



Primary Headwater Habitat Evaluation Form

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

62

SITE NAME / LOC. Wise Road, Green - Stream 1, Lower Reach
SITE NUMBER
RIVER BASIN Tuscarawas River
Drainage Area(mi^2) 0.07
Length of Stream Reach 200 ft
Lat. 81.45630W
Long. 40.95143N
RIVER MILE
DATE 1/2/2012
SCORER Judith Mitchell
COMMENTS

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

STREAM CHANNEL [ ] NONE / NATURAL CHANNEL [ ] RECOVERED [x] 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 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.
TYPE PERCENT TYPE PERCENT
[ ] BLDR SLABS [16 pts] [ ] SILT [3 pts] 10%
[ ] BOULDER (>256 mm) [16 pts] 3% [ ] LEAF PACK/WOODY DEBRIS [3 pts] 12%
[ ] BEDROCK [16 pts] [ ] FINE DETRITUS [3 pts]
[ ] COBBLE (65-256 mm) [12 pts] 10% [ ] CLAY or HARDPAN [0 pts] 17%
[x] GRAVEL (2-64 mm) [9 pts] 23% [ ] MUCK [0 pts]
[ ] SAND (<2 mm) [6 pts] 25% [ ] ARTIFICIAL [3pts]
Total of Percentages of (A) (B)
Bldr Slabs, Boulder, Cobble, Bedrock = 13%
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 7
HHEI Metric Points
Substrate Max = 40
22
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]
[x] >10 - 22.5 cm [25 pts] [ ] NO WATER/MOIST CHANNEL [0 pts]
COMMENTS: MAXIMUM POOL DEPTH (centimeters) 21
Pool Depth Max=30
25
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):
[ ] >4.0 meters (13') [30 pts] [x] >1.0 m - 1.5 m (>3'3"-4'8") [15 pts]
[ ] >3.0-4.0 m (>9' 7"-13') [25 pts] [ ] ≤1.0 m (≤ 3'3") [5 pts]
[ ] >1.5-3.0 m (>9' 7"-4' 8") [20 pts]
COMMENTS: AVERAGE BANKFULL WIDTH (meters) 1.1
Bankfull Width Max=30
15

This information must also be completed.

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

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

COMMENTS:

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

[x] Stream Flowing [ ] Moist channel, isolated pools, no flow (Intermittent)
[ ] Subsurface flow with isolated pools (Interstitial) [ ] Dry channel, no water, (Ephemeral)

COMMENTS: High recent precipitation

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

[ ] None [ ] 1.0 [x] 2.0 [ ] 3.0
[ ] 0.5 [ ] 1.5 [ ] 2.5 [ ] > 3

STREAM GRADIENT ESTIMATE

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

**Location / Stream Name:** Wise Road, Green - Stream 1, Lower Reach

**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: Tuscarawas River 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 Quad Name: North Canton NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_  
County: Summit Township/City: Green

**MISCELLANEOUS**

Base Flow Conditions? (Y/N) Y Date of Last Precipitation: \_\_\_\_\_ Quantity: \_\_\_\_\_

Photograph Information: See Attached

Elevated Turbidity? (Y/N): N Canopy (% open): 50% open

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

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

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

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

**BIOTIC EVALUATION**

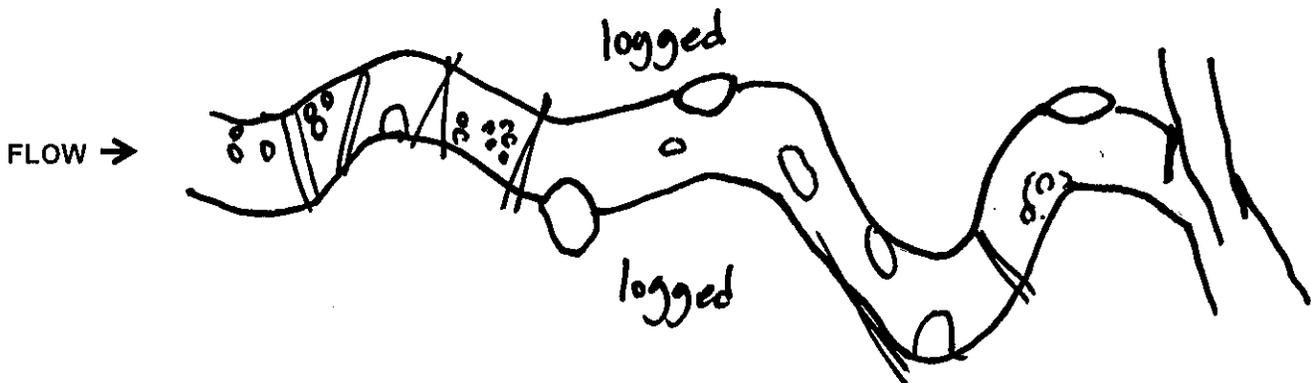
Performed? (Y/N) N (If yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID Number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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

