



**King County
West Nile Virus
Surveillance
Report
2010**

Public Health
Seattle & King County



Zoonotic Disease Program
Environmental Health Services

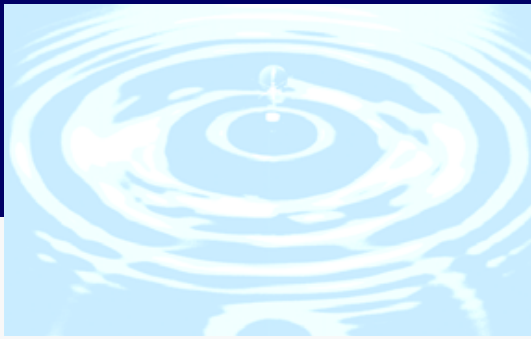
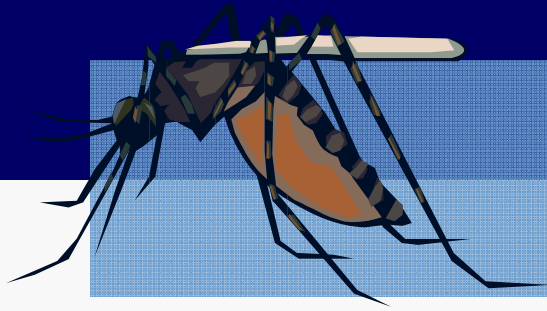


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Mosquito Surveillance

While mosquito surveillance had been a part of West Nile virus monitoring in King County during 2007 and 2008, mosquito trapping, species identification and WNV testing of mosquito samples from King County was not performed in 2010 due to budget cuts.

Results of earlier years of mosquito surveillance in King County can be found on the web at <http://www.kingcounty.gov/healthservices/health/ehs/westnile/alert.aspx>. See the **King County WNV Annual Surveillance Reports** for 2007 and 2008.



Bird Mortality Surveillance

Corvid birds (crows, jays, ravens, magpies) and raptors (owls, hawks, eagles) are especially sensitive to WNV and commonly die as a result of infection. Several studies [Mostashari et al, 2003; Johnson et al, 2006]) have shown that bird mortalities may be useful in predicting human WNV infections. In response to this observation and federal CDC recommendations, Public Health-Seattle & King County (Public Health) actively solicits and receives online and phone reports year-round from the public about observed bird deaths in the county. During the height of the WNV season (July through October), a selection of corvid birds are collected for WNV testing based on bird type, condition, geographic location, and worker availability. In order for a bird to be successfully tested it must be freshly dead and in good condition. Only corvid samples are submitted for lab testing because these birds have the highest likelihood of dying from WNV infection.

Through an interagency agreement, dead birds reported to Public Health meeting the criteria for avian influenza dead bird reporting (as determined by Washington State Department of Agriculture (WSDA) for domestic poultry and Washington Department of Fish & Wildlife (WDFW) for wild birds and waterfowl) are referred to the appropriate agency.

Oral swab samples from the birds to be tested for WNV are mailed to the Washington Animal Disease Diagnostic Laboratory (WADDL), in cooperation with the DOH, for West Nile virus testing. Results of WNV testing are received on a weekly basis from the Washington State Department of Health. There is approximately a two week lag time between submission and receipt of results, although the lag is reduced to one week if a sample tests positive, as results are immediately phoned to Public Health. In addition to testing, the locations of all bird mortality reports are mapped on a weekly basis in order to identify unusual clustering of bird deaths. Clustering may signify the beginning of a WNV outbreak among the birds and indicate the need for more intense sampling and testing in the area to determine if WNV is causing the bird deaths.

Through September, 2010, Public Health—Seattle & King County received public reporting of 603 total bird mortalities. This was a significant reduction compared to previous years when the dead bird counts reached upwards of 3,000 (Figure 1). Bird mortality reporting peaked from July to mid August with over 350 dead birds being sighted in that period (Figure 2). Eighty-six percent of bird mortalities reported were crows, which did not appear to be unusual compared to previous years (Figures 3, 4). No significant clusters of bird mortalities suggestive of a WNV outbreak were observed when bird mortality reports were mapped and analyzed on a weekly basis.

Sixty-two total birds were collected and 45 (43 American Crows and 2 Stellar's Jays) were found to be suitable candidates for WNV testing. However, all tested negative.

