Regional Science Consortium Macroinvertebrates

Background

Presque Isle State Park is located in Erie, PA and consists of a sand spit arching out into Lake Erie. This sand spit evolved into a landmass with both natural and man-made wetland areas. These wetlands are considered high priority areas for conservation and protection because they have become fish nesting areas and preserves for sensitive, protected, and even some endangered species. Water quality is the measure of the healthiness of the water in an area and is important to determine in these priority wetlands on Presque Isle State Park.

Macroinvertebrates, or the larval stage of many insects, are an easy and accurate way for scientists to determine the water quality of a stream or wetland. Some macroinvertebrates are tolerant to pollution and can therefore live within waters that are quite polluted, but some macroinvertebrates are less sensitive to pollution and will not be found in highly polluted waters. Therefore, using the macroinvertebrate identities and quantities at a sample site, scientists can determine the water quality of the site by using a Biotic Index which can produce a water quality rating of **Excellent, Good, Fair, or Poor.**

Objective

Students will apply their knowledge of macroinvertebrates and their importance in determining water quality by utilizing a dichotomous key to identify 5 samples of macroinvertebrates that have been collected from one wetland, Thompson's Bay.

Instructions

- 1. Use the dichotomous key to identify each macroinvertebrate within the 5 samples and write each name on your student worksheet in the space provided next to **Genus**.
- Complete the math table using the identities and quantities of each insect, and find the Total Index Value, or Biotic Index. Circle the appropriate water quality selection for each site.
- 3. Answer the questions at the end of your student worksheet to compile your data and determine the best and worst water quality sites in Thompson's Bay and why that might be.