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## **A Guide to Mongolian Stoneflies (Insecta: Plecoptera)**

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## Abstract

Since the early 1900s, efforts have been made to catalogue the stoneflies of Mongolia. Taxonomic work from 1960 to 1980 greatly expanded basic lists of stoneflies in Mongolia, but no comprehensive survey or synthesis of this dispersed literature has been completed. In conjunction with a modern survey of the aquatic insects of Mongolia, we collected Plecoptera on a series of expeditions to the Selenge (north) and Altai (west) regions of Mongolia. A total of 48 species distributed in 24 genera and 8 families were documented, including 3 of the 5 Mongolian endemics, 2 new species records for Mongolia, and 1 species new to science. The majority of the fauna is representative of the East Palearctic region. The 800+ specimen records were used to validate historical species lists, document species ranges with georeferenced localities, and create identification tools to be used by Mongolian and international researchers with a broad range of taxonomic expertise. These identification tools include a generic-level key to nymphs, species diagnoses, as well as known species range and predicted species range maps created using Ecological Niche Modeling. These tools are primarily intended for use by Mongolian scientists, sampling teams, and community water quality monitoring groups, as well as general use by researchers interested in biogeography, ecology, and water quality applications of Mongolian Plecoptera. With this work, we hope to equip Mongolians with the scientific resources to protect their valuable and vulnerable water resources.

**Key words:** Stoneflies, Plecoptera, Insecta, Mongolia, taxonomy, biogeography, GIS, water quality, biomonitoring

## Introduction

The country of Mongolia is located in central Asia, bordered by Russia to the north and China along the remainder. Mongolia is the third largest country in Asia, covering 1,564,100 km<sup>2</sup>, an area approximately one-fifth the size of the United States. The country is divided into provinces (“aimags”) made up of districts or counties (“soums”). Despite Mongolia’s reputation as a desert steppe roamed by nomads and camels, the landscape is dotted by a number of major rivers and glacial streams that contribute to well-known water sources like Lake Baikal and the Yenisei River. In fact, the Selenge River of the Hovsgol region, contributes half of the inflow into Lake Baikal and has been noted as one of the main pollution sources contaminating the relatively pristine lake (Garmaeva 2001,