



# Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: **79.5**

Stream & Location: Eudial Creek LS of St. Clair

RM: L.65 Date: 07/06/15

Holtan (Zablota)(Soehlen)

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: -

STORET #: -

Lat./Long.: 41.5741 181.5467

Office verified location

### 1] SUBSTRATE

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

Check ONE (Or 2 & average)

<b>BEST TYPES</b>		<b>OTHER TYPES</b>		<b>ORIGIN</b>		<b>QUALITY</b>		<b>Substrate</b> <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 5px;">17</div> Maximum 20
<input type="checkbox"/> BLDR/SLABS [10]	<input checked="" type="checkbox"/> POOL	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> RIFFLE	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> SILT	<input type="checkbox"/> HEAVY [-2]	<input type="checkbox"/> MODERATE [-1]	
<input type="checkbox"/> BOULDER [9]	<input checked="" type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input checked="" type="checkbox"/> TILLS [1]	<input type="checkbox"/>	<input type="checkbox"/> NORMAL [0]	<input type="checkbox"/> FREE [1]	
<input type="checkbox"/> COBBLE [8]	<input checked="" type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/>	<input type="checkbox"/> EXTENSIVE [-2]	<input type="checkbox"/> MODERATE [-1]	
<input type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/>	<input type="checkbox"/> SILT [2]	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/>	<input type="checkbox"/> MODERATE [-1]	<input type="checkbox"/> NORMAL [0]	
<input checked="" type="checkbox"/> SAND [6]	<input checked="" type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input checked="" type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/>	<input type="checkbox"/> NONE [1]		
<input type="checkbox"/> BEDROCK [5]	<input checked="" type="checkbox"/>			<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/>			

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)

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

Comments

**Channel**  
Maximum 20 

14

### 3] CHANNEL MORPHOLOGY

<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 checked="" type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input checked="" 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]	

Comments

**Channel**  
Maximum 20 

15.5

### 4] BANK EROSION AND RIPARIAN ZONE

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

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

Comments

**Riparian**  
Maximum 10 

6

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

<b>MAXIMUM DEPTH</b>	<b>CHANNEL WIDTH</b>	<b>CURRENT VELOCITY</b>	<b>Recreation Potential</b> <b>Primary Contact</b> <b>Secondary Contact</b> <small>(circle one and comment on back)</small>
<input type="checkbox"/> > 1m [8]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	
<input checked="" type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> VERY FAST [1]	<input type="checkbox"/> SLOW [1]
<input type="checkbox"/> 0.4-<0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input checked="" type="checkbox"/> FAST [1]	<input type="checkbox"/> INTERSTITIAL [-1]
<input type="checkbox"/> 0.2-<0.4m [1]		<input checked="" type="checkbox"/> MODERATE [1]	<input type="checkbox"/> INTERMITTENT [-2]
<input type="checkbox"/> < 0.2m [0]			<input checked="" type="checkbox"/> EDDIES [1]

Indicate for reach - pools and riffles.

Comments

**Pool / Current**  
Maximum 12 

10

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

<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 checked="" 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 type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input checked="" type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]

Comments

**Riffle / Run**  
Maximum 8 

7

<b>6] GRADIENT</b> (16.20ft/ml)	<input type="checkbox"/> VERY LOW - LOW [2-4]	%POOL: <input type="text"/>	%GLIDE: <input type="text"/>	<b>Gradient</b> Maximum 10 <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 5px;">10</div>
<b>DRAINAGE AREA</b> (21.80ml <sup>2</sup> )	<input type="checkbox"/> MODERATE [8-10]	%RUN: <input type="text"/>	%RIFFLE: <input type="text"/>	

