

Stream & Location: West Creek Trib 4, RM: 0.20 Date: 7/23/15

River Code: Zaboltny STORET #: Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District Lat./Long.: 41.4047181, 81.6539 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES: estimate % or note every type present. Includes categories: BEST TYPES, OTHER TYPES, ORIGIN, and QUALITY. Includes a 'Substrate' score box with value 20.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts... Includes categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes a 'Cover' score box with value 14.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). Includes categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes a 'Channel' score box with value 16.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). Includes categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION. Includes a 'Riparian' score box with value 8.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY. Includes a 'Recreation Potential' box with 'Primary Contact' and 'Secondary Contact' options. Includes a 'Pool / Current' score box with value 9.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). Includes categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes a 'Riffle / Run' score box with value 4.

6] GRADIENT (117.6 ft/mi) DRAINAGE AREA (1.6 mi^2). Includes categories: VERY LOW - LOW, MODERATE, HIGH - VERY HIGH. Includes a 'Gradient' score box with value 4.

A) SAMPLE REACH

Check All that apply

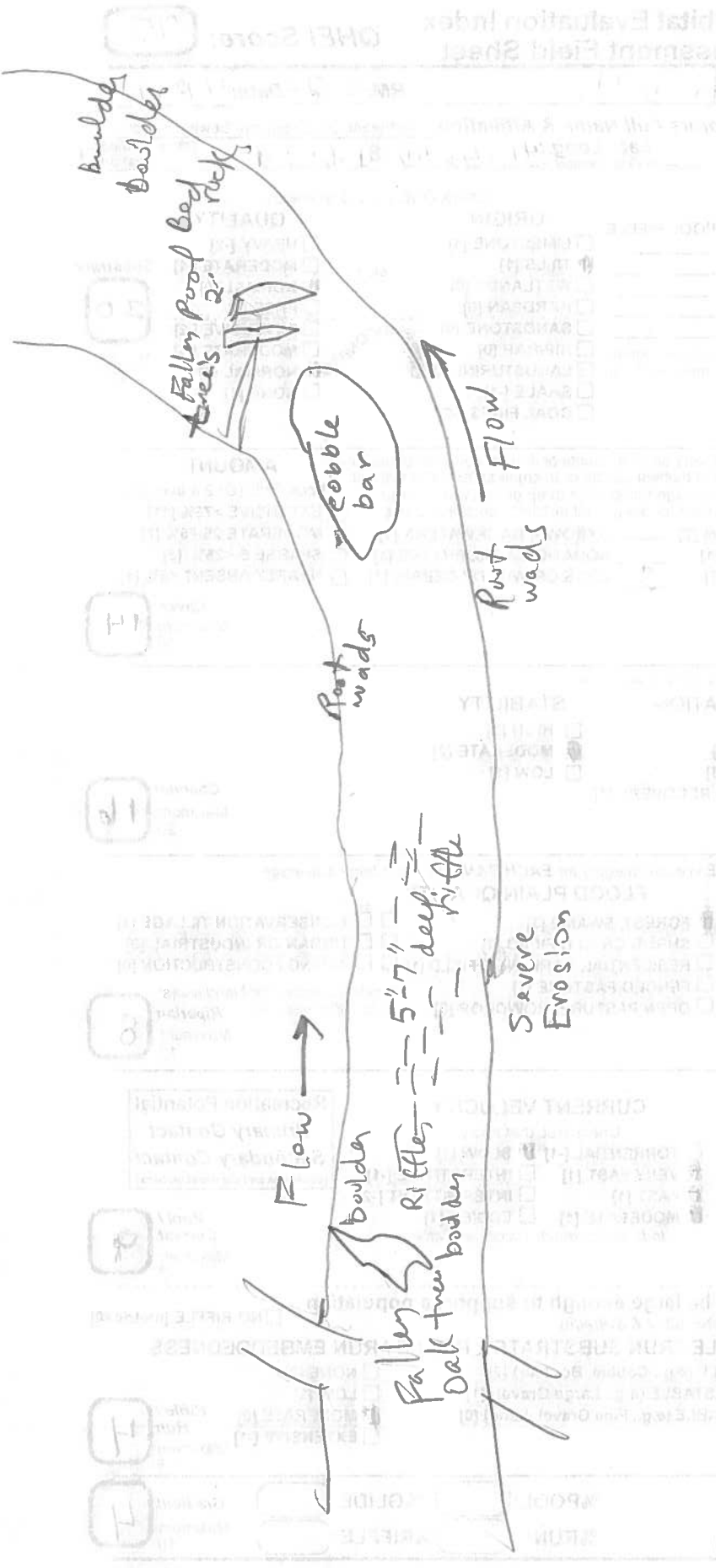
Comment RE: Reach consistency/Is reach typical of stream? Re Observed - Inferred. Other/ Sampling observations. Concerns. Access direction.

