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Marilyn G. Spalding
University of Florida

Holly S. Sellers
Poultry Diagnostic Research Center, College of Veterinary Medicine, University of Georgia

Barry K. Hartup
International Crane Foundation

Glenn H. Olsen
USGS Patuxent Wildlife Research Center

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A WASTING SYNDROME IN RELEASED WHOOPING CRANES IN FLORIDA ASSOCIATED WITH INFECTIOUS BURSAL DISEASE TITERS

MARILYN G. SPALDING, Department of Pathobiology, Box 110880, College of Veterinary Medicine, University of Florida, Gainesville, FL 32610 USA

HOLLY S. SELLERS, Poultry Diagnostic Research Center, College of Veterinary Medicine, University of Georgia, Athens, GA 30602, USA

BARRY K. HARTUP, International Crane Foundation, Baraboo, WI 53913, USA and Department of Surgical Sciences, School of Veterinary Medicine, University of Wisconsin, Madison WI 53706, USA

GLENN H. OLSEN, USGS Patuxent Wildlife Research Center, Laurel, MD 20708, USA

Abstract: Whooping cranes (*Grus americana*) have been reintroduced into central Florida beginning in 1993 until the present. Bobcat predation of otherwise healthy cranes in good nutritional condition was the most common cause of mortality. However, release cohorts in the years 1997-1998 (14/22 died) and 2001-2002 (14/27 died, 5/27 clinical illness) experienced unusually high morbidity and mortality. Positive serum neutralizing titers for infectious bursal disease virus (IBDV) were identified following the 2001 event, and an epidemiological study of released birds and the captive source flocks was initiated. Serotype 1 (Lukert and Variant A) tests were mostly negative. Serotype 2 testing resulted in many more positives. Polymerase chain reaction positive results for IBDV were obtained from two whooping cranes; one that died during the first epizootic in Florida in 1998, and one captive bird that died in 2003 at Patuxent Wildlife Research Center. The serotype remains unconfirmed at this time. Virus isolation has not been accomplished. The disease was characterized by chronic weight loss in young of the year birds that were actively foraging. Other observations included granulomatous oral lesions, bill bruising and fractures, anemia, abnormal submissive behavior, and infection with *Megabacteria* and *Eimeria*. Eight of 10 released cranes with titers > 1:128 had detectable evidence of illness. Older birds sharing the same habitat and food remained unaffected. Some sick birds were able to recover and become members of bonded pairs. The first seropositive case occurred in 1993. Seropositive birds are not randomly distributed by year indicating differential exposure or susceptibility. The prevalence of seropositive birds (titer > 1:32, $n = 256$, 1993 to 2003) increased from 7% of birds leaving captive centers to 33% of birds that had spent 2 weeks in Florida. Significantly more older birds, captured because they were clinically ill or to change transmitters, were seropositive (75%). Within the wild flock seroprevalence increased with age. In wild birds monitored frequently, fluctuation in titers indicated multiple re-exposures. The source of exposure, whether within the whooping crane flock, sandhill cranes, or another species, remains unknown.

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Key words: burnivirus, epidemiology, Florida, *Grus americana*, infectious bursal disease, whooping crane.
