STREAM HABITAT ASSESSMENT

Huron River Watershed Council

Please follow the directions on the "Procedure for Stream Habitat Assessment" to complete this form. If you need to reach us, our number at the office is (734) 769-5123 x 601, Paul's home (734) 709-6589.

Site ID: _____ Date:_____ Starting Time:_____

Stream Name:_____ Location:_____

Names:_____

Did it rain in the past 3 days? _____ If so, when and how much (approximately)? _____

IMPORTANT NOTE: When determining the left/right side of a stream, please face the downstream direction.

I. Transects and Stream Bank Measurements

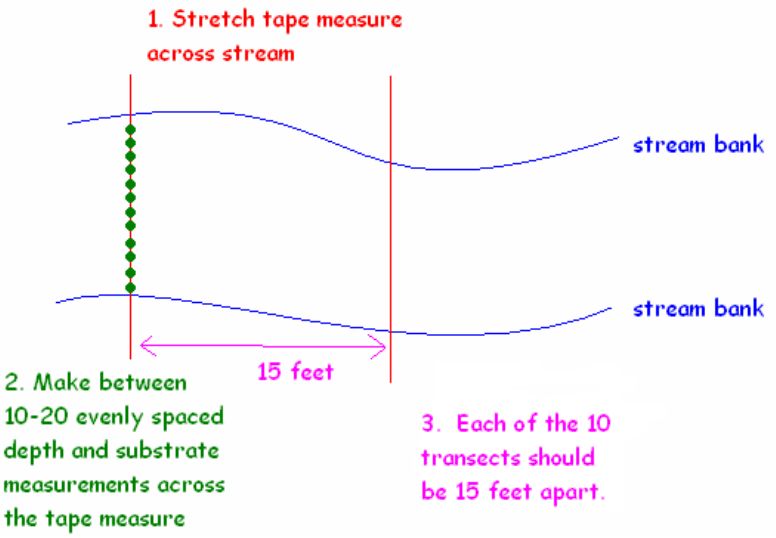
A. TEN TRANSECTS

1) Stretch the tape measure perpendicular across the stream. Measure the active channel width and the water's edge width (see diagram below)
2) Use the rod to measure depth (D) and substrate (S) at more than 10 but less than 20 regular intervals along the entire transect. (For streams less than 10 feet wide, measure approximately every 1/2 foot, for streams greater than 10 feet wide, measure every foot, etc.)
3) At every depth measurement, identify the single piece of substrate that the rod lands on (If it lands on two pieces, please pick one of them).
4) For every measurement, enter the number on the tape measure, the depth measurement, and the substrate type on the data sheet (see back pages).

B. BANK ANGLES

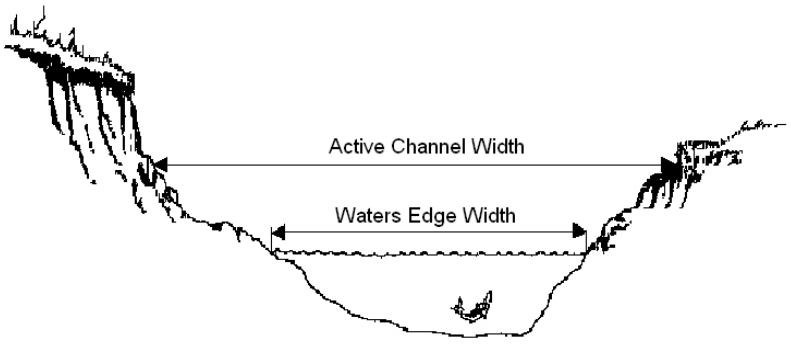
Vertical banks can be unstable, while banks with an overhang provide good habitat for fish and insects. While doing transects, record the angle of the bank (right, acute, obtuse) as indicated on the data sheet. Also, if the bank angle is acute (undercut), record its undercut width.

What is a transect?



What is the active edge and active channel?

The active edge is usually the bottom edge of vegetation. This is the border of the *active channel*, where water flows under normal conditions (not too dry, not too flooded).



Stream Name _____ **Location**_____ **Date** _____

II. General Characteristics **All of these measurements & judgment calls are made on the 300 foot stream segment.**

A. FLOW PATTERNS
Please observe the POOLS (deep and slow), and RIFFLES (shallow and faster). You should estimate and not measure for the observations below.

POOLS: Number:_____ Average Depth:_____ Maximum Depth:_____

RIFFLES: Length of feet in the study site that could be called a riffle:_____ Average Riffle Depth:_____

B. BENDS
Is the stream perfectly straight? _____ How many bends are in the 300' stretch of creek?_____

C. STREAM FLOW
Estimate the current stream flow (circle one): Dry/Stagnant Low Medium High

D. SHADE
Stand in the middle of the stream and look overhead (assume the sun is directly above you).
What percentage of the stream could be shaded by the vegetation?_____%

E. COOL AREAS
Did you find any spots where the water has a localized cool area?_____
This may be difficult to notice with waders on.

