UVM WATERSHED ALLIANCE

STREAM MONITORING DATA SHEET

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BACKGROUND INFORMATION:

River/Stream Name: _____ Watershed Name: _____

Name(s) of Investigators: _____ Town:_____

Date:_____ Time of Sampling: _____

(GPS Coordinates) Latitude:_____ Longitude:_____

Weather:	Today: (Check One)	Past 48 Hours: (Check One)
Clear / Sunny	☐	☐
Overcast	☐	☐
Showers	☐	☐
Steady Rain	☐	☐
Heavy Rain (Stormy)	☐	☐

Site Description: (topography, bank slope, vegetation, other defining characteristics)

PHYSICAL ASSESSMENT:

Approx. Channel Width:

_____ ft.

Avg. Depth: (measure 3 times across channel)

a) _____ ft.
b) _____ ft.
c) _____ ft.

Average (add above #s & divide by 3): _____ ft.

Stream/River Velocity:

Measurement 1: 10ft. / _____ seconds = _____ft. / sec

Measurement 2: 10ft. / _____ seconds = _____ft. / sec.

Total (add above) _____ ft. / sec.

Average Velocity for Site: Total _____ / 2 = ft. / sec.

Bank Stability:
% of banks eroding (face downstream)

_____ % Left Bank

_____ % Right Bank

Stream/River Bottom Composition:
Estimate the % of river bottom that is composed of the following materials (% should total 100 when added together)

___% Bedrock
___% Boulders
___% Cobble
___% Gravel
___ % Sand, Silt, Clay
___% Organic Matter (leaves)

Embeddedness:
Estimate the % of river area of gravel, cobble, and boulder particles are surrounded by fine sediment.

☐ 0-25%

☐ 25-50%

☐ 50-75%

☐ 75-100%

Relative Flow Patterns:
(check as many as are present)

Slow is < 1ft/sec, fast is >1.5ft/sec.

☐ Slow-Deep

☐ Slow-Shallow

☐ Fast-Deep

☐ Fast-Shallow

Water Appearance:

☐ Green ☐ Tea
☐ Milky ☐ Muddy
☐ Cloudy ☐ Foamy
☐ Clear ☐ Reddish
☐ Oily Sheen
☐ Other: _____

Surrounding Development or Land Uses:

☐ Dairy Farm
☐ Park Area
☐ Golf Course
☐ Residential
☐ Forest
☐ Factory/Mining
☐ Other: _____

Riparian Vegetation Zone Width (buffer):
Estimate width of zone on both sides:
_____ ft. Left Bank
_____ ft. Right Bank

Overhead Canopy:
_____% of stream width covered or shadowed by overhanging grasses, shrubs and trees.

Algal Growth:

_____ % of bottom covered

Water Odor:

☐ None ☐ Rotten Eggs
☐ Sewage ☐ Fish
☐ Oil ☐ Chlorine
☐ Other: ___

Do you see any pipes entering into the river?

☐ Yes ☐ No

Is there a water treatment plant upstream?

☐ Yes ☐ No

BENTHIC MACROINVERTEBRATE SAMPLING:

POLLUTION TOLERANCE INDEX (PTI)

PT GROUP 1 *Intolerant*		PT GROUP 2 *Moderately Intolerant*		PT GROUP 3 *Fairly Tolerant*		PT GROUP 4 *Very Tolerant*	
Stonefly Nymph	_____	Damselfly Nymph	_____	Midges	_____	Left-Handed Snail	_____
Mayfly Nymph	_____	Dragonfly Nymph	_____	Black Fly Larvae	_____	Aquatic Worms	_____
Caddis Fly Larvae	_____	Sowbug	_____	Planaria	_____	Blood Midge	_____
Dobsonfly Larvae	_____	Scud	_____	Leech	_____	Rat-tailed Maggot	_____
Riffle Beetle	_____	Crane Fly Larvae	_____				
Water Penny	_____	Clams/Mussels	_____				
Right-Handed Snail	_____	Crayfish	_____				
# Of TAXA	_____	**# Of TAXA**	_____	**# Of TAXA**	_____	**# Of TAXA**	_____
Weighting Factors: **(x 4)**	_____	**(x 3)**	_____	**(x 2)**	_____	**(x 1)**	_____

"# of TAXA" refers to the number of *different types of BMI's in a PT Group*, i.e, if there are 4 stoneflies and 3 mayflies in PT Group 1, the **# of TAXA is 2, it is not 7, the total # of organisms**

23 or More	**Excellent**
17 - 22	**Good**
11 - 16	**Fair**
10 or Less	**Poor**

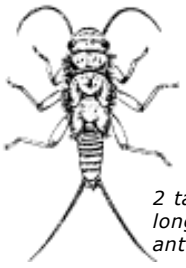
POLLUTION TOLERANCE INDEX RATING
(Add the final index values for each group.)

