





Fresh Water Analysis

Date:	Weather Conditions:
Location:	Air Temperature (°C)
Latitude/Longitude:	Wind Conditions
Water body:	% Cloud Cover
Watershed:	Precipitation

Test Factor	Result	Comparison	Rank	Percent (%) Saturation in Fresh Water Dissolved Oxygen																																																																
Water Temperature (°C) (Get from stream card)																																																																				
Dissolved Oxygen (Use the table to <u>convert ppm to % saturation</u>) 		91-110% Saturation 71-90% Saturation 51-70% Saturation <50% Saturation	4 – Excellent 3 – Good 2 – Fair 1 – Poor	<table border="1"> <thead> <tr> <th></th> <th>0 ppm</th> <th>4 ppm</th> <th>8 ppm</th> </tr> </thead> <tbody> <tr><td>2</td><td>0</td><td>29</td><td>58</td></tr> <tr><td>4</td><td>0</td><td>31</td><td>61</td></tr> <tr><td>6</td><td>0</td><td>32</td><td>64</td></tr> <tr><td>8</td><td>0</td><td>34</td><td>68</td></tr> <tr><td>10</td><td>0</td><td>35</td><td>71</td></tr> <tr><td>12</td><td>0</td><td>37</td><td>74</td></tr> <tr><td>14</td><td>0</td><td>39</td><td>78</td></tr> <tr><td>16</td><td>0</td><td>41</td><td>81</td></tr> <tr><td>18</td><td>0</td><td>42</td><td>84</td></tr> <tr><td>20</td><td>0</td><td>44</td><td>88</td></tr> <tr><td>22</td><td>0</td><td>46</td><td>92</td></tr> <tr><td>24</td><td>0</td><td>48</td><td>95</td></tr> <tr><td>26</td><td>0</td><td>49</td><td>99</td></tr> <tr><td>28</td><td>0</td><td>51</td><td>102</td></tr> <tr><td>30</td><td>0</td><td>53</td><td>106</td></tr> </tbody> </table>		0 ppm	4 ppm	8 ppm	2	0	29	58	4	0	31	61	6	0	32	64	8	0	34	68	10	0	35	71	12	0	37	74	14	0	39	78	16	0	41	81	18	0	42	84	20	0	44	88	22	0	46	92	24	0	48	95	26	0	49	99	28	0	51	102	30	0	53	106
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pH (Use the pH paper to test your stream sample)		4 5 6 7 8 9 10	1 – Poor 1 – Poor 3 – Good 4 – Excellent 3 – Good 1 – Poor 1 – Poor	Water Temperature (°C)																																																																
Nitrate (Get from stream card)		5 ppm 20 ppm 40 ppm	2 – Fair 1 – Poor 1 – Poor	Soil characteristics Temperature: pH: Texture: Color smear:																																																																
Phosphate (Get from stream card)		1 ppm 2 ppm 4 ppm	4 – Excellent 3 – Good 2 – Fair																																																																	
Turbidity (Get from stream card)		0 JTU > 0 to 40 JTU > 40 to 100 JTU > 100 JTU	4 – Excellent 3 – Good 2 – Fair 1 – Poor																																																																	
Units Used ppm = parts per million JTU = Johnson Turbidity Units pH = parts Hydrogen % Saturation = how much Oxygen is dissolved in the water																																																																				

Pollution Tolerance Index

BIO-MONITORING DATA

Group 1 Check if present

Stonefly Nymph

Mayfly Nymph

Caddisfly Larva

Dobsonfly Larva

Riffle Beetle

Water Penny

Gilled Snail

total number of species _____

multiply by the index value of 4.0 _____

Group 2 Check if present

Damselfly Nymph

Dragonfly Nymph

Aquatic Sowbug

Scud

Crane fly Larva

Clam

total number of species _____

multiply by the index value of 3.0 _____

Group 3 Check if present

Midge (except Blood Midge)

Blackfly Larva

Flatworm

Leech

Water Mite

total number of species _____

multiply by the index value of 2.0 _____

Group 4 Check if present

Pouch Snail

Tubifex Worm

Blood Midge

Rat-tailed Maggot Larva

total number of species _____

multiply by the index value of 1.0 _____

Add the index values of each group together and divide by the total number of species in the sample: _____

POLLUTION TOLERANCE INDEX = _____

Directions

1. Use the macroinvertebrate key to identify and classify the species in your stream sample.
2. Mark off each type of species that was found in your sample. If there are one or more species for each order, add them together.
Example: If you identify two different types of mayflies, mark off "mayfly" on your sheet.
3. Multiply the number of species in each group by the index value (4, 3, 2, or 1)
4. Add the final four numbers and divide by the total number of species found in your sample to determine the Pollution Tolerance Index.

10-minute wildlife survey

# different species of...	# of individuals of...
Amphibians	Amphibians
Fish	Fish
Mammals	Mammals
Aquatic plants	Aquatic plants
Birds	Birds
Insects	Insects
Reptiles	Reptiles
Land plants	Land plants
Total	Total

Biodiversity Index =
number of species/number of individuals

A number closer to 1 means a high biodiversity index