



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 66

Stream & Location: Chippewa Creek, Bramblewood Branch
East of Confluence, East of Harris Rd. and Eagle Valley RM. **RM:** 0.10 **Date:** 7/26/18

River Code: 1254 **STORET #:** 3448 **Scorers Full Name & Affiliation:** Northeast Ohio Regional Sewer District
Lat./ Long.: 41.3244 81.6448 **Office verified location** ☐

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

BEST TYPES		POOL RIFFLE		OTHER TYPES		POOL RIFFLE	
☐ BLDR / SLABS [10]	☒	☒	☒	☐ HARDPAN [4]	☐	☐	☐
☐ BOULDER [9]	☒	☒	☒	☐ DETRITUS [3]	☐	☐	☐
☐ COBBLE [8]	☒	☒	☒	☐ MUCK [2]	☐	☐	☐
☐ GRAVEL [7]	☒	☒	☒	☐ SILT [2]	☒	☐	☐
☐ SAND [6]	☒	☒	☒	☐ ARTIFICIAL [0]	☐	☐	☐
☐ BEDROCK [5]	☒	☒	☒	(Score natural substrates; ignore sludge from point-sources)			

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

Check ONE (Or 2 & average)

ORIGIN		QUALITY	
☐ LIMESTONE [1]	☐	☐ HEAVY [-2]	☐
☐ TILLS [1]	☐	☐ MODERATE [-1]	☐
☐ WETLANDS [0]	☐	☐ NORMAL [0]	☐
☐ HARDPAN [0]	☐	☐ FREE [1]	☐
☐ SANDSTONE [0]	☐	☐ EXTENSIVE [-2]	☐
☐ RIPRAP [0]	☐	☐ MODERATE [-1]	☐
☐ LAGUSTURINE [0]	☐	☐ NORMAL [0]	☐
☐ SHALE [-1]	☐	☐ NONE [1]	☐
☐ COAL FINES [-2]	☐		

Substrate 4.5 **Maximum** 20

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.

AMOUNT	
☐ UNDERCUT BANKS [1]	☐
☐ OVERHANGING VEGETATION [1]	☐
☐ SHALLOWS (IN SLOW WATER) [1]	☐
☐ ROOTMATS [1]	☐
☐ POOLS > 70cm [2]	☐
☐ ROOTWADS [1]	☐
☐ BOULDERS [1]	☐
☐ OXBOWS, BACKWATERS [1]	☐
☐ AQUATIC MACROPHYTES [1]	☐
☐ LOGS OR WOODY DEBRIS [1]	☐

Comments

Check ONE (Or 2 & average)

☐ EXTENSIVE >75% [11]	☐
☐ MODERATE 25-75% [7]	☐
☐ SPARSE 5-25% [3]	☐
☐ NEARLY ABSENT <5% [1]	☐

Cover 7 **Maximum** 20

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

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ HIGH [4]	☐	☐	☐
☒ MODERATE [3]	☐	☐	☐
☐ LOW [2]	☐	☐	☐
☐ NONE [1]	☐	☐	☐

Comments

Channel 5.5 **Maximum** 20

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

EROSION		RIPARIAN WIDTH		FLOOD PLAIN QUALITY	
☐ NONE / LITTLE [3]	☐	☐	☐	☐	☐
☒ MODERATE [2]	☐	☐	☐	☐	☐
☐ HEAVY / SEVERE [1]	☐	☐	☐	☐	☐

Comments

Indicate predominant land use(s) past 100m riparian.

Riparian 9 **Maximum** 10

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY
Check ONE (ONLY)	Check ONE (Or 2 & average)	Check ALL that apply
☐ > 1m [6]	☐	☐
☐ 0.7-1m [4]	☐	☐
☐ 0.4-0.7m [2]	☐	☐
☐ 0.2-0.4m [1]	☐	☐
☐ < 0.2m [0]	☐	☐

Comments

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Pool / Current 7 **Maximum** 12

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

Check ONE (Or 2 & average).

☐ NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
☐	☐	☐	☐
☐	☐	☐	☐
☐	☐	☐	☐

Comments

Riffle / Run 5 **Maximum** 8

6] GRADIENT (34.48 ft/mi) ☐ VERY LOW - LOW [2-4]
DRAINAGE AREA (2.3 mi²) ☐ MODERATE [6-10]
☐ HIGH - VERY HIGH [10-6]

%POOL: **%GLIDE:**
%RUN: **%RIFFLE:**

Gradient 8 **Maximum** 10

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

AJ SAMPLED REACH

Check ALL that apply

METHOD

- ☐ BOAT
☐ WADE
☐ L LINE
☐ OTHER

STAGE

- 1st sample pass-- 2nd
☐ HIGH
☐ UP
☐ NORMAL
☐ LOW
☐ DRY

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/GTB
☐ SECCHI DEPTH

meters

CANOPY

- ☐ > 85% OPEN
☐ 65%-85%
☐ 30%-65%
☐ 10%-30%
☐ < 10% CLOSED

CJ RECREATION

POOL: ☐ > 100ft² ☐ > 3ft

BJ AESTHETICS

- ☐ NUISANCE ALGAE
☐ INVASIVE MAGROPHYTES
☐ EXCESS TURBIDITY
☐ DISCOLORATION
☐ FOAM / SCUM
☐ OIL SHEEN
☐ TRASH / LITTER
☐ NUISANCE ODOR
☐ SLUDGE DEPOSITS
☐ GSOS/SSOS/OUTFALLS

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
☐ ARMoured / SLUMPS
☐ ISLANDS / SCoured
☐ IMPOUNDED / DESICCATED
☐ FLOOD CONTROL / DRAINAGE

Circle some & COMMENT

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 H₂O / TILE / H₂O TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- ☐ width
☐ depth
☐ max. depth
☐ bankfull width
☐ bankfull depth
☐ W/D ratio
☐ bankfull max. depth
☐ floodprone x² width
☐ entrench. ratio

Legacy Tree:

Stream Drawing:



Flow →





Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score:

73.75

Stream & Location: Chippewa Creek drive, Metroparks Brecksville Reservoir RM: 0.60 Date: 7/26/18

DA: 17.4 mi² Gradient: 21.28

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: -

STORET #: -

Lat./ Long.: 41.3173 / 81.5952

Office verified location ☐

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

Check ONE (Or 2 & average)

BEST TYPES	POOL RIFFLE	OTHER TYPES	POOL RIFFLE
☐ BLDR / SLABS [10]	☐	☐ HARDPAN [4]	☒
☐ BOULDER [9]	☐	☐ DETRITUS [3]	☐
☐ COBBLE [8]	☐	☐ MUCK [2]	☐
☐ GRAVEL [7]	☒	☐ SILT [2]	☐
☒ SAND [6]	☒	☐ ARTIFICIAL [0]	☐
☐ BEDROCK [5]	☐		

ORIGIN
☐ LIMESTONE [1]
☐ TILLS [1]
☐ WETLANDS [0]
☐ HARDPAN [0]
☐ SANDSTONE [0]
☐ RIPRAP [0]
☐ LAGUSTURINE [0]
☐ SHALE [1]
☐ COAL FINES [2]

QUALITY
☐ HEAVY [-2]
☐ MODERATE [-1]
☐ NORMAL [0]
☐ FREE [1]
☐ EXTENSIVE [2]
☐ MODERATE [1]
☐ NORMAL [0]
☐ NONE [1]

Substrate
14.5
Maximum 20

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

Comments

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.

AMOUNT

Check ONE (Or 2 & average)

☒ UNDERCUT BANKS [1]
☒ OVERHANGING VEGETATION [1]
☒ SHALLOWS (IN SLOW WATER) [1]
☒ ROOTMATS [1]

☒ POOLS > 70cm [2]
☒ ROOTWADS [1]
☒ BOULDERS [1]

☐ OXBOWS, BACKWATERS [1]
☐ AQUATIC MACROPHYTES [1]
☐ LOGS OR WOODY DEBRIS [1]

☐ EXTENSIVE > 75% [11]
☐ MODERATE 25-75% [7]
☐ SPARSE 5-25% [3]
☐ NEARLY ABSENT < 5% [1]

Cover
Maximum 20
15

Comments

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

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☐ MODERATE [2]
☒ LOW [2]	☐ FAIR [3]	☐ RECOVERING [3]	☐ LOW [1]
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]	

Channel
Maximum 20
13

Comments

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

EROSION	RIPARIAN WIDTH	FLOOD PLAIN QUALITY	CONSERVATION TILLAGE
☒ NONE / LITTLE [3]	☐ WIDE > 50m [4]	☐ FOREST, SWAMP [3]	☐ URBAN OR INDUSTRIAL [0]
☐ MODERATE [2]	☐ MODERATE 10-50m [3]	☐ SHRUB OR OLD FIELD [2]	☐ MINING / CONSTRUCTION [0]
☐ HEAVY / SEVERE [1]	☐ NARROW 5-10m [2]	☐ RESIDENTIAL, PARK, NEW FIELD [1]	
	☐ VERY NARROW < 5m [1]	☐ FENCED PASTURE [1]	
	☐ NONE [0]	☐ OPEN PASTURE, ROWCROP [0]	

Indicate predominant land use(s) past 100m riparian.

Riparian
Maximum 10
8.25

Comments

5) POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY
Check ONE (ONLY!)	Check ONE (Or 2 & average)	Check ALL that apply
☒ > 1m [6]	☐ POOL WIDTH > RIFFLE WIDTH [2]	☐ TORRENTIAL [-1]
☐ 0.7-1m [4]	☐ POOL WIDTH = RIFFLE WIDTH [1]	☐ VERY FAST [1]
☐ 0.4-0.7m [2]	☐ POOL WIDTH < RIFFLE WIDTH [0]	☐ FAST [1]
☐ 0.2-0.4m [1]		☐ MODERATE [1]
☐ < 0.2m [0]		☐ SLOW [1]
		☐ INTERSTITIAL [-1]
		☐ INTERMITTENT [-2]
		☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Pool / Current
Maximum 12
10

Comments

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

Check ONE (Or 2 & average).

☐ NO RIFFLE [metric=0]

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

Riffle / Run
Maximum 8
5

Comments

6) GRADIENT (21.28 ft/mi)

DRAINAGE AREA (17.4 mi²)

☐ VERY LOW - LOW [2-4]
☐ MODERATE [6-10]
☒ HIGH - VERY HIGH [10-6]

%POOL:

%GLIDE:

%RUN:

%RIFFLE:

Gradient
Maximum 10
8

AJ SAMPLED REACH

Check ALL that apply

METHOD

BOAT ☐ WADE ☒ L. LINE ☐ OTHER ☐

STAGE

1st - sample pass-- 2nd

HIGH ☐ UP ☐ NORMAL ☒ LOW ☐ DRY ☐

DISTANCE

0.5 Km ☐ 0.2 Km ☒ 0.15 Km ☐ 0.12 Km ☐ OTHER ☐

CLARITY

1st - sample pass-- 2nd

< 20 g/L ☒ 20-40 g/L ☐ 40-70 g/L ☐ > 70 g/L/CTB ☐

SECCHI DEPTH ☐

1st _____ cm 2nd _____ cm

meters

CANOPY

> 85% - OPEN ☐ 65%-85% ☒ 30%-65% ☐ 10%-30% ☐ <10% - CLOSED ☐

CJ RECREATION

AREA DEPTH

POOL: ☐ >100ft² ☐ >3ft

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

DS side of zone makes line it previously was a bankfill for some flatland. Now exposed due to bank erosion on river left

- Couple swimming @ upstream pool, running water to become turbid half way through site.

FJ MEASUREMENTS

width
depth
max. depth
bankfull width
bankfull x depth
W/D ratio
bankfull max. depth
floodproof x² width
entrench. ratio

Legacy Tree:

Circle some & COMMENT

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

ARMORED / SLUMPS

ISLANDS / SCOURED

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 H₂O / TILE / H₂O TABLE

ACID / MINE / QUARRY / FLOW

NATURAL / WETLAND / STAGNANT

PARK / GOLF / LAWN / HOME

ATMOSPHERE / DATA PAUCITY

Stream Drawing:

Flow →

Eroding Bank, Cans/bottles well present

