WATER QUALITY VOLUNTEER COALITION

(Short Form)

WATER MONITORING SITE PHYSICAL & CHEMICAL DATA PAGE-1

Revised November 2023		
SITE ID #		
SITE NAME		
DATE	TIME	
RECORDER	MONITOR/#	
MONITOR/#	MONITOR/#	
MONITOR/#	MONITOR/#	
MONITOR/#	MONITOR/#	

PRECIPITATION			
choose one	choose one		
<u>CURRENT</u>	PAST 24 HR		
Storm	Storm		
Rain (continuous)	Rain (continuous)		
Shower (intermittent)	Showers (intermittent)		
Overcast	Overcast		
Clear	Clear		

choose at least one by check mark				
Straight	Channelized			
Meandering/curved	Pool/Riffle			
A 41 d	Yes			
Any other dams present?	No			
Level of high water above the present stream level (meters) m				
Is this an estimate?	Yes			
is this an estimate?	No			

STREAM TYPE

WATER APPEARANCE		
choose at least one by check mark		
Clear	Foamy	
Orange/red	Milky/white	
Dark brown	Muddy/cloudy	
Green	Multi-colored	
Other (describe below):		

STREAM BANK		
X-Section Shape Erosion		
V-Shape	No sign of erosion	
U-Shape	Occasional areas of erosion	
Rectangular	Extensive erosion	
Banks undercut Rock/concrete stabl. prese		

WATER ODORS		
choose at least one by check mark		
Chlorine	Fishy	
Sulfur	Sewage	
Musty	Earthy	
Manure	Spicy	
Other (describe below):		
No unusual smells		
Non-wadable stream		

STREAM BOTTOM			
At least one entry			
INORGANIC + ORGANIC MUST = 100%			
INORGANIC	%	ORGANIC	%
Bedrock (solid)		Muck-mud	
Boulder >25 cm		Pulpy peat	
Cobble 6.25 - 25 cm		Fibrous peat	
Gravel 0.25 - 6.25 cm		Detritus	
Sand up to 0.25 cm		Logs, limbs	
Silt soft fine sand		Marl (gray, shell frag)	
Clay sticky fine sand		Other:	
Other:		Non-wadable stream	
TOTAL = 100%			

SEDIMENT DEPOSITS						
choose d	choose at least one by check mark					
Sludge	Sludge Gravel Paper Fiber					
Silt	Mud	Sand				
Other (describe below):						
No unusual sediments						

Observations/Notes:	
Internal Use Only:	
Flow Factor: 0.8 or 0.9	LANCASTER COUNTY CONSERVATION DISTRICT

WATER QUALITY VOLUNTEER COALITION

(Short Form)

WATER MONITORING SITE PHYSICAL & CHEMICAL DATA PAGE-2

PREDOMINANT SURROUNDING LAND USE			
Estimated by percentage			
At least one entry required			
%			
Wetlands		Commercial	
Forest		Industrial	
Cropland Unused/abandoned			
Pasture Shrubs/small trees			
Residential		Other:	
No change in land use from previous sampling			
TOTAL = 100%			

AVERAGE TEMPERATURE				
A :	$(\underline{\hspace{1cm}} \circ F + \underline{\hspace{1cm}} \circ F)/2 = \underline{\hspace{1cm}} \circ F$			
Air	$(\underline{\hspace{1cm}}^{\circ}C + \underline{\hspace{1cm}}^{\circ}C)/2 = \underline{\hspace{1cm}}^{\circ}C$			
Watan	(°F+°F)/2 =°F			
Water	$(\underline{\hspace{1cm}}^{\circ}C + \underline{\hspace{1cm}}^{\circ}C)/2 = \underline{\hspace{1cm}}^{\circ}C$			

AVERAGE STREAM DEPTH					
<i>Conversion:</i> ft * 0.3048 = meters					
Average (m):					
Non-Wadable					

AVERAGE STREAM WIDTH							
Conversion:	ft * 0.3048 =	meters					
Average (m):							
Non-Wadable							

AVERAGE STREAM VELOCITY
$Velocity\ (m/s) = distance\ (m)\ /\ average\ time\ (s)$
Velocity (m/s):

STREAM FLOW VOLUME							
Flow Volume = width (m) * depth (m) * velocity (m/s)							
Flow Meter ID (if applicable)							
Flow Volume (m³/s)							
Non-wadable stream							
Internal Use: (Vol * Factor)	Final Flow Vol =						

01	IBITITE E		
Readings deemed ur	nusual for the si	te should be q	uestioned
Every 6 visits,		plicate for qu	uality
Parameter	*Water Quality Guidelines*	Original Reading	Duplicate Reading
pH ¹ (pH Units)	6.0 - 9.0		
Dissolved Oxygen ¹ (mg/l)	≥ 6.0 mg/l		
Specific Conductivity ² (μS/cm)	50 – 1,500 μS/cm		
Nitrates ¹ (ppm = mg/l)	≤ 10 mg/l as Nitrogen		
Phosphates (ppm)	-		
Salinity ³ (ppt)	≤ 1 ppt		
Total Alkalinity ¹	≥ 20 mg/l		
TDS ¹ (mg/l)	≤ 750 mg/l		
Turbidity (FAU=NTU)	-		
Calibration Data	Specific Conductivity	pI	H
Calibration Std.		4.01	7.01
Std. Solution Readback (Check)			

CHEMICAL DATA

Water Quality Guidelines derived from PA Code 25, Chapter 93¹, US EPA², and USGS³. These values help indicate the health of a stream and should only be used as a reference. They do not indicate the range of the instrument

Reagent Lot Numbers/Exp Date:



- Nitrate:
- Phosphate:
- Bromocresol Green:

Equipment

- pH Probe ID:
- Colorimeter #:

Observations/Notes:

For questions or concerns, contact noellelafaver@lancasterconservation.org or amandagoldsmith@lancasterconservation.org

Biosurvey: Field Data Sheets (p 1 of 3)

Macroinvertebrate Survey

Date: year_	month	day	Time:	hour	minute
	(NOTE: Time hr./r	min. on 24-hoເ	ur clock, as 10:1	0 for AM or 2	22:10 for PM)
Site ID#			Creek:		
Recorder In Name	formation				
Monitor Info	ormation				
Monitor Info	ormation				
Monitor Info	ormation				
Monitor Info	ormation				
Storm (h	n In the past 24 heavy rain > 1in) eady rain ¼in to 1 s (intermittent rain st	in)	Current: Storm (h Rain ste Showers Overcas Clear	ady rain ¼ins (intermitter	-
	eam -bottom -bottom				



Biosurvey: Field Data Sheets (p 2 of 3)

Macroinvertebrate Count

Identify the macroinvertebrates (to order) in your sample using the identification sheets. We are only concerned with organisms that appear on the identification sheets. Record the number of organisms below and then assign them letter codes based on their abundance:

R (rare) = 1-9; **C** (common) = 10-99; **D** (dominant) = 100 plus organisms.

example: 20 (C) WaterPenny larvae

Group I - Sensitive	
() Water Penny larvae	() Riffle beetle adults
() Hellgrammites	() Stonefly nymphs
() Mayfly nymphs	() Non-net spinning
() Gilled snails	caddisfly larvae (case-
	making & free-living
Group II - Somewhat Sensitive	
() Beetle larvae	() Scuds
() Clams	() Sowbugs
() Cranefly larvae	() Fishfly larvae
() Crayfish	() Alderfly larvae
() Damselfly nymphs	() Net-spinning
() Dragonfly nymphs	caddisfly larvae
Group III - Tolerant	
() Aquatic worms	() Midge larvae
() Blackfly larvae	() Snails
() Leeches	



Biosurvey: Field Data Sheets (p 3 of 3)

Water Quality Rating

To calculate the <u>index value</u>, add the number of **letters** found in the three groups above and multiply by the indicated weighing factor.

Group I - Sensitive

(# of R's)	x 5.0 =	
(# of C's)	x 5.6 =	
(# of D's)	x 5.3 =	

Sum of the Index Value for Group I = _____

Group II – Somewhat Sensitive

Sum of the <u>Index Value</u> for Group II = _____

Group III - Tolerant

Sum of the Index Value for Group III =

To calculate the water quality score for the stream site, add together the index values for each group. The sum of these values equals the water quality score.

