

Duck Plague in California, Maryland and South Carolina *SCWDS Briefs, July 1993, 9.2*

Duck plague, also known as duck virus enteritis (DVE), recently gained national attention as the news media spotlighted efforts of a small group of people to stop the depopulation of an affected flock of semi-wild waterfowl in Venice, California. A vocal minority filed for a temporary restraining order against the California Department of Fish and Game (CDFG) in their effort to depopulate the remaining birds. The CDFG, advised by the U.S. Fish and Wildlife Service's National Wildlife Health Research Center and SCWDS, maintained that destruction of the ducks was necessary because the exposed birds were a potential threat to wild waterfowl populations. Surviving ducks can be long-term virus carriers, and there is no reliable way to detect disease in waterfowl that have "silent" infections. The Court allowed the depopulation to proceed on June 10, but by that time protestors had moved several birds to other locations.

The California outbreak was not the only time that duck plague surfaced this year. The disease also was confirmed in a group of semi-wild waterfowl on a 33-acre lake on Ft. Jackson, South Carolina, in early May. SCWDS personnel, working in cooperation with the Army Base Veterinarian and wildlife staff on Ft. Jackson and with the South Carolina Wildlife and Marine Resources Department, depopulated these birds in early June. Another outbreak occurred in a private waterfowl collection in Maryland. There, surviving birds have been confined in a life-time quarantine.

Duck plague is caused by a herpesvirus and only affects birds of the order anseriformes (ducks, geese, and swans). The first U.S. outbreak was in commercial Pekin ducks on Long Island, New York, in 1967. The virus "spilled over" into wild waterfowl, killing several hundred birds. In 1973, a massive outbreak on Lake Andes National Wildlife Refuge in South Dakota killed approximately 43,000 ducks and 250 Canada geese.

There have been 67 confirmed duck plague outbreaks in the United States associated with non-migratory birds on public park ponds, private waterfowl collections, duck farms, or shooting preserves. In contrast, virus has been isolated only 3 times from wild, migratory birds, and all 3 were individual cases. Muscovy ducks are highly susceptible to infection and usually become acutely ill and die; other species of ducks vary in susceptibility and some survive infection. Surviving birds may intermittently shed virus for up to 5 years following infection. Additionally, infected ducks may have poor reproduction, and virus may be transmitted through eggs to the next generation. Detection of carrier birds is nearly impossible because of the intermittent nature of virus shedding and the fact that both antibody-positive and antibody-negative birds may shed virus.

Vaccination of waterfowl has been proposed as an alternative to depopulation, but the current vaccine is effective only in Pekin ducks and only when vaccine is administered prior to virus exposure. The vaccine has not been tested adequately in wild North American waterfowl; however, preliminary data suggest that some species are not protected and in some instances may actually be more susceptible to disease after vaccination. The effect of vaccination on virus shedding remains unknown; therefore, vaccination cannot be relied upon to reduce or eliminate inapparent carriers and may represent a risk to wild waterfowl.

Although unpopular with some members of the public, depopulation of directly exposed ducks currently is the only feasible method of reducing the threat of duck plague to free-flying migratory waterfowl. All exposed birds and their eggs must be removed from an infected premise. Additionally, the area should

be treated with an appropriate disinfectant, and the impounded water drained or altered to a highly basic or acidic pH. After depopulation, a prolonged waiting period is recommended before waterfowl are allowed to repopulate the area.