crows and jays to WNV (Chu et al. 2003). In the Chicago area the precipitous decline in crows, Blue Jays, and chickadees relative to their historical numbers offers some support for the idea that the virus may be the cause.

It must be noted that these findings apply only to the Chicago region and more analysis is required to determine if they have broader geographic applicability. Moreover, we know virtually nothing about how WNV might have affected the migratory species that breed here and winter elsewhere. The 2003 Breeding Bird Surveys may be able to offer insight into that important issue. The findings from this year's CBCs hardly end the need to evaluate the WNV question. It is essential that monitoring continue to determine if and when populations recover. Well-worked out protocols with detailed monitoring in-place before WNV hits others might give us a clearer picture of its impact on birds.

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Literature Cited

Audubon-Chicago Region. 2002. September 10 press release: Survey raises alarm about West Nile virus effects on local birds. North suburban crows "just about gone."

Bildstein, K. L. and K. Meyer. 2000. Sharp-shinned Hawk (*Accipiter striatus*). In The Birds of North America, No. 482. (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

Centers for Disease Control. 2002. West Nile Vertebrate Ecology. October 17.

City of Chicago Department of Public Health. 2002. West Nile Virus (WNV) Information.

Chu, M., W. Stone, K. J. McGowan, A. A. Dhondt, W. M. Hochachka, and J. E. Therrien. West Nile file. Birdscope 17(1): 10-11.

Dallas County (Texas). 2003. West Nile Virus Update. Department of Health and Hospitals, State of Louisiana. Blue Jays with West Nile virus. June 18, 2002.

Eidson, M., N. Komar, F. Sorhage, R. Nelson, T. Talbot, F. Mostashari, R. McLean, and the West Nile Virus Avian Mortality Surveillance Group. 2001. Crow deaths as a sentinel surveillance system for West Nile virus in the Northeastern United States. Emerging Infectious Diseases 7: 615-620.

Illinois Department of Public Health. 2003. West Nile Virus: January 17. National Audubon Society. 2003. The Christmas Bird Count Historical Results [Online]. Available http://www.audubon.org/ bird/cbc (February 2003).

Rosenfield, R. N. and J. Bielefeldt, 1993. Cooper's Hawk (Accipiter cooperii). In The Birds of North America, No. 75 (A. Poole and F. Gill, eds.). Philadelphia: The Academy of Natural Sciences; Washingtron, D.C.: The American Ornithologists' Union.

Smith, S. M. 1993. Blackcapped Chickadee. In The Birds of North America, No. 39 (A. Poole, P. Stettenheim, and Frank Gill, Eds.). Philadelphia: The Academy of Natural Sciences; Washington DC: The American Ornithologists' Union.

Tarvin, K. A., and G. E. Woolfenden. 1999. Blue Jay (*Cyanocitta cristata*). In The Birds of North America, No. 469 (A. Poole and F. Gill, eds.). The Birds of North America, Inc. Philadelphia, PA.

Verbeek, N.A. M., and C. Caffrey. 2002. American Crow (*Corvus brachyrhynchos*). In The Birds of North America, No. 647 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

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