

2006 SURVEILLANCE TO DETECT HIGHLY PATHOGENIC AVIAN INFLUENZA IN WILD BIRDS IN COLORADO

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In 2006, the Colorado Division of Wildlife (CDOW) used multiple survey approaches to monitor wild bird populations for avian influenza (AI) viruses. These programs were developed in response to national concerns over an emerging Asian strain of highly pathogenic AI (HPAI) virus (also termed “H5N1”), and the possibility that migrating wild birds may introduce Asian HPAI into North America.

The CDOW Wildlife Health Program’s (WHP) primary focus was to investigate unusual mortality events of ill/dead wild birds reported across the state of Colorado. WHP staff responded to all calls forwarded by the Colorado Health Education Line for the Public (CO-HELP) line regarding dead birds. Calls were handled using a decision tree developed in conjunction with the Colorado Avian Disease Surveillance Program and Colorado Department of Public Health and Environment staff.

Monthly CO-HELP dead bird summary reports were reviewed to identify potential mortality events that were not reported directly to the WHP. CO-HELP started reporting dead bird calls with reference to all species beginning in May 2006; prior to that date CO-HELP only documented calls for corvids. Of the 2,162 calls received in May–December 2006, 53 were described as waterfowl or shorebirds. Only one potential mortality event was missed. The missed event was a report of 5 dead waterfowl, however, it was determined during the call that the carcasses were not likely to be ‘testable’.

A total of 93 bird carcasses were received for necropsy in 2006 as a result of this reporting system. Of the 93 submissions, 25 were screened for AI virus. This group of 25 included waterfowl, shorebird and game bird species. Samples were archived from the other carcasses submitted based upon post-mortem condition.

During the month of June 2006, the CDOW obtained cloacal swabs from 2,974 resident Canadian geese (1,319 from Front Range sites, 1,655 from the Western Slope sites). The cloacal swabs were submitted for AI screening. Only 3 of 2,974 swabs yielded evidence of low pathogenic AI strains endemic in North American waterfowl; no geese tested positive for HPAI. The prevalence of low pathogenic strains of AI was consistent with historical waterfowl surveillance data. See attached map.

In July 2006, the CDOW, working with the U.S. Department of Agriculture (USDA), began a surveillance program to detect HPAI virus in wild, apparently healthy birds in Colorado as part of a nationwide surveillance program. This surveillance approach was based on the concern that some wild birds may become infected and shed AI virus for some period before showing outward signs of the disease. Priority species for sampling in Colorado were selected in coordination with surrounding states, and included

waterfowl (dabbling ducks, diving ducks, and geese) and shorebirds that migrate through Colorado. Target sample sizes for wild, apparently healthy birds were 500 for CDOW and 700 for USDA. Target species were based on priority species identified by the Central Flyway Council that were likely to occur in Colorado. Sample size targets for each species were based on its priority status in the Central Flyway plan, and our anticipated ability to find and obtain samples from that species in Colorado. Initially, 12 waterfowl and 13 shorebird species from the Central Flyway plan were targeted for sampling in Colorado. However, there were concerns that some species (e.g., buff-breasted sandpiper, black-bellied plover) would be extremely difficult to find in Colorado. In addition, our approach allowed sampling of other species of birds that are closely related to target species and occur in the same habitats.

Sampling began in July 2006. By the end of December 2006, CDOW and USDA had obtained and submitted for testing 1,746 samples from wild birds in Colorado, including 377 shorebirds, 708 dabbling ducks, 63 diving ducks, 597 geese, and 1 sandhill crane. Samples were obtained from birds in 19 counties in Colorado. Shorebird samples were collected on the eastern plains, primarily in August. Most shorebird samples were collected by capturing live shorebirds in mist-nets, collecting a sample, and releasing the birds. Waterfowl samples were collected throughout the state, primarily from September through December. Most waterfowl samples were collected from birds killed by hunters who volunteered to have their ducks or geese sampled. Some ducks were sampled during on-going banding operations conducted by CDOW.

All samples collected in Colorado were submitted for initial screening to the Colorado State University Veterinary Diagnostic Laboratory. Several samples tested positive for endemic strains of low pathogenic AI virus. No samples from wild bird surveillance tested positive for HPAI virus, either in Colorado or elsewhere in the U.S. where similar surveillance efforts were being conducted.



