

# 12. Insects and Others

## Often Overlooked Organisms

Often overlooked, insects and other arthropods are among those organisms sometimes called “the little things that run the world.”

As Canadian naturalist Ben Gadd says: “Insects are beautiful. Their

strange, alien lives are quite interesting. Remember as you are slapping and swearing: if it were not for the bugs the wildflowers wouldn't get pollinated and we mountaineers would be up to our knees in unprocessed elk poop.”

Insects of the Crown of the Continent make up for their small size with sheer numbers. In addition, insects also influence their ecosystems disproportionate to their size. For example, since 1980, roughly 80% of the lodgepole pine trees of Waterton Lakes National Park have died. They were killed by mountain pine beetles, insects only one centimeter long. Because of the work of millions of beetles, entire mountainsides were covered in red, dead trees.

National park visitors are rarely as interested in insects as they are in birds or wildflowers, even though insects are vital to the survival of those eye-catching organisms. When visitors ask about insects, they usually inquire how best to avoid pests like mosquitoes. Indeed, the most studied insects in the Crown of the Continent are those we consider pests.

In forests managed for timber, foresters

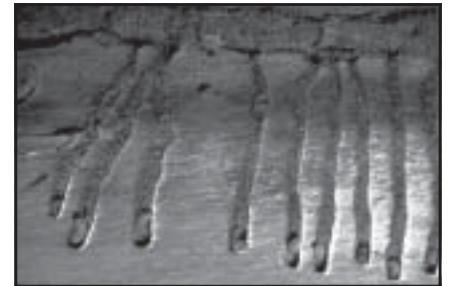


have invested considerable effort to better understand and control bark beetles. The Latin name of this genus of beetles, *Dendroctonus*, means tree killer. Bark beetles (such as the mountain pine beetle) bore into tree

bark, laying eggs just underneath the surface.

The beetle larvae grow fat eating the tree cambium, eventually girdling the tree and leaving it to

die. When the beetles become adults, they exit the tree looking for more trees in which to lay eggs. Millions of insects may



leave many acres of dead trees. Bark beetles are a native species, and their effects on trees are a natural process.

One of the side effects of fire suppression is a greater percentage of older trees than would occur with periodic fires. Older or crowded trees are less able to naturally resist beetles. Such conditions may result in beetle infestations that are larger than would normally occur. In turn, beetle-killed lodgepole pine also fuels large forest fires. Thus our history of fighting fires may ironically lead to a cycle of bigger beetle infestations, more fuel, and more and larger fires.

The mountain pine beetle outbreak that

killed trees in Waterton was just one part of a larger outbreak in the Rocky Mountains in the 1980s. Different species of tree-killing beetles are specialized for different species of trees. For example, there are species of beetle that specialize in Englemann spruce forests and others that attack Douglas fir. Other species are more generalists.

Other forest pests, such as spruce bud worm or the Douglas fir tussock moth, can also stunt or kill centuries-old trees. The larvae of these insects munch tree needles and buds. While sometimes considered pests by people, caterpillars and aphids in the treetops are the summer staple for a wide variety of nesting birds, such as warblers.

Airborne insects, such as mosquitoes and gnats, are important food for airborne predators like swallows and night hawks, as well as food for myotis bats. Even some larger birds, like kestrel falcons and Swainson's hawks, spend substantial time hunting grasshoppers and other insects. Ants, ladybugs, and other ground-dwelling insects and their larvae are also an important food for grizzly bears, other mammals, and birds.

Insects are an important agent for converting plant matter to soil. Carpenter ants and other invertebrates gradually break down even the largest logs. Beetles also carry spores of fungi on their backs, which then take hold in logs, helping break them down into soil.

Some insects, such as ladybug beetles, congregate in great numbers. These congregations can be important sources of grizzly bear food in the Mission Mountains and elsewhere. Army cutworm moths also retreat to the cool, mountain boulder fields during hot summers, where grizzlies congregate to feed on them.

As discussed in earlier sections, the rivers and lakes of the Crown of the Continent host a complex web of aquatic insects.

Truly dangerous insects are scarce in the Crown of the Continent. Unless one is allergic to stings, the insects here are more bothersome than perilous to humans. Warmer climates tend to host more dangerous insects and arthropods, such as scorpions or venomous spiders.

Gadd estimated that of 100,000 arthropod species in North America, perhaps 20,000 exist in the Canadian Rockies. Such an estimate offers a ballpark estimate for the Crown of the



Continent as well.

The study of insects is still a world waiting for discovery in the Crown of the Continent. A Montana State University entomologist studying insects in the North Fork of the Flathead River Valley not only discovered several new species in the 1990s, but also several genera that were previously undescribed. By comparison, no new mammal species have been described in North America for about 150 years.

## Sources

Gadd, Ben. *Handbook of the Canadian Rockies*. 2000 edition. Jasper, Alberta: Corax Press.

Rockwell, David. *Glacier National Park: A Natural History Guide*. New York: Houghton Mifflin Co., 1995.

