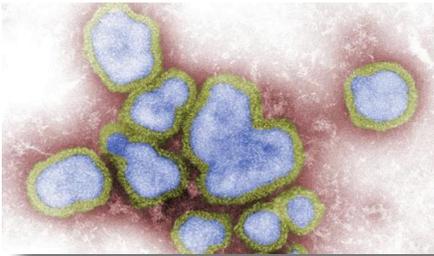


Highly Pathogenic Avian Influenza Seaduck Challenge Study



Male Ruddy duck.
Credit: Glenn Bartley/VIREO



Avian influenza viruses. Digitally-colored negative-stained transmission electron micrograph (TEM).
Credit: CDC/E.A. Murphy.



Male Lesser Scaup.
Credit: Rob Curtis/VIREO

The Challenge: The susceptibility and pathogenesis of highly pathogenic avian influenza virus (HPAI) has not been characterized in numerous duck species, especially diving ducks (genera *Melanitta*, *Aythya*, and *Oxyura*), some of which migrate across the continental US. The few studies available (on Tufted duck, *Aythya fuligula*) suggest that they may shed high amounts of virus, but it is unclear whether they have the capacity to spread HPAI long distances.

The Science: This project is in collaboration with Alicia Berlin (United States Geological Survey) and Erica Spackman (United States Department of Agriculture, Southeast Poultry Disease Research Laboratory). The pathobiology of HPAI H5N2 was characterized in two diving duck species, Ruddy ducks (*Oxyura jamaicensis*) and Lesser Scaup (*Aythya affinis*). Adult ducks and hatching eggs for both species were obtained from captive breeding colonies at the Patuxent Wildlife Research Center, Patuxent, MD. Adult and juvenile Ruddy ducks and juvenile Lesser Scaup were exposed to three doses of highly pathogenic avian influenza. Virus shed, clinical disease, mortality, gross and microscopic lesions were evaluated.

The Future: This study will help fill an important gap in our current state of knowledge on HPAI in wild birds, and would serve as input factors for disease transmission risk models. Understanding disease transmission in migratory wild birds has important consequences for human and environmental health and the economy; in recent outbreaks, wild birds were implicated as long-distance vectors for HPAI.