Date:

Investigators:

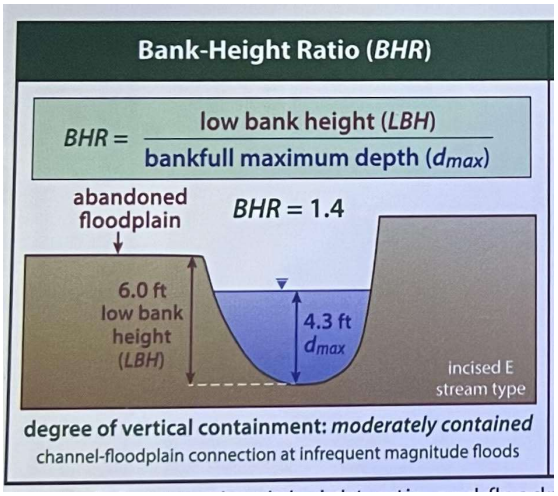
HB SQT Rapid Assessment Form

I. Reach Information and Stratification

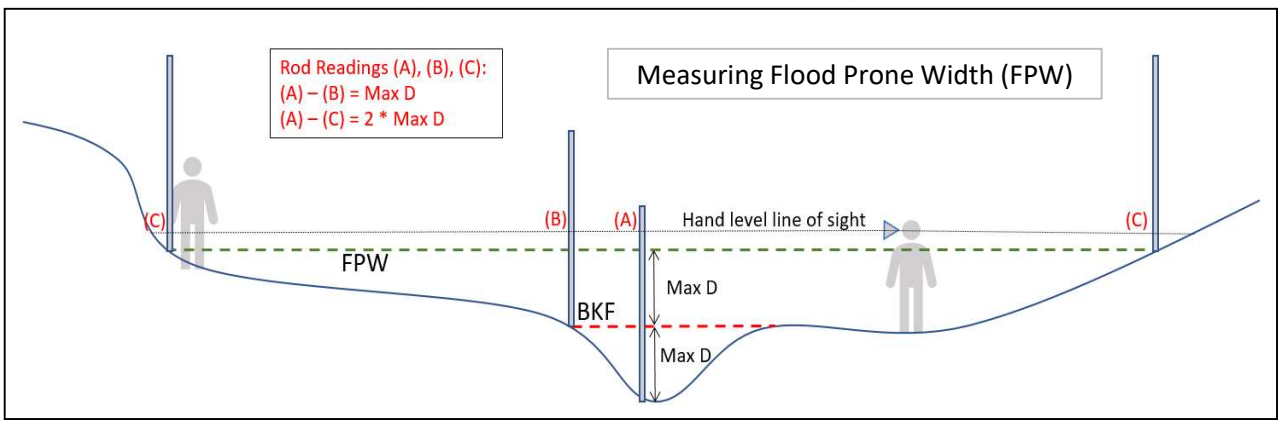
Project Name:			
Reach ID:			
Upstream Latitude:			
Upstream Longitude:			
Downstream Latitude:			
Downstream Longitude:			
Ecoregion:			
Drainage Area (sq. mi.):			
Stream Reach Length (ft):			
Total Length of Streambank (ft)			
Flow Type:	Perrenial	Ephemeral	Intermittent
Valley Type:	Colluvial	Alluvial	Confined Alluvial

Shading Key
Desktop Value
Field Value
Calculation

Notes:



Quick Rosgen Stream Classification Guide (Rosgen, 1996)					
ER < 1.4		1.4 < ER < 2.2		ER > 2.2	
WDR < 12	WDR > 12	WDR > 12		WDR < 12	WDR > 12
A or G	F	B		E	C



Date:
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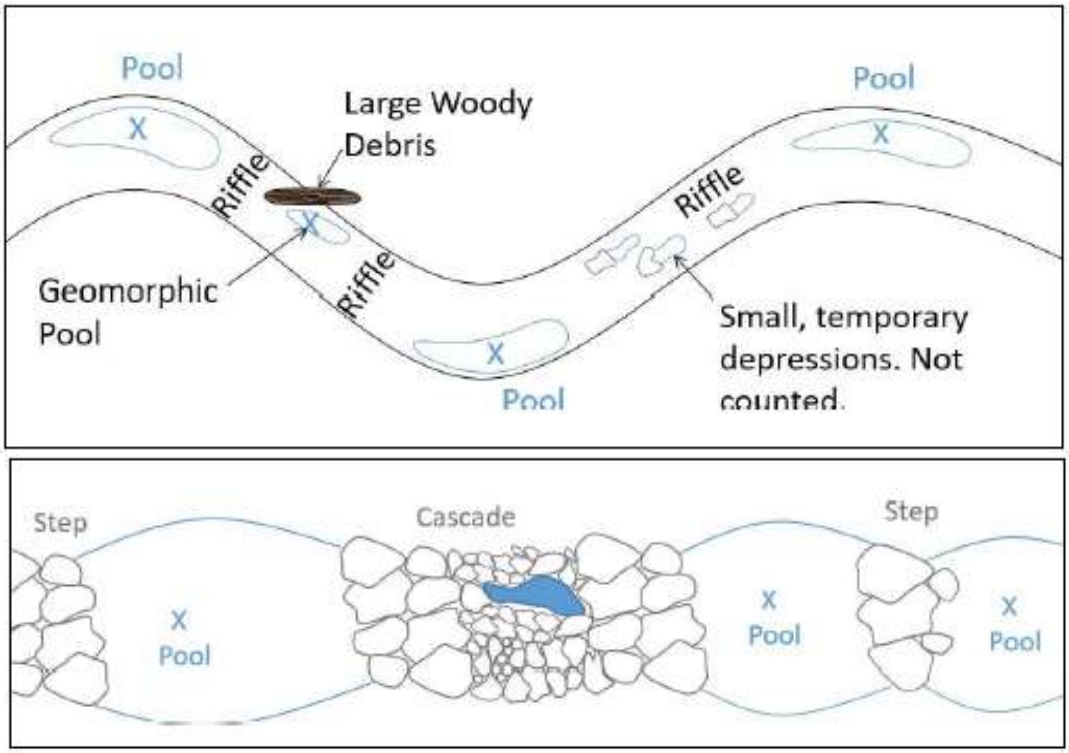
HB SQT Rapid Assessment Form



Bankfull Riffle Width (W_{bkf})	the surface width of the riffle cross-section at the bankfull stage
Bankfull Riffle Mean Depth (d_{bkf})	mean depth of the riffle cross-section at the bankfull stage elevation
Bankfull Riffle Cross-sectional Area (A_{bkf})	area of the riffle corss-section at the bankfull stage elevation ($A_{bkf} = W_{bkf} \times d_{bkf}$)
Bankfull Riffle Maximum Depth (d_{max})	the distance measured between the bankfull stage elevation and the channel thalweg at the riffle cross-section
Flood-prone Area Width (W_{fpa})	width at an elevation that is twice the bankfull riffle maximum depth measured perpendicular to the fall line of the valley in a riffle section
Entrenchment Ratio (ER)	the vertical containment of a river calculated as flood-prone area width divided by bankfull riffle width (W_{fpa}/W_{bkf})

Date:
Investigators:

HB SQT Rapid Assessment Form

II. Hydrology

1. *Land Use Coefficient:*		Reach Runoff Acreage:		

