



OWQ Biological Studies QHEI (Qualitative Habitat Evaluation Index)

Sample #	bioSample #	Stream Name	Location
		Unmapped intermittent Xing #1	
Surveyor	Sample Date	County	Macro Sample Type
Sobecki, McCoy		Clark	
<input type="checkbox"/> Habitat Complete			QHEI Score: 66

1] SUBSTRATE Check ONLY Two predominant substrate TYPE BOXES; estimate % and check every type present GOOD

BEST TYPES		OTHER TYPES		ORIGIN	QUALITY
P R	PRESENT TOTAL %	P R	PRESENT TOTAL %		
<input type="checkbox"/> <input type="checkbox"/> BLDR/SLABS [10]	<input type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> HARDPAN [4]	<input checked="" type="checkbox"/> <input type="checkbox"/> 5	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> HEAVY [-2] <input type="checkbox"/> MODERATE [-1] <input checked="" type="checkbox"/> NORMAL [0] Substrate <input type="checkbox"/> FREE [1]
<input type="checkbox"/> <input type="checkbox"/> BOULDER [9]	<input type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> TILLS [1]	
<input type="checkbox"/> <input checked="" type="checkbox"/> COBBLE [8]	<input type="checkbox"/> <input type="checkbox"/> 35	<input type="checkbox"/> <input type="checkbox"/> MUCK [2]	<input type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> WETLANDS [0]	
<input type="checkbox"/> <input checked="" type="checkbox"/> GRAVEL [7]	<input type="checkbox"/> <input type="checkbox"/> 45	<input type="checkbox"/> <input checked="" type="checkbox"/> SILT [2]	<input type="checkbox"/> <input type="checkbox"/> 10	<input type="checkbox"/> HARDPAN [0]	
<input type="checkbox"/> <input checked="" type="checkbox"/> SAND [6]	<input type="checkbox"/> <input type="checkbox"/> 5	<input checked="" type="checkbox"/> <input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/> <input type="checkbox"/> _____	<input checked="" type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> EXTENSIVE [-2] <input type="checkbox"/> MODERATE [-1] <input checked="" type="checkbox"/> NORMAL [0] Maximum <input type="checkbox"/> NONE [1] 20
<input type="checkbox"/> <input type="checkbox"/> BEDROCK [5]	<input type="checkbox"/> <input type="checkbox"/> _____	(Score natural substrates; ignore sludge from point-sources)		<input type="checkbox"/> RIP/RAP [0]	
NUMBER OF BEST TYPES: <input type="checkbox"/> 4 or more [2] <input checked="" type="checkbox"/> 3 or less [0]		<input type="checkbox"/> SHALE [-1]	<input type="checkbox"/> COAL FINES [-2]	<input type="checkbox"/> LACUSTRINE [0]	

Comments

2] INSTREAM COVER Indicate presence 0 to 3 and estimate percent: 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 root wad in deep/fast water, or deep, well-defined, functional pools.)

% Amount	% Amount	% Amount	AMOUNT
$\frac{10}{30}$ $\frac{2}{3}$ UNDERCUT BANKS [1]	$\frac{15}{15}$ $\frac{2}{2}$ POOLS > 70cm [2]	$\frac{10}{10}$ $\frac{2}{2}$ OXBOWS, BACKWATERS [1]	Check ONE (Or 2 & average)
$\frac{5}{20}$ $\frac{1}{2}$ OVERHANGING VEGETATION [1]	$\frac{15}{15}$ $\frac{2}{2}$ ROOTWADS [1]	$\frac{10}{10}$ $\frac{2}{2}$ AQUATIC MACROPHYTES [1]	<input type="checkbox"/> EXTENSIVE > 75% [11]
$\frac{5}{20}$ $\frac{1}{2}$ SHALLOWS (IN SLOW WATER) [1]	$\frac{10}{10}$ $\frac{2}{2}$ BOULDERS [1]	$\frac{10}{10}$ $\frac{2}{2}$ LOGS OR WOODY DEBRIS [1]	<input checked="" type="checkbox"/> MODERATE 25 - 75% [7]
$\frac{5}{20}$ $\frac{1}{2}$ ROOTMATS [1]			<input type="checkbox"/> SPARSE 5 - < 25% [3]
			<input type="checkbox"/> NEARLY ABSENT < 5% [1]
			Cover Maximum 20

