



# Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) :

81

SITE NAME/LOCATION Wright Creek - South of 2419 Coventry Dr. Parma  
 SITE NUMBER \_\_\_\_\_ RIVER BASIN \_\_\_\_\_ DRAINAGE AREA (mi<sup>2</sup>) 0.29  
 LENGTH OF STREAM REACH (ft) \_\_\_\_\_ LAT. 41.3050 LONG. -81.6975 RIVER CODE \_\_\_\_\_ RIVER MILE 7512.5  
 DATE 7/13/18 SCORER M. Henson COMMENTS \_\_\_\_\_

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH Streams" for Instructions

STREAM CHANNEL  NONE / NATURAL CHANNEL  RECOVERED  RECOVERING  RECENT OR NO RECOVERY  
 MODIFICATIONS:

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
<input checked="" type="checkbox"/> BLD R SLABS [16 pts]	<u>35</u>	<input type="checkbox"/> SILT [3 pt]	<u>5</u>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<u>5</u>	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<u>0</u>
<input type="checkbox"/> BEDROCK [16 pt]	<u>0</u>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<u>0</u>
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<u>20</u>	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<u>0</u>
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<u>25</u>	<input type="checkbox"/> MUCK [0 pts]	<u>0</u>
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<u>10</u>	<input type="checkbox"/> ARTIFICIAL [3 pts]	<u>0</u>

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 60

(A) 25

(B) 6

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points

Substrate Max = 40

31

A + B

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

- > 30 centimeters [20 pts]  > 5 cm - 10 cm [15 pts]  
 > 22.5 - 30 cm [30 pts]  < 5 cm [5 pts]  
 > 10 - 22.5 cm [25 pts]  NO WATER OR MOIST CHANNEL [0 pts]

20

Pool Depth Max = 30

20

COMMENTS \_\_\_\_\_

MAXIMUM POOL DEPTH (centimeters):

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

- > 4.0 meters (> 13') [30 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  
 > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  ≤ 1.0 m (≤ 3' 3") [5 pts]  
 > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]

30

Bankfull Width Max=30

30

COMMENTS \_\_\_\_\_

AVERAGE BANKFULL WIDTH (meters)

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

### RIPARIAN WIDTH

- L R (Per Bank)  
  Wide >10m  
  Moderate 5-10m  
  Narrow <5m  
  None

### FLOODPLAIN QUALITY

- L R (Most Predominant per Bank)  
  Mature Forest, Wetland  
  Immature Forest, Shrub or Old Field  
  Residential, Park, New Field  
  Fenced Pasture

- L R  
  Conservation Tillage  
  Urban or Industrial  
  Open Pasture, Row Crop  
  Mining or Construction

COMMENTS \_\_\_\_\_

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

- Stream Flowing  Moist Channel, isolated pools, no flow (Intermittent)  
 Subsurface flow with isolated pools (Interstitial)  Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

- None  1.0  2.0  3.0  
 0.5  1.5  2.5  >3

### STREAM GRADIENT ESTIMATE

- Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/100 ft)

**ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):**

QHEI PERFORMED? -  Yes  No QHEI Score \_\_\_\_\_ (If Yes, Attach Completed QHEI Form)

**DOWNSTREAM DESIGNATED USE(S)**

WWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
 CWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
 EWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_

**MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION**

USGS Quadrangle Name: \_\_\_\_\_ NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order \_\_\_\_\_  
County: Cuyahoga Township / City: \_\_\_\_\_

**MISCELLANEOUS**

Base Flow Conditions? (Y/N): Y Date of last precipitation: 7/5/18 Quantity: 1.43"

Photograph Information: \_\_\_\_\_

Elevated Turbidity? (Y/N): N Canopy (% open): 55

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: \_\_\_\_\_

Field Measures: Temp (°C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) \_\_\_\_\_ Conductivity (µmhos/cm) \_\_\_\_\_

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

**BIOTIC EVALUATION**

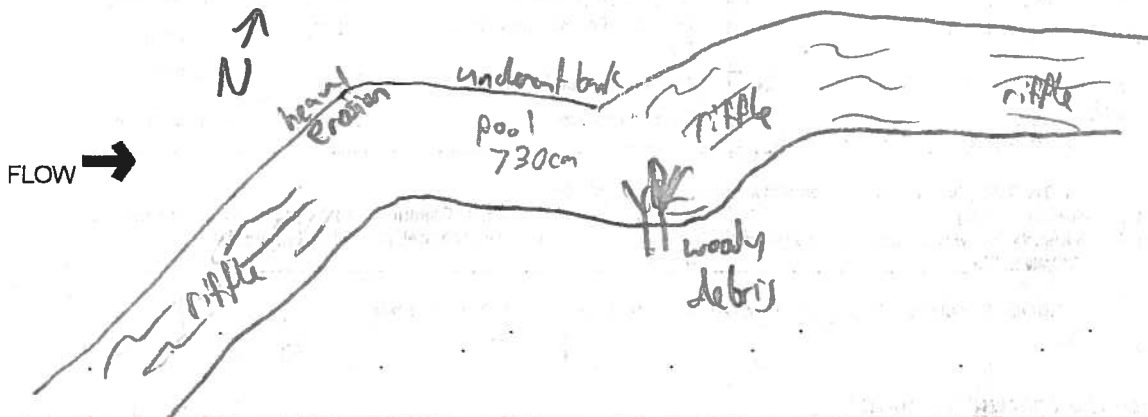
Performed? (Y/N): Y (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) \_\_\_\_\_ Salamanders Observed? (Y/N) Y Voucher? (Y/N) Y  
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) \_\_\_\_\_ Aquatic Macroinvertebrates Observed? (Y/N) Y Voucher? (Y/N) \_\_\_\_\_

Comments Regarding Biology: \_\_\_\_\_

**DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):**

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





# Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) :

70

SITE NAME/LOCATION West Creek  
 RM 8.55 SITE NUMBER \_\_\_\_\_ RIVER BASIN \_\_\_\_\_ DRAINAGE AREA (mi<sup>2</sup>) 0.17  
 LENGTH OF STREAM REACH (ft) 200 LAT. \_\_\_\_\_ LONG. \_\_\_\_\_ RIVER CODE \_\_\_\_\_ RIVER MILE \_\_\_\_\_  
 DATE 7/13/18 SCORER Matheson COMMENTS \_\_\_\_\_

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH Streams" for Instructions

STREAM CHANNEL  NONE / NATURAL CHANNEL  RECOVERED  RECOVERING  RECENT OR NO RECOVERY  
 MODIFICATIONS:

1. **SUBSTRATE** (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.)

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]	<u>0</u>	<input type="checkbox"/> SILT [3 pt]	<u>7</u>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<u>0</u>	<input type="checkbox"/> LEAF PACKWOODY DEBRIS [3 pts]	<u>0</u>
<input type="checkbox"/> BEDROCK [16 pt]	<u>0</u>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<u>0</u>
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<u>15</u>	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<u>0</u>
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<u>40</u>	<input type="checkbox"/> MUCK [0 pts]	<u>3</u>
<input checked="" type="checkbox"/> SAND (<2 mm) [6 pts]	<u>35</u>	<input type="checkbox"/> ARTIFICIAL [3 pts]	<u>0</u>

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 15 (A) **15** (B) **5**

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **15** TOTAL NUMBER OF SUBSTRATE TYPES: **5**

2. **Maximum Pool Depth** (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

<input checked="" type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS \_\_\_\_\_ MAXIMUM POOL DEPTH (centimeters): **20**

3. **BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check ONLY one box):

<input checked="" type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	

COMMENTS \_\_\_\_\_ AVERAGE BANKFULL WIDTH (meters) **30**

**HHEI Metric Points**

Substrate Max = 40 **20**

A + B

Pool Depth Max = 30 **20**

Bankfull Width Max=30 **30**

This information must also be completed

### RIPARIAN ZONE AND FLOODPLAIN QUALITY

☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH		FLOODPLAIN QUALITY	
L	R	L	R
<input type="checkbox"/>	<input checked="" type="checkbox"/> (Per Bank)	<input type="checkbox"/>	<input type="checkbox"/> (Most Predominant per Bank)
<input type="checkbox"/>	Wide >10m	<input type="checkbox"/>	Mature Forest, Wetland
<input type="checkbox"/>	Moderate 5-10m	<input checked="" type="checkbox"/>	Immature Forest, Shrub or Old Field
<input checked="" type="checkbox"/>	Narrow <5m	<input checked="" type="checkbox"/>	Residential, Park, New Field
<input type="checkbox"/>	None	<input type="checkbox"/>	Fenced Pasture
		<input type="checkbox"/>	Conservation Tillage
		<input type="checkbox"/>	Urban or Industrial
		<input type="checkbox"/>	Open Pasture, Row Crop
		<input type="checkbox"/>	Mining or Construction

COMMENTS \_\_\_\_\_

### FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

### SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input checked="" type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

### STREAM GRADIENT ESTIMATE

Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/100 ft)

**ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):**

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County: Cuyahoga Township / City: Broadview Heights

**MISCELLANEOUS**

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Photograph Information: \_\_\_\_\_

Elevated Turbidity? (Y/N): N Canopy (% open): 98

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: \_\_\_\_\_

Field Measures: Temp (°C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) \_\_\_\_\_ Conductivity (µmhos/cm) \_\_\_\_\_

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Additional comments/description of pollution impacts: \_\_\_\_\_

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Fish Observed? (Y/N) N Voucher? (Y/N) \_\_\_\_\_ Salamanders Observed? (Y/N) N Voucher? (Y/N) \_\_\_\_\_  
Frogs or Tadpoles Observed? (Y/N) Y Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_

Comments Regarding Biology: Stream overrun w/ catfish

**DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):**

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