Land Use	Area (ac)	Area (%)	Curve #	% Area*CN
Totals				

2. *Concentrated Flow Points:*		

II. Hydraulics

	Bankfull Verification and Stable Riffle Cross Section	
1.	Difference between BKF stage and WS (ft) *Average or consensus value from reach walk.*	
2.	Riffle Bankfull Width (ft)	
3.	Bankfull Max Depth (D_{max})	
4.	Bankfull Mean Depth (ft) = Average of depth measurements	
5.	Bankfull Area (sq. ft.) Width * Mean Depth	
6.	Regional Curve Bankfull Width (ft)	
7.	Regional Curve Bankfull Mean Depth (ft)	
8.	Regional Curve Bankfull Area (sq. ft.)	
9.	Curve Used	
10.	Low Bank Height	
11.	Flood Prone Width (FPW; ft)	
12.	**Entrenchment Ratio (ER)**	
13.	Width Depth Ratio (WDR)	
14.	**Bank Height Ratio (BHR)**	
15.	Stream Type	

Cross Section Measurements Depth measured from bankfull			
Station	Depth	Station	Depth

Date:
Investigators:

HB SQT Rapid Assessment Form

III. Geomorphology

1. Large Woody Debris Index

from Large Woody Degris Field Form (page 5)

Score	1	2	3	4	5	Σ	LWDI Score
Pieces							
*Pieces*Score*							
Debris Dams							
*(Debris Dams*Score)*5*							

*LWDI Score = (Σ(Pieces*Score)) + (Σ(Debris Dams*Score)*5))*

2. Lateral Migration

a. Dominant BEHI/NBS

Step 1: Record field data on BEHI/NBS Field Form (page 6)

Step 2: Enter field data into BEHI and NBS Processing excel document available here:

https://www.landscapepartnership.org/networks/working-lands-for-wildlife/target-species/eastern-hellbender/partner-workspace/hellbender-sqt-materials

Step 3: From the SQT Field Value Calculation table (starting at line 48 in BEHI and NBS Processing document), identify the BEHI/NBS category with the highest percent represented in the reach. This category is your field value for the SQT.

Dominant BEHI/NBS Field Value:	

b. Percent Streambank Erosion (get values from BEHI/NBS Field Form)

Total Length of Streambank =		Total linear ft of eroding banks =	
(Erosion/Total Length of Streambank)*100 =			

c. Percent Armoring	Length								
Armoring (linear ft)									
Total linear ft of bank armoring =									
(Armoring/Total Length of Streambank)*100 =									

LARGE WOODY DEBRIS FIELD FORM

Date Revised: 10/19/2016

Investigator(s)			State		Forest Type	Deciduous	Evergreen	Mixed	Other
Date			County		Forest Age (yrs)				
Stream Name			Phys. Province		Latitude (dd)				
Reach ID			Drainage Area (mi^2)		Longitude (dd)				
Watershed Name			Dominant Species						
Survey Length (ft)	328	Survey Length = 328 ft/100 m	BKF Width (ft)		Slope (ft/ft)				
Stream Classification	Ephemeral	Intermittent Perennial	BKF Mean Depth (ft)		Bed material				
Stream Condition	Degraded	Restored Reference Managed	Floodprone Width (ft)		Rosgen Type				
Field Notes:									

SCORE										
	1		2		3		4		5		
CATEGORY	*** PIECES ***										**TOTAL PIECES**
Length/BKF Width	0 to 0.4		0.4 to 0.6		0.6 to 0.8		0.8 to 1.0		> 1.0		
Diameter (cm)	10 to 20		20 to 30		30 to 40		40 to 50		>50		
Location	**Zone 4** (Above BKF/Extending into Channel)				**Zone 3** (Above BKF/Within Streambanks)		**Zone 2** (Above WS/Below BKF)		**Zone 1** (Below WS)		
Type	Bridge				Ramp		Submersed		Buried		
Structure	Plain		Plain/Int		Intermediate		Int/Sticky		Sticky		
Stability	Moveable		Mov/Int		Intermediate		Int/Sec		Secured		
Orientation (deg)	0 to 20		20 to 40		40 to 60		60 to 80		80 to 90		
CATEGORY	**** DEBRIS DAMS ****										**TOTAL DAMS**
Length (% of BKF Width)	0 to 20		20 to 40		40 to 60		60 to 80		80 to 100		
Height (% of BKF Depth)	0 to 20		20 to 40		40 to 60		60 to 80		80 to 100		
Structure	Coarse		Coarse/Int		Intermediate		Int/Fine		Fine		
Location	Partially high flow		In high flow		Partially low flow		Mid low flow		In low flow		
Stability	Moveable		Mov/Int		Intermediate		Int/Sec		Secured		

* Pieces - Non-living wood that has a large end diameter ≥ 10 cm and has a length ≥ 1 m. ** Debris Dams - Three (3) or more pieces touching.

