

## Be careful; Kenai Peninsula wildlife rife with parasites

by Liz Jozwiak

I've been thinking about writing an article about parasites since I attended a wolf trapping school a few years back. A highly skilled wolf trapper was showing us the proper method for skinning a wolf, and I noticed he wasn't wearing any gloves! All I could think about was the myriad of parasites to which this fellow was unknowingly exposing himself.

As one who handles many species of wild animals (both dead and alive, injured and healthy) inside our laboratory and outside in the field while conducting surveys, I am genuinely fascinated with the variety of parasites that inhabit the wildlife in our region. Most of us know that our pets (cats, dogs, birds...) are susceptible to parasites such as fleas, ticks, lice, or worms, but how knowledgeable are we about the parasites carried by local wildlife?

Many hunters and trappers have little knowledge about the variety of wildlife parasites and diseases, unless they've spent time studying parasitology or microbiology.

Some wildlife parasites are communicable to humans and some are not. For example, several ectoparasites (those that live on the outside of the body) are species-specific; that is, they can live only on a related group of animals such as canids (dog family) or felids (cat family). Dog owners and wolf trappers are familiar with the biting dog louse (*Trichodectes canis*). This species of louse will not survive on man, but it can be transmitted through social contact between dogs, coyote and wolves. It's believed that wolves on the Kenai Peninsula picked up this parasite in the early 1980's through contact with free roaming domestic dogs or coyotes. Heavy infestation of biting dog lice creates a scruffy appearance of the hair coat from scratching and rubbing of the infested areas. In severe cases, patches of hair are missing, which greatly reduces the value of the pelt.

Other examples of ectoparasites that live solely on a host species are the occasional fleas we find on red-backed voles (yes, there are fleas in Alaska!). If they manage to get on you, don't worry; they won't survive more than a few hours. The same goes for fleas on lynx, or lice on eagles. On several occasions I've had to hold down a sick eagle while the lice were slowly mak-

ing their wayward journey up my arms. They don't live long after they leave their hosts.

One internal parasite that has been found in wolves on the Kenai Peninsula is the tapeworm *Echinococcus granulosus*. This tapeworm has a two-host life cycle, primarily in canids and moose, and rarely in humans. Adult tapeworms mature in the intestine of a wolf or other canid (called the "definitive host") and the eggs are released into the feces. The eggs enter an intermediate host (such as moose or caribou) by ingestion of feces-contaminated vegetation. The eggs hatch into larvae (small worms) in the intestines of the intermediate host and travel through the lymphatic or blood system throughout the body where they lodge within the body tissue and develop into fluid filled cysts (hydatids). Upon the death of the intermediate host (such as a moose), either through direct predation by wolves, or scavenging by coyotes on the carcass, the larvae are transmitted back to a definitive host, where they develop into adult tapeworms and the cycle begins anew.

*Echinococcus* can have many intermediate warm-blooded hosts, such as humans, sheep, horses, and cattle, as well as moose and caribou. Humans, especially children, acquire *Echinococcus* in the same way as other intermediate hosts, i.e., by ingestion of *Echinococcus* eggs. This usually occurs by hand-to-mouth contact with infected dogs or their feces. Humans infected with *Echinococcus* usually develop masses of hydatid cysts on the liver, lungs, or stomach cavity. As long as the cysts do not develop in a high-risk area of the body, such as the brain, the mass can be surgically removed, and is usually not life threatening. In Alaska there are only a handful of cases of humans contracting *Echinococcus* (also known as hydatid disease), primarily through exposure of their dogs to raw moose or caribou viscera, and subsequent contact with their infected dog. Hydatid disease is most prevalent in the sheep-raising regions in the western states.

The best way to avoid contracting *Echinococcus* is good hygiene. Wash your hands after you skin that wolf or coyote, and avoid contact with their feces. Better yet, use a pair of disposable rubber gloves. People often break open dried coyote and wolf scats to see

what the animal has eaten, as revealed by bits of bone, teeth, and hair. This is interesting to do, and it can be done with a sharp stick or rubber gloves, but don't do it with bare fingers!

Keep in mind that the eggs of *Echinococcus* can remain dormant in below freezing temperatures for up to 1 year. To reduce the chance of exposing your pet to this tapeworm, don't let your dog feed on raw moose entrails or gut piles. By exercising caution, you can

reduce the risk of your family becoming the next generation of "intermediate hosts."

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