Florida Field Naturalist

PUBLISHED BY THE FLORIDA ORNITHOLOGICAL SOCIETY

VOL. 35, NO. 2 MAY 2007 PAGES 39-72

NOTES

Florida Field Naturalist 35(2):39-42, 2007.

AVIAN POX-LIKE LESIONS IN A FLORIDA SCRUB-JAY POPULATION

KARL E. MILLER[1] AND CRAIG A. FAULHABER[1,2]
[1]*Florida Fish and Wildlife Conservation Commission*
Fish and Wildlife Research Institute
4005 S. Main Street, Gainesville, Florida 32601

[2]*Current address: Department of Wildland Resources, Utah State University*
5230 Old Main Hill, Logan, Utah 84322

Wild birds in Florida suffer from a variety of infectious diseases, including avian pox caused by the virus *Poxvirus avium*. Although poxvirus infections have been reported for a large number of passeriform birds globally (Kirmse 1967, Bolte et al. 1999), infections have been documented in only 6 passerine species in Florida: Blue Jay (*Cyanocitta cristata*), Northern Mockingbird (*Mimus polyglottos*), Chipping Sparrow (*Spizella passerina*), Red-winged Blackbird (*Agelaius phoeniceus*), Common Grackle (*Quiscalus quiscula*), and House Finch (*Carpodacus mexicanus*) (Forrester and Spalding 2003). Although most poxvirus infections on passerines in Florida have been mild and self-limiting (Forrester and Spalding 2003), the potential mortality rate from poxvirus can be high for certain taxa (Tripathy and Reed 1997, van Riper et al. 2002). In addition, the pox virus can indirectly affect survival of birds by reducing their body condition (Tripathy and Reed 1997, Forrester 1991), by impairing feeding ability, respiration, and vision (Tripathy et al. 2000), and possibly by increasing susceptibility to other diseases (Atkinson et al. 2005). Given the paucity of data on poxvirus in Florida and that there is no effective treatment for the disease (Bolte et al. 1999), any occurrence in imperiled or listed species warrants concern. We report here on the prevalence of pox-like lesions in Florida Scrub-Jays (*Aphelocoma coerulescens*) in suburban areas of Charlotte County during the 2005 breeding season.

Federally listed as threatened in 1987 because of habitat loss and fragmentation (Woolfenden and Fitzpatrick 1996), the Florida Scrub-Jay is restricted to peninsular Florida in patches of scrub oak (*Quercus* spp.) habitat. Our study area is located in the Deep Creek and Harbour Heights suburban subdivisions in Charlotte County, which comprise the second largest population of Florida Scrub-Jays in southwestern Florida.

In the course of an ongoing color-banding study of the demographics of Florida Scrub-Jays, we examined, measured, and banded nestling jays when they were 11 days old and then recaptured the birds when they were fledglings at ≥6 weeks old to add a unique combination of colored bands. Pox-like swellings on the featherless body parts of a few fledglings were first observed with the aid of binoculars in early June 2005; subse-

quently, we began looking carefully for current or old lesions on all nestlings, fledglings, and adults. We carefully washed hands and equipment with a 10% Nolvasan (Fort Dodge, Iowa) solution when handling birds to prevent further transmission.

We did not observe lesions on any of the 116 nestling Florida Scrub-Jays we handled between 28 March and 17 June 2005. We observed lesions on 13 of the 39 (33%) fledglings we captured between 23 June and 18 July 2005; lesions were primarily on the feet (12 of the infected fledglings), but also on the cere (3 of the infected fledglings), eyelids (2 of the infected fledglings), and in one case on the axillary region at the base of the wing (Figs. 1-2). The largest of these wounds were approximately 9-10 mm in diameter. Survival of fledglings was independent of whether they had pox-like lesions; 4 of the 13 fledglings with lesions disappeared before September 2005, whereas 5 of the 26 fledglings without lesions disappeared before September 2005 (Fisher's exact; $P = 0.45$). Not all fledglings within a brood showed signs of infection.

The apparent infection was more frequent in fledglings than in adults. With binoculars, we frequently observed lesions on fledglings but never on adults, although we did trap one adult (out of 5 caught during June-July) with a small 2-3 mm scabby lesion on the right hallux on 19 July.

The observed lesions were consistent with avian pox (M. Cunningham and D. Forrester, personal communication). However, we did not sample blood or tissue for laboratory analysis given time constraints and limited resources. Therefore, we cannot definitively rule out the possibility of other less likely potential causes, including papilloma virus, scaly leg mites, mycotoxins, or nutritional deficiencies (Tripathy and Reed 1997, Pennycott 2003). Pox-like lesions on Florida Scrub-Jays have been observed occasionally in central Florida (R. Bowman, personal communication), but have not been re-

Figure 1. Pox-like lesions on the feet of a two-month old Florida Scrub-Jay.

Figure 2. Pox-like lesions on the head of a two-month old Florida Scrub-Jay. Photos taken by C. Faulhaber.

ported in frequencies as high as we found in our study. The cause of the outbreak in our study is unknown; we did not observe any instances in 2004 or 2006. It is notable that the 2005 breeding season was preceded by the passage of Hurricane Charley, which caused considerable damage to the vegetation and to housing and infrastructure in the study area. The virus is generally transmitted mechanically, often by mosquitos (Buenestado et al. 2004), and poxvirus is most widespread in Florida during the late summer when mosquito abundance peaks (Forrester and Spalding 2003). Potential effects of the hurricane on mosquito abundance, food availability, and microhabitat use are unknown.

Monitoring and understanding disease outbreaks is important for managing Florida Scrub-Jay populations, particularly those populations that are small or declining or facing other threats such as habitat loss and degradation from human development. Poxvirus could have a negative impact on scrub-jay populations if it increases in frequency following hurricanes or other environmental perturbations.

Funding for this project was provided by the Nongame Wildlife Trust Fund of the Florida Fish and Wildlife Conservation Commission. We thank M. Cunningham, D. Forrester, J. Rodgers, and an anonymous referee for reviewing the manuscript.

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