

Stream & Location: Euclid Creek, US of Villa Angela Dr. bridge RM: 0.40 Date: 10/31/13

Scorers Full Name & Affiliation: J.M. Novak, D. Fredman Northeast Ohio Regional Sewer District Office verified location

1) SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, QUALITY. Comments

2) INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts... AMOUNT. UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Comments

3) CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Comments

4) BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). RIPARIAN WIDTH, FLOOD PLAIN QUALITY. Comments

5) POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY. Recreation Potential Primary Contact Secondary Contact. 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. Comments

6) GRADIENT (5.90 ft/mi) DRAINAGE AREA (23.20 mi^2) VERY LOW - LOW, MODERATE, HIGH - VERY HIGH. %POOL, %GLIDE, %RUN, %RIFFLE. Gradient Maximum

Stream & Location: Euclid Creek, DS of Lakeshore Blvd.

RM: 0.55 Date: 10/03/13

Jill Novak D. Friedman

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

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

Lat./ Long.: 41.5833 81.5594

Office verified location

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

Check ONE (Or 2 & average)

Substrate assessment grid with categories: BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, QUALITY. Includes checkboxes for BLDR/SLABS, BOULDER, COBBLE, GRAVEL, SAND, BEDROCK, etc.

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

AMOUNT

Check ONE (Or 2 & average)

Instream Cover assessment grid with categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS.

Comments

Cover Maximum 20

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

Channel Morphology assessment grid with categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes checkboxes for HIGH, MODERATE, LOW, NONE, EXCELLENT, GOOD, FAIR, POOR, etc.

Comments

Channel Maximum 20

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

Bank Erosion and Riparian Zone assessment grid with categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING OR CONSTRUCTION.

Comments

Riparian Maximum 10

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)

Check ONE (ONLY!)

Check ONE (Or 2 & average)

Check ALL that apply

Maximum Depth checkboxes: > 1m, 0.7-1m, 0.4-0.7m, 0.2-0.4m, < 0.2m

Channel Width checkboxes: POOL WIDTH > RIFFLE WIDTH, POOL WIDTH = RIFFLE WIDTH, POOL WIDTH < RIFFLE WIDTH

Current Velocity checkboxes: TORRENTIAL, SLOW, VERY FAST, INTERSTITIAL, FAST, INTERMITTENT, MODERATE, EDDIES

Indicate for reach - pools and riffles.

Comments

Pool / Current 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

Riffle Depth checkboxes: BEST AREAS > 10cm, BEST AREAS 5-10cm, BEST AREAS < 5cm

Run Depth checkboxes: MAXIMUM > 50cm, MAXIMUM < 50cm

Riffle/Run Substrate checkboxes: STABLE, MOD. STABLE, UNSTABLE

Riffle/Run Embeddedness checkboxes: NONE, LOW, MODERATE, EXTENSIVE

Riffle / Run Maximum 8

Comments

6) GRADIENT (5.90 ft/mi)

DRAINAGE AREA

(23.00 mi²)

Gradient checkboxes: VERY LOW - LOW, MODERATE, HIGH - VERY HIGH

%POOL:

%GLIDE:

Gradient

%RUN:

%RIFFLE:

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

- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/CTB
- SECHI DEPTH

1st _____ cm
2nd _____ cm

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/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

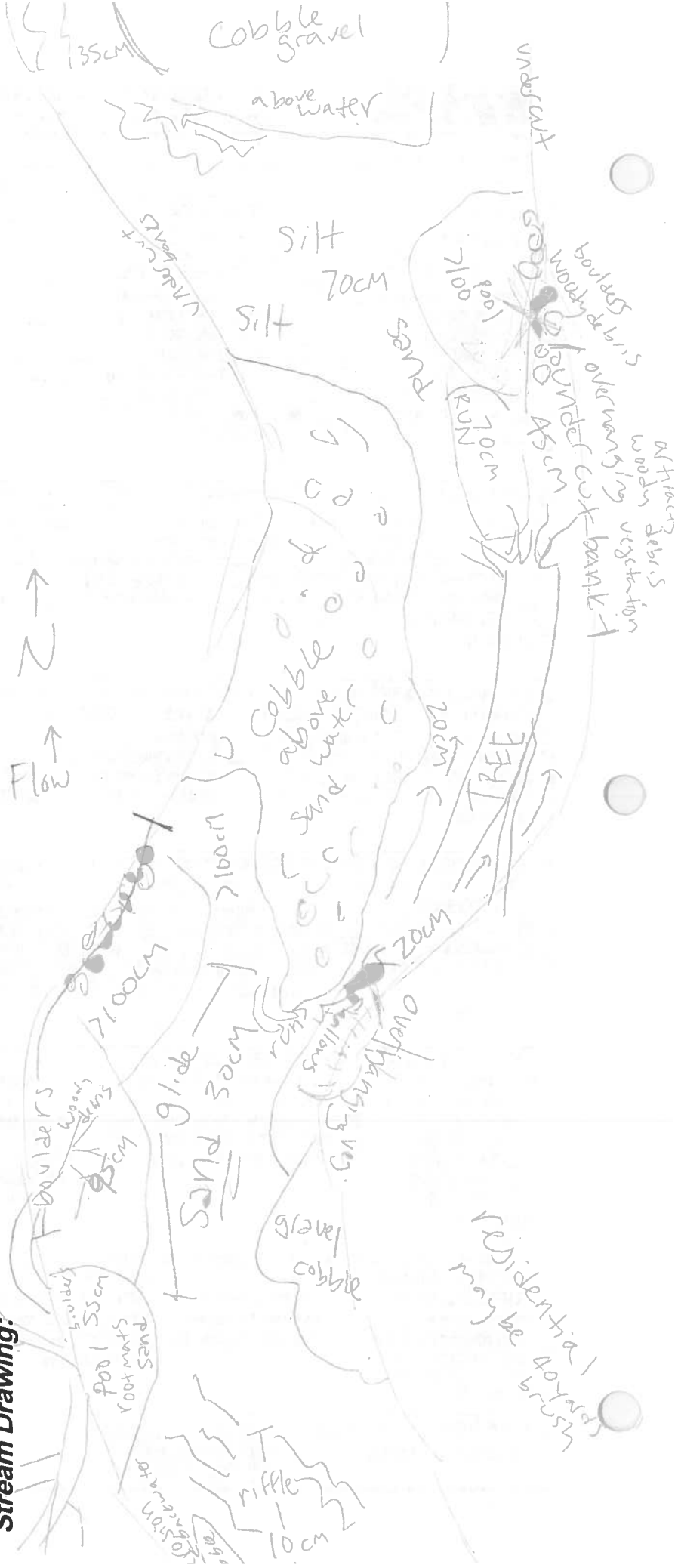
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT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



Stream & Location: Euclid Creek, concrete structure US of Lakeshore Blvd RM: L00 Date: 10/03/13

J. Navack I.D. Friedman

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: STORET #: Lat./ Long.: 41.9828 181.5552 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 a grid for substrate types and a score box for Substrate (16).

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 score box for Cover (12).

3) CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). Includes categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes a score box for Channel (10).

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 score box for Riparian (4).

5) POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY. Includes categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY. Includes a score box for Pool / Current (11).

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. Includes categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes a score box for Riffle / Run (5).

6) GRADIENT (5.90 ft/mi) DRAINAGE AREA (23.10 mi^2). Includes categories: GRADIENT, DRAINAGE AREA. Includes a score box for Gradient (6).

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

meters

CANOPY

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

CJ RECREATION

AREA DEPTH
POOL: >100ft? >3ft

BJ AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/ISSOs/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 H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

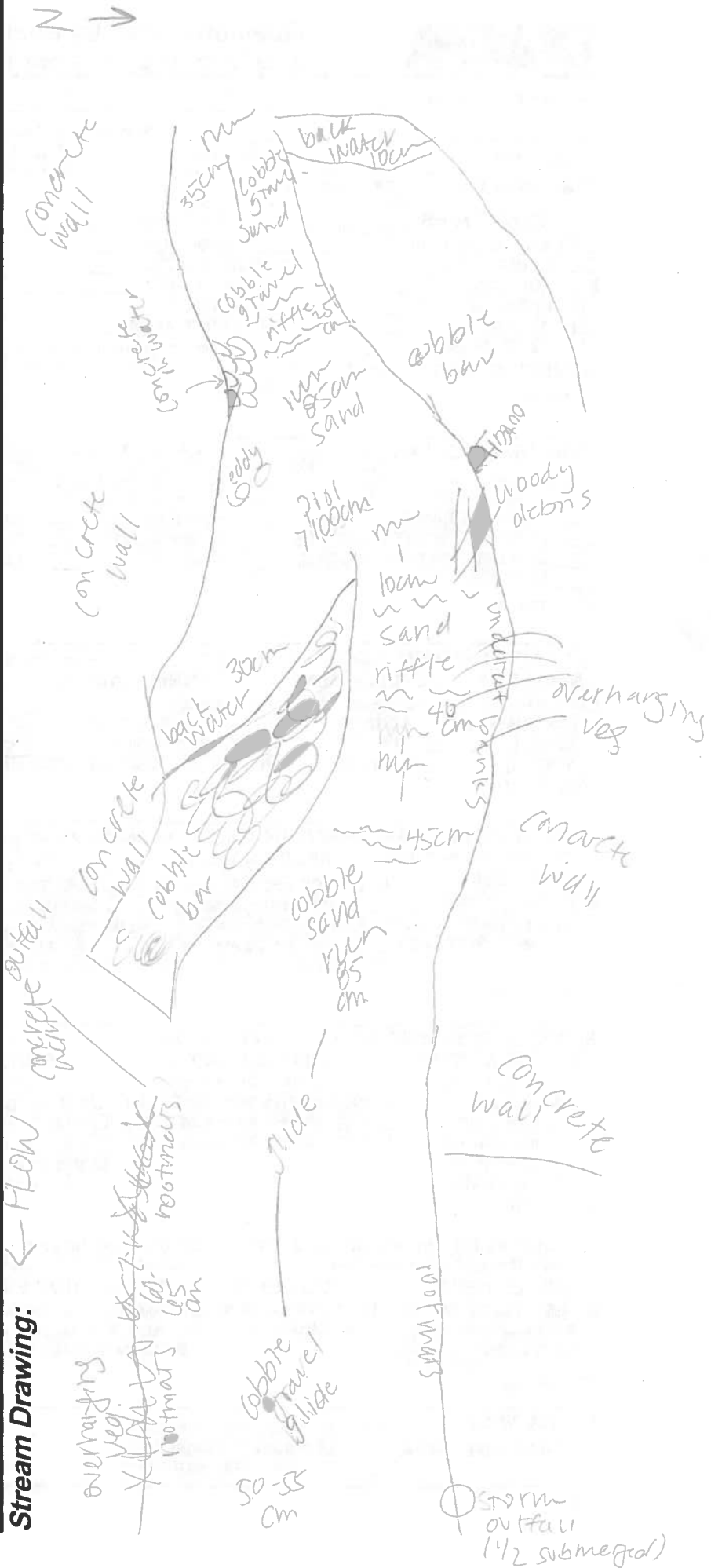
FJ MEASUREMENTS

- \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:

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

Stream Drawing:



Stream & Location: Euclid Creek East Branch, US of Highland Rd. RM: 0.25 Date: 11/10/13

J. Novak, S. Hothem

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: - - - STORET #: - - - Lat./ Long.: 41.5618 181.5277 Office verified location

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

Check ONE (Or 2 & average)

Substrate assessment grid with categories: BEST TYPES, OTHER TYPES, ORIGIN, QUALITY. Includes checkboxes for BLDR/SLABS, BOULDER, COBBLE, GRAVEL, SAND, BEDROCK, etc. Includes a 'Substrate' score box with value 14.

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

AMOUNT

Check ONE (Or 2 & average)

Instream Cover assessment grid with categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS > 70cm, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes a 'Cover' score box with value 8.

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

Channel Morphology assessment grid with categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes a 'Channel' score box with value 8.

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

River right looking downstream

Bank Erosion and Riparian Zone assessment grid with categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION. Includes a 'Riparian' score box with value 8.5.

5) POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Recreation Potential Primary Contact Secondary Contact

Pool / Glide and Riffle / Run Quality assessment grid with checkboxes for depth, width, and velocity. Includes a 'Pool / Current' score box with value 10.

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 / Run Quality assessment grid with categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes a 'Riffle / Run' score box with value 6.

6) GRADIENT (83.33 ft/mi) DRAINAGE AREA (12.50 mi^2)

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

Gradient Maximum 10

due to high gradient

Stream & Location: Euclid Creek, US of St. Clair Avenue RM: 1.65 Date: 10/10/12

J. Novak, S. Hohner Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: - STORET #: - Lat./Long.: 41.5738 181.5470 Office verified location

1) SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Check ONE (Or 2 & average). BEST TYPES: BLDR /SLABS [10], BOULDER [9], COBBLE [8], GRAVEL [7], SAND [6], BEDROCK [5]. OTHER TYPES: HARDPAN [4], DETRITUS [3], MUCK [2], SILT [2], ARTIFICIAL [0]. ORIGIN: LIMESTONE [1], TILLS [1], WETLANDS [0], HARDPAN [0], SANDSTONE [0], RIP/RAP [0], LACUSTURINE [0], SHALE [-1], COAL FINES [-2]. QUALITY: HEAVY [-2], MODERATE [-1], NORMAL [0], FREE [1], EXTENSIVE [-2], MODERATE [-1], NORMAL [0], NONE [1]. Substrate Maximum 20. Score: 16.

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. 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]. AMOUNT: EXTENSIVE >75% [11], MODERATE 25-75% [7], SPARSE 5-<25% [3], NEARLY ABSENT <5% [1]. Cover Maximum 20. Score: 13.

3) CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). SINUOSITY: HIGH [4], MODERATE [3], LOW [2], NONE [1]. DEVELOPMENT: EXCELLENT [7], GOOD [5], FAIR [3], POOR [1]. CHANNELIZATION: NONE [6], RECOVERED [4], RECOVERING [3], RECENT OR NO RECOVERY [1]. STABILITY: HIGH [3], MODERATE [2], LOW [1]. Channel Maximum 20. Score: 15.5.

4) BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). River right looking downstream. EROSION: NONE / LITTLE [3], MODERATE [2], HEAVY / SEVERE [1]. RIPARIAN WIDTH: WIDE > 50m [4], MODERATE 10-50m [3], NARROW 5-10m [2], VERY NARROW < 5m [1], NONE [0]. FLOOD PLAIN QUALITY: FOREST, SWAMP [3], SHRUB OR OLD FIELD [2], RESIDENTIAL, PARK, NEW FIELD [1], FENCED PASTURE [1], OPEN PASTURE, ROWCROP [0]. CONSERVATION TILLAGE [1], URBAN OR INDUSTRIAL [0], MINING / CONSTRUCTION [0]. Indicate predominant land use(s) past 100m riparian. Riparian Maximum 10. Score: 6.

5) POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH: > 1m [6], 0.7-<1m [4], 0.4-<0.7m [2], 0.2-<0.4m [1], < 0.2m [0]. CHANNEL WIDTH: POOL WIDTH > RIFFLE WIDTH [2], POOL WIDTH = RIFFLE WIDTH [1], POOL WIDTH < RIFFLE WIDTH [0]. CURRENT VELOCITY: TORRENTIAL [-1], VERY FAST [1], FAST [1], MODERATE [1], 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 bank). Pool / Current Maximum 12. Score: 11.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). RIFFLE DEPTH: BEST AREAS > 10cm [2], BEST AREAS 5-10cm [1], BEST AREAS < 5cm [metric=0]. RUN DEPTH: MAXIMUM > 50cm [2], MAXIMUM < 50cm [1]. RIFFLE / RUN SUBSTRATE: STABLE (e.g., Cobble, Boulder) [2], MOD. STABLE (e.g., Large Gravel) [1], UNSTABLE (e.g., Fine Gravel, Sand) [0]. RIFFLE / RUN EMBEDDEDNESS: NONE [2], LOW [1], MODERATE [0], EXTENSIVE [-1]. Riffle / Run Maximum 8. Score: 7.

6) GRADIENT (16.20 ft/mi) DRAINAGE AREA (21.80 mi²). VERY LOW - LOW [2-4], MODERATE [6-10], HIGH - VERY HIGH [10-6]. %POOL: [] %GLIDE: [] %RUN: [] %RIFFLE: []. Gradient Maximum 10. Score: 10.



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 63.25

Stream & Location: Euclid Creek, US of Highland Rd. **RM:** 2.10 **Date:** 10/16/13

J. Novak S. Hothorn **Scorers Full Name & Affiliation:** Northeast Ohio Regional Sewer District
River Code: - - - **STORET #:** - - - **Lat./Long.:** 41.5658 181.5358 (NAD 83 - decimal°) **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
<input type="checkbox"/> BLDR /SLABS [10]	<input checked="" type="checkbox"/>	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/>	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> HEAVY [-2]
<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"/> MODERATE [-1]
<input type="checkbox"/> COBBLE [8]	<input checked="" type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	<input checked="" type="checkbox"/> NORMAL [0]
<input checked="" type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/>	<input type="checkbox"/> SILT [2]	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/> FREE [1]
<input 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"/> EXTENSIVE [-2]
<input checked="" type="checkbox"/> BEDROCK [5]	<input checked="" type="checkbox"/>			<input type="checkbox"/> RIP/RAP [0]	<input checked="" type="checkbox"/> MODERATE [-1]

NUMBER OF BEST TYPES: 4 or more [2] 3 or less [0] (Score natural substrates; ignore sludge from point-sources)

Comments

Check ONE (Or 2 & average)

EMBEDDEDNESS

SILT

LACUSTURINE [0]

SHALE [-1]

COAL FINES [-2]

NONE [1]

Substrate 14.5
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.

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

Cover 11
Maximum 20

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 checked="" type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input checked="" type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input checked="" type="checkbox"/> LOW [2]	<input checked="" 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 13.5
Maximum 20

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

River right looking downstream

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 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]

Conservation Tillage

CONSERVATION TILLAGE [1]

URBAN OR INDUSTRIAL [0]

MINING / CONSTRUCTION [0]

Comments

Riparian 6.75
Maximum 10

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 checked="" 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 bank)
<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 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

Pool / Current 9
Maximum 12

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).

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 checked="" 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]
			<input type="checkbox"/> EXTENSIVE [-1]

Comments

Riffle / Run 4.5
Maximum 8

6) GRADIENT (69.20 ft/mi) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

DRAINAGE AREA (21.40 mi²)

%POOL: **%GLIDE:**

%RUN: **%RIFFLE:**

Gradient 4
Maximum 10

Stream & Location: Euclid Creek, US confluence w/ East Branch RM: 3.30 Date: 11/10/13

J. Novak, S. Holthorn

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: STORET #: Lat./ Long.: 41.561281.5315 Office verified location

1) SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Includes categories: BEST TYPES, POOL RIFFLE, OTHER TYPES, POOL RIFFLE, ORIGIN, SILT, QUALITY, and EMBEDDEDNESS.

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. Includes categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS.

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

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.

5) POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY. Includes categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY, Recreation Potential, Primary Contact, Secondary Contact.

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. Includes categories: BEST AREAS > 10cm, MAXIMUM > 50cm, STABLE, MOD. STABLE, UNSTABLE, NONE, LOW, MODERATE, EXTENSIVE.

6) GRADIENT (47.60 ft/mi) DRAINAGE AREA (9.10 mi^2). Includes categories: VERY LOW - LOW, MODERATE, HIGH - VERY HIGH, %POOL, %GLIDE, %RUN, %RIFFLE.

due to high gradient

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
 WADE
 L. LINE
 OTHER
- 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

CJ RECREATION

- AREA DEPTH
 POOL: > 100r² > 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}^2 width
 entrench. ratio

Legacy Tree:

Stream Drawing: ← FLOW



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

Stream & Location: Euclid Creek East Branch DS of Richmond Rd. RM: 280 Date: 10/11/13

J. Novak, M. Matreson Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: - STORET #: Lat./ Long.: 41.5743181.4948 Office verified location

1) SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Check ONE (Or 2 & average) ORIGIN QUALITY. Includes categories like BLDR /SLABS, BOULDER, COBBLE, GRAVEL, SAND, BEDROCK, LIMESTONE, SILT, etc.

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. Includes categories like UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS.

3) CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average) SINUOSITY DEVELOPMENT CHANNELIZATION STABILITY. Includes categories like HIGH, MODERATE, LOW, NONE, EXCELLENT, GOOD, FAIR, POOR, NONE, RECOVERED, RECOVERING, RECENT OR NO RECOVERY, HIGH, MODERATE, LOW.

4) BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average) River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY. Includes categories like EROSION, NONE/LITTLE, MODERATE, HEAVY/SEVERE, WIDE, MODERATE, NARROW, NONE, FOREST, SWAMP, SHRUB OR OLD FIELD, RESIDENTIAL, PARK, NEW FIELD, FENCED PASTURE, OPEN PASTURE, ROWCROP, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION.

5) POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH CHANNEL WIDTH CURRENT VELOCITY Recreation Potential Primary Contact Secondary Contact. Includes categories like > 1m, 0.7-1m, 0.4-0.7m, 0.2-0.4m, < 0.2m, POOL WIDTH > RIFFLE WIDTH, POOL WIDTH = RIFFLE WIDTH, POOL WIDTH < RIFFLE WIDTH, TORRENTIAL, VERY FAST, FAST, MODERATE, SLOW, INTERSTITIAL, INTERMITTENT, EDDIES.

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. Includes categories like BEST AREAS > 10cm, BEST AREAS 5-10cm, BEST AREAS < 5cm, MAXIMUM > 50cm, MAXIMUM < 50cm, STABLE, MOD. STABLE, UNSTABLE, NONE, LOW, MODERATE, EXTENSIVE.

6) GRADIENT (166.70 ft/mi) DRAINAGE AREA (7.05 mi^2) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6] %POOL: %GLIDE: %RUN: %RIFFLE: Gradient Maximum 10

Stream & Location: Unnamed trib. to Fuedid Creek, US of Richmond Rd. RM: 1.50 Date: 10/11/13

S. Novak, M. M. Herson Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: - - - STORET #: - - - Lat./ Long.: 41.5320 181.4970 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Check ONE (Or 2 & average). BEST TYPES: BLDR/SLABS [10], BOULDER [9], COBBLE [8], GRAVEL [7], SAND [6], BEDROCK [5]. OTHER TYPES: HARDPAN [4], DETRITUS [3], MUCK [2], SILT [2], ARTIFICIAL [0]. ORIGIN: LIMESTONE [1], TILLS [1], WETLANDS [0], HARDPAN [0], SANDSTONE [0], RIP/RAP [0], LACUSTURINE [0], SHALE [-1], COAL FINES [-2]. QUALITY: HEAVY [-2], MODERATE [-1], NORMAL [0], FREE [1], EXTENSIVE [-2], MODERATE [-1], NORMAL [0], NONE [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. 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].

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). SINUOSITY: HIGH [4], MODERATE [3], LOW [2], NONE [1]. DEVELOPMENT: EXCELLENT [7], GOOD [5], FAIR [3], POOR [1]. CHANNELIZATION: NONE [6], RECOVERED [4], RECOVERING [3], RECENT OR NO RECOVERY [1]. STABILITY: HIGH [3], MODERATE [2], LOW [1].

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). RIVER RIGHT LOOKING DOWNSTREAM. EROSION: NONE/LITTLE [3], MODERATE [2], HEAVY/SEVERE [1]. RIPARIAN WIDTH: WIDE > 50m [4], MODERATE 10-50m [3], NARROW 5-10m [2], VERY NARROW < 5m [1], NONE [0]. FLOOD PLAIN QUALITY: FOREST, SWAMP [3], SHRUB OR OLD FIELD [2], RESIDENTIAL, PARK, NEW FIELD [1], FENCED PASTURE [1], OPEN PASTURE, ROWCROP [0]. CONSERVATION TILLAGE [1], URBAN OR INDUSTRIAL [0], MINING / CONSTRUCTION [0].

5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH: Check ONE (ONLY!). CHANNEL WIDTH: Check ONE (Or 2 & average). CURRENT VELOCITY: Check ALL that apply. TORRENTIAL [-1], VERY FAST [1], FAST [1], MODERATE [1]. SLOW [1], INTERSTITIAL [-1], INTERMITTENT [-2], EDDIES [1]. Recreation Potential: Primary Contact, Secondary Contact. Pool / Current 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: BEST AREAS > 10cm [2], BEST AREAS 5-10cm [1], BEST AREAS < 5cm [metric=0]. RUN DEPTH: MAXIMUM > 50cm [2], MAXIMUM < 50cm [1]. RIFFLE / RUN SUBSTRATE: STABLE (e.g., Cobble, Boulder) [2], MOD. STABLE (e.g., Large Gravel) [1], UNSTABLE (e.g., Fine Gravel, Sand) [0]. RIFFLE / RUN EMBEDDEDNESS: NONE [2], LOW [1], MODERATE [0], EXTENSIVE [-1]. Riffle / Run Maximum 8.

6] GRADIENT (39.50 ft/mi) DRAINAGE AREA (1.20 mi^2). VERY LOW - LOW [2-4], MODERATE [6-10], HIGH - VERY HIGH [10-6]. %POOL: %GLIDE: %RUN: %RIFFLE: Gradient Maximum 10.



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 70.5

Stream & Location: Finch Creek, DS of Newfield Rd. **RM:** 6.90 **Date:** 10/11/13

J. Naval, M. Matheson **Scorer's Full Name & Affiliation:** Northeast Ohio Regional Sewer District

River Code: - - - **STORET #:** - - - **Lat./Long.:** 41.5196 181.5115 (NAD 83 - decimal °) **Office verified location**

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

BEST TYPES		OTHER TYPES		ORIGIN		QUALITY	
<input type="checkbox"/> BLDR / SLABS [10]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> POOL 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 checked="" type="checkbox"/> NORMAL [0]	<input type="checkbox"/> FREE [1]
<input checked="" 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 checked="" type="checkbox"/> MODERATE [-1]
<input checked="" type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/>	<input type="checkbox"/> SILT [2]	<input checked="" type="checkbox"/>	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/>	<input type="checkbox"/> NORMAL [0]	<input type="checkbox"/> NONE [1]
<input 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"/>	<input type="checkbox"/>
<input type="checkbox"/> BEDROCK [5]	<input checked="" type="checkbox"/>	<small>(Score natural substrates; ignore sludge from point-sources)</small>		<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/>	<input type="checkbox"/>	<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.)

<input checked="" 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 checked="" type="checkbox"/> AQUATIC MACROPHYTES [1]	<input checked="" 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 checked="" type="checkbox"/> SPARSE 5-<25% [3]
<input type="checkbox"/> ROOTMATS [1]			<input type="checkbox"/> NEARLY ABSENT <5% [1]

Comments **Cover Maximum 20** 12

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 checked="" 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]	

Comments **Channel Maximum 20** 12.5

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 type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]
		<input type="checkbox"/> CONSERVATION TILLAGE [1]
		<input type="checkbox"/> URBAN OR INDUSTRIAL [0]
		<input type="checkbox"/> MINING / CONSTRUCTION [0]

Comments **Riparian Maximum 10** 7.5

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]	<small>(circle one and comment on back)</small>
<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 type="checkbox"/> FAST [1]	
		<input checked="" type="checkbox"/> MODERATE [1]	
		<input type="checkbox"/> INTERMITTENT [-2]	
		<input type="checkbox"/> EDDIES [1]	

Comments **Pool / Current Maximum 12** 6

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 type="checkbox"/> MAXIMUM < 50cm [1]	<input checked="" 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 checked="" type="checkbox"/> MODERATE [0]
			<input type="checkbox"/> EXTENSIVE [-1]

Comments **Riffle / Run Maximum 8** 5.5

6) GRADIENT (19.6 ft/mi) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6] **%POOL:** **%GLIDE:** **%RUN:** **%RIFFLE:** **Gradient Maximum 10** 10

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
- 1st _____ cm
- 2nd _____ cm

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

CJ RECREATION

AREA DEPTH POOL: > 100ft? > 3ft

BJ AESTHETICS

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

- \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

Stream Drawing:

