



Stream Survey Data Sheet

Stream Subwatershed and location:

Sample Number _____ of _____

Date _____

Time _____

Weather _____

Please make sure you have the forms on file prior to starting:

- Waiver form
- Monitoring agreement
- Current contact data

Please forward a copy of this form via email to Holly Miller at hmiller@wakeforestnc.gov or drop off/mail to:

Town of Wake Forest
Engineering Department
301 South Brooks Street
Wake Forest, NC 27587

If you have any questions please contact Holly Miller at 919-435-9443.

Type of monitoring (place a ✓ on the appropriate line):

- _____ Visual monitoring
- _____ Macro invertebrate count
- _____ Chemical test (check which parameters taken)
 - ___ Temperature
 - ___ pH
 - ___ Dissolved Oxygen
 - ___ Nitrogen
 - ___ Phosphorus
 - ___ Turbidity
 - ___ Conductivity
- _____ Stream clean up

(Optional)

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

Width of study area
Pool section _____
Riffle section _____
Depth of Study area

Pool section _____
Riffle section _____

Speed of stream flow (velocity in meters/sec) _____ Use tennis ball method or multi parameter unit
Water Temp (degrees Celsius) _____

Visual Monitoring

(place a ✓ on the appropriate line that matches the condition)

Water Appearance
_____ Scum
_____ Foam
_____ Muddy
_____ Clear
_____ Tea
_____ Milky
_____ Oil sheen
_____ Brownish
_____ Other

Stream Bed Coating
_____ Orange/red
_____ Yellowish
_____ Black
_____ Brown
_____ Gravel
_____ None

Odor
_____ Rotten egg
_____ Musky
_____ None
_____ Other

Bank Cover
Look at the stream bank on both sides and visually determine % of ground cover in several spots (if different mark left bank or right bank looking downstream)
_____ Good (70-100% of bank soil covered by plants, rocks, logs)
_____ Fair (30-70% of bank soil covered by plants, rocks, logs)
_____ Poor (0-30% of bank soil covered by plants, rocks, logs)

Stability of Stream Bank
Stand on the bank and determine if the material sinks below your feet in several locations (5-10)
_____ no spots _____ few spots _____ many spots

Bed Composition of Riffle
Use sand cards to determine size
_____ % silt
_____ % sand (1/16-1/4")

% gravel (1/4- 2")
 % cobbles (2-10")
 % boulders (> 10" stones)

Algae color	Algae location
<input type="checkbox"/> light green	<input type="checkbox"/> widespread
<input type="checkbox"/> dark green	<input type="checkbox"/> localized
<input type="checkbox"/> brown coat	<input type="checkbox"/> % bedcover
<input type="checkbox"/> matted on stream bed	
<input type="checkbox"/> hairy looking	

Land use near stream reach/section
(place a ✓ on the appropriate line that matches the condition, if more than one use is nearby check all that match)

<input type="checkbox"/> stores/commercial	<input type="checkbox"/> factories/industrial
<input type="checkbox"/> woods	<input type="checkbox"/> residential
<input type="checkbox"/> farm fields (cows/horses)	<input type="checkbox"/> golf course/playing field
<input type="checkbox"/> agriculture (crops)	<input type="checkbox"/> construction
<input type="checkbox"/> other: _____	

Please answer the following questions regarding point source pollution with a yes or no

Are there any direct discharge pipes (stormwater, grey water, other) into creek?

If yes, note pipe size, qty, type (RCP, plastic, other), discharge color:

Pipe size (interior diameter in inches) _____

Quantity _____

Type (RCP-concrete, HDPE-black plastic, PVC- white) _____

Discharge Color _____

Did you test below and above discharge to determine any changes in water quality?

If yes, please note differences:

Upstream	Downstream
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Temp	_____	_____
pH	_____	_____
DO	_____	_____
Nitrogen	_____	_____
Phosphorus	_____	_____
Turbidity	_____	_____
Conductivity	_____	_____

Water elevation drop

Note structures causing water level differences of 1 foot or more by placing a ✓ on the appropriate line that matches the condition, if more than one condition exists in the reach/section check all that apply

_____ Waterfalls (including rock weirs in stream restorations, stream crossings, etc...)

_____ Down trees, log jams

_____ Beaver dams

_____ Pipe structures that have undermined

_____ None

_____ Other:

Barrier to fish passage

Note structures limiting/prohibiting fish passage by placing a ✓ on the appropriate line that matches the condition, if more than one condition exists in the reach/section check all that apply

_____ Waterfalls (including rock weirs in stream restorations, stream crossings, etc...)

_____ Down trees, log jams

_____ Beaver dams

_____ Pipe structures that have undermined

_____ None

_____ Other:

Aquatic Life

In this section, we will be searching the stream for macro invertebrates who are indicators of water quality. Use the leaf pack cards, macro books and kicknets to find organisms record your results by tolerant level. This should be done in 3 times in a riffle section of the creek with in a 24 foot area. For each test, multiply the groups I, II, and III by the appropriate value, then add up to get the stream index value. This value then gives us a range for water quality and stream support value based on your field counts.

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

Circle the macro species that was found

<u>Group I</u> - intolerant	<u>Group II</u> - moderate	<u>Group III</u> - tolerant
Caddis fly larvae	beetle fly larvae	aquatic worms
Dobson fly larvae	clam	black fly larvae
Mayfly nymph	crane fly larvae	leech
other snails	crayfish	midge larvae
riffle beetle (adult)	damselfly nymph	pouch snail
stonefly nymph	dragonfly nymph	
water penny larvae	scud	

Count number of circles from each group and write number on each line, then multiply by the correct number and add up to get the stream index value

Group I	Group II	Group III
Tolerant Multiplier x 3 = _____	x 2 = _____	x 1 = _____
_____	+ _____	+ _____
Sum of tolerant multipliers = _____	Stream Index value	

(place a ✓ on the appropriate line that matches the condition, if more than one group is nearby check all that match)

Sample ____ of ____

Date _____

Time taken: _____

Location _____

Weather today _____

Rain fall within 24 hours, if so how much? _____

48 hours? _____

72 hours? _____

Air Temperature (degrees C/degrees F) _____

Water Temperature (degrees C/degrees F) _____

pH _____ Testing Method: _____

DO _____ mg/L Notes:

Conductivity _____

Turbidity _____

Nitrogen _____

Phosphorus _____

Stream Flow _____ cfs

Litter Cleanup

Date _____

Length of stream cleaned _____

Group _____

Number of participants _____

Describe % and type of litter collected around stream

Average number of small and large items collected

Small, paper, trash

cans and bottles

tires, carts, etc...

_____ 0 – 5

_____ 0 – 5

_____ 0 – 5

_____ 5 – 10

_____ 5 – 10

_____ 5 – 10

_____ 10 – 50

_____ 10 – 50

_____ 10 – 50

_____ 50 +

_____ 50 +

_____ 50 +

Total number of trash bags _____

Unusual items
