



# Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

**QHEI Score:** 77.5

**Stream & Location:** Nine Mile Creek **RM:** 0.40 **Date:** 10/08/14  
**Scorers Full Name & Affiliation:** Mark Matheson + Jon Bruner Northeast Ohio Regional Sewer District  
**River Code:** - **STORET #:** - **Lat./ Long.:** 18 **Office verified location**

**1] SUBSTRATE** Check **ONLY** Two substrate **TYPE BOXES**; estimate % or note every type present

<b>BEST TYPES</b>	<b>POOL RIFFLE</b>	<b>OTHER TYPES</b>	<b>POOL RIFFLE</b>	<b>ORIGIN</b>	<b>QUALITY</b>
<input type="checkbox"/> BLDG / SLABS [10]	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> HARDPAN [4]	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> HEAVY [-2]
<input type="checkbox"/> BOULDER [9]	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> TILLS [1]	<input type="checkbox"/> MODERATE [-1]
<input type="checkbox"/> COBBLE [8]	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	<input checked="" type="checkbox"/> NORMAL [0]
<input checked="" type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> SILT [2]	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/> FREE [1]
<input checked="" type="checkbox"/> SAND [6]	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> EXTENSIVE [-2]
<input type="checkbox"/> BEDROCK [5]	<input type="checkbox"/> <input type="checkbox"/>			<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/> MODERATE [-1]

**NUMBER OF BEST TYPES:**  4 or more [2]  3 or less [0]

**Comments:** 7+6+1+0+1

**2] INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

<u>2</u> UNDERCUT BANKS [1]	<u>3</u> POOLS > 70cm [2]	<u>1</u> OXBOWS, BACKWATERS [1]	<b>AMOUNT</b>
<u>1</u> OVERHANGING VEGETATION [1]	<u>2</u> ROOTWADS [1]	<u>0</u> AQUATIC MACROPHYTES [1]	<input type="checkbox"/> EXTENSIVE >75% [11]
<u>2</u> SHALLOWS (IN SLOW WATER) [1]	<u>1</u> BOULDERS [1]	<u>2</u> LOGS OR WOODY DEBRIS [1]	<input checked="" type="checkbox"/> MODERATE 25-75% [7]
<u>1</u> ROOTMATS [1]			<input type="checkbox"/> SPARSE 5-<25% [3]
			<input type="checkbox"/> NEARLY ABSENT <5% [1]

**Comments:** 10+7

**3] CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

<b>SINUOSITY</b>	<b>DEVELOPMENT</b>	<b>CHANNELIZATION</b>	<b>STABILITY</b>
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input checked="" type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input checked="" type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]
<input checked="" type="checkbox"/> LOW [2]	<input checked="" type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input checked="" type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

**Comments:** 2+4+6+1

**4] BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)

<b>EROSION</b>	<b>RIPARIAN WIDTH</b>	<b>FLOOD PLAIN QUALITY</b>
<input type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]
<input checked="" type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]
<input checked="" type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input checked="" type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]

**Comments:** 1.5 + 4 + 2

**5] POOL / GLIDE AND RIFFLE / RUN QUALITY**

<b>MAXIMUM DEPTH</b>	<b>CHANNEL WIDTH</b>	<b>CURRENT VELOCITY</b>	<b>Recreation Potential</b>
<input checked="" type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	<b>Primary Contact</b>
<input type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> VERY FAST [1]	<b>Secondary Contact</b>
<input type="checkbox"/> 0.4-<0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> SLOW [1]	(circle one and comment on back)
<input type="checkbox"/> 0.2-<0.4m [1]		<input type="checkbox"/> INTERSTITIAL [-1]	
<input type="checkbox"/> < 0.2m [0]		<input checked="" type="checkbox"/> FAST [1]	

**Comments:** 6+2+2

**Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:** Check ONE (Or 2 & average)

<b>RIFFLE DEPTH</b>	<b>RUN DEPTH</b>	<b>RIFFLE / RUN SUBSTRATE</b>	<b>RIFFLE / RUN EMBEDDEDNESS</b>
<input checked="" type="checkbox"/> BEST AREAS > 10cm [2]	<input type="checkbox"/> MAXIMUM > 50cm [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input checked="" type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input checked="" type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input checked="" type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]

**Comments:** 2+1+0+2

**6] GRADIENT** (10.46 ft/ml)  VERY LOW - LOW [2-4] **% POOL:**  **% GLIDE:**   
**DRAINAGE AREA** (11.30 ml<sup>2</sup>)  MODERATE [6-10] **% RUN:**  **% RIFFLE:**   
 HIGH - VERY HIGH [10-6] **Gradient Maximum** 10

**AJ SAMPLED REACH**

Check ALL that apply

**METHOD**

- BOAT
- WADE
- L. LINE
- OTHER

**DISTANCE**

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

**CLARITY**

- 1st --sample pass-- 2nd
- < 20 cm
- 20--<40 cm
- 40-70 cm
- > 70 cm/CTB
- SECCHI DEPTH

**CANOPY**

- > 85%- OPEN
- 55%--<85%
- 30%--<55%
- 10%--<30%
- <10%- CLOSED

**STAGE**

- HIGH
- UP
- NORMAL
- LOW
- DRY

**CLARITY**

- 1st --sample pass-- 2nd
- < 20 cm
- 20--<40 cm
- 40-70 cm
- > 70 cm/CTB
- SECCHI DEPTH

**CANOPY**

- > 85%- OPEN
- 55%--<85%
- 30%--<55%
- 10%--<30%
- <10%- CLOSED

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

**DJ MAINTENANCE**

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMOURD / SLUMPS
- ISLANDS / SCOURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

**EJ ISSUES**

- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H<sub>2</sub>O / TILE / H<sub>2</sub>O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

**FJ MEASUREMENTS**

- $\bar{x}$  width
- $\bar{x}$  depth
- max. depth
- $\bar{x}$  bankfull width
- bankfull  $\bar{x}$  depth
- W/D ratio
- bankfull max. depth
- floodprone  $x^2$  width
- entrench. ratio
- Legacy Tree:

**BJ AESTHETICS**

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/ISSOs/OUTFALLS

**CJ RECREATION**

- AREA DEPTH
- POOL:  >100ft<sup>2</sup>  >3ft

**Stream Drawing:**