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

**A) SAMPLED REACH**

Check ALL that apply

**METHOD**

- BOAT
- WADE
- L. LINE
- OTHER

**STAGE**

- 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/CTB
- SECCHI DEPTH

meters

**CANOPY**

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

**CJ RECREATION**

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

**BJAESTHETICS**

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

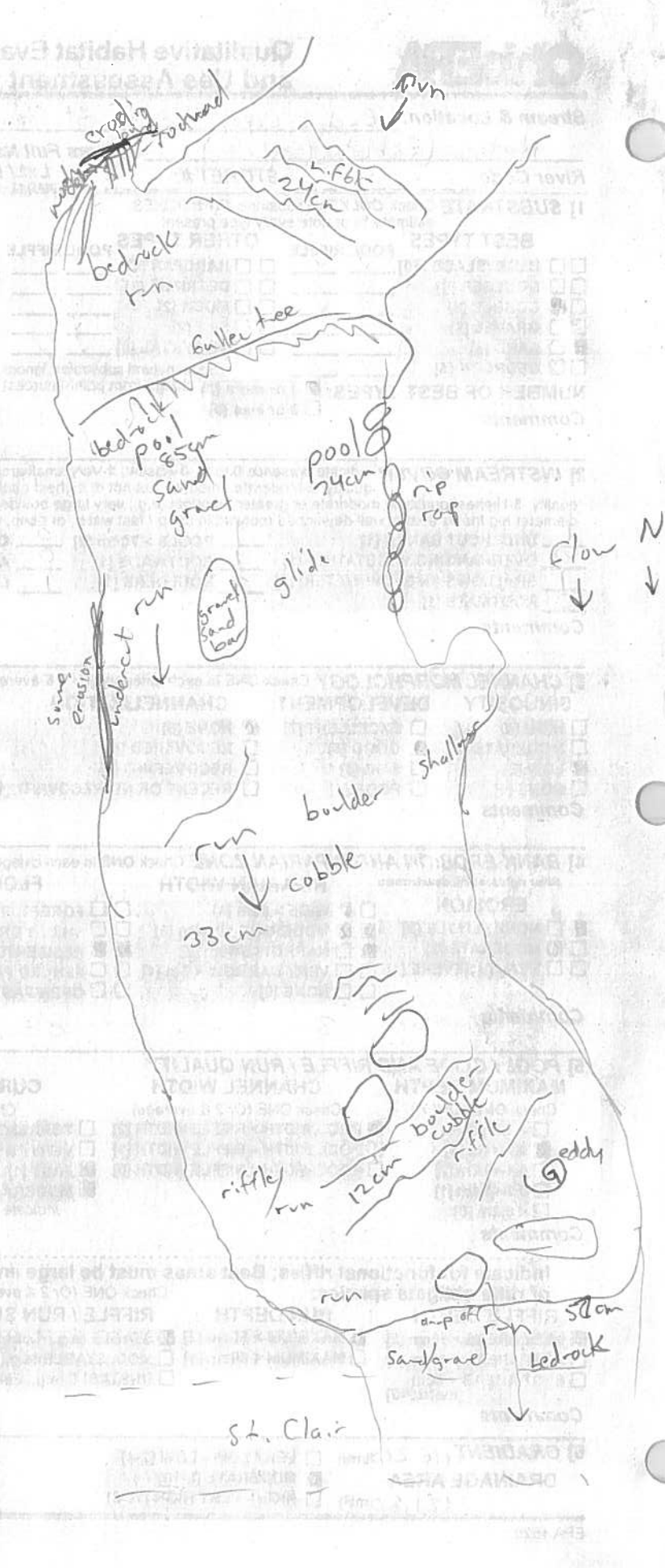
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H<sub>2</sub>O / TILE / H<sub>2</sub>O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / 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  $\bar{x}$  width
- entrench. ratio

Legacy Tree:

**Stream Drawing:**



**Stream & Location:** Euclid Creek Lakeshore **RM:** 55 **Date:** 7/6/15

**River Code:** 1 **SCORET #:** 1 **Scorers Full Name & Affiliation:** Northeast Ohio Regional Sewer District

**Lat./Long.:** 41.5833 181.5594 **Office verified location**

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

<p><b>BEST TYPES</b></p> <input type="checkbox"/> BLDR/SLABS [10] <input type="checkbox"/> BOULDER [9] <input type="checkbox"/> COBBLE [8] <input type="checkbox"/> GRAVEL [7] <input checked="" type="checkbox"/> SAND [6] <input type="checkbox"/> BEDROCK [5]	<p><b>POOL RIFFLE</b></p> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<p><b>OTHER TYPES</b></p> <input type="checkbox"/> HARDPAN [4] <input type="checkbox"/> DETRITUS [3] <input type="checkbox"/> MUCK [2] <input type="checkbox"/> SILT [2] <input type="checkbox"/> ARTIFICIAL [0]	<p><b>POOL RIFFLE</b></p> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p><b>ORIGIN</b></p> <input type="checkbox"/> LIMESTONE [4] <input checked="" type="checkbox"/> TILLS [4] <input type="checkbox"/> WETLANDS [0] <input type="checkbox"/> HARDPAN [0] <input type="checkbox"/> SANDSTONE [0] <input type="checkbox"/> RIP/RAP [0] <input type="checkbox"/> LACUSTURINE [0] <input type="checkbox"/> SHALE [-1] <input type="checkbox"/> COAL FINES [-2]	<p><b>QUALITY</b></p> <input type="checkbox"/> HEAVY [-2] <input checked="" type="checkbox"/> MODERATE [-1] <input type="checkbox"/> NORMAL [0] <input type="checkbox"/> FREE [1] <input type="checkbox"/> EXTENSIVE [-2] <input type="checkbox"/> MODERATE [-1] <input checked="" type="checkbox"/> NORMAL [0] <input checked="" type="checkbox"/> NONE [1]	<p><b>Substrate</b></p> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; width: 40px; text-align: center; margin: 0 auto;">3.5</div> <p>Maximum 20</p>
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**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.)

<p><b>UNDERCUT BANKS</b> [1] <u>2</u></p> <p><b>OVERHANGING VEGETATION</b> [1] <u>2</u></p> <p><b>SHALLOWS (IN SLOW WATER)</b> [1] <u>1</u></p> <p><b>ROOTMATS</b> [1] <u>1</u></p>	<p><b>POOLS &gt; 70cm</b> [2] <u>1</u></p> <p><b>ROOTWADS</b> [1] <u>1</u></p> <p><b>BOULDERS</b> [1] <u>1</u></p>	<p><b>OXBOWS, BACKWATERS</b> [1] <u>0</u></p> <p><b>AQUATIC MACROPHYTES</b> [1] <u>0</u></p> <p><b>LOGS OR WOODY DEBRIS</b> [1] <u>2</u></p>	<p><b>AMOUNT</b></p> <p>Check ONE (Or 2 &amp; average)</p> <input type="checkbox"/> EXTENSIVE >75% [11] <input checked="" type="checkbox"/> MODERATE 25-75% [7] <input type="checkbox"/> SPARSE 5-25% [3] <input type="checkbox"/> NEARLY ABSENT <5% [1]	<p><b>Cover</b></p> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; width: 40px; text-align: center; margin: 0 auto;">17</div> <p>Maximum 20</p>
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**Comments**

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

<p><b>SINUOSITY</b></p> <input type="checkbox"/> HIGH [4] <input type="checkbox"/> MODERATE [3] <input checked="" type="checkbox"/> LOW [2] <input type="checkbox"/> NONE [1]	<p><b>DEVELOPMENT</b></p> <input type="checkbox"/> EXCELLENT [7] <input type="checkbox"/> GOOD [5] <input checked="" type="checkbox"/> FAIR [3] <input type="checkbox"/> POOR [1]	<p><b>CHANNELIZATION</b></p> <input checked="" type="checkbox"/> NONE [6] <input type="checkbox"/> RECOVERED [4] <input type="checkbox"/> RECOVERING [3] <input type="checkbox"/> RECENT OR NO RECOVERY [1]	<p><b>STABILITY</b></p> <input type="checkbox"/> HIGH [3] <input checked="" type="checkbox"/> MODERATE [2] <input checked="" type="checkbox"/> LOW [1]	<p><b>Channel</b></p> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; width: 40px; text-align: center; margin: 0 auto;">12.5</div> <p>Maximum 20</p>
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**Comments**

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

<p><b>EROSION</b></p> <input checked="" type="checkbox"/> NONE / LITTLE [3] <input type="checkbox"/> MODERATE [2] <input type="checkbox"/> HEAVY / SEVERE [1]	<p><b>RIPARIAN WIDTH</b></p> <input type="checkbox"/> WIDE > 50m [4] <input type="checkbox"/> MODERATE 10-50m [3] <input checked="" type="checkbox"/> NARROW 5-10m [2] <input type="checkbox"/> VERY NARROW < 5m [1] <input type="checkbox"/> NONE [0]	<p><b>FLOOD PLAIN QUALITY</b></p> <input type="checkbox"/> FOREST, SWAMP [3] <input type="checkbox"/> SHRUB OR OLD FIELD [2] <input checked="" type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1] <input type="checkbox"/> FENCED PASTURE [1] <input type="checkbox"/> OPEN PASTURE, ROWCROP [0]	<p><b>CONSERVATION TILLAGE</b> [1]  <input type="checkbox"/> URBAN OR INDUSTRIAL [0]  <input type="checkbox"/> MINING / CONSTRUCTION [0]</p> <p>Indicate predominant land use(s) past 100m riparian.</p>	<p><b>Riparian</b></p> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; width: 40px; text-align: center; margin: 0 auto;">5</div> <p>Maximum 10</p>
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**Comments**

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

<p><b>MAXIMUM DEPTH</b></p> <p>Check ONE (ONLY)</p> <input checked="" type="checkbox"/> > 1m [6] <input type="checkbox"/> 0.7-1m [4] <input type="checkbox"/> 0.4-0.7m [2] <input type="checkbox"/> 0.2-0.4m [1] <input type="checkbox"/> < 0.2m [0]	<p><b>CHANNEL WIDTH</b></p> <p>Check ONE (Or 2 &amp; average)</p> <input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2] <input checked="" type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1] <input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<p><b>CURRENT VELOCITY</b></p> <p>Check ALL that apply</p> <input type="checkbox"/> TORRENTIAL [-1] <input type="checkbox"/> VERY FAST [1] <input checked="" type="checkbox"/> FAST [1] <input checked="" type="checkbox"/> MODERATE [1]	<p><b>RECREATION POTENTIAL</b></p> <p>Primary Contact                  Secondary Contact</p> <p>(circle one and comment on back)</p>	<p><b>Pool / Current</b></p> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; width: 40px; text-align: center; margin: 0 auto;">8</div> <p>Maximum 12</p>
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**Comments**

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:  NO RIFFLE [metric=0]

Check ONE (Or 2 & average).

<p><b>RIFFLE DEPTH</b></p> <input type="checkbox"/> BEST AREAS > 10cm [2] <input type="checkbox"/> BEST AREAS 5-10cm [1] <input type="checkbox"/> BEST AREAS < 5cm [metric=0]	<p><b>RUN DEPTH</b></p> <input type="checkbox"/> MAXIMUM > 50cm [2] <input type="checkbox"/> MAXIMUM < 50cm [1]	<p><b>RIFFLE / RUN SUBSTRATE</b></p> <input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2] <input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1] <input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<p><b>RIFFLE / RUN EMBEDDEDNESS</b></p> <input type="checkbox"/> NONE [2] <input type="checkbox"/> LOW [1] <input type="checkbox"/> MODERATE [0] <input type="checkbox"/> EXTENSIVE [-1]	<p><b>Riffle / Run</b></p> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; width: 40px; text-align: center; margin: 0 auto;">0</div> <p>Maximum 8</p>
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**6] GRADIENT** 5.90 ft/ml  VERY LOW - LOW [2-4]  MODERATE [6-10]  HIGH - VERY HIGH [10-8]

**DRAINAGE AREA** (23.00) ml<sup>2</sup>

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

**Gradient**

6

Maximum 10

**Comments**

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**
- 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/ CTB
  - SECCHI DEPTH
- 1st \_\_\_\_\_ cm
- 2nd \_\_\_\_\_ cm

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

**BJ AESTHETICS**

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL / SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/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
- ARMORED / 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  $\bar{x}^2$  width
- entrench. ratio

**CJ RECREATION**

- AREA DEPTH
- POOL:  >100ft?  >3ft

**Stream Drawing:**

