December 2022

TERRESTRIAL ARTHROPOD MONITORING PROGRAM

METABARCODING REPORT – RED LAKE DISTRICT HIGH SCHOOL

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Results

A total of 5,520 different BINs (Barcode Index Numbers; a proxy for species) were encountered at Red Lake District High School. Over half the BINs captured were flies (Diptera), followed by bees, ants and wasps (Hymenoptera), moths and butterflies (Lepidoptera), and true bugs (Hemiptera; Figure 1).

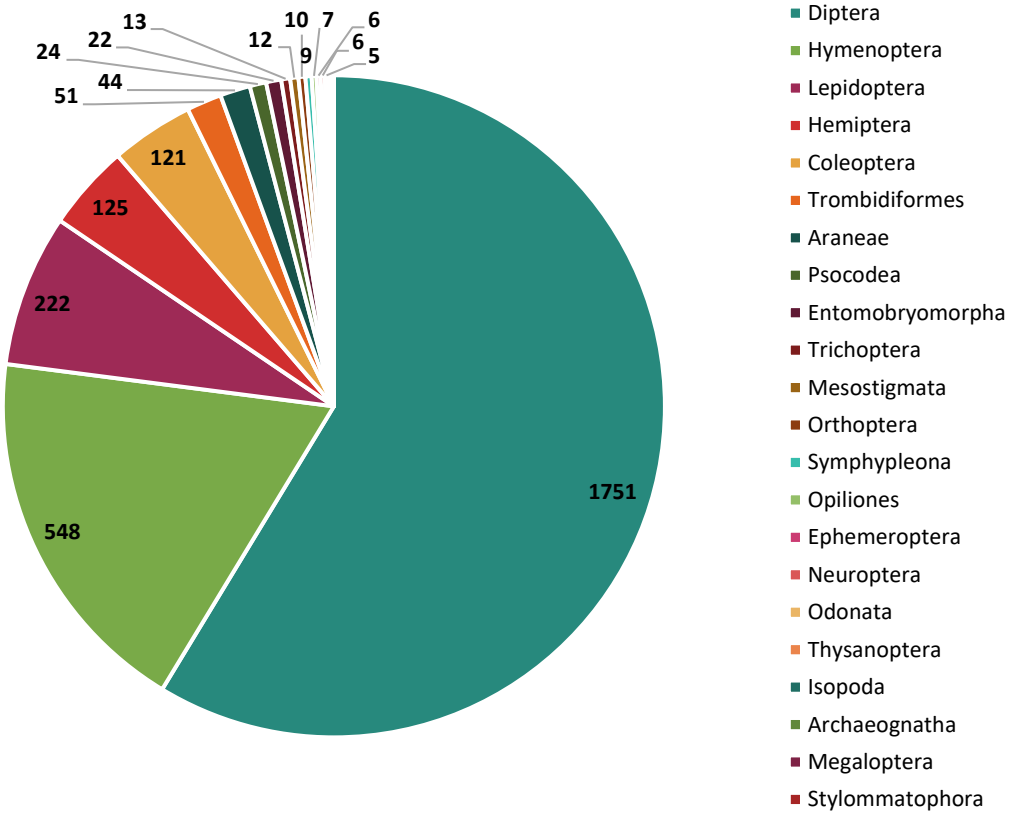

Figure 1. Taxonomic breakdown of BINs captured in the Malaise trap at Red Lake District High School.

Species diversity and insect abundance varied throughout the collecting period; the period that captured the most BINs was not necessarily the largest sample collected (Figure 2). The peak of species diversity was obtained towards the middle of July.

In total, 761 species were named, representing 26% of the BINs. All but three BINs were assigned at least to family and 72% of the BINs were assigned to a genus. Specimens collected from this site represent 257 different families and 921 genera. A complete species list is attached separately.

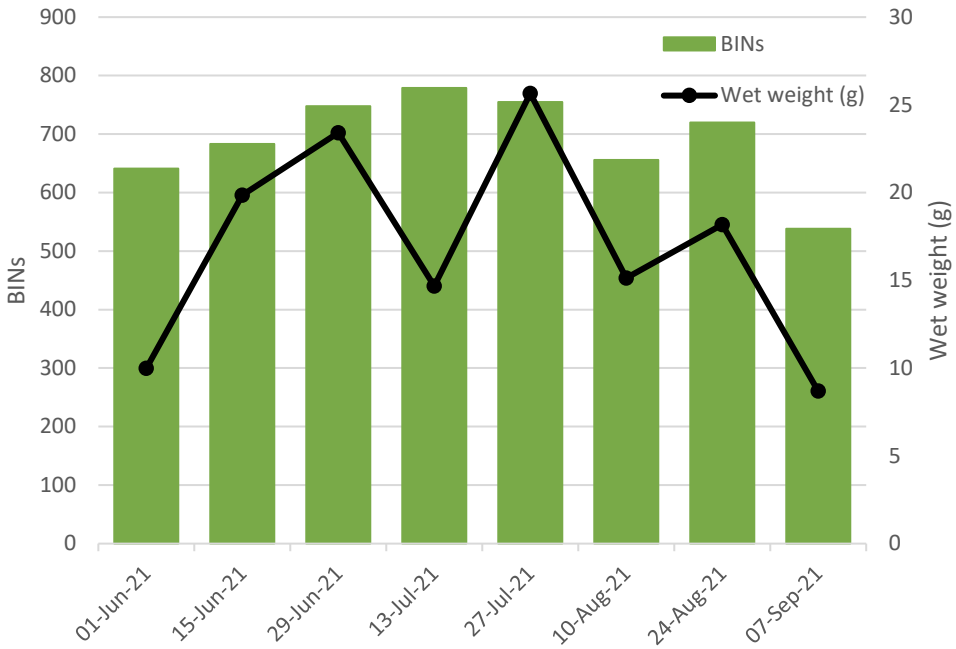

Figure 2. Species diversity (measured by BINs) and approximate insect abundance (measured by wet weight of sample) captured at the trap over the 2021 collecting period.

In combination with the metabarcoding results from the 2020 sampling, a grand total of 5,083 BINs have been captured from Red Lake District High School. There was an overlap of 894 BINs between both sampling years and the 2021 trap added 2,090 BINs to the total species pool (Figure 3).

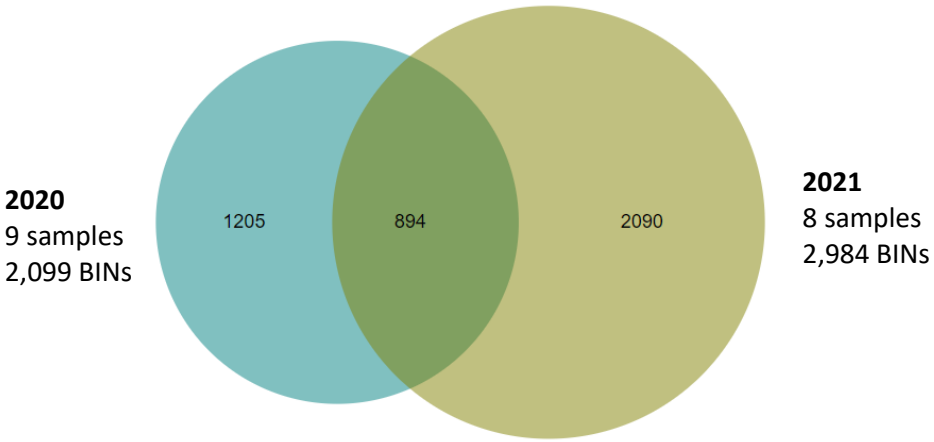

Figure 3. Venn diagram showing the species overlap between the 2020 and 2021 traps.