Did you notice any springs or seeps along the stream bank? _____

Did an orange-yogurt-like substance accompany these any springs or seeps? _____
(This is a natural iron-containing substance produced by some types of bacteria.)

F. TRASH
Does trash need to be removed from the stream? _____ If so, please describe the kinds and amounts, or note if you decide to remove it yourself.

G. APPEARANCE OR ODOR
Does the water have an unusual appearance or odor? _____ If so, please describe.

Is there foam on the water? _____ If yes, is it gritty? (probably natural) _____
Or is it soapy? (probably not natural) _____

Is there a sheen on the surface of the water? _____ Does it break up when poked? (probably natural) _____
Does it come back together after being poked? (not-natural) ____

H. PIPES
Are pipes present? _____ Does the opening extend over the water? _____

Do the areas around or behind the pipes show signs of erosion? _____

Are there any problems that the Watershed Council needs to know about?

Sheet Checked By:

Stream Name _____ **Location**_____ **Date** _____

III. Riparian Zone and Plant Community

A. Riparian Zone

Right/Left banks are identified by looking downstream.

1. Left Bank

Circle those land-use types that you can see from this stream segment.

Wetlands Forest Residential Lawn Park Shub, Old Field Agriculture

Construction Commercial Industrial Highways Golf Course Other_____

2. Right Bank

Circle those land-use types that you can see from this stream segment.

Wetlands Forest Residential Lawn Park Shub, Old Field Agriculture

Construction Commercial Industrial Highways Golf Course Other_____

3. Summarize the size and quality of the riparian zone along each bank separately on a scale of 1 through 10, by circling a value below.

Excellent	Good	Marginal	Poor
Width of riparian zone >150 feet, dominated by vegetation, including trees, understory shrubs, or non-woody macrophytes or wetlands; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	Width of riparian zone 75-150 feet; human activities have impacted zone only minimally.	Width of riparian zone 10-75 feet; human activities have impacted zone a great deal.	Width of riparian zone ,10 feet; little or no riparian vegetation due to human activities.
LEFT BANK 10 - 9	LEFT BANK 8 - 7 - 6	LEFT BANK 5 - 4 - 3	LEFT BANK 2 - 1 - 0
RIGHT BANK 10 - 9	RIGHT BANK 8 - 7 - 6	RIGHT BANK 5 - 4 - 3	RIGHT BANK 2 - 1 - 0

B. Plant Community

Using the given scale, estimate the relative abundance of the following:

Plants in the stream:		*Plants on the bank/riparian zone:*	
Algae on Surfaces of Rocks or Plants	Filamentous Algae (Streamers)	Shrubs	Trees
Macrophytes (Rooted Herbaceous Plants)	**0= Absent 1= Rare 2= Common 3= Abundant 4= Dominant**	Grasses	**0= Absent 1= Rare 2= Common 3= Abundant 4= Dominant**
Identified species (optional)		Identified species (optional)	

Sheet Checked By:

Stream Name _____ **Location**_____ **Date** _____

IV. Stream Substrate and Sediment

A. STABLE HABITAT (HIDING PLACES)

Circle the objects that make up the hiding places for insects, fish and other critters:

Large rocks grocery carts submerged logs undercut banks other (please describe)

B. SEDIMENT AND ROCKS BEYOND THE TRANSECTS

Please check whether the substrate on the bottom of the stream **beyond** the area of transects contains more, less, or a similar amount of **fine sediment** than you saw in the transects (Circle one):

Much more Much less A similar amount

Please check whether the substrate on the bottom of the stream **beyond** the area of transects contains more, less, or a similar amount of **rocks, gravel, and cobble** than you saw in the transects (Circle one):

Much more Much less A similar amount

C. SEDIMENT DEPOSITION

Did you see:
Islands with little vegetation?_____
Deposition along the inside of bends? _____
Deposition along obstructions? _____

D. SOFT BOTTOM

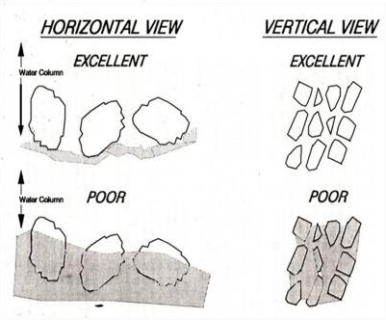
Was a soft bottom common in shallow areas? _____
Was a soft bottom only found in pools? _____
In the soft bottom areas, was the muck deep (did you sink in above the tops of your feet)? _____

E. EMBEDDEDNESS

Estimate the extent to which gravel, cobble and boulder particles are surrounded by fine sediment. Look in the upstream or central portions of **riffles** or **cobble** substrate. Circle One:

<25% (clean; excellent) 25-50% (somewhat silted) 50-75% (silty but a little loose)

>75% (firmly lodged; poor) No gravel, cobble, or boulder particles are present



Other Comments:

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Stream Name _____ **Location**_____ **Date** _____

V. Bank Stability

A. BARE BANKS

What percent of the banks (above the active edge) are bare (showing either soil or sand)? Bank areas covered by rocks, rip-rap, or anything else should not be considered "bare". If percent is difficult to estimate, use words.

_____%

If any, estimate the percent of bank covered in cement or unnatural rock (human influenced bank stability)

_____%

B. BANK STABILITY

Summarize the extent of erosion along <u>each bank separately</u> on a scale of 1 through 10, by circling a value below.

Excellent	Good	Marginal	Poor
Banks Stable. No evidence of erosion or bank failure. Little potential for problems during floods. < 5% of bank affected. LEFT BANK 10 - 9 RIGHT BANK 10 - 9	Moderately stable. Small areas of erosion. Slight potential for problems in extreme floods. 5-30% of bank in reach has areas of erosion. LEFT BANK 8 - 7 - 6 RIGHT BANK 8 - 7 - 6	Moderately unstable. Erosional areas occur frequently and are somewhat large. High erosion potential during floods. 30-60% of banks in reach are eroded. LEFT BANK 5 - 4 - 3 RIGHT BANK 5 - 4 - 3	Unstable. Many eroded areas. > 60% banks eroded. Raw areas frequent along straight sections and bends. Bank sloughing obvious. LEFT BANK 2 - 1 - 0 RIGHT BANK 2 - 1 - 0

Please use the space below to record any additional observations about this stream site or your experience today:

CONGRATULATIONS!
You've completed a challenging job!
Please check that you have answered all questions on all pages and initial each box that says "Sheet Checked By".

Stop Time: _____

Sheet Checked By:

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Stream Name _____ **Location**_____ **Date** _____

B: Boulder -- more than 10" (Adult head)
C: Cobble -- 2.5 - 10" (Fist→ Small head)
R: Rock -- 1 - 2.5" (Small fingers→ Small fist)
G: Gravel -- up to about an inch (Fingernails)
S: Sand -- fine particles, all about the same tiny size, gritty
F: Clay or Muck -- finer than sand and not gritty
Rt: Root or Woody Debris
I: Island V: Vegetation

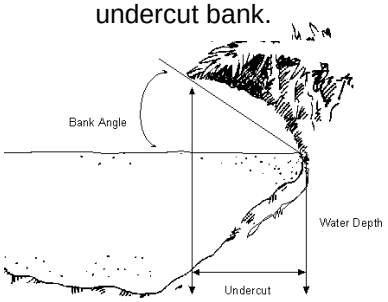
T= Reading on tape
D = Depth
S = Substrate

	EXAMPLE			Transect #1			Transect #2			Transect#3		
Active Channel Width	18.6											
Water's Edge Width	13.3											
	T	**D**	**S**	**T**	**D**	**S**	**T**	**D**	**S**	**T**	**D**	**S**
Beginning Water's Edge:	1.5											
1	2.5	0.4	G									
2	3.5	0.4	G									
3	4.5	0.4	G									
4	5.5	0.2	C									
5	6.5	0	S									
6	7.5	0.6	S									
7	8.5	0.7	S									
8	9.5	0.7	G									
9	10.5	0.6	C									
10	11.5	0.7	B									
11	12.5	0.4	G									
12	13.5	0.3	G									
13	14.5	0.2	Rt									
14												
15												
16												
17												
18												
19												
Ending Water's Edge	14.8											
Bank Side	**L**	**R**		**L**	**R**		**L**	**R**		**L**	**R**	
Does the bank have an undercut?	N	Y										
If so, how wide is it?		1 ft										
Bank Angles: Sketch												

Sketch examples:

Undercut (Acute) Obtuse Right

Example of an undercut bank.



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	Transect #4			Transect #5			Transect #6			Transect #7		
Active Channel Width												
Water's Edge Width												
	T	**D**	**S**	**T**	**D**	**S**	**T**	**D**	**S**	**T**	**D**	**S**
Beginning Water's Edge:												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
Ending Water's Edge												
Bank Side	**L**	**R**		**L**	**R**		**L**	**R**		**L**	**R**	
Does the bank have an undercut?												
If so, how wide is it?												
Bank Angles:												
Sketch												

Sketch examples:

Undercut (Acute) Obtuse Right

Sheet Checked By:

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Stream Name _____ **Location**_____ **Date** _____

B: Boulder -- more than 10" (Adult head)
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I: Island V: Vegetation

T= Reading on tape
D = Depth
S = Substrate

	Transect #8			Transect #9			Transect #10					
Active Channel Width												
Water's Edge Width												
	T	**D**	**S**	**T**	**D**	**S**	**T**	**D**	**S**	**T**	**D**	**S**
Beginning Water's Edge:												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
Ending Water's Edge												
Bank Side	**L**	**R**		**L**	**R**		**L**	**R**		**L**	**R**	
Does the bank have an undercut?												
If so, how wide is it?												
Bank Angles:												
Sketch												

Sketch examples:

Undercut (Acute) Obtuse Right

Sheet Checked By:

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