Other Biological Indicators

☐ Native Mussels ☐ Zebra Mussels ☐ Rusty Crayfish ☐ Aquatic Plants _____ % Algae Cover _____ Diversity Index

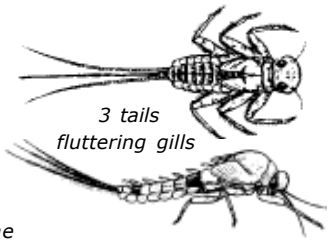
Macroinvertebrate Identification Key

GROUP 1 – Very Intolerant of Pollution



2 tails
long
antennae

Stonefly Nymph



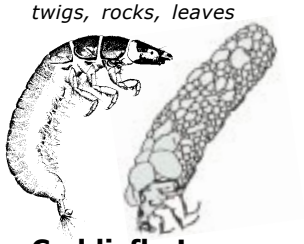
3 tails
fluttering gills

Mayfly Nymph

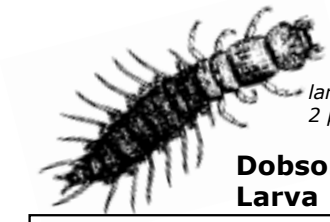
very
small
&
hard
shell

Riffle Beetle
Adult & Larva

makes a case from
twigs, rocks, leaves



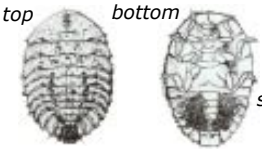
Caddisfly Larva



large head &
2 pinchers

Dobsonfly
Larva

top bottom



looks
like a
suction
cup

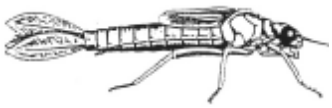
Water Penny Larva

Right-
Handed
Snail

must be
alive to
count

GROUP 2 – Moderately Intolerant of Pollution

3 paddle-like (feathery) tails



Damselfly Nymph

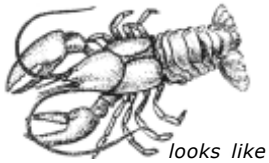
Dragonfly
Nymph

no tails
large eyes

flattened
side-ways
& swims
on side

Scud

Crayfish

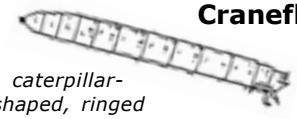


looks like
a mini-
lobster

Sowbug

flattened top to
bottom (looks
like a pill bug)

Cranefly



caterpillar-
shaped, ringed

must be
alive to
count

Clam/Mussel

GROUP 3 – Fairly Tolerant of Pollution

Midge
Larva

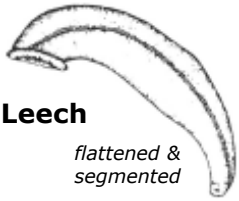
small, but
visible head
intense wiggler

Planaria

2 eye spots
& very small

one end is
swollen

Black Fly Larva

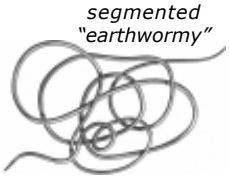


Leech

flattened &
segmented

GROUP 4 – Very Tolerant of Pollution

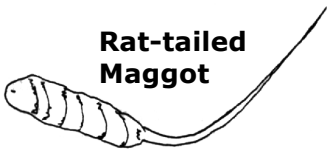
segmented
"earthwormy"



Aquatic Worms

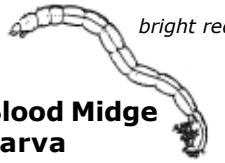
must be
alive to
count

Left-
Handed
Snail



Rat-tailed
Maggot

bright red



Blood Midge
Larva

CHEMICAL MONITORING:

	Temperature (Varies with life stage and species) Example: Atlantic Salmon Max. for growth –23 C Opt. for spawning -5 C Embryo survival -7 C	**pH** 6.5-8.0 Average pH range for most aquatic life	**Turbidity** (Transparency) No Impact >60 cm - 17cm = 0-50 ntu Possible Impact: 17 - 8cm = 65-150 ntu Impacted: 8 - < 6 cm = >150 ntu	**Orthophosphate PO_4^{-3}** (Divide by 3 to get P) No Impact 0-0.05 mg/L of P Likely Impact 0.05-0.10 mg/L of P Certain Impact >0.1 mg/L of P	**Dissolved Oxygen** 4-7 mg/L of DO: low for cold fisheries, good for pond animals 7-11 mg/L of DO very good for most stream fish
Trial 1					
Trial 2					
Avg.					
Field Notes					

SITE PICTURE:

Direction Taken: _____
Label: