

Beak deformities spread through crow population

But the Avian Keratin Disorder is relatively rare in B.C., veterinarian says

By Randy Shore, Vancouver Sun December 24, 2010

Formerly rare beak deformities are spreading rapidly among crows in southwestern B.C. and Puget Sound, according to researchers from the U.S. Geological Survey.

The biologists observed an unusual concentration of crows with badly overgrown beaks in Alaska beginning a little over 10 years ago. According to the scientists, a capture program in 2007 and 2008 revealed that more than 16 per cent of the Alaskan crow population was afflicted, "the highest rate of gross deformities ever recorded in a wild bird population."

"That's about 10 to 20 times the normal rate," said Colleen Handel, co-author of a recent article on the phenomenon published in *The Auk*, a scientific journal of ornithology. "Some of us who had been working in the field for a long time had never seen anything more than a scattered incidence of this kind of deformity."

Handel and her co-author Caroline Van Hemert began to receive reports of similar deformities down the Alaska Panhandle, from the Vancouver area and communities surrounding Puget Sound in Washington state.

There are also indications the ailment, known as Avian Keratin Disorder, has affected other bird species.

Birds afflicted by overgrown beaks have difficulty feeding and are forced to take bigger risks to obtain enough food, making them more susceptible to predators.

The birds may also be unable to preen, leaving them vulnerable to the cold. Birds use their beaks to harvest oil from a gland near their tail that they spread on their feathers as a natural waterproofing that protects the downy insulating feathers underneath.

The cause of the ailment is unknown. Possible candidates include environmental toxins, parasites, bacterial infection and viral infection.

"There are different types of infections, or a bird can hit a window and have abnormal growth," Handel said.

Researchers working in B.C. and Washington had not recorded any beak deformities in crows before 1999, she said.

"It was a little surprising to us that it seems to be spreading. The geographic patterns suggest deformities in crows started in south-central Alaska and spread south," said Handel.

"There has been a really fairly rapid increase in Alaska and, as far as we can tell, in Puget Sound and the Vancouver area."

In one Alaskan crow population studied by the researchers, 36 per cent of the birds were afflicted, what the study calls an "epizootic cluster," an epidemic in the animal world.

How common the deformity is in B.C. and Washington is not yet known, but reports from the public and government agencies range from one or two birds a year before 2003 to as many as 25 a year by 2007, after the researchers made a public request for reports of deformities, said Handel.

B.C. government wildlife veterinarian Helen Schwantje said beak deformities in crows remain relatively rare in B.C.

"A few crows have been found in the Lower Mainland and we forward that data to the USGS," said Schwantje.

"Remember when you look a little harder for something, you tend to find more of it."

Avian Keratin Disorder also affects black-capped chickadees in Alaska, and Handel worries it has already spread to other bird populations.

"There is every indication that the same disorder is affecting both [crows and chickadees] and we have seen similar deformities in species such as woodpeckers and nuthatches," Handel said.

The outer tissue of a bird's beak grows constantly, like a human fingernail. The size of the beak is maintained through constant wear. But in birds with the beak deformity, the rate of growth is greatly accelerated, Handel said.

The search for a cause of the deformities is complicated by the poor condition of the birds examined by researchers.

Afflicted birds are often underfed and diseased, often with secondary infections.

Tests are being conducted on the beaks and surrounding tissues to try to detect changes in cell function and hormone function.

"We are testing for a lot things simultaneously, but neither environmental contaminants nor disease has produced a smoking gun," she said.

"We are looking for a virus, but they can be very difficult to find. You can develop a test for a virus and then not be able to detect it because they mutate so rapidly."

rshore@vancouversun.com Blog: vancouversun.com/randyshoretwitter.com/thegreenmanblog

© Copyright (c) The Vancouver Sun