



Avian Vacuolar Myelinopathy (AVM)

January 2001

Emerging Disease Notice

Summary

In December 2000 the US Geological Survey (USGS) issued a Wildlife Health Alert to natural resource/conservation agencies about significant wildlife health threats of Avian Vacuolar Myelinopathy (AVM).

AVM was first identified in 1994 in Bald eagles in Arkansas. Since then sporadic cases of AVM were recognized in the Southeastern United States in several duck species and most recently in Canada geese.

The host range includes only wild waterfowl and Bald eagles.

No outbreaks are reported in domestic birds.

No data exist concerning infection of humans.

The disease appears to be site-specific, i.e. the lakes where the birds are dying is the site of exposure. AVM affects the bird's central nervous system. The causative agent remains unknown, however, disease appears to be caused by neurotoxins of unknown origin.

Many agencies are continuing field, laboratory and research efforts to determine the cause of disease.

Background

AVM was first documented in a dozen Bald eagles and in American coots found dead along DeGray Lake in Arkansas in the fall and winter of 1994. Since then it was confirmed in several duck species including Mallard, Ring-necked duck, Bufflehead, American Wigeon and in Canada geese in the Southeastern United States. AVM is the most significant unknown cause of eagle mortality. Disease affects birds usually between October and March with a peak from mid-November through early December.

Site Map



Clinical and Pathological Signs

AVM is an avian disease that is believed to be caused by a neurotoxin of unknown origin. It causes open

space lesions in the white matter of the brain and in the spinal cord of affected birds. Water birds with AVM demonstrate difficulty flying, walking and swimming. Sick birds are usually alert and may bite when handled even if unable to escape capture. Affected birds are usually found between October and March. Dead birds appear to be in good body condition and have no visible external or internal changes with the exception of microscopic neural lesions.

Transmission of AVM

It remains unknown if the disease is "spreading" or if affected birds at other locations are being recognized because more people are aware of the problem. All diagnostic, field and laboratory efforts indicate the cause is most likely a chemical substance, either one naturally occurring or manmade. It is unclear how the birds are exposed to the toxins. One theory is waterfowl, which feed on aquatic vegetation, ingest material associated with algae bloom. The algae is possibly producing toxic agents fatal to Bald eagles, which feed on waterfowl. However, independent exposure of the multiple waterfowl species cannot be ruled out. To date no confirmed outbreak of AVM has been found in domestic waterfowl.

There is no evidence that AVM is transmissible to humans, however, the risk to humans is unknown. As precautions, the USGS National Wildlife Health Center (NWHC) recommends that people should avoid handling wildlife having died from unknown causes. Hunters should avoid shooting waterfowl exhibiting unusual behavior, use rubber gloves when dressing out game, and thoroughly cook meat before eating.

Control and Preventive Measures

Many agencies including US Geological Survey, US Army Corps of Engineers, US Fish and Wildlife Service and State agencies are continuing field, laboratory and research efforts to determine the cause

of disease. This include water analysis from affected lakes, toxicology analysis of affected avian tissues, and multi-state epidemiological investigation by the Southeastern Cooperative Wildlife Disease Study Center.

For more information on this subject please go to the official AVM web site, Pro-MED web site, or the USGS - NWHC web site:

<http://www.mvk.usace.army.mil/offices/od/odm/avm>

<http://www.fas.org/promed/index.html>

<http://www.umesc.usgs.gov/nwhchome.html>

If you wish to comment on this notice, please contact Milo Muller at (970) 490-7844 or miloslav.muller@aphis.usda.gov.