Haw River Watch Survey

Return to: Haw River Watch Project, P.O. Box 187, Bynum, NC 27228
(919) 967-2500 E-mail: riverwatch@hawriver.org

Data enterer: _____
Date entered: _____
Office use only

The purpose of this form is to aid you in gathering and recording important data about the health of your stream, to document changes in water quality. Refer to the Stream Insects and Crustaceans ID chart to identify stream macroinvertebrates.

SECTION A. *Fill in this section each time you do a sampling of your stream.*

Team Name _____ Site ID _____ # of participants: _____

Stream _____ Location _____

County _____ Survey Leader _____ Phone # _____

Date: _____ Start time _____ End time _____ Survey Scribe _____

Air temperature _____ Water temperature _____ Flow rate: ❑High ❑Normal ❑Low ❑Negligible

Weather conditions (last 3 days) _____

Chemical testing: pH _____ Nitrate _____ Phosphate _____ Transparency (in inches): _____

Macroinvertebrate Count

Search several likely habitats: look under stones in riffle areas; use net to sample bottom in several places; and sample underbank, leaf mat, and woody debris. Use letter codes to record number of organisms of each type found: A = 1-9; B = 10-99; C = 100 or more. Add up the number of letters in each column and multiply by the indicated index value.

Pollution Sensitive	**Somewhat Pollution Sensitive**	**Pollution Tolerant**
_____ Stonefly	_____ Crayfish	_____ Aquatic Worm
_____ Caddisfly	_____ Sowbug	_____ Midge Fly Larva
_____ Water Penny	_____ Scud	_____ Blackfly Larva
_____ Riffle Beetle	_____ Alderfly Larva	_____ Leech
_____ Mayfly	_____ Fishfly Larva	_____ Pouch (and other) Snails
_____ Gilled Snail	_____ Damselfly	
_____ Dobsonfly (Hellgrammite)	_____ Watersnipe Fly Larva	
	_____ Crane Fly	
	_____ Beetle Larva	
	_____ Dragonfly	
	_____ Clam	
_____ # letters times 3 =	_____ # letters times 2 =	_____ # letters times 1 =
_____ Index Value	_____ Index Value	_____ Index Value

Now add together the three Index Values from the columns for your total index value: Total Index Value = _____

Compare the Total Index Value to the following ranges of numbers to determine the water quality of your stream. Good water quality is indicated by a variety of different kinds of organisms, with no one kind making up the majority of the sample. Although the A, B, and C ratings do not contribute to the water quality rating, record them to see how your macroinvertebrate populations change over time.

Water Quality Rating

_____ Excellent (>22) _____ Good (17 - 22) _____ Fair (11 - 16) _____ Poor (<11)

What kind of Algae? Is water discolored (green, bright blue, red)? [Phytoplankton type algae] ❑Yes ❑No If No:
Is algae big thick "hairlike" mat (green, blue-green, black, yellowish)? [Filamentous type algae] ❑Yes ❑No If No:
Are rocks and logs covered with beardlike growth (green, blue-green, golden brown)? [Periphyton type algae] ❑Yes ❑No If No:
Is there brown slimy algae on rocks? [Diatomaceous type algae] ❑Yes ❑No
Algae is located: ❑ everywhere ❑ in spots _____% of stream covered (for one stream-width by one stream-width area)
Are you seeing an unusual amount of algae? ❑Yes ❑No

If there is foam, is it:

❑ivory brownish, less than 8" high, w/earthy, fishy, or fresh cut grass smell? [Natural foam]

❑ bright white, over 8" high, with perfumy or artificial "fresh" soapy scent? [Indicates pollution problem]

Wildlife

Mussel shells seen? ❑Yes ❑No

Fish seen? ❑Yes ❑No

Signs of beaver? ❑Yes ❑No

If Yes, describe:_____

Signs of other wildlife observed:

_____

_____

_____

Odor: (check one)

❑ rotten eggs
❑ musky
❑ petroleum
❑ sewage
❑ none
❑ other _____

_____

_____

Water Appearance: (you may check up to two items from the list below)

❑ clear ❑ clear but tea-colored
❑ cloudy ❑ muddy
❑ milky ❑ colored sheen (oily)
❑ grey ❑ black
❑ foamy ❑ green (suspended algae)
❑ other _____

SECTION B. *The following aspects of the stream don't change often. Fill in this section on your first survey, and be sure to keep a copy to refer to. Thereafter, fill in an item only if it changes. Photographs are very useful in recording changes to your stream.*

Stream Channel *Answer these questions for a stream length of four times the stream width, with monitored section close to middle.*

Average stream width _____ ft. Average stream depth _____ ft. Is stream channel natural and meandering? ❑Yes ❑No

Does stream have access to its flood plain (is there stream deposit or debris on banks, streamside trees & rocks)? ❑Yes ❑No

Has stream been channelized? ❑Yes ❑No Is there rip-rap in stream? ❑Yes ❑No Do manmade dams block flow? ❑Yes ❑No

Stream Buffer Natural vegetation (a mix of trees, shrubs, and ground cover), looking dowstream: _____ feet left bank; _____ feet right bank

Description of stream buffer: _____

Stream Sides

Are stream banks (sides) eroding? ❑Yes ❑No

_____% bare soil on stream banks (not covered by plants, rocks, and logs)

Is stream getting cut deeper? ❑Yes ❑No

Is stream widening? ❑Yes ❑No

Stream Shade

❑Best (25 - 90% shade--sun-dappled stream)
❑Good (>90% shade -- almost totally shaded)
❑Poor (<25 shade - almost no shade)

Stream Bed (bottom) (=100%)**:**

_____% silt (mud)
_____% sand (1/16" - 1/4" grains
_____% gravel (1/4" - 2" stones)
_____% cobble (2" - 10" stones)
_____% boulders (>10" stones)
_____% dead leaves

Bed sinks beneath your feet in:
❑no spots ❑a few spots ❑many spots

Stream Buffer Composition (=100%)**:**

_____% trees
_____% shrubs
_____% grass
_____% bare soil
_____% rocks
_____% other _____

Land Uses in the Watershed: *Record all land uses observed in the watershed area nearby (one mile upstream) and surrounding your sampling site. Indicate whether the following land uses have a High (H), Moderate (M), Slight (S) or No (N) potential to negatively impact the quality of your stream. If the land use is not present in your watershed, leave it unmarked.*

❑H ❑M ❑S ❑N Oil & gas drilling
❑H ❑M ❑S ❑N Housing developments
❑H ❑M ❑S ❑N Forest
❑H ❑M ❑S ❑N Logging
❑H ❑M ❑S ❑N Urban uses (highways, parking lots, etc.)
❑H ❑M ❑S ❑N Sanitary landfill
❑H ❑M ❑S ❑N Housing construction
❑H ❑M ❑S ❑N Road construction
❑H ❑M ❑S ❑N Mining (types _____)
❑H ❑M ❑S ❑N Cropland (types _____)

❑H ❑M ❑S ❑N Trash dump
❑H ❑M ❑S ❑N Fields
❑H ❑M ❑S ❑N Livestock pasture
❑H ❑M ❑S ❑N Animal operations (types_____)
❑H ❑M ❑S ❑N Other possible sources of pollution (describe: _____

_____

_____)
❑H ❑M ❑S ❑N Garbage/litter (Type: _____

_____)

Discharging Pipes Are there any discharging pipes? ❑Yes ❑No If Yes, how many? _____

What types of pipes? ❑runoff (field or stormwater?)_____ ❑sewage treatment ❑industrial (type of industry) _____

Other comments on your stream's health and condition: _____

_____

_____

_____