Water Quality Score = _____

Compare this score to the following number ranges to determine the quality of your stream site.

_____ Good > 40 _____ Fair 20-40 _____ Poor <20

• Note: The tolerance groupings (Group I, II, III) and the water quality rating categories were developed for streams in the Mid-Atlantic states.

Contact Information

Amanda Goldsmith - amandagoldsmith@lancasterconservation.org or 717-478-8224 **Noelle Cudney -** noellelafaver@lancasterconservation.org or 717-874-2557



	Physic	al Ha	abita	t Ev	alua	tior	ı For	m fo	r Ri	iffle/	Run	Pre	vale	nce					
Waterbody Name:				GI	S Key	/ (YY	YYMM	DD-hh	mm-Us	ser):									
Location:																			
Investigators:							С	ompl	eted I	Ву:									
Parameter	Optimal					Su	bopti	mal			Ma	rgin	al				Poo	r	
†1. Instream Cover¹ (fish)	Greater the boulder, of submerge undercut stable hal	obble d log banks	e, s,		cobb	0% n le, oı at; a		bould r stab		cobb habit	0% m le, or at; ha ability able.	othe bitat	r stat	ole	bould stabl	der, c	obbl oitat;	mix ce, or or or lack or ous.	ther
	20 19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
t2. Epifaunal Substrate¹ (riffle quality)	Well-deverun; rifflestream arextends twidth of sabundand	is as nd len wo tin tream	wide a gth nes th n;	as e	strea than abun	m bu two dand ders	s wide ut leng times ce of c and g	gth is width cobble	;	lackir as st is les strea large bedro	area r ng; rif ream s thai m wid bould ock pr le pre	fle no and n 2 ti dth; g ders eval	ot as its ler mes gravel and ent; s	ngth the or	none bould preva lackii	xiste ders a alent;	nt; la and b	edroc	
	20 19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
t*3. Embeddedness¹ (evaluate in upstream & central portions of riffles)	Gravel, co boulder p 25% surro sediment	obble article ounde	, and es are	0-	bould	el, co der p surro	obble, article ounde	, and es are		Grav bould	surro	bble,	es are	50-		der parte than ounder	obble article 175% ed by	, and es are 6	
	20 19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
4. Velocity/Depth Regimes¹	/elocity/Depth All four velocity/depth		W-	present if fast-shallow is missing, score lower than if missing other regimes.)			Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score lower than if missing other regimes).			(usually slow-deep).			Э						
	20 19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
5. Channel Alteration ² (only include downstream alteration when affecting reach)	No chann dredging	elizat	ion or		prese of bri evide chan drede 20 yr	ent, udge ence neliz ging .) ma	anneliusually abutnof paration, (greation) ay be t char	zation y in a nents st i.e., ter tha	reas ; an ent,	New prese and ² reach disru	10 to a	both 80%	n ban of str	eam		on or of th neliz	cem e stre ed ar	with ent ove eam re	
	20 19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
*6. Sediment Deposition ² (evaluate in pools & depositional areas)	Little or n of islands and less t bottom af sediment	o enla or po han s fected	argemoint base of the byte of	irs the	Some bar in from 30%	e never nform coar of th ted;	w incr nation se gra e bott	ease , mos avel; tom	in stly 5-	Mode new gon ol 50% affect depo const	erate graved and of the ted; satruction of ted;	I coal new bott edim t obs on an depo	rse s bars tom ent tructi d be sitior	of and ; 30- on, nds,	mate deve 50% chan pools	erial in lopm of the ging s alm bstar	ent; ent; e bot frequ ost a	s of fir ased ba more t tom uently; bsent sedime	ar han due
	20 19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Note: Wadeable couplet scores only calculated if the Wadeable Riffle-Run Protocol (Chapter 3.1) is used. Semiwadable couplet score only calculated if Semiwadeable Large River Protocol (Chapter 3.4) is used.

