

## Parameter and Metric Selection Guide

The following table is provided to assist practitioners in selecting the appropriate parameters for each stream restoration project. All parameters would rarely, if ever, be used for a single project. The scenarios below show when each parameter could be used. Note, the same parameters (and metrics) must be assessed for the existing and proposed condition.

ONLY complete SQT monitoring on Hellbender WLFW project with express landowner or land manager permission.

If a landowner or land manager is uncomfortable with a certain parameter, it can be removed from the assessment.

Functional Category	Function-based Parameters	Metric	Metric Selection Instruction
Hydrology	Reach Runoff	Land Use Coefficient	<b>Required</b> for all assessments.
		Concentrated Flow Points (#/1000 LF)	<b>Required</b> for all assessments.
Hydraulics	Floodplain Connectivity	Bank Height Ratio	<b>Required</b> for all assessments.
		Entrenchment Ratio	<b>Optional</b> for BMP projects, <b>Required</b> for projects with streambank stabilization component.
Geomorphology	Large Woody Debris	LWD Index	<b>Required</b> for all assessments.
	Lateral Migration	Dominant BEHI/NBS	<b>DO NOT</b> measure projects where no erosion is present, <b>Required</b> for projects with erosion present.
		Percent Streambank Erosion (%)	
	Riparian Vegetation	Percent Streambank Armoring (%)	
		Forested Buffer Width (ft)	<b>Required</b> for all assessments with forested floodplain reference conditions.
		Buffer Width of Undisturbed Soil	<b>Required</b> for all assessments.
		Forested Buffer Gap (% of reach)	<b>Required</b> for all assessments with forested floodplain reference conditions.
	Bed Form Diversity	Stem Density (#/acre)	<b>Required</b> for all assessments with forested floodplain reference conditions.
		Pool Spacing Ratio	<b>DO NOT</b> measure for BMP-only projects, <b>Required</b> for projects with streambank stabilization component.
		Pool Depth Ratio	
Percent Riffle			
Bed Material Characterization		Percent Fines	<b>Optional</b>
		Substrate Embeddedness	<b>Required</b>
	D50	<b>Optional</b>	
	Cover Rock Density (#/10,000 sq ft)	<b>Required</b> when nest and cover rock augmentation is part of project or when significant improvements to sediment transport are expected in project reach with suitable substrate. <b>Optional</b> for all other project types. <b>DO NOT</b> measure when working in streams too small to support Hellbender populations.	
Available Nest Site Density (#/10,000 sq ft)			
Physicochemical	Temperature	Summer Daily Maximum (°F)	<b>Optional</b>
	Bacteria	Fecal Coliform (Cfu/100 ml)	<b>Required</b>
	Organic Matter	Percent Shredders (%)	<b>Optional</b>
Biology	Macros	Intolerant Macros Index	<b>Required</b>
	Hellbender Recruitment	Larva, juvenile, or subadult presence	<b>Required</b> when nest and cover rock augmentation is part of project or when significant improvements to sediment transport are expected in project reach with suitable substrate. <b>Optional</b> for all other project types. <b>DO NOT</b> measure when working in streams too small to support Hellbender populations.