



Lice on Birds in Alberta



Common name

bird louse, chewing louse, biting louse, feather lice

Scientific name

various species

Significance

Lice on birds occur frequently, often with little or no negative effect on infested birds. Sometimes there may be subtle effects resulting in birds just not in prime condition. However, if there are many many lice, particularly on young birds, they can affect the health and perhaps survival of individuals.

Lice and birds have an ancient relationship. Indeed, there is fossil evidence of a bird louse from ~44 million years ago! Given the length of time spent together, there is a close association between species of lice and the species of bird they live on. Co-evolution (that is, two species evolving together) seems to be a big part of the current relationships among birds and lice.

What? Where? How?

General information about lice can be found in *Lice on Mammals in Alberta*, Fact Sheet #38 of this series.

Lice on birds are extremely common but often overlooked. You have to look closely among the feathers to see these relatively small wingless flattened insects. While we may not see them, infested birds certainly know the lice are there. Much of the grooming and preening done by birds is in response to lice in their feathers. Grooming can be a very effective way to remove lice. The lice could even be an added source of food for infested birds



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What's Bugging Wild Critters?

Fact sheet # 43:
Lice on Birds



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Perhaps the most conspicuous bird lice in Alberta are *Piagetiella peralis*. This louse occurs across North America and adults live inside the throat pouches of pelicans and cormorants. They often form a small circular rosette with all heads facing inward.

The lice feed on blood and skin cells and heavily infested birds can lose body condition, particularly young pelicans. Some young birds die as a result of the lice and mortality is worse in some years than others.

Lice on Birds

(various species)

Transmission Cycle

Bird lice spend their entire lives on birds and cannot live anywhere else. Fortunately for infested birds, the lice do not live very long.

Eggs hatch in about a week, hatched larvae (called nymphs) molt three times and become adults in about a month. Adults live 3-4 weeks, with each female producing an average of one egg a day until she dies.

Lice are passed on to other birds by direct contact with an infested bird. Increased social contact in large groups, in nests and nest boxes, or during mating periods can increase the opportunities for transfer of lice to other birds.

We know quite a bit about feather lice on birds. In fact different areas of the body provide suitable habitat for different species of lice. Thus, lice on the head are different than those in the armpits/underwings, and different again from those on the belly or the tail.

Distribution in Alberta

Most wild birds in Alberta have lice somewhere sometime. Anyone who handles live wild birds is likely to find lice if you look for them. Waterbirds, except pelicans and cormorants, are somewhat less likely to have many lice, particularly species that dive underwater. Similarly birds that live in dry arid habitats are less likely to provide suitable places for lice to live.

Importance for Wildlife Management

Birds are very good at keeping the number of lice under control; thus bird lice generally cause few problems. However, large numbers of lice can be very irritating and cause direct or indirect damage to feathers and skin. Some birds even suffer from lack of sleep if they are infested with lots of lice. Over time, high numbers of lice can be associated with reduced reproductive success or perhaps reduced survival of infested birds.

Pouch lice have been associated with mortality in young pelicans at Primrose Lake (on the Alberta-Saskatchewan border north of Cold Lake). Feeding lice can cause haemorrhage, ulcers, and tissue damage in the pouch and oral cavity. Nymphs occasionally cause damage to the skin of very young pelicans before they get their feathers.



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There is an intriguing observation that greater sage-grouse heavily infested with lice may have pin-point haemorrhages on their big yellow air sacs. When the air sacs are inflated during the spring breeding displays, females apparently notice the haemorrhages and decide not to mate with heavily infested (=lousy) males.

Similarly barn swallow males with lots of lice are less attractive to females. Infested males have shorter songs and the females can detect the lack of energy and thus chose a different male. Infested males also lose their long tail feathers and are less adept at flying.

Lice also can be involved in transmitting parasites. A nematode (roundworm) that lives in the ankles of coots and grebes (waterbirds) uses biting lice to get to uninfested birds. When the lice are transferred, they take the nematode with them.

Lice on Birds

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Public Significance

Bird lice are of little concern for people. Although they can occasionally end up on someone, they do not stay. Apparently we just do not taste as good as a bird.

On rare occasions, bird lice may bite someone who handles live birds but such bites do not transfer anything that can infect people.

Bird lice are considered a relatively minor concern in domestic poultry operations. Free-range birds, birds held under crowded conditions, or birds in poor health may provide suitable habitat for increased numbers of lice. Effective treatments for lice on poultry are readily available.

Due to the host specificity, lice on wild birds do not occur on domestic birds.

Prevention/Control

There is nothing that can be done about lice on wild birds. And perhaps nothing that should be done. These animals are part of the biodiversity of the province and simply exist when and where there are conditions that support their population.

The long-standing evolutionary connection between birds and their lice implies that, for the most part, the relationship works quite well for both parties.

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Summary

Lice are a fact of life for most wild birds. Birds keep the number of lice in check through extensive grooming and lice take just enough resources from the bird to support a population without overwhelming their host.

Additional Information

Bartlett, C.M., and R.C. Anderson. 1987. *Pelecitus fulicaeatrae* (Nematoda: Filarioidea) of coots (Gruiformes) and grebes (Podicipediformes): skin-inhabiting microfilariae and development in Mallophaga. *Canadian Journal of Zoology* 65: 2803-2812.

Clayton, D.H., R.J. Adams, and S.E. Bush. 2008. Phthiraptera, the chewing lice. Chapter 29 in *Parasitic Diseases of Wild Birds*, C.T. Atkinson, N.J. Thomas, and D.B. Hunter (eds.), John Wiley & Sons, pp. 513-526.

Samuel, W.M., E.S. Williams, and A.B. Rippin. 1982. Infestations of *Piagetiella peralis* (Mallophaga: Menoponidae) on juvenile white pelicans. *Canadian Journal of Zoology* 60: 951-953.



For more information on wildlife diseases in Alberta: www.esrd.alberta.ca/fish-wildlife/wildlife-diseases/