Count of Dead Birds in King Co. by Year, 2003 - 2010

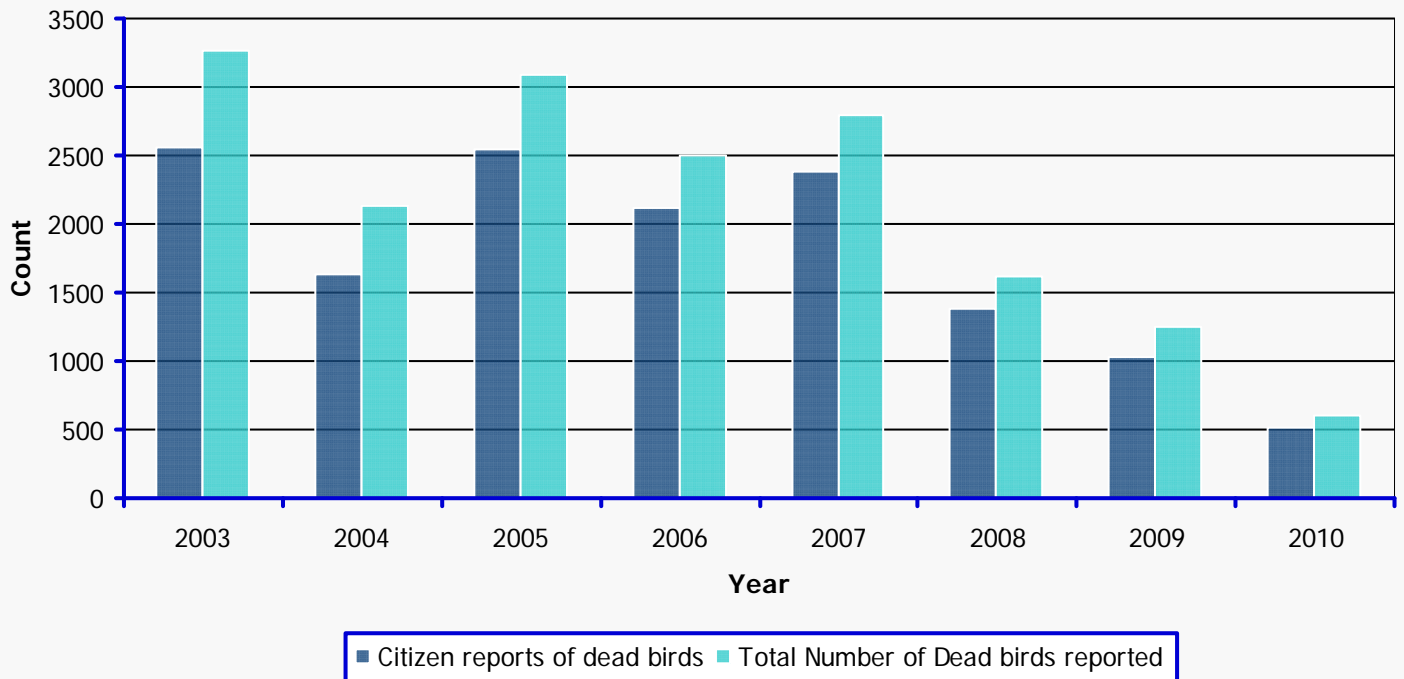


Figure 1. Count of citizen reports of bird mortalities and the number of bird mortalities associated with these reports by year.

Count of Dead Birds in King Co. by Month, 2007-2010

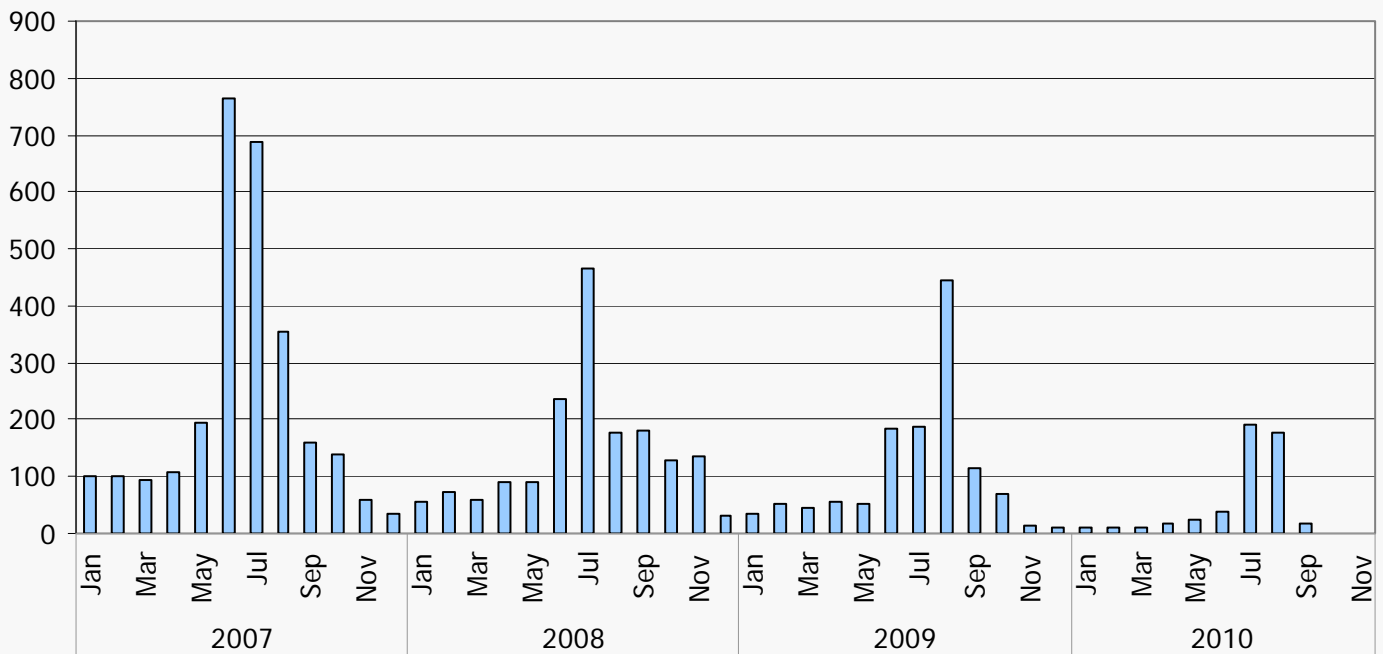


Figure 2. Count of bird mortalities reported to Public Health each month from 2007—2010.

Number of Bird Mortalities Reported in King Co. by Bird Type in 2010 (N=603)

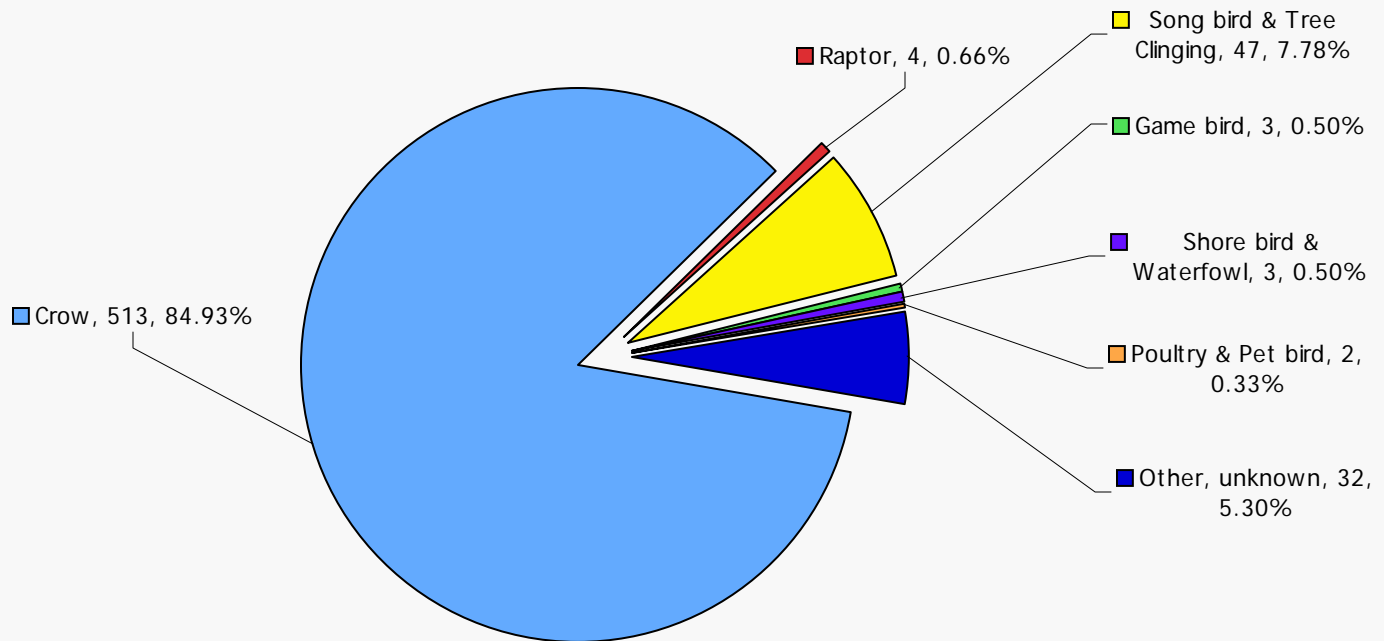


Figure 3. Distribution of bird mortalities by bird type. Three-quarters of reported bird mortalities reported were crows.

Number of Birds Reported in King County (WA) by Bird Type and Year, 2003 - 2010

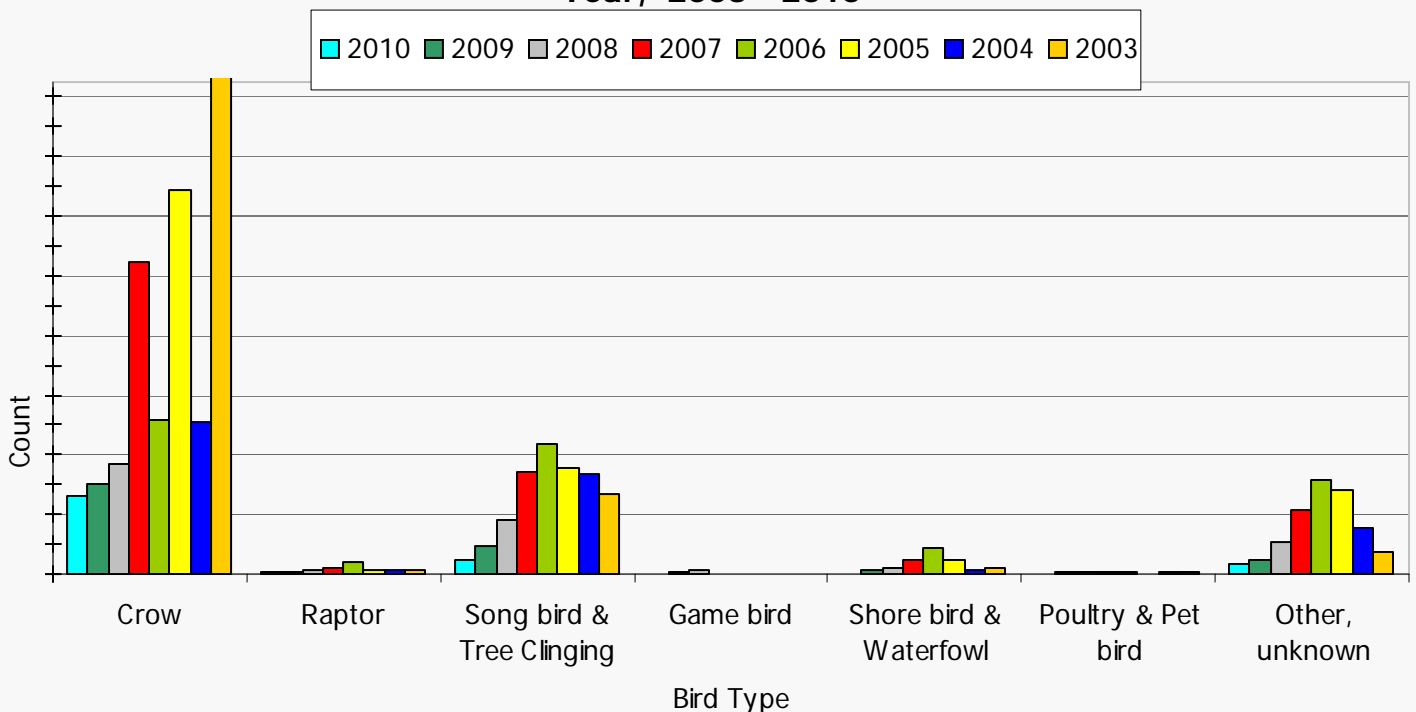


Figure 4. Bird mortalities by bird type, 2003 - 2010. Crows were the most frequently reported bird in all years, followed by song-birds and tree-clinging type birds.