

Pollution Tolerance Index

Student Name _____ Class/Group # _____

Location _____ Date _____ Time _____

Weather conditions _____

Air Temperature _____ Water Temperature _____

Instructions: Place a checkmark in the box to indicate the presence of the following macroinvertebrates. Complete the calculations to determine the PTI for this location.

Sensitive	Somewhat Sensitive	Tolerant
<input type="checkbox"/> caddisfly larva <input type="checkbox"/> dobsonfly larva <input type="checkbox"/> gilled snail (right-side opening) <input type="checkbox"/> mayfly larva <input type="checkbox"/> stonefly larva <input type="checkbox"/> riffle beetle adult <input type="checkbox"/> water penny	<input type="checkbox"/> alderfly larva <input type="checkbox"/> beetle larva <input type="checkbox"/> clam <input type="checkbox"/> crane fly larva <input type="checkbox"/> crayfish <input type="checkbox"/> damselfly larva <input type="checkbox"/> dragonfly larva <input type="checkbox"/> scud <input type="checkbox"/> sowbug (aquatic) <input type="checkbox"/> water mite	<input type="checkbox"/> aquatic earthworm <input type="checkbox"/> blackfly larva <input type="checkbox"/> leech <input type="checkbox"/> midge larva <input type="checkbox"/> pouch snail (left-side opening) <input type="checkbox"/> other snail (flat coil) <input type="checkbox"/> water boatman <input type="checkbox"/> backswimmers
Total checkmarks: _____ X 3 pts = _____	Total checkmarks: _____ X 2 pts = _____	Total checkmarks: _____ X 1 pt = _____
Add: _____ + _____ + _____ = _____ (Sensitive) (Somewhat Sensitive) (Tolerant) (PTI Score)		

Water Quality Rating

(circle one of the following based on the PTI score above)

Excellent (>22)

Good (17-22)

Fair (11-16)

Poor (<11)

OWEB Level 2 Assessment of Water Quality*

The Level 2 assessment is based on family level identifications. The number of organisms in each family are counted and recorded. The family-level metrics and scoring criteria are:

- Taxa Richness – total number of macroinvertebrate families identified from the sample.
- Mayfly Richness – total number of mayfly families identified from the sample.
- Stonefly Richness – total number of stonefly families identified from the sample.
- Caddisfly Richness – total number of caddisfly families identified from the sample.
- % Diptera – total number of diptera (true flies) in the sample divided by the total number of macros X 100.
- % Dominance – total number of the three most abundant organisms divided by the total number of macros X 100.

Metric	Raw Score	5	3	1	Score (circle one)
Taxa Richness		>18	10 – 18	<10	5 3 1
Mayfly Richness		>4	2 – 4	<2	5 3 1
Stonefly Richness		>3	1 – 3	<1	5 3 1
Caddisfly Richness		>4	2 – 4	<2	5 3 1
% Diptera (diptera/total X 100)		<15	15 – 30	> 30	5 3 1
% Dominance (sum top 3/total X 100)		<30	30 – 50	> 50	5 3 1
				Sum the Score =	

Score Range	Stream Condition
> 23	No Impairment: passes Level 2 assessment. Indicates good diversity of invertebrates and stream conditions with little disturbance. Further sampling will help confirm the site’s condition as unimpaired.
17 – 23	Moderate Impairment: Evidence of some water quality impairment exists. Requires further study and more detailed analysis.
<17	Severe Impairment: Fails Level 2 assessment. Evidence of stream disturbance exists. Further study may be warranted to confirm level of impairment and potential causes.

* OWEB Level 2 Assessment as presented to Clark County educators by the Environmental Information Cooperative, Fall 2005