



Lice on Mammals in Alberta

Common name

biting lice, chewing lice, dog louse, deer louse,

Scientific name

Trichodectes canis (biting louse; wolves, coyotes, dogs)

Tricholipeurus lipeuroides and *T. parallelus* (biting lice; mule deer, white-tailed deer)

Solenoptes ferrisi (sucking louse; mule deer, white-tailed deer)

What's Bugging Wild Critters?

Fact sheet #38:
Lice on Mammals



Significance

There is increasing evidence of *Trichodectes canis* on wolves and coyotes in Alberta. Damage can sometimes affect the quality of the pelt, and thus is of particular concern to trappers and wildlife managers. Lice on deer generally increase throughout the winter and most hunters do not even see them in the fall.

What? Where? How?

Lice are a successful group of insects that live on the outer surface of domestic and wild birds and mammals throughout the world. This fact sheet deals with lice on mammals; we have a separate fact sheet (# 43) for lice on birds. There are many many species of lice. Most species are highly host-specific (that is, choosy about who they live on) and often **infest*** one species of host or a few close relatives. For example, *Trichodectes canis* is common on domestic dogs around the world and has spilled over into wolf and coyote populations in various locations, including western Canada and Alaska.

* General Rule:

Ectoparasites (animals that live on other animals) are an **infestation**.

Endoparasites (animals that live in other animals) are an **infection**.

There are two major lifestyles used by lice, based on different methods of food intake: biting lice (Mallophaga) chew their food, sucking lice (Anoplura) exist on a diet of fluids. Biting lice live on birds and mammals and chew off chunks of hair, feathers, and skin. Sucking lice live only on mammals and feed only on blood.

Lice generally look like tiny dark brown or bronze elongated specks of dirt. But these pieces of dirt move! Biting lice tend to have a broad flat head, elongated body, and a rounded tail end, that is, they are blunt at both ends. Sucking lice have a pointed anterior end shaped like a cone. They

also have needle-sharp mouth-parts that pierce the skin and suck up blood. Both types of lice are easy to distinguish from fleas - which are 'round', with really long legs.

Lice are common on many species of birds and mammals, generally with little negative effect. However, depending on how many lice are on an individual mammal, problems can range from minor skin irritation to the development of extensive skin damage, matted clumps of hair, and loss of hair.



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Transmission Cycle

Adult lice live on the skin. Lice eggs, often called "nits", are glued to hairs so they don't fall off. These were a real nuisance for folks in medieval times [Thus the term 'nit-picking', as applied to someone who fritters time away by picking at small details!] However, back to the lice eggs... as the eggs develop, nymphs (the first 'larval' stage) hatch in several days. These nymphs look exactly the same as an adult but are smaller. They moult and shed their outer cuticle twice more, each stage lasting a few days to a week. The final stage matures into an adult louse, which will live about 30 days. Thus an entire generation from egg to egg can happen in about 45 days.

Lice are superbly adapted to living on warm-blooded animals and generally survive less than 24 hours off the host. Thus, successful transfer generally involves lice moving directly from one animal rubbing up against another. This may occur between females and young during rearing, between males and females during breeding, or between any individuals involved in casual, aggressive, or dominance interactions. For social species like dogs, wolves, and coyotes, the high degree of direct contact among pack members can result in very high numbers of lice (intensity) and a high proportion of infected individuals (prevalence). Individuals with poor nutritional and body condition are likely to have more lice than healthy animals - but we don't know what comes first, the lice or the poor condition.

Distribution in Alberta

Lice are common on domestic dogs throughout Alberta; however, known infestations on wolves and coyotes are sporadic and generally reported in association with research projects or trapping activities. Lice have

been confirmed on wolves and coyotes in the foothills, northwest, and central Alberta. Relatively high coyote and wolf populations, in conjunction with expanded rural subdivisions, may lead to greater spillover of dog lice into wild canids. However, it may be that dog lice are now well established (enzootic), particularly on coyotes.

Trappers have for many years noticed triangular patches of damaged hair on the shoulders of coyotes. Some years are worse than others, and the winter of 2014/15 was a bad year.

Occurrence of lice on deer also appears to differ widely in different years and on different individuals. It is likely that most deer have at least a few lice but they are largely unseen, particularly in fall when most deer are examined closely by hunters.

Importance for Wildlife Management



Generally, lice have little effect and most individuals have relatively few lice. However, infestations can build up during winter months and denning periods. Animals found in poor condition can have large numbers of lice. There is undoubtedly some interplay among lice and other stresses such as food shortage, weakened immune systems, or disease that is not yet understood.

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What to Look For

When lice are present on a wolf or coyote trappers generally know right away. The hair is rough and dry, with matted clumps often with sticks, leaves, and other debris caught up in the hair. Lousy wolves and coyotes have a distinct odour which most people describe as a "mousy" smell. Often small dark lice can be seen near the surface of the skin or attached to individual hairs.

Lice on deer harvested during hunting seasons generally go unnoticed.

However, exotic/introduced species of lice can cause severe hairloss on deer under specific conditions, as documented by the wildlife department in the State of Washington.



Public Significance

In keeping with their high host specificity, lice from wildlife do NOT infest people. Dog lice could potentially transfer [back!] from wildlife to pet dogs. Cattle and other livestock have their own species of lice.

Prevention/Control

Little can be done to limit the number of lice on wildlife. Alaska Game and Fish had some success in limiting lice on wolves using aerial delivery of treated baits at dens and rendezvous sites. However, most lice on wildlife are sporadic outbreaks or may simply become part of the ecosystems in which they occur. Dog lice may have been incorporated into many populations of wild canids.

We need more information

Alberta Trappers Association and Fish and Wildlife are documenting occurrence and distribution of dog lice on wolves and coyotes in Alberta. If you detect lice on a carcass (but NOT mange), please collect a few lice or a swatch of infested hide (3 or 4" square). Bag and label the sample (date, location, your contact info, and host species) and keep the sample either dried or frozen. Samples can be sent to ATA headquarters in Westlock or to Fish and Wildlife at 6909-116 St., Edmonton T6H 4P2.

Summary

Lice on wild mammals generally are of little concern. For the most part, they exist as part of the biodiversity of the province. They do not infest people, but some can transfer to pets.

Additional Information

Parasitic Diseases of Wild Mammals, Second Edition. Edited by William M. Samuel, Margo J. Pybus and A. Alan Kocan. 2001. Chapter 1 - Lice (Phthiraptera).

Jimenez, M. et al. 2010. Dog lice (*Trichodectes canis*) found on wolves (*Canis lupus*) in Montana and Idaho. *Northwestern Naturalist* 91: 331-333.

Samuel, W. et al. 1980. Ectoparasites (Mallophaga, Anoplura, Acari) on mule deer, *Odocoileus hemionus*, and white-tailed deer, *Odocoileus virginianus*, of Alberta, Canada. *Journal of Medical Entomology* 17: 15-17.

Washington Dept of Fish and Wildlife: wdfw.wa.gov/conservation/health/hair_loss/index.html

Wildlife diseases in Alberta: esrd.alberta.ca/fish-wildlife/wildlife-diseases/