus in California quail was approximately one and one-half to three times greater in immatures than adults. Prevalence of poxvirus in turkeys in our study (2.6%) was greater than that reported by Thomas (1964) for Rio Grande turkeys (0.3%). It did not reach the level reported by Davidson et al. (1985) who acknowledged that the prevalence of 22% in the sample of dead or moribund turkeys may not have reflected the infection rate of the populations.

We acknowledge R. Anthony and W. Krueger for providing critical reviews of

the manuscript. This is Technical Paper No. 7926 of the Oregon Agricultural Experiment Station. Funding for this work was provided by the Oregon Department of Fish and Wildlife and the U.S. Forest Service.

LITERATURE CITED

- AKEY, B. L., J. K. NAYAR, AND D. J. FORRESTER. 1981. Avian pox in Florida wild turkeys: *Culex nigrpalpus* and *Wyeomyia vanduzeei* as experimental vectors. *Journal of Wildlife Diseases* 17: 597–599.
- CRAWFORD, J. A. 1986. Differential prevalence of avian pox in adult and immature California quail. *Journal of Wildlife Diseases* 22: 564–566.
- , R. M. OATES, AND D. H. HELFER. 1979. Avian pox in California quail from Oregon. *Journal of Wildlife Diseases* 15: 447–449.
- DAVIDSON, W. R., F. E. KELLOGG, AND G. L. DOSTER. 1980. An epornitic of avian pox in wild bobwhite quail. *Journal of Wildlife Diseases* 16: 293–298.
- , V. F. NETTLES, C. E. COUVILLION, AND E. W. HOWERTH. 1985. Diseases diagnosed in wild turkey (*Meleagris gallopavo*) of the southeastern United States. *Journal of Wildlife Diseases* 21: 386–390.
- KARSTAD, L. 1971. Pox. In *Infectious and parasitic diseases of wild birds*, J. W. Davis, R. C. Anderson, L. Karstad, and D. O. Trainer (eds.). The Iowa State University Press, Ames, Iowa, pp. 34–41.
- LATHAM, R. M. 1956. Complete book of the wild turkey. Stackpole Co., Harrisburg, Pennsylvania, 265 pp.
- MACE, R. U. 1965. Turkey talk. *Oregon State Game Commission Bulletin* 5(20): 3–6.
- POWELL, J. A. 1965. The Florida wild turkey. Florida Game and Fresh Water Fish Commission Technical Bulletin 8, 28 pp.
- PRESTWOOD, A. K., F. E. KELLOGG, AND G. L. DOSTER. 1973. Parasitism and disease among southeastern wild turkeys. In *Wild turkey management: Current problems and programs*, G. C. Sanderson and H. C. Schultz (eds.). University of Missouri Press, Columbia, Missouri, pp. 159–167.
- THOMAS, J. W. 1964. Diagnosed diseases and parasitism in Rio Grande wild turkeys. *Wilson Bulletin* 76: 292.

Received for publication 10 July 1986.