Bioindicators of Water Quality
(Midwest focus)

Title: Bioindicators of Water Quality

For: youth in middle and high school (possibly upper elementary, with help)

Keywords: water quality, insects, entomology, bioindicators

Description:
4-H members who are interested in water quality or entomology will enjoy learning how aquatic insects can be used as bioindicators of water quality. Youth locate a stream and collect insects for 45 minutes along a 200 foot section. Captured insects are kept in water and sorted by matching to insects to pictures (total accuracy is not required).

The bioindicator cards/pub show larval stages of aquatic insects that may be found in Midwestern streams and a corresponding tolerance score. The tolerance score represents the insect's sensitivity to pollution and is used to estimate water quality. Insects with a tolerance score value of 0 are intolerant to pollution while insects with a tolerance score of 10 are very tolerant of pollution. Since this material is intended for use in Midwestern states and would need to be adapted by an entomologist familiar with local aquatic insects and their tolerance for water pollutants for use in other parts of the world.

Youth then record the number of insects from each insect family on a data sheet and use the associated water quality rating to complete calculations and determine the stream water quality rating.

Publications:

- Instructions, flashcards, the 8.5 x 11 format publication, and data sheets are available at: www.ydae.purdue.edu/natural_resources/Resources/BioindicatorWQ/
- Mobile version: 4-H-1018, at www.edustore.purdue.edu (enter 4-H-1018 in the Store Search box on the right)

Reviewed by scientists and education specialists

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