Smith Creek
Water Quality Monitoring Group

Stream Survey Data Sheet

Please forward a copy/email of the stream survey data, the visual monitoring, litter clean-up, and any additional testing sheets to Town of Wake Forest, Engineering Department c/o Holly Spring. If you have questions please call 919-554-3158

Stream location: _____

Sample number _____of_____

Date _____

Time _____

(*Optional)*
You should select a riffle where the water is not running too fast (ideal depth is 3 – 6 inches), and the bed consists of cobble-sized stones or larger if possible. Try to select a 3-foot square area if possible.

Width of study area:
Pool section _____
Riffle section _____

Depth of study area:
Pool section _____
Riffle section _____

Speed of stream's flow: _____

Water Temperature (C) _____

(Required)

Type of Monitoring:

_____ visual monitoring

_____ macroinvertebrate count

_____ chemical tests (Please list) _____

_____ other (Please list) _____

Comments:

Visual Monitoring

(This section is required. A copy should be made and returned to the Stream Watch State Coordinator. Please retain the original for your records.)

Water appearance:

scum _____

foam _____

muddy_____

clear _____

tea _____

milky _____

color sheen (oily) ___

brownish _____

other _____

Stream bed coating:

orange to red _____

yellowish _____

black _____

brown _____

none _____

Odor:

rotten egg ____

musky _____

other _____

none _____

Bank cover:

good cover _____

(70% -- 100% of bank soil covered by plants, rocks, and logs)

fair cover _____

(30% -- 70% of bank covered by plants, rocks, and logs)

poor cover _____

(less than 30% of bank soil covered by plants, rocks, and logs)

Stability of stream bank: Bed sinks beneath your feet

_____ no spots

_____ a few spots

_____ many spots

Bed composition of riffle:	**Algae color**:	**Algae located**:
_____ % silt (mud)	_____ light green	_____ everywhere
_____ % sand (1/16" – 1/4")	_____ dark green	_____ in spots
_____ % gravel (1/4" – 2")	_____ brown coat	_____ % bed cover
_____ % cobbles (2" – 10")	_____ matted on stream bed	
_____ % boulders (> 10" stones)	_____ hairy	

Land use in watershed:

_____ stores/commercial	_____ factories/industrial	_____residential
_____ woods	_____ fields	_____ other

Are there any discharging pipes? _____ yes _____ no

If so, how many discharging pipes are there? _____

Did you test above the discharge and below the discharge to determine any changes in water quality and were changes notices? _____ yes _____ no

Structure causing a water level difference of one foot or more:

_____ waterfalls

_____ down trees

_____ dams

_____ beaver dams

_____ none

_____other _____

Barrier to fish movements:

_____ waterfalls

_____ tree snag

_____ dams

_____ beaver dams

_____ none

_____other _____

Comments:

AQUATIC LIFE

Macroinvertebrate Count- indicators of water quality

Place an "**X**" next to the organism found in a 3 foot by 3 foot area. Then add up the number of **X**'s in each column and multiply by the indicated index value.

Group I- intolerant	**Group II-** moderate	**Group III-** tolerant
_____ caddisfly larvae	_____ beetle larvae	_____ aquatic worms
_____ dobsonfly larvae	_____ clams	_____ blackfly larvae
_____ mayfly nymphs	_____ crane fly larvae	_____ leeches
_____ other snails	_____ crayfish	_____ midge larvae
_____ riffle beetle adult	_____ damselfly nymph	_____ pouch snails
_____ stonefly nymphs	_____ dragonfly nymphs	
_____ water penny larvae	_____ scuds	
	_____ sowbugs	
	_____ atherix	

Group I _____ # of X's

Multiply by **3** = _____ index value

Group II _____ # of X's

Multiply by **2** = _____ index value

Group III _____ # of X's

Multiply by **1** = _____ index value

Index Value Total

A_____ + B_____ + C_____ =

Total index value _____

Ex: Group I = 3x3 =**9** + Group II = 5x2 = **10** + Group 3 = 3x1 =**3**,
total index value = **21** = **good**

Compare this total index value to the following 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.

_____ EXCELLENT (> 22) _____ GOOD (17 – 22)

_____ FAIR (11 – 16) _____ POOR (< 11)

Note: You should test at least 3 different riffles within a 24-foot area to ensure that you have a truly representative sample which includes all key organisms. You may also want to sample some of the rocks in the slower-moving water, nearer the banks, because mayflies and stoneflies are sometimes found there instead.

Fish:		Crayfish:	
_____	scattered individuals	_____	scarce
_____	scattered schools	_____	abundant

Chemical and Physical Parameters

Water temperature (C): _____

Phosphorous: _____mg/l**

pH: _____**

Nitrogen: _____mg/l**

D.O.: _____mg/l**

Turbidity: _____ (meters, units, or JTU's)**

Rainfall: _____ inches /mm over _____ time period

Streamflow: _____ cubic feet/second

Testing Method:

** Describe which method or brand of test kit used.

Litter Cleanup

Length of stream cleaned: _____ Date: _____

Group: _____ Number of Participants: _____

Describe % and type of litter in and around the stream:

_____

_____

_____

_____

Average number of small and large items collected:

paper, small trash	can and bottles	tires, carts, etc.
_____ 0 – 5	_____ 0 – 5	_____ 0 – 5
_____ 5 – 10	_____ 5 – 10	_____ 5 – 10
_____ 10 – 50	_____ 10 – 50	_____ 10 – 50
_____ more than 50	_____ more than 50	_____ more than 50

Total number of trash bags: _____

Unusual items found:

_____

_____

_____

_____

_____

_____