Date:
Investigators:

BEHI/NBS Field Form

Reach ID:
Valley Type:
Bed Material:

			Bank Erosion Hazard Index (BEHI)									
Station ID	Bank Length (Ft)	Study Bank Height (ft)	BKF Height (ft)	Root Depth (ft)	Root Density (%)	Bank Angle (degrees)	Surface Protection (%)	Bank Material Adjustment	Stratification Adjustment	BEHI Total/ Category	NBS Ranking	Notes

Date:
Investigators:

HB SQT Rapid Assessment Form

III. Geomorpholoy continued

3. Riprian Vegetation

a. Forested Buffer Width *measured to the extent of continuous canopy cover*

	Buffer Width Measurements (ft)								L Avg.
Left (looking downstream)									
Left (looking downstream)									
									R Avg.
Right (looking downstream)									
Right (looking downstream)									

b, Buffer Width of Undisturbed Soil *eroding streambanks DO NOT count as disturbed soil for this metric*

	Buffer Width Measurements (ft)								L Avg.
Left (looking downstream)									
Left (looking downstream)									
									R Avg.
Right (looking downstream)									
Right (looking downstream)									

c. Stem Density *(30'x30' plots)*

Left Bank Plots	1	2	3	4	5	6	7	8	Total
Total Stems									
Right Bank Plots	1	2	3	4	5	6	7	8	Total
Total Stems									
									Avg.
L StemDensity *(#/1300)*43560*									
R StemDensity *(#/1300)*43560*									

d. Forested Buffer Gap

Left Bank Forested Section Lengths									Total
Right Bank Forested Section Lengths									Total
Total Length of Streambank =		LB % Forest =			RB % Forest =				

Date:
Investigators:

HB SQT Rapid Assessment Form

III. Geomorpholoy continued

4. Bed Form Diversity *(all components can be pulled from longitudinal profile)*

a. Pool Spacing Ratio and b. Pool Depth Ratio

	P1	P2	P3	P4	P5	P6	P7	P8
Geomorphic Pool?								
Station At maximum pool depth								
P-P Spacing (ft)	X							
Pool Spacing Ratio Pool Spacing / BKF Width	X							
Pool Depth (ft) Measured from Bankfull								
Pool Depth Ratio Pool depth/BKF mean D								
Average Pool Depth Ratio			Median Pool Spacing Ratio					

c. Percent Riffle *(data can be pulled from longitudinal profile)*

	Riffle	Station Start	Station End	Length	Riffle	Station Start	Station End	Length
	1				14			
Reach Length	2				15			
	3				16			
	4				17			
Percent Riffle	5				18			
	6				19			
	7				20			
	8				21			
	9				22			
	10				23			
	11				24			
	12				25			
	13				26			

Date:
Investigators:

HB SQT Rapid Assessment Form

III. Geomorpholoy continued

5. Bed Material Characterization

a. Substrate Embeddedness

Date:			Days Since Bankfull Event: *(must be at least 30 days)*			
Transect	1	2	3	4	5	6	Average
Quad 1							
Quad 2							
Quad 3							
Transect	7	8	9	10	11		
Quad 1							
Quad 2							
Quad 3							

V. *****Biology****

1. Macros

a. Intolerant Macros Index

							Group 1	
Transect	**1**	**2**	**3**	**4**	**5**	**6**	*Total*	*FV*
Quad 1								
Quad 2							*Group 2*	
Quad 3							*Total*	*FV*
Leaf Pack								
	7	**8**	**9**	**10**	**11**		*Group 3*	
Rock 1							*Total*	*FV*
Rock 2								
Rock 3							**ITMI Field Value**	
Leaf Pack								

Date:
Investigators:

HB SQT Rapid Assessment Form

III. Geomorpholoy continued

5. Bed Material Characterization cont...

b. Percent Fines, D50 *(data should come from engineers completing design)*

If the design team is not providing pebble count data or you decide to inlcude pebble count data in the assessment for a non-streambank stabilization project, use the Pebble Count Form on page 11 to record the data.

Note: Data from the design team should already include D50, but may not calculate percent fines. Percent fines is calculated as the cumulative percent of substrate that is > 2mm. Use the Pebble Count Analyzer, if needed, to calculate this information with the data provided by the design team.

Pebble Count Analyzer: https://www.landscapepartnership.org/networks/working-lands-for-wildlife/target-species/eastern-hellbender/partner-workspace/hellbender-sqt-materials/pebble-count-analyzer

c. Cover Rock and d. Nest Rock Density

Cover Rocks *(tally)*			Total		
Avail. Nest Sites *(tally)*			Total		
Stream Length Assessed (ft)			*Length of B axis*		
Wetted Width (ft)			*20-36"*	*>36"*	*Bedrock (if clear cavity)*
Cover Rock Density		*Riffle*	*Cover*	*Cover*	*Nest*
Available Nest Site Dens.		*Run, Glide, Pool*	*Cover*	*Nest*	*Nest*

IV. Physicochemical

1. Summer Daily Maximum Temperature

2. Fecal Coliform

Animal Units	
Discharge (cfs)	
col/100mL	

Livestock Type	Average Weight	Animal Units/Animal
Cattle	1400	1.4
Goat	150	0.15
Sheep	160	0.16
Horse	1000	1

=

Site:

Location: HUC: _ _ _ _ _ _ _ _ _ _ _ _ _ _

Observers:

Inches	PARTICLE	Millimeters		Dot Count for RIFFLE 1	POOL 2	COMP. 3	RIFFLE (1) Reach: Date: TOT #	ITEM %	% CUM	POOL (2) Reach: Date: TOT #	ITEM %	% CUM	COMPOSITE (3) Reach: Date: TOT #	ITEM %	% CUM
	Silt / Clay	< .062	S/C												
	Very Fine	.062 - .125	SAND												
	Fine	.125 - .25													
	Medium	.25 - .50													
	Coarse	.50 - 1.0													
.04 - .08	Very Coarse	1.0 - 2													
.08 - .16	Very Fine	2 - 4	GRAVEL												
.16 - .22	Fine	4 - 5.7													
.22 - .31	Fine	5.7 - 8													
.31 - .44	Medium	8 - 11.3													
.44 - .63	Medium	11.3 - 16													
.63 - .89	Coarse	16 - 22.6													
.89 - 1.3	Coarse	22.6 - 32													
1.3 - 1.8	Very Coarse	32 - 45													
1.8 - 2.5	Very Coarse	45 - 64													
2.5 - 3.5	Small	64 - 90	COBBLE												
3.5 - 5.0	Small	90 - 128													
5.0 - 7.1	Large	128 - 180													
7.1 - 10.1	Large	180 - 256													
10.1 - 14.3	Small	256 - 362	BOULDER												
14.3 - 20	Small	362 - 512													
20 - 40	Medium	512 - 1024													
40 - 80	Large-Vry Large	1024 - 2048													
	Bedrock		BDRK												
Stream Type:			***Landscape Type:***			TOTAL→									

Date:
Investigators:

HB SQT Rapid Assessment Form

V. Biology

1. Hellbender Presence

a. Eggs, Larva, Subadult, or Adult Presence *(record lenghts, location, if no capture assume adult if not obviously other)*

Length	Location	*Adult*	> 289 mm
		Subadult	131-289mm
		Juvenile	No external gills and < 131mm
		Larva	External gills present