**Cool-Climate Insects and Survivors of the Ice Age**

The climate of the Kushiro Wetlands, which has changed little over the past 6,000 years, supports many species of cool-climate insects. There are over 1,000 species of insects living in the wetlands; some are remnants of the last ice age, while others have migrated to the area more recently.

*The impact of climate change*

Many of the insects in the Kushiro region once inhabited a much wider area of Hokkaido. As temperatures have increased across much of the island, these insects have migrated to the cool wetlands of Kushiro, where annual temperatures average 5.8°C. These migration patterns show how the earth’s climate and biodiversity is changing.

*Ice-age survivors*

Several insect subspecies in the Kushiro Wetlands have been in the area since the last ice age, including the subarctic darner dragonfly (*Aeshna subarctica*) and the Japanese water spider (*Argyroneta aquatica japonica*). These are almost identical to subspecies found in Europe and Eurasia.

*Protected species*

The wetlands are home to endangered insects protected as Natural Living Monuments of Japan, including the *ezokaojiro tonbo* dragonfly (*Leucorrhinia intermedia ijimai*) with its distinctive white face, the *akameito tonbo* damselfly(*Erythromma humerale),* and the *min-min zemi* cicada (*Hyalessa maculaticollis*). Although most of the area is too cold for it to live in, the *min-min zemi* thrives on the Wakoto Peninsula on Lake Kussharo, its northernmost habitat in Japan, thanks to the peninsula’s geothermal heat.