- 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/CTB
 - SECCHI DEPTH

- CANOPY**
- > 85%- OPEN
 - 55%-<85%
 - 30%-<55%
 - 10%-<30%
 - <10%- CLOSED
- C) RECREATION**
- AREA DEPTH
- POOL: >100ft² >3ft

Stream Drawing:



B) AESTHETICS

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

D) 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 / SCURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

Circle some & COMMENT

E) 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

F) 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
- Legacy Tree:



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: **59.75**

"good"

Stream & Location: West Creek

RM: 5.30 Date: 06/22/15

Donna Friedman

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: - - - STORET #: - - -

Lat./ Long.: 41.3899 / 81.6982

Office verified location

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

Check ONE (Or 2 & average)

BEST TYPES		OTHER TYPES		ORIGIN		QUALITY	
<input type="checkbox"/> BLDR / SLABS [10]	<input checked="" type="checkbox"/> POOL	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> POOL	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> SILT	<input type="checkbox"/> HEAVY [-2]	Substrate 15 Maximum 20
<input type="checkbox"/> BOULDER [9]	<input checked="" type="checkbox"/> RIFFLE	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/> RIFFLE	<input checked="" type="checkbox"/> TILLS [1]	<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/> MODERATE [-1]	
<input type="checkbox"/> COBBLE [8]	<input checked="" type="checkbox"/> SAND	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/> RIFFLE	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/> SANDSTONE [0]	<input checked="" type="checkbox"/> NORMAL [0]	
<input checked="" type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/> BEDROCK [5]	<input type="checkbox"/> SILT [2]	<input type="checkbox"/> RIFFLE	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/> FREE [1]	
<input type="checkbox"/> SAND [6]		<input type="checkbox"/> ARTIFICIAL [0]	<input checked="" type="checkbox"/> RIFFLE	<input type="checkbox"/> LACUSTURINE [0]	<input type="checkbox"/> SHALE [-1]	<input type="checkbox"/> EXTENSIVE [-2]	
				<input type="checkbox"/> COAL FINES [-2]	<input type="checkbox"/> NONE [1]	<input type="checkbox"/> MODERATE [-1]	

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

Comments: 2 + 7 + 5 + 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.

AMOUNT

Check ONE (Or 2 & average)

<input checked="" type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> POOLS > 70cm [2]	<input type="checkbox"/> OXBOWS, BACKWATERS [1]	Check ONE (Or 2 & average)
<input checked="" type="checkbox"/> OVERHANGING VEGETATION [1]	<input checked="" type="checkbox"/> ROOTWADS [1]	<input checked="" type="checkbox"/> AQUATIC MACROPHYTES [1]	
<input checked="" type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input checked="" type="checkbox"/> BOULDERS [1]	<input checked="" type="checkbox"/> LOGS OR WOODY DEBRIS [1]	
<input checked="" type="checkbox"/> ROOTMATS [1]			

Comments: 9

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

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input checked="" type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input 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 checked="" 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: 17

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
<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 type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input 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: 1.75 3.5 2 6 7.25

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

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY	Recreation Potential Primary Contact Secondary Contact (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 type="checkbox"/> 0.7-1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> SLOW [1]	

Comments: 2 + 1 + 2

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 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 checked="" type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [4]	<input checked="" type="checkbox"/> LOW [4]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]