^{*} WADEABLE COUPLET SCORE (EMBEDDEDNESS + SEDIMENT DEPOSITION)

[†]SEMIWADEABLE TRIPLET SCORE (INSTREAM COVER + EPIFANUAL SUBSTRATE + EMBEDDEDNESS)

Note: Wadeable couplet scores only calculated if the Wadeable Riffle-Run Protocol (Chapter 3.1) is used. Semiwadable triplet

score only calculated if Semiwadeable Large River Protocol (Chapter 3.4) is used.

Parameter		ptima	al	S	ubopti	mal		Ma	rginal				Poor		
7. Riffle Frequency ²	Occurren	•		Occurre	nce of	riffles	Occa			r bend;	Gene	erally	all fla	t wate	er or
(riffle quantity; consider	relatively	freque	ent;	infreque	nt; dist	ance				rovide					
run:bend ratio)	distance					divided b					habita				
,	divided b	ν the ν	width of			stream				ided by					d by
			als 5 to 7;	equals 7	' to 15					ream is					
	variety of			'			betw	een 15	5 to 25		>25.				
	20 19	18	17 16	15 14	13	12 11	10	9	8 7	6	5	4	3	2	1
8. Channel Flow	Water rea			Water fil						of the					
Status ²	both lowe			available						and/or					
Status	minimal a			<25% of					ates ar		prese				
	channel s			substrat				ly exp		6	pools		Starr	ung	
	exposed.	นมอแจ	ale is	Substiat	C 13 CX	poseu.	most	iy exp	oseu.		pools	۰.			
	•							_			<u> </u>				_
	20 19	18	17 16	15 14		12 11	10	9	8 7	6	5	4	3	2	1
**9. Condition of	Banks sta			Moderat	,					ble; up	Unsta				ed
Banks ³	evidence		sion or			all areas c									
(edge of water to bankful	<i>l</i> bank failu	ıre.		erosion	mostly	healed	have	areas	of ero	sion.	frequ				
delineation)				over.							section				
											side s				o ot
											bank		erosic	nal	
											scars	3 .			
LDB	10	9	8	7		6	5		4	3		2		1	
LDB	10		<u> </u>			<u> </u>			-	<u> </u>					
Total RDB	10	9	8	7		6	5		4	3		2		1	
**10. Bank Vegetative	More that			70-90%	of the	stream)% of	the stre	eam	Less	than	50%	of the	
Protection ³	stream ba			bank su					ces co		strea				
				1			by ve				1				
(edge of water to bankful	<i>I</i> Icoverea I	ov ved	letation.	ibv vede			D V V C	uctan			cover	red b'	v vea	etatio	
(edge of water to bankful delineation)	/covered i	by veg	jetation.	by vege			by vc	getati			cover	red b	y veg	etatio	
(edge of water to bankful delineation)	covered i	by veg	jetation.	by vege	auon.		by vc	getati			cover	red by	y veg	etatio	
		y veg	jetation.	by vege		6	5	getati	4	3	cover	red by	y veg	etatio	
delineation)	10					6		getati		3	cover		y veg		
delineation) LDB Total RDB	10	9	8	7		6	5 5		4	3		2 2		1	
delineation) LDB Total RDB 11. Grazing or Other	10 10 Vegetativ	9 9 re disr	8 8 uption	7 7 Disruption	on evic	6 lent but	5 5 Disru	ption	4 4 obviou	3	Disru	2 ption	of st	1 1 ream	n.
LDB Total RDB 11. Grazing or Other Disruptive Pressure ³	10 10 Vegetativ	9 9 re disr	8 8 uption g or	7 7 Disruption not affective and affective a	on evic	6 lent but	5 5 Disru patch	ption ones of	4 4 obvious	3	Disru	2 ption	of stu	1 1 ream	n.
LDB Total RDB 11. Grazing or Other Disruptive Pressure³ (bankfull through riparian	10 10 Vegetative through genowing is	9 9 e disr	8 uption g or mal or not	7 7 Disruption not affection growth p	on eviceting fu	6 lent but Ill plant al to any	5 Disrupatch	ption ones of	4 obvious bare sepped	s; oil or	Disru bank high;	2 ption vege	of stretation	1 1 ream is ve	n.
LDB Total RDB 11. Grazing or Other Disruptive Pressure ³	10 10 Vegetative through general investment is evident; a	9 9 re disr razing s mini	8 uption g or mal or not all plants	7 7 Disruption not affect growth progreat ex	on eviceting function	6 lent but Ill plant al to any nore than	5 Disrupatch close vege	ption ones of sly croptation	4 obvious bare sepped	3 s; oil or on; less	Disru bank high; been	2 ption vege vege remo	of stretation	1 ream n is ven n has	n. ery
