**The impact of forestry on insects**

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To most people, insects are an annoyance if not downright harmful; they bite, sting, carry disease, smear car windshields, and cause damage to our food crops and destroy trees. Although some insects are pretty, such as butterflies and bees pollinate plants, what good are they?

Of the 1.6 million animals and plants identified worldwide to date, about 60% are insects, more than 650,000 species. Of these, more than half are beetles, that is 350,000, and these are just the ones we have identified – there are potentially thousands still to be discovered.

The rap that insects get is not founded. The vast majority of insects do not bite or sting us, do not harm our foods or trees in forests but are major players in ecosystem dynamics. In forested ecosystems, the major herbivores, by far, are the insects, and they carry out this role without harming trees. Ecosystems require the functions of herbivores, carnivores and decomposers, all groups dominated by insects, to exist.

Danks estimates more than 66,000 insect species in Canada, but about 50% are unrecorded or undescribed. We know a lot about the insects that compete with us in agriculture and forestry – they are monitored and fought with pesticides. We create the conditions for some insect population to explode in numbers. Monocultures in both agriculture and forestry are the conditions for them to succeed. Additionally, we facilitate the invasion of insects from other parts of the world. These insects often become pests because our native plants do not have the defence mechanisms to keep populations low. But the “harmful” insects are such a tiny proportion compared to the useful ones keeping ecosystems healthy, but we do not know much about these. They are rarely studied and rarely monitored. In Canada, insects are seldom listed. The list of wildlife species at risk in Canada includes over 800 species. The vertebrates and plants vastly dominate the list, while insects only make up 33 individuals, mostly butterflies and moths. If we monitored for all insects in forests under forestry practices, the list would likely dominate.

Since we know so little about insects in Nova Scotia and the impact that forestry has on populations, we need to look elsewhere. In Sweden, where forestry is similar to that in Nova Scotia, there are an estimated 5000 species of beetles alone. Of these, over 1000 are red-listed and this primarily due to forestry. It is the saprozylic beetles, the ones that depend on deadwood, that are listed. The vast majority of saproxylic beetles depend on deadwood for their existence; they do not kill trees but rather seek out already dead trees and are essential organisms in the decomposition of wood and thus crucial in the process of soil formation.

In Nova Scotia, intensive forestry, where residual wood is chipped, is removing the habitat for saproxylic beetles with the consequence that soils will lose required nutrients for successive stands of trees. By not monitoring for species and then ignorant of their loss is unacceptable.

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