Comments: 1 + 1 + 1 + 1

6) **GRADIENT** (33.3 ft/ml)
DRAINAGE AREA (3.8 ml²)

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

%POOL: 10 %GLIDE: 50
%RUN: 50 %RIFFLE: 15

Gradient Maximum 10 **8**

AJ SAMPLED REACH

Check ALL that apply

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

- METHOD**
- BOAT
 - WADE
 - L. LINE
 - OTHER
- DISTANCE**
- 0.5 Km
 - 0.2 Km
 - 0.15 Km
 - 0.12 Km
 - OTHER

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

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

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

- DJ MAINTENANCE**
- Circle some & COMMENT
- 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

- 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

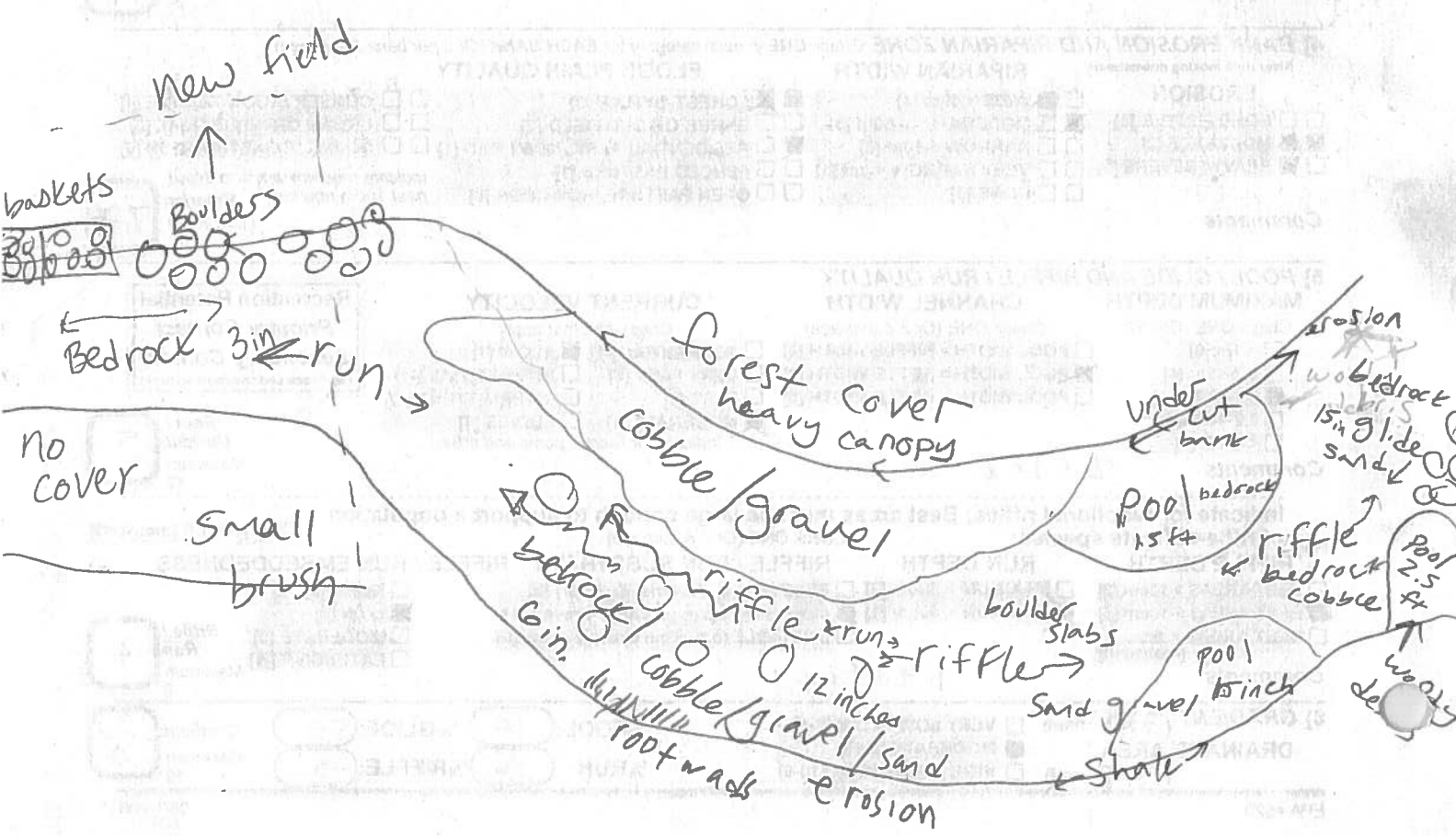
- FJ MEASUREMENTS**
- \bar{x} width
 - \bar{x} depth
 - max. depth
 - \bar{x} bankfull width
 - bankfull \bar{x} depth
 - W/D ratio
 - bankfull max. depth
 - floodprone \bar{x} width
 - entrench. ratio
- Legacy Tree:

- CANOPY**
- 1st pass _____ cm
- 2nd pass _____ cm
- > 85% - OPEN
 - 55% - 85%
 - 30% - 55%
 - 10% - 30%
 - < 10% - CLOSED

- CJ RECREATION**
- AREA DEPTH
- POOL: >100R² >3R

Stream Drawing:

flow ← →



Stream & Location: West Creek RM: 3.6 Date: 6/24/85

Zoblotny Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District
River Code: STORET #: Lat./Long.: 41.4103 181.0943 Office verified location

1) SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Includes categories: BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, and QUALITY. Includes handwritten '18' in a box.

2) INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts... Includes categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes handwritten '7' in a box.

3) CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). Includes categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes handwritten '12' in a box.

4) BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). Includes categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY. Includes handwritten '4' in a box.

5) POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY. Includes categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY, Recreation Potential. Includes handwritten '02' in a box.

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. Includes handwritten '6' in a box.

6) GRADIENT (78.4 ft/mi) DRAINAGE AREA (6.3 mi^2). Includes categories: GRADIENT, DRAINAGE AREA. Includes handwritten '4' in a box.

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
 - 0.16 Km
 - 0.12 Km
 - OTHER
- CLARITY**
- 1st - sample pass - 2nd
- < 20 cm
 - 20-40 cm
 - 40-70 cm
 - > 70 cm / CTB
 - SECCHI DEPTH
- CANOPY**
- 1st _____ cm
- 2nd _____ cm
- > 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 Circle some & COMMENT