LDB Total RDB 11. Grazing or Other Disruptive Pressure³ (bankfull through riparian	10 10 Vegetative through general evident; allowed to	9 9 re disr razing s mini	8 uption g or mal or not all plants	7 7 Disruption not affect growth progreat expone-half	on eviceting functions tent; m	6 lent but ill plant al to any nore than potential	5 Disrupatch close vege than	ption one-hadron	4 obvious bare so pped commo	s; oil or on; less	Disru bank high; been inche	2 ption vege vege remo	of streation	1 ream n is ven n has	n. ery
LDB Total RDB 11. Grazing or Other Disruptive Pressure³ (bankfull through riparian	10 10 Vegetative through general investment is evident; a	9 9 re disr razing s mini	8 uption g or mal or not all plants	7 7 Disruption not affect growth progreat ex	on evice ting function tent; makes of the libble h	6 lent but ill plant al to any nore than potential	5 Disrupatch close vege than poter	ption ones of tation one-hatial pl	4 obvious bare so pped commo	s; oil or on; less	Disru bank high; been	2 ption vege vege remo	of streation	1 ream n is ven n has	n. ery
LDB Total RDB 11. Grazing or Other Disruptive Pressure³ (bankfull through riparian zone)	10 Vegetative through general evident; allowed to naturally.	9 9 re disr razing s mini	8 uption g or mal or not all plants	7 7 Disruption of affection of affection of affection of affection of a feeting and a feeting affection of a feeting affecting affec	on evice ting function tent; makes of the libble h	6 lent but ill plant al to any nore than potential	5 Disrupatch close vege than poter heigh	ption ones of tation one-hatial pl	4 obvious bare so pped commo alf of than t stu	s; oil or on; less	Disru bank high; been inche	2 ption vege vege remo	of streation	1 ream n is ven n has	n. ery
LDB Total RDB 11. Grazing or Other Disruptive Pressure³ (bankfull through riparian zone) LDB	10 Vegetative through general evident; a allowed to naturally.	9 9 e disr grazing s minital most o grow	8 uption g or mal or not all plants	7 7 Disruption affection a	on evice ting function tent; makes of the libble h	6 lent but ill plant al to any nore than potential eight	5 Disrupatch close vege than poter heigh 5	ption ones of tation one-hatial pl	4 obvious bare sepped common alf of that stuaining.	3 s; oil or on; less ne bble	Disru bank high; been inche	2 ption vege vege remo	of streation	1 1 ream is ven has to 2 n aven	n. ery
LDB Total RDB 11. Grazing or Other Disruptive Pressure³ (bankfull through riparian zone) LDB Total RDB	10 10 Vegetative through generating allowed to naturally.	9 9 re disr rrazing s minin almost o grow	8 8 uption g or mal or not all plants v	7 7 Disruption of affection of affection of affection of affection of affection of a feeting and a feeting affection of a feeting affecting affecti	on evice ting function tent; many of the libble h	6 lent but ill plant al to any nore than potential eight 6	5 Disrupatch close vege than poter heigh 5 5	ption ones of station one-half remains	4 obvious bare sopped commonalf of that stuaining.	3 s; oil or on; less ne bble 3 3	Disru bank high; been inche stubb	2 ption vege vege remo	of stream of str	1 1 ream is ven has to 2 n aven	ery
