TICKS IN BRITISH COLUMBIA
WILDLIFE HEALTH FACT SHEET

There are several species of ticks which occur in British Columbia. The most commonly encountered include the winter tick (*Dermacentor albipictus*), the Rocky Mountain wood tick (*Dermacentor andersoni*) and the Western black-legged tick (*Ixodes pacificus*). Only an expert can be relied upon to identify most ticks accurately, particularly when they are in immature stages. An adult tick may measure from 3-4 mm to 1 cm when engorged. Immature stages are 1-2 mm and often difficult to see.

D. albipictus is usually seen on deer species, particularly moose, less commonly on livestock and is rarely found on humans. *D. andersoni* occur on many mammals. The immature larval and nymph stages are on rabbits or small rodents, with adult ticks on larger wildlife, deer, livestock, dogs and humans. *I. pacificus* has a similar host range as *D andersoni*, with immature larval and nymph stages on mice and lizards and adult ticks on dogs, deer, humans and horses. It is strictly found near coastal BC, while the other species are more widespread into the interior and northern areas.

These most common ticks have one of two basic life cycles, utilizing either one or three hosts for their development from larva, nymph to adult stages. One host ticks, such as the winter tick, hatch from eggs laid on the ground in early spring. The larvae rest until early fall when they climb vegetation and wait for a passing host. If a host brushes against the tick, it climbs on and attaches for a blood meal, molting to become a nymph by late fall. A second blood meal is taken before molting to the adult stage. Adult ticks are present by late winter. Mating occurs, the female feeds one more time, then drops from the host to lay eggs on the ground in ground litter before dying.

Three host ticks, such as the wood tick or the Western black-legged tick, occur on a different host during each life stage. Three host tick adults emerge from ground litter in the spring and seek large hosts for a blood meal and mating. Females then drop to the ground to lay eggs. If conditions are suitable, larvae hatch and climb vegetation to wait for a suitable host, usually a small rodent. If a host is found, they attach, take a meal and drop off to molt to the nymph stage. The nymph must repeat the process of finding a host, feeding and dropping off to molt to the adult stage. Each life stage of a three host tick can survive for a long period of time without a host. Nymphs and adults which have not fed can become dormant and prolong the cycle for up to three years. If conditions are not ideal, they simply wait until they improve.

Heavy tick loads can be debilitating, however, severe effects are best documented for the one host winter tick on moose. A single moose may carry tens of thousands of ticks. Each tick can remove a significant amount of blood and causes irritation at the site of attachment. The moose rubs and scratches, often resulting in a significant loss of hair by early spring in a characteristic pattern over the neck and body. The pale hairless skin remaining has given rise to the term “ghost moose” for those animals severely affected. Heavy tick burdens can weaken animals by direct blood loss, loss of body heat due to hair removal and poor body condition when scratching and rubbing behaviors reduce the time spent feeding. Moose in weakened condition may be unable to compensate for severe weather conditions occurring before new hair grows. Death can result, particularly in young animals in early spring in combination with poor nutrition and severe weather conditions. Adult moose may be debilitated by hair and blood loss. Wild sheep, elk and deer species appear to carry fewer winter ticks and are rarely affected adversely.

Infestations with three host ticks, even in deer species, are rarely as heavy as winter ticks and direct tick-associated mortality is not recognized. These types of ticks are important, however, since they can serve as transmitters of infectious diseases to animals and humans. As larvae they feed on small mammals or in the case of black-legged ticks, lizards or mice. Infectious organisms within the host’s blood may be picked up with the blood meal. Subsequent feeding by the tick can pass the organism to the next host. The best known of these diseases is human Lyme borreliosis, carried by the Western black-legged tick, others include Rocky Mountain spotted fever, relapsing fever and tularemia.