



To: Natural Resource/Conservation Managers
From: Dr. Jonathan Sleeman, Center Director, USGS National Wildlife Health Center
Title: Virulent Newcastle Disease Virus Found in Double-Crested Cormorants
Date: September 3, 2010

Since late July, the USGS National Wildlife Health Center (NWHC) has confirmed that at least 800 double-crested cormorants have died in Minnesota, North Dakota, and Wisconsin from virulent Newcastle Disease virus (vNDV). Ring-billed gulls and American white pelicans have also been found dead in these same areas, but vNDV has not been confirmed as the cause of death. This virus sporadically cycles through nestling and juvenile cormorants in summer nesting colonies. The designation of vNDV indicates that this strain has the potential to cause illness or mortality in poultry, although transmission of wild bird vNDV to poultry is probably rare based on similar historic events. NWHC has alerted wildlife management and agricultural authorities in affected states, including the USDA. According to the Canadian Cooperative Wildlife Health Centre, Newcastle Disease has also been confirmed in cormorants in Saskatchewan.

Newcastle Disease (NDV) is caused by infection with an RNA virus within the avian paramyxovirus-1 (APMV-1) group. Not only is NDV highly contagious, but there is great variation in the severity of disease caused by different strains of NDV. A classification system for the severity of disease has been established to guide disease control efforts in poultry because of the economic damage of NDV. Typically, wild bird isolates are usually classified as non-virulent.

NDV had not been reported as a cause of mortality in free-living native birds of the U.S. or Canada prior to 1990. In 1992, multiple mortality events occurred in double-crested cormorant colonies across the Great Lakes, upper Midwest, and Canada with over 35,000 birds estimated dead. The most recent large-scale outbreak in the U.S. occurred in 2008 when over 1,200 double-crested cormorants from Minnesota colonies died. The virus has seen little genetic change over time and geographic location since 1990.

Clinical signs of NDV in wild birds have only been observed in sick nestling or juvenile double-crested cormorants and include twisting of the head and neck, paralysis of the legs and wings, lack of muscular coordination, and tremors. The virus can be transmitted by direct contact, feces, and excretions from infected birds. Segregation of potentially infected cormorants and poultry is warranted to minimize the possible introduction of NDV to poultry. Biosecurity, surveillance, and also vaccination in the case of poultry, are all important in limiting the spread of NDV. NDV is not a major concern for human health, although it may cause a mild conjunctivitis and influenza-like symptoms.

Further investigations are in progress to assess the extent of the outbreak. NWHC is working with officials from the Minnesota and Wisconsin Departments of Natural Resources, biologists from affected wildlife refuges, USDA APHIS Wildlife and Veterinary Services, USDA National Veterinary Services Laboratories, the Minnesota, North Dakota, and Wisconsin State Veterinarian's offices, and the Canadian Cooperative Wildlife Health Centre to manage the outbreak by reducing possible impacts to wild birds and preventing spread to domestic poultry.

If you see cormorants or other species displaying field signs described above, or if you would like more information, please contact a member of NWHC's Field Investigation Team listed below.

To report or request assistance for wildlife mortality events or health issues, visit

http://www.nwhc.usgs.gov/mortality_events/reporting.jsp or contact Dr. Anne Ballmann, 608-270-2445, aballmann@usgs.gov (Eastern Region), Dr. LeAnn White, 608-270-2491, clwhite@usgs.gov (Central Region), Dr. Krysten Schuler, 608-270-2447, kschuler@usgs.gov (Western Region), Dr. Thierry Work, 808-792-9520, thierry_work@usgs.gov (Hawaii and Pacific Islands) or Jennifer Bradsby, 608-270-2443, jbradsby@usgs.gov (single mortality events nationwide).

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