

## The crane flies (Diptera: Tipuloidea) of Great Smoky Mountains National Park

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### Abstract

The list of crane flies (Diptera: Ptychopteridae, Tipuloidea, Trichoceridae) known from Great Smoky Mountains National Park is updated. Sampling in association with the All Taxa Biodiversity Inventory of Great Smoky Mountains National Park resulted in the addition of 107 new Park records, bringing the current list to 250 species. This species assemblage is much richer than those of surrounding areas, although similar in composition. Total richness is estimated to be between 450 and 500 species for Great Smoky Mountains National Park.

**Key words:** ATBI, Ptychopteridae, Tipuloidea, Trichoceridae, Great Smoky Mountains

### Introduction

Crane flies (Diptera: Tipuloidea) are a diverse array of small (3 mm) to large (> 50 mm) delicate, long-legged flies of the families Cyndrotomidae, Limoniidae, Pediciidae, and Tipulidae. This exceedingly rich superfamily contains approximately 15,000 described species worldwide (Byers 1996, Oosterbroek 2005), with about 1,600 species known from the Nearctic Region (Borror et al. 1989, Oosterbroek 2005). Young and Gelhaus (2000) have documented that crane fly diversity may represent nearly 2% of the entire organismal diversity of an area. The ecological diversity of crane flies is seen in the range of habitats used by the various species of this group. Crane fly larvae occupy a wide range of aquatic, semi-aquatic, and terrestrial habitats, including streams and seeps, mosses and liverworts, burrows in the leaves of plants, thin films of water trickling over vertical rock faces, dry to soggy decaying wood, rich organic to dry sandy soils, fungi, accumulations of detritus,