LDB Total RDB 11. Grazing or Other Disruptive Pressure³ (bankfull through riparian zone) LDB Total RDB 12. Riparian Vegetative	10 10 Vegetative through general sevident; a allowed to naturally. 10 10 Width or	9 9 9 re disr razings minimalmost o grow 9 9 riparia	8 8 uption g or mal or not all plants v 8 8 n zone	7 7 Disruption of affection of affection of affection of affection of affection of a feeting and a feeting of	on evice ting function tent; many of the ubble h	6 lent but ill plant al to any nore than potential eight 6 6 an zone	5 5 Disrupatch close vege than poter heigh 5 Width	ption ones of a light of the li	4 4 obvious bare so pped commo alf of the ant stu aining. 4 4 oarian 2	3 s; oil or on; less ne bble 3 zone 6-	Disru bank high; been inche stubb	2 ption vege vege remo es or le ble he 2 n of ri	of stretation etation oved t less in eight.	1 1 ream n is ven n has to 2 n aven 1 1 n zon	ery
LDB Total RDB 11. Grazing or Other Disruptive Pressure³ (bankfull through riparian zone) LDB Total RDB 12. Riparian Vegetative Zone³	10 10 Vegetative through general evident; a allowed to naturally. 10 10 Width or >18 meters	9 9 re disr grazings minimalmost o grow 9 9 riparia	8 uption g or mal or not all plants v 8 8 un zone man	7 7 Disruption of affecting affectin	on evice eting function tent; many for the subble hag.	6 lent but ill plant al to any nore than potential eight 6 6 an zone human	5 5 Disrupatch close vege than poter heigh 5 Width 12 m	ption ones of the state of the	4 4 obvious bare sopped common alf of the ant stuaining. 4 4 oarian z	3 s; oil or on; less ne bble 3 zone 6-	Disru bank high; been inche stubb	2 ption vege vege remo s or lole he	of stretation of	1 Team In is ven In has Ito 2 In aven 1 1 1 n zon Ino	ery rage
In the second se	10 Vegetative through of through of the vident; a allowed to naturally. 10 10 Width or >18 meter activities	9 9 re disr grazings minimalmost o grow 9 griparia ers; hu (i.e., p	8 uption g or mal or not all plants v 8 8 an zone man parking	7 7 7 Disruption of affecting growth pure properties one-half plant sturemaining 7 Width of 12-18 multiplactivities	on evice cting fue cotentiatent; m fof the abble h ng.	6 lent but ill plant al to any nore than potential eight 6 6 an zone human impacted	5 Disrupatch close vege than poter heigh 5 Width 12 m activi	ption ones of ripeters; ties ha	4 4 obvious bare so pped commo alf of th ant stu aining. 4 4 oarian 2 humar ave im	3 s; oil or on; less ne bble 3 3 zone 6-n oacted	Disru bank high; been inche stubb	2 ption vege vege remo s or lole he 2 n of ri rs; litt an ve	of stretation of station of stati	1 1 ream n is ven n has to 2 n aven 1 1 n zon no tion di	ery rage
LDB Total RDB 11. Grazing or Other Disruptive Pressure³ (bankfull through riparian zone) LDB Total RDB 12. Riparian Vegetative Zone³	10 Vegetative through of mowing is evident; a allowed to naturally. 10 10 Width or >18 meter activities lots, road	9 9 re disr grazing s mini almost o grow 9 griparia ers; hu (i.e., p	8 uption g or mal or not all plants v 8 8 n zone man parking clear-	7 7 Disruption of affecting affectin	on evice cting fue cotentiatent; m fof the abble h ng.	6 lent but ill plant al to any nore than potential eight 6 6 an zone human impacted	5 Disrupatch close vege than poter heigh 5 Width 12 m activi	ption ones of ripeters; ties ha	4 4 obvious bare sopped common alf of the ant stuaining. 4 4 oarian z	3 s; oil or on; less ne bble 3 3 zone 6-n oacted	Disru bank high; been inche stubb	2 ption vege vege remo s or lole he 2 n of ri rs; litt an ve	of stretation of station of stati	1 1 ream n is ven n has to 2 n aven 1 1 n zon no tion di	ery rage