- 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

FI ISSUES

- WITH PCSO / 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

BJ AESTHETICS

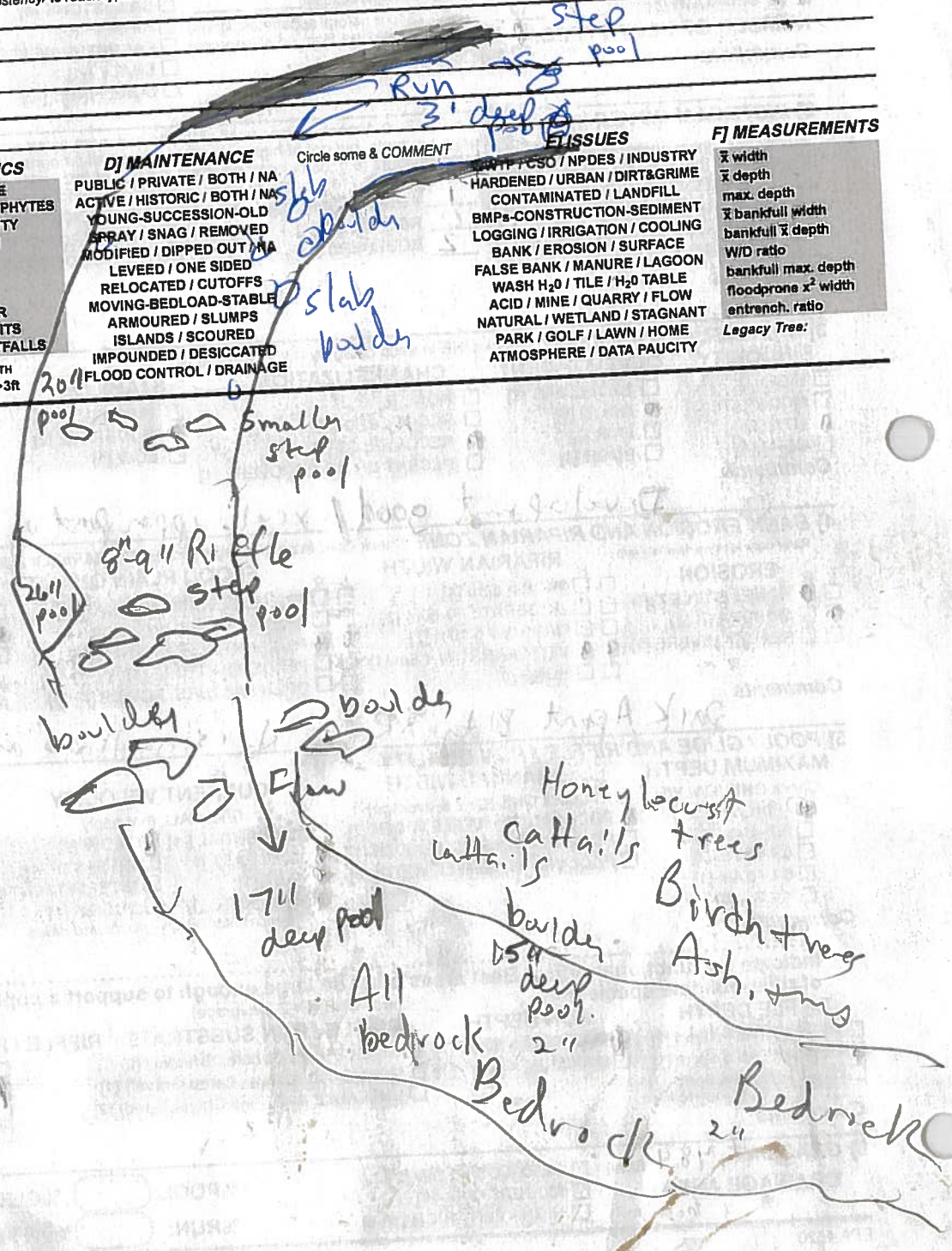
- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

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:

CJ RECREATION AREA DEPTH
POOL: >100R2 >3R

Stream Drawing:



"excellent"



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 74

Stream & Location: West Creek RM 2.10

RM: 2.10 **Date:** 07/02/15

Donna Friedman

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: - - - **STORET #:** - - -

Lat./Long.: 41.103 181.6943
(NAD 83 - decimal)

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	ORIGIN	QUALITY	Substrate 19 Maximum 20
<input type="checkbox"/> BLDR/SLABS [10]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> HEAVY [-2]	
<input type="checkbox"/> BOULDER [9]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> TILLS [1]	<input type="checkbox"/> MODERATE [-1]	
<input type="checkbox"/> COBBLE [8]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	<input checked="" type="checkbox"/> NORMAL [0]	
<input type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> SILT [2]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/> FREE [1]	
<input type="checkbox"/> SAND [6]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> EXTENSIVE [-2]	
<input type="checkbox"/> BEDROCK [5]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<small>(Score natural substrates; ignore sludge from point-sources)</small>			<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/> MODERATE [-1]	
NUMBER OF BEST TYPES:		<input type="checkbox"/> 4 or more [2]				<input type="checkbox"/> LACUSTURINE [0]	<input checked="" type="checkbox"/> NORMAL [0]	
Comments		<input type="checkbox"/> 3 or less [0]				<input type="checkbox"/> SHALE [-1]	<input type="checkbox"/> NONE [1]	
<u>8+10+2</u>						<input type="checkbox"/> COAL FINES [-2]		

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="0"/> UNDERCUT BANKS [1]	<input type="2"/> POOLS > 70cm [2]	<input type="0"/> OXBOWS, BACKWATERS [1]	<input type="checkbox"/> EXTENSIVE >75% [11]
<input type="0"/> OVERHANGING VEGETATION [1]	<input type="0"/> ROOTWADS [1]	<input type="0"/> AQUATIC MACROPHYTES [1]	<input checked="" type="checkbox"/> MODERATE 25-75% [7]
<input type="1"/> SHALLOWS (IN SLOW WATER) [1]	<input type="3"/> BOULDERS [1]	<input type="1"/> LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> SPARSE 5-<25% [3]
<input type="0"/> ROOTMATS [1]			<input type="checkbox"/> NEARLY ABSENT <5% [1]
Comments			Channel Maximum 20 13
<u>6+9</u>			

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

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	Channel Maximum 20 13
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input checked="" type="checkbox"/> HIGH [3]	
<input type="checkbox"/> MODERATE [3]	<input checked="" type="checkbox"/> GOOD [5]	<input checked="" type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]	
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input checked="" type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]	
<input checked="" type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]		
Comments				
<u>1+5+4+3</u>				

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		Recreation Potential Primary Contact Secondary Contact <small>(circle one and comment on back)</small>
<input type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> MODERATE [2]	<input type="checkbox"/> WIDE > 50m [4]	<input checked="" type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> FOREST, SWAMP [3]	<input checked="" type="checkbox"/> SHRUB OR OLD FIELD [2]	
<input type="checkbox"/> MODERATE [2]	<input checked="" type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input checked="" type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> FENCED PASTURE [1]	<input type="checkbox"/> CONSERVATION TILLAGE [1]
<input type="checkbox"/> HEAVY / SEVERE [1]		<input type="checkbox"/> NONE [0]		<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]		<input checked="" type="checkbox"/> URBAN OR INDUSTRIAL [0]
Comments						Pool / Current Maximum 12 10
<u>2.5+2.5+0</u>						

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY	Recreation Potential Primary Contact Secondary Contact <small>(circle one and comment on back)</small>
Check ONE (ONLY)	Check ONE (Or 2 & average)	Check ALL that apply	
<input checked="" type="checkbox"/> > 1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	Pool / Current Maximum 12 10
<input type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> VERY FAST [1]	
<input type="checkbox"/> 0.4-<0.7m [2]	<input checked="" type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> FAST [1]	
<input type="checkbox"/> 0.2-<0.4m [1]		<input checked="" type="checkbox"/> MODERATE [1]	
<input type="checkbox"/> < 0.2m [0]		<input type="checkbox"/> INTERSTITIAL [-1]	
Comments		<input type="checkbox"/> INTERMITTENT [-2]	
<u>6+0+4</u>		<input type="checkbox"/> EDDIES [1]	

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

NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input checked="" 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 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 6

6] GRADIENT (36.4 ft/mi) VERY LOW - LOW [2-4]

% POOL: 0 **% GLIDE:** 0

Gradient
Maximum 10 8



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 60

Stream & Location: West Creek OS, Lancaster, Zablony **RM:** 1-60 **Date:** 7/7/18

River Code: - **STORET #:** - **Scorers Full Name & Affiliation:** Northeast Ohio Regional Sewer District **Office verified location**

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present (NAD 83 - decimal) 41.444 181.6618

BEST TYPES		POOL RIFFLE		OTHER TYPES		POOL RIFFLE		ORIGIN		QUALITY		
<input type="checkbox"/> BLDR / SLABS [10]	<input checked="" type="checkbox"/> BOULDER [9]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> TILLS [1]	<input type="checkbox"/> HEAVY [-2]	<input type="checkbox"/> MODERATE [-1]	
<input type="checkbox"/> COBBLE [8]	<input checked="" type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/> SILT [2]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> NORMAL [0]	<input type="checkbox"/> FREE [1]	
<input type="checkbox"/> SAND [6]	<input checked="" type="checkbox"/> BEDROCK [5]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> EXTENSIVE [-2]	<input type="checkbox"/> MODERATE [-1]	
NUMBER OF BEST TYPES: <input checked="" type="checkbox"/> 4 or more [2] <input type="checkbox"/> 3 or less [0]				EMBEDDEDNESS <input type="checkbox"/>				SHALE [-1]		LACUSTURINE [0]		Substrate
Comments				COAL FINES [-2]				SHALE [-1]		NONE [1]		19.5

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

Comments 6

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

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

Comments 10

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
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]
<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]
	<input checked="" 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 3.5

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	Primary Contact
<input type="checkbox"/> > 1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	Secondary Contact
<input checked="" type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> SLOW [1]	(circle one and comment on back)
<input type="checkbox"/> 0.4-<0.7m [2]	<input checked="" 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 type="checkbox"/> < 0.2m [0]		<input checked="" type="checkbox"/> MODERATE [1]	
		<input type="checkbox"/> INTERSTITIAL [-1]	
		<input type="checkbox"/> INTERMITTENT [-2]	
		<input type="checkbox"/> EDDIES [1]	

Comments 8

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
<input checked="" type="checkbox"/> BEST AREAS > 10cm [2]	<input type="checkbox"/> MAXIMUM > 50cm [2]	<input checked="" 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 type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input 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]

Comments 5

6] GRADIENT (33.3 ft/ml) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

DRAINAGE AREA (89 m²) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

% POOL: **% GLIDE:**

% RUN: **% RIFFLE:**

Comments 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 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH cm

CANOPY

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

CJ RECREATION

AREA DEPTH
POOL: >100ft² >3ft

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

EJ ISSUES

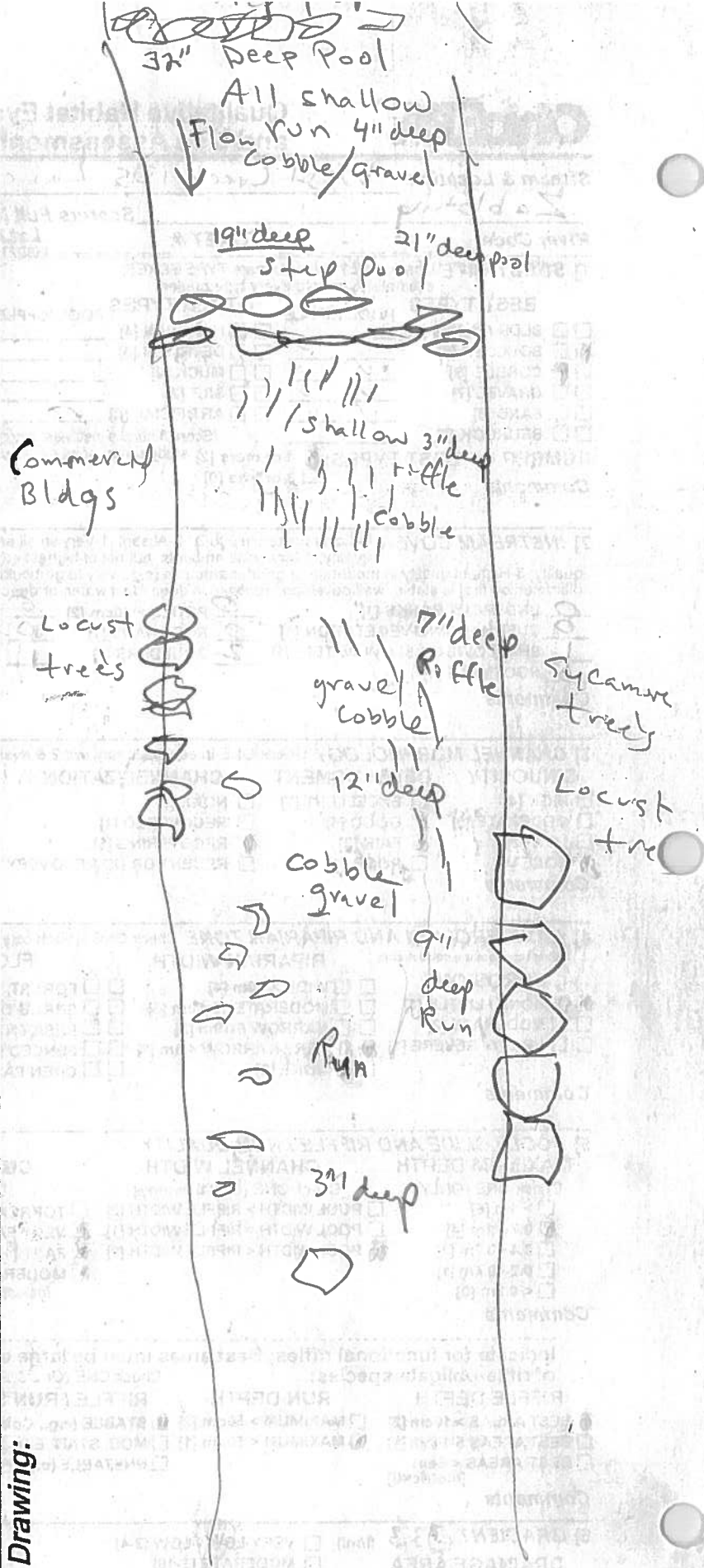
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- 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:



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

Stream & Location: West Creek **RM:** 0.20 **Date:** 7/22/15
Zubotny/Bogdan
River Code: 1 **STORET #:** 1 **Scorers Full Name & Affiliation:** Northeast Ohio Regional Sewer District
Lat./ Long.: 41.45181.6477 **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	ORIGIN	QUALITY	SILT EMBEDDEDNESS 17 Maximum 20
<input type="checkbox"/> BLDR / SLABS [10]	<input checked="" type="checkbox"/> BOULDER [9]	<input checked="" type="checkbox"/>	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input checked="" type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> HEAVY [-2]	
<input checked="" type="checkbox"/> COBBLE [8]	<input checked="" type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/> SILT [2]	<input type="checkbox"/>	<input type="checkbox"/> TILLS [1]	<input type="checkbox"/> MODERATE [-1]	
<input type="checkbox"/> SAND [6]	<input type="checkbox"/> BEDROCK [5]	<input type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]			<input type="checkbox"/> WETLANDS [0]	<input checked="" type="checkbox"/> NORMAL [0]	
			(Score natural substrates; ignore sludge from point-sources)			<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/> FREE [1]	
NUMBER OF BEST TYPES: <input checked="" type="checkbox"/> 4 or more [2] <input type="checkbox"/> 3 or less [0]						<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> EXTENSIVE [-2]	
Comments						<input type="checkbox"/> RIP/RAP [0]	<input checked="" type="checkbox"/> MODERATE [-1]	
						<input type="checkbox"/> LACUSTURINE [0]	<input type="checkbox"/> NORMAL [0]	
						<input type="checkbox"/> SHALE [-1]	<input type="checkbox"/> NONE [1]	
						<input type="checkbox"/> COAL FINES [-2]		

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.

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

Comments Cover Maximum 6

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

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	Channel Maximum 11
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]	
<input checked="" 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 checked="" 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

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	Riparian Maximum 5
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]	
<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	
<input type="checkbox"/> HEAVY / SEVERE [1]	<input checked="" type="checkbox"/> NARROW 5-10m [2]	<input 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 Indicate predominant land use(s) past 100m riparian.

5) POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY	Recreation Potential Primary Contact Secondary Contact (circle one and comment on back) Pool / Current Maximum 7
Check ONE (ONLY!)	Check ONE (Or 2 & average)	Check ALL that apply	
<input type="checkbox"/> > 1m [6]	<input 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 checked="" type="checkbox"/> SLOW [1]	
<input type="checkbox"/> 0.4-0.7m [2]	<input checked="" type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> VERY FAST [1]	
<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]	
		<input type="checkbox"/> INTERMITTENT [-2]	
		<input checked="" type="checkbox"/> MODERATE [1]	
		<input type="checkbox"/> EDDIES [1]	

Comments Indicate for reach - pools and riffles.

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

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input checked="" type="checkbox"/> BEST AREAS > 10cm [2]	<input type="checkbox"/> MAXIMUM > 50cm [2]	<input checked="" 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 type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input 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]

Comments Riffle / Run Maximum 5

6) GRADIENT (5.4 ft/mi) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

DRAINAGE AREA (13.2 mi²)

%POOL: **%GLIDE:** **Gradient Maximum** 6

%RUN: **%RIFFLE:** **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/ GTB
- SECCHI DEPTH

CANOPY

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

CJ RECREATION

AREA DEPTH
POOL: >100ft² >3ft

BJAESTHETICS

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

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

- \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

Legacy Tree:

Stream Drawing:

