

Diagnostic Findings in Aleutian Canada Geese

Dead Geese Found in California

From 1976 through 1991, 102 Aleutian Canada geese (*Branta canadensis leucopareia*) found dead on wintering areas and migratory routes in California were sent to the National Wildlife Health Research Center for necropsy examination. Carcasses collected in 1987–91 accounted for 90% of the deaths. Most (82) of the birds were found in the upper San Joaquin Valley, but nine came from near Crescent City, five each from the Sacramento Valley and Salton Sea, and one from Humboldt Bay.

Avian Cholera, Shooting, and Lead Poisoning were Largest Causes of Deaths

Avian cholera, an infectious bacterial disease caused by *Pasteurella multocida*, accounted for 64 of the deaths (Figure). Although Aleutian Canada geese are at risk to avian cholera throughout their migratory and winter range, all 64 carcasses were found in the upper San Joaquin Valley. Geese died of avian cholera from late December through February, and nearly half (30) of the deaths occurred during a single outbreak of this disease in the winter of 1990–91. Shooting resulted in the deaths of 14 Aleutian Canada geese—8 from the upper San Joaquin valley, 4 from Salton Sea, and 2 from the Sacramento Valley. Ten of the 14 had

recent fatal gunshot wounds, and the other four died of peritonitis caused by shooting. Lead poisoning in Aleutian Canada geese was first diagnosed in 1987 and was the primary cause of death for eight geese. Lead poisoning was a concurrent diagnosis in two of the birds that died of avian cholera. These carcasses had lesions consistent with lead poisoning, elevated liver lead concentrations (8–63 ppm wet weight), and lead shot pellets were found in the gizzard contents of 8 of the 10 birds. Nine of the carcasses were found in the upper San Joaquin Valley and one near Crescent City. Five additional geese had elevated liver lead concentrations (2 ppm wet weight), indicating probable recent exposure to metallic lead.

Other Diagnostic Findings

Five Aleutian Canada geese died of traumatic injuries caused by impact and predation, three drowned, three were emaciated (no cause could be determined), and one died of salmonellosis caused by an intestinal infection with *Salmonella typhimurium*. A kidney deformity was found in one bird, one died of a mixed bacterial infection, and no cause of death could be determined for two birds. One was scavenged with traumatic injuries and the

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other was heavily parasitized with gizzard worm (*Amidostomum anseris*).

Avian Cholera Represents Significant Hazard to Aleutian Canada Geese

These findings indicate that avian cholera is the single largest cause of identified deaths in migrating and wintering Aleutian Canada geese. Because of the threatened status of this species and because large proportions of the total population migrate and

spend the winter in close proximity, an avian cholera epizootic could be devastating.

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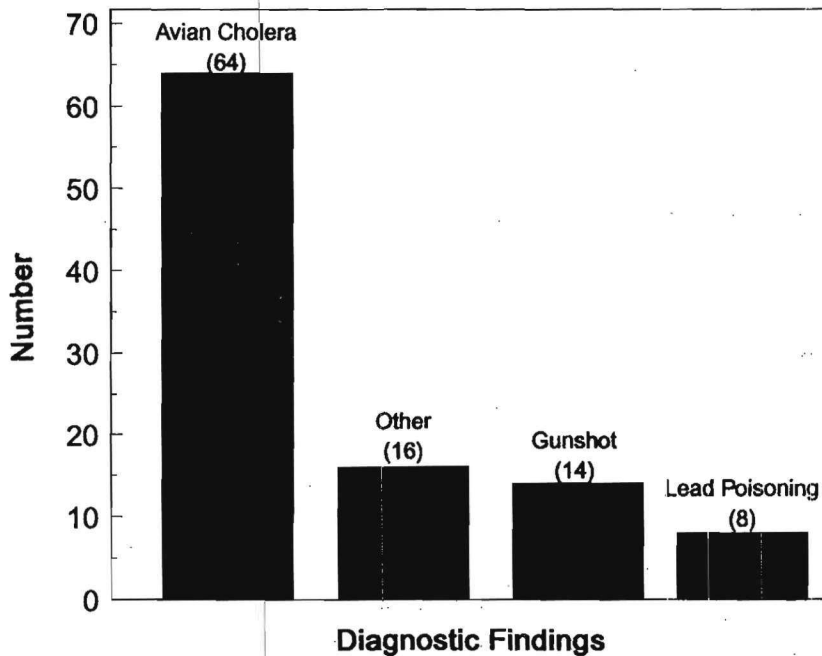


Figure. Diagnostic findings in 102 migrating and wintering Aleutian Canada geese (*Branta canadensis leucopareia*), 1976-1991.