Total RDB 11. Grazing or Other Disruptive Pressure³ (bankfull through riparian zone) LDB Total RDB 12. Riparian Vegetative Zone³ (bankfull	10 10 Vegetative through of mowing is evident; a allowed to naturally. 10 10 Width or >18 meter activities lots, road cuts, lawn	9 9 re disr grazing s mini almost o grow 9 griparia ers; hu (i.e., p beds, ns or o	8 uption g or mal or not all plants v 8 an zone man barking clear- crops)	7 7 7 Disruption of affecting growth pure properties one-half plant sturemaining 7 Width of 12-18 multiplactivities	on evice cting fue cotentiatent; m fof the abble h ng.	6 lent but ill plant al to any nore than potential eight 6 6 an zone human impacted	5 Disrupatch close vege than poter heigh 5 Width 12 m activi	ption ones of ripeters; ties ha	4 4 obvious bare so pped commo alf of th ant stu aining. 4 4 oarian 2 humar ave im	3 s; oil or on; less ne bble 3 3 zone 6-n oacted	Disru bank high; been inche stubb	2 ption vege vege remo s or lole he 2 n of ri rs; litt an ve	of stretation of station of stati	1 1 ream n is ven n has to 2 n aven 1 1 n zon no tion di	ery rage
LDB Total RDB 11. Grazing or Other Disruptive Pressure³ (bankfull through riparian zone) LDB Total RDB 12. Riparian Vegetative Zone³ (bankfull through riparian zone)	10 10 Vegetative through general sevident; a allowed to naturally. 10 10 Width or >18 meter activities lots, road cuts, lawy have not	9 9 re disr grazings minimalmost o grow 9 griparia rrs; hu (i.e., p beds, ns or c impac	8 uption g or mal or not all plants v 8 8 n zone man parking clear- crops) sted zone.	7 7 Disruption of affective growth part expension of affective great expension on the following plant sturemainin 7 7 Width of 12-18 mactivities zone on	on evice cting fue cotentiatent; m fof the abble h ng.	lent but all plant all to any nore than potential eight 6 6 an zone human impacted mally.	5 5 Disrupatch close vege than poter heigh 5 Width 12 m activizone	ption ones of ripeters; ties ha	4 4 obvious bare so pped commo alf of the ant stu aining. 4 4 oarian 2 humar ave impat deal	s; oil or on; less ne bble 3 zone 6-n oacted	Disru bank high; been inche stubb	ption vege vege remoses or lole here 2 2 n of rirs; litt an vegemen	of stretation of station of stati	1 1 ream n is ven n has to 2 n aven 1 1 n zon no ion dities.	ery rage
Total RDB Total RDB T1. Grazing or Other Disruptive Pressure³ (bankfull through riparian zone) LDB Total RDB Total RDB T12. Riparian Vegetative Zone³ (bankfull	10 10 Vegetative through go mowing is evident; a allowed to naturally. 10 10 Width or >18 meter activities lots, road cuts, laws have not 10	9 9 re disr grazing s mini almost o grow 9 griparia ers; hu (i.e., p beds, ns or o	8 uption g or mal or not all plants v 8 an zone man barking clear- crops)	7 7 7 Disruption of affecting growth pure properties one-half plant sturemaining 7 Width of 12-18 multiplactivities	on evice cting fue cotentiatent; m fof the abble h ng.	6 lent but ill plant al to any nore than potential eight 6 6 an zone human impacted	5 Disrupatch close vege than poter heigh 5 Width 12 m activi	ption ones of ripeters; ties ha	4 4 obvious bare so pped commo alf of th ant stu aining. 4 4 oarian 2 humar ave im	3 s; oil or on; less ne bble 3 3 zone 6-n oacted	Disru bank high; been inche stubb	2 ption vege vege remo s or lole he 2 n of ri rs; litt an ve	of stretation of station of stati	1 1 ream n is ven n has to 2 n aven 1 1 n zon no tion di	ery rage

^{**} WADEABLE COUPLET SCORE (CONDITION OF BANKS + BANK VEGETATIVE PROTECTION)

TOTAL HABITAT SCORE

¹ Reach scale: Evaluate parameter within the immediate vicinity of biological sampling reach.

² Expanded scale Evaluate parameter within sampling reach and at least 100m UPS of sampled reach, longer if visual extent allows.

³ Macro scale: Evaluate parameter based on expanded scale; can be extended further to account for characteristics within representative reach.

Water Monitoring Field Data Sheet (p 5 of 12)

<u>Stream Flow Volume or Discharge</u> Check to see if the United States Geological Survey (USGS) has the information for Stream Flow Volume or Discharge for your site. Check this Internet address: water.usgs.gov/

"USGS Water Resources of the United States" Look under "Water Data"; "Real-time"

If stream discharge data is available for your site, you can use this information rather than performing the procedures on the following pages (stream width, depth, and velocity). Make sure to check for this information BEFORE you go out to the stream site.

If the USGS does not have this information for your site, make sure to do all of the physical assessments and all of the math to save yourself or your SEC's designated Web Host time.

<u>Stream Width</u> Determine the average width of wadeable streams by measuring at 5 places within your sampling area and dividing the total by 5. For the purpose of converting feet to meters use: feet x = 0.3048 = meters.

+	·	+	+	+ =		÷ 5 =
meters Sample 1 Non-	<i>meters</i> <i>Sample 2</i> wadeable St	meters Sample 3 ream	meters Sample 4	meters Sample 5	meters Total	meters Average Width
For non-wa	adeable strea	ıms, if you h	ave recorded	stream width,	, note WHA	Γ you have done below.
along the w	flath of the s	nine the aver stream and d imeters ÷ 10	ividing the to	r wadeable streetal by 5. For	the purpose	suring at 5 equal interval of converting use: inche
meters Sample 1	meters Sample 2	meters Sample 3	meters Sample 4	meters Sample 5	meters	meters Average Depth
Non-v For non-wa	wadeable Str deable strea	ream ms, if you h	ave recorded	stream denth.	note WHAT	you have done below.
Notes:						you have done below.
Date	/	/				
Sita ID #						

Water Monitoring Field Data Sheet (p 6 of 12)

Surface Velocity

Complete the following steps to determine the surface velocity of wadeable streams:

- 1. Measure and mark a 10 meter distance at your stream site, using the depth management line as the up stream mark. Each of the 5 intervals marked off to measure stream depth should be used as starting points for the weighted bobber.
- 2. Release the bobber at each of the 5 intervals, and time how long it takes the bobber to travel from the upstream mark down 10 meters to the downstream mark.
- 3. Divide the 10 meter distance by the travel time of the bobber to determine the stream's surface velocity.
- 4. Run the test 5 times, once at each of the 5 intervals you used for measuring depth along the transect, and take the average.

Irial#I:	meters ÷	time (seconds) =	meters per second
Trial #2:	meters ÷	time (seconds) =	meters per second
Trial #3:	meters ÷	time (seconds) =	meters per second
Trial #4:	meters ÷	time (seconds) =	meters per second
Trial #5:	meters ÷	time (seconds) =	meters per second
		Total = + 5 = _	meters per second
			Average Velocity
Non-w	adeable stream		
For non-wade	eable streams, if you	nhave recorded surface veloc	ity, note WHAT you have done below.
Notes:			

Date	 /
Site ID#	

Water Monitoring Field Data Sheet (p 7 of 12)

Stream Flow Volume or Discharge			
Calculate the streamflow volume (cubic meters)	/second - cms) using the above measurements.		
Check here if stream discharge data was obtained from the USGS. Enter this data below as the Stream Flow Volume in cubic meters/second. (You will need to convert cubic feet/second to cubic meters/second.) For the purpose of converting cfs (cubic feet/second) to cms use: cfs x 0.0283 = cms			
		$\mathbf{w} \times \mathbf{d} \times \mathbf{v} \times \mathbf{k} = \mathbf{cms}$	
		Y Y Y	- ama
		Avg. Width X Avg. Depth Avg. Velocity	L * Streamflow Volume
(meters) / (meters) / (meters sec.) / (s			
· · · · · · · · · · · · · · · · · · ·	constant)		
· ·	onstant)		
*k = stream bottom constant (0.8 if it's rubble/g	ravel or 0.9 if it is sand, mud, silt or bedrock)		
Ice Coverage, if any (refer to page 46)	%		
Snow Donth if any	!1		
Snow Depth, if any	inches		
and/or take a photo when able.	e identify species (see Extras Appendix) when possible,		
Seasonal Changes Observed			
Weather Notes (example: our county is under a this week)	drought watch, tornados touched down in area earlier		
	•		
Date / / Site	e ID #		