27

SITE NAME / LOC. Wise Road, Green - Stream 1, Upper Reach
SITE NUMBER
RIVER BASIN Tuscarawas River
Drainage Area(mi^2) 0.07
Length of Stream Reach 200 ft
Lat. 81.45630W
Long. 40.95143N
RIVER MILE
DATE 1/2/2012
SCORER Judith Mitchell
COMMENTS Crosses through maintained easement

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

STREAM CHANNEL [ ] NONE / NATURAL CHANNEL [ ] RECOVERED [x] 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 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

Table with 4 columns: TYPE, PERCENT, TYPE, PERCENT. Rows include BLDR SLABS, BOULDER, BEDROCK, COBBLE, GRAVEL, SAND, SILT, LEAF PACK/WOODY DEBRIS, FINE DETRITUS, CLAY or HARDPAN, MUCK, ARTIFICIAL.

HHEI Metric Points

Substrate Max = 40

7

A + B

Total of Percentages of (A) 3 (B) 4
Bldr Slabs, Boulder, Cobble, Bedrock = 0%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 TOTAL NUMBER OF SUBSTRATE TYPES: 4

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):

Table with 2 columns: Pool Depth options and their corresponding points. Options include >30 centimeters, >22.5 - 30 cm, >10 - 22.5 cm, >5 cm - 10 cm, <5 cm, NO WATER/MOIST CHANNEL.

Pool Depth Max=30

15

COMMENTS: MAXIMUM POOL DEPTH (centimeters) 6

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

Table with 2 columns: Bank Full Width options and their corresponding points. Options include >4.0 meters, >3.0-4.0 m, >1.5-3.0 m, >1.0 m - 1.5 m, <=1.0 m.

Bankfull Width Max=30

5

COMMENTS: AVERAGE BANKFULL WIDTH (meters) 0.5

This information must also be completed.

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

Table with 3 columns: RIPARIAN WIDTH (Per Bank), (FLOODPLAIN QUALITY), and Riparian Zone categories (Conservation Tillage, Urban or Industrial, Open Pasture, Row Crop, Mining or Construction).

COMMENTS:

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

Table with 2 columns: Flow Regime options and their corresponding points. Options include Stream Flowing, Subsurface flow with isolated pools, Moist channel, isolated pools, no flow, Dry channel, no water.

COMMENTS: High recent precipitation

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

Table with 4 columns: Sinuosity options and their corresponding points. Options include None, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, > 3.

STREAM GRADIENT ESTIMATE

Table with 5 columns: Stream Gradient Estimate options and their corresponding points. Options include Flat (0.5 ft/100 ft), Flat to Moderate, Moderate (2 ft/100 ft), Moderate to Severe, Severe (10 ft/100 ft).

**Location / Stream Name:** Wise Road, Green - Stream 1, Upper Reach

**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: Tuscarawas River 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 Quad Name: North Canton NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_  
County: Summit Township/City: Green

**MISCELLANEOUS**

Base Flow Conditions? (Y/N) Y Date of Last Precipitation: \_\_\_\_\_ Quantity: \_\_\_\_\_

