

Diversity of parasitoids (Hymenoptera: Ichneumonidae) under various harvesting regimes in deciduous-dominated stands

Lead by: [Marla Schwarzfeld](#)

Theme: [Arthropod Diversity](#)

Status: Continuing

Start: 2006

Participants

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Background

The Ichneumonidae comprise the largest hymenopteran family with at least 60,000 species, and probably many more. While there are many exceptions, the majority of species are solitary endoparasitoids of endopterygote larvae and pupae, particularly among the Lepidoptera and Symphyta (Gauld and Bolton 1988). As such, they play a large role in the regulation of potential pest species, and in maintaining the equilibrium of ecosystems in general. Because of their highly specialized life histories, they may also be particularly vulnerable to ecological disturbances (LaSalle and Gauld 1991, Shaw and Hochberg 2001). However despite their abundance and ecological importance, the Ichneumonidae remain relatively unstudied (Shaw and Hochberg 2001). Many studies performed at EMEND have focused on arthropods, due to their abundance, diversity and sensitivity to fine-grained changes in habitat quality. However these studies have focused primarily on spiders (Work et al. 2004), moths (Morneau 2002) and beetles (Jacobs 2004, Jacobs et al. 2007). Very little work has been done on parasitoids (but see Wesley 2002, Wesley et al. 2006), and no work has looked at the ichneumonid community as a whole. Since different organisms can respond to disturbance in different ways, it is important to use a variety of indicators in order to assess habitat quality. For example, parasitoids may not respond to habitat fragmentation in the same manner as their hosts, which could potentially increase outbreaks of herbivorous insects (Anton et al. 2007; Roland and Taylor 1997).

Objectives

The goal of this project is to determine baseline Ichneumonidae community data for Alberta's boreal mixedwood forest, and to determine the impact of variable retention harvesting on the ichneumonids of deciduous-dominated stands. As well, I will be creating a user-friendly computerized key to the ichneumonids of Alberta's boreal forest which will enable further studies on this ecologically important group of insects.

Key Results

In 2007, 12,141 specimens were collected. These have been sorted into 21 subfamilies, and identification to genus and species/morphospecies (estimated at several hundred species) is on-going.