

KNOWLEDGE BASE



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Diseases Gone Wild

In the wildlife profession's first textbook, author Aldo Leopold surmised that "The role of disease in wildlife populations has probably been radically underestimated." The book focused on "the probable role of the disease factor in game productivity and the possibilities of its control in game management" (Chapter 13 in *Game Management*, 1933). Understanding how a disease operates within a species of interest and how to manage its effects at the population level remains an important aspect of wildlife management today. But despite Aldo Leopold's prescient words, he likely had no inkling of the diverse, complex, and scary disease problems that would challenge today's professionals in the wildlife and human health fields.

The frontiers of wildlife disease have been advancing along several fronts. Some particularly scary diseases—such as Ebola, Marburg viruses, and severe acute respiratory syndrome (SARS)—illustrate how pathogens have jumped the species barrier to cause epidemics and death in humans. Strange new fungal infections, such as white-nosed syndrome in bats and chytrid fungus in amphibians, are causing major population declines across multiple species and broad

geographic areas in North America. When it comes to strange, the life form called a "prion," which causes chronic wasting disease (CWD) in deer and elk, takes the cake. Not even a type of microbe, prions are mis-folded proteins that animals pick up from one another or from the environment, and that cause proteins in the infected animal's brain and neural system to assume the mis-folded state. There is no treatment or cure for CWD, and the prions are disturbingly resistant to heat, chemical treatment, and other normal weapons in the disease-fighting arsenal.

Some diseases affecting wildlife populations come from surprising sources, such as infections of two parasitic protozoans, *Toxoplasma gondii* and *Sarcocystis neurona*, linked to sea otter die-offs along the California coast. The sources were found to be, respectively, domestic cats (presumably, via improperly-disposed litter box contents) and wild populations of opossums. West Nile virus and Lyme disease are growing concerns for both wildlife and human disease specialists because of their continuing expansion in North America. Wildlife serves as the reservoir for these and many other diseases that can be very debilitating in the humans unfortunate enough to become infected. It's no wonder that wildlife health is a growing specialty in the wildlife field, and that veterinarians, wildlife biologists, and human health specialists are collaborating across disciplinary lines in a trend termed "One Health."

In this issue of *Fair Chase*, the article by Dr. Megan Kirchgessner focuses on Q fever and other diseases that pose risks to hunters and others who handle dead wildlife. Her purpose is to emphasize prevention through the simple act of wearing surgical-type gloves when handling game. Sometimes it takes a seminal event to change one's behavior; two such experiences convinced me to accept gloves as an essential item of hunting gear. The first occurred in 2005, when I had the luck of drawing for musk oxen on Nunivak Island in the Bearing Sea and of booking with Ed Shavings Sr., a Chup'ig elder and legendary Alaskan guide. Hunting with Ed had many traditional aspects to it, but once the animal was down (a fine bull meeting the B&C minimum—my lucky streak held out), he immediately took the non-traditional step of pulling on surgical gloves to commence field dressing and skinning. That made an impression, for sure! Thereafter, gloves became a standard item in my hunting pack.

What really sealed the deal was losing my favorite cousin to chronic Q fever two years ago. A Vietnam vet, George spent his Navy service as a submariner before dedicating himself to a career of teaching math and computer science. It's doubtful he got Q fever through hunting; he kept goats and rabbits and may have gotten exposed that way. But the diagnosis was a real wake-up call; nobody in the family had heard of this disease before George became very ill.

As Dr. Kirchgessner advises, when considering whether to glove or not, it's far better to be safe than sorry. ■

W. B. Kessler

Setting the Record Straight.

In my last column about The Wildlife Society's new *Technical Review of the North American Model of Wildlife Conservation*, I mistakenly stated that six of the authors are Boone and Crockett Club Members. Actually the number is seven. My apologies to Richard E. McCabe, a 20-year member. Thanks for your work on this milestone publication, Dick!

Aldo Leopold, pictured with a group of graduate students in 1947, met to discuss management practices. They likely had no inkling of the diverse, complex, and scary disease problems that would challenge today's professionals in the wildlife and human health fields. PHOTO BY: R.A. MCCABE