Photograph Information: See Attached

Elevated Turbidity? (Y/N): N Canopy (% open): 40% open

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

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

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

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

**BIOTIC EVALUATION**

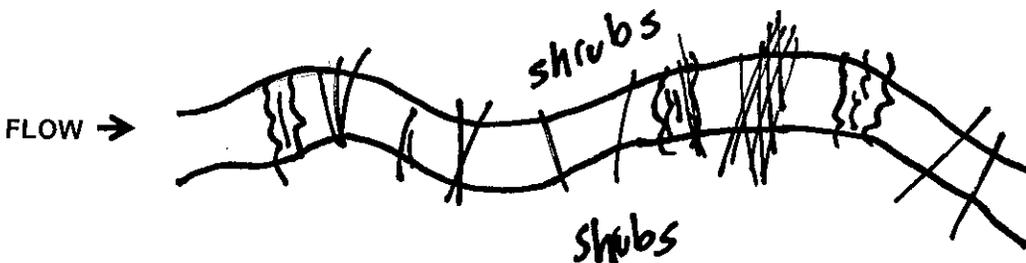
Performed? (Y/N) N (If yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID Number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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

20

SITE NAME / LOC. Wise Road, Green - Stream 2
SITE NUMBER
RIVER BASIN Tuscarawas River
Drainage Area(mi^2) <0.1
Length of Stream Reach 200 ft
Lat. 81.45630W
Long. 40.95143N
RIVER MILE
DATE 1/2/2012
SCORER Judith Mitchell
COMMENTS

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

STREAM CHANNEL [ ] NONE / NATURAL CHANNEL [x] 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 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.
TYPE PERCENT TYPE PERCENT
[ ] [ ] BLDR SLABS [16 pts] [ ] [x] SILT [3 pts] 5%
[ ] [ ] BOULDER (>256 mm) [16 pts] [ ] [x] LEAF PACK/WOODY DEBRIS [3 pts] 20%
[ ] [ ] BEDROCK [16 pts] [ ] [ ] FINE DETRITUS [3 pts]
[ ] [ ] COBBLE (65-256 mm) [12 pts] 2% [ ] [ ] CLAY or HARDPAN [0 pts] 10%
[ ] [ ] GRAVEL (2-64 mm) [9 pts] 8% [x] [ ] MUCK [0 pts] 45%
[ ] [ ] SAND (<2 mm) [6 pts] 10% [ ] [ ] ARTIFICIAL [3pts]
Total of Percentages of (A) (B)
Bldr Slabs, Boulder, Cobble, Bedrock = 2%
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 TOTAL NUMBER OF SUBSTRATE TYPES: 7
HHEI Metric Points
Substrate Max = 40
10
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] [x] <5 cm [5 pts]
[ ] >10 - 22.5 cm [25 pts] [ ] NO WATER/MOIST CHANNEL [0 pts]
COMMENTS: MAXIMUM POOL DEPTH (centimeters) 4
Pool Depth Max=30
5

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]
[ ] >3.0-4.0 m (>9' 7"-13') [25 pts] [x] ≤1.0 m (≤ 3'3") [5 pts]
[ ] >1.5-3.0 m (>9' 7"-4' 8") [20 pts]
COMMENTS: AVERAGE BANKFULL WIDTH (meters) 0.4
Bankfull Width Max=30
5

This information must also be completed.

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

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

COMMENTS:

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):
[x] Stream Flowing [ ] Moist channel, isolated pools, no flow (Intermittent)
[ ] Subsurface flow with isolated pools (Interstitial) [ ] Dry channel, no water, (Ephemeral)

COMMENTS: High recent precipitation

SINUOSITY (Number of bends per 200 ft (61 m) of channel) (Check ONLY one box):
[ ] None [ ] 1.0 [x] 2.0 [ ] 3.0
[ ] 0.5 [ ] 1.5 [ ] 2.5 [ ] > 3

STREAM GRADIENT ESTIMATE

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

**Location / Stream Name:** Wise Road, Green - Stream 2

**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: Tuscarawas River 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 Quad Name: North Canton NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_  
County: Summit Township/City: Green

**MISCELLANEOUS**

Base Flow Conditions? (Y/N) Y Date of Last Precipitation: \_\_\_\_\_ Quantity: \_\_\_\_\_

Photograph Information: See Attached

Elevated Turbidity? (Y/N): N Canopy (% open): 30% open

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

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

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

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

**BIOTIC EVALUATION**