Comments

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

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input checked="" type="checkbox"/> HIGH [4]	<input checked="" type="checkbox"/> EXCELLENT [7]	<input checked="" type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	Channel Maximum 20

Comments

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

River right looking downstream	L R	RIPARIAN WIDTH	L R	FLOOD PLAIN QUALITY	L R
L R	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> WIDE > 50m [4]	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input type="checkbox"/> EROSION	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NONE/LITTLE [3]	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> MODERATE [2]	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> VERY NARROW [1]	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> FENCED PASTURE [1]	<input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input type="checkbox"/> HEAVY/SEVERE [1]	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> NONE [0]	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> OPEN PASTURE, ROWCROP [0]	Indicate predominant land use(s) past 100m riparian.
					Riparian Maximum 10

Comments

5] POOL/GLIDE AND RIFFLE/RUN QUALITY

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY	Recreation Potential
Check ONE (ONLY!)	Check ONE (Or 2 & average)	Check ALL that apply	(Circle one and comment on back)
<input type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	<input checked="" type="checkbox"/> Primary Contact
<input type="checkbox"/> 0.7 - < 1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> SLOW [1]	<input type="checkbox"/> Secondary Contact
<input type="checkbox"/> 0.4 - < 0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> VERY FAST [1]	
<input type="checkbox"/> 0.2 - < 0.4m [1]		<input type="checkbox"/> FAST [1]	
<input checked="" type="checkbox"/> < 0.2m [0]		<input type="checkbox"/> MODERATE [1]	
		<input type="checkbox"/> INTERSTITIAL [-1]	
		<input checked="" type="checkbox"/> INTERMITTENT [-2]	
		<input type="checkbox"/> EDDIES [1]	
		Indicate for reach - pools and riffles.	Pool/ Current Maximum 12

Comments

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species.

RIFFLE DEPTH	RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS
<input type="checkbox"/> BEST AREAS > 10cm [2]	<input type="checkbox"/> MAXIMUM > 50cm [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5 - 10cm [1]	<input checked="" type="checkbox"/> MAXIMUM < 50cm [1]	<input checked="" type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input checked="" type="checkbox"/> BEST AREAS < 5cm [metric = 0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input checked="" type="checkbox"/> MODERATE [0]
			<input type="checkbox"/> EXTENSIVE [-1]
			Riffle/ Run Maximum 8

Comments

6] GRADIENT (48 ft/mi) VERY LOW - LOW [2-4] %POOL: 10 %GLIDE:

MODERATE [6-10] %RUN: 90 %RIFFLE:

HIGH - VERY HIGH [10- 6]

DRAINAGE AREA (< 1 mi²) Gradient
Maximum 10



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COMMENT _____

A-CANOPY

- > 85% - Open
- 55% - < 85%
- 30% - < 55%
- 10% - < 30%
- < 10% - Closed

B-AESTHETICS

- Nuisance algae
- Invasive macrophytes
- Excess turbidity
- Discoloration
- Foam/Scum
- Oil sheen
- Trash/Litter
- Nuisance odor
- Sludge deposits
- CSOs/SSOs/Outfalls

C-RECREATION

- Area Depth
Pool: > 100 ft² > 3 ft

D-MAINTENANCE

- Public Private
- Active Historic
- Succession: Young Old
- Spray Islands Scoured
- Snag: Removed Modified
- Leveed: One sided Both banks
- Relocated Cutoffs
- Bedload: Moving Stable
- Armoured Slumps
- Impounded Desiccated
- Flood control Drainage

E-ISSUES

- WWTP CSO NPDES
- Industry Urban
- Hardened Dirt & Grime
- Contaminated Landfill
- BMPs: Construction Sediment
- Logging Irrigation Cooling
- Erosion: Bank Surface
- False bank Manure Lagoon
- Wash H₂O Tile H₂O Table
- Mine: Acid Quarry
- Flow: Natural Stagnant
- Wetland Park Golf
- Lawn Home
- Atmospheric deposition

Looking upstream (> 10m, 3 readings; < 10m, 1 reading in middle); Round to the nearest whole percent

	Left	Middle	Right	Total Average
% open	%	%	%	%
	X	X	X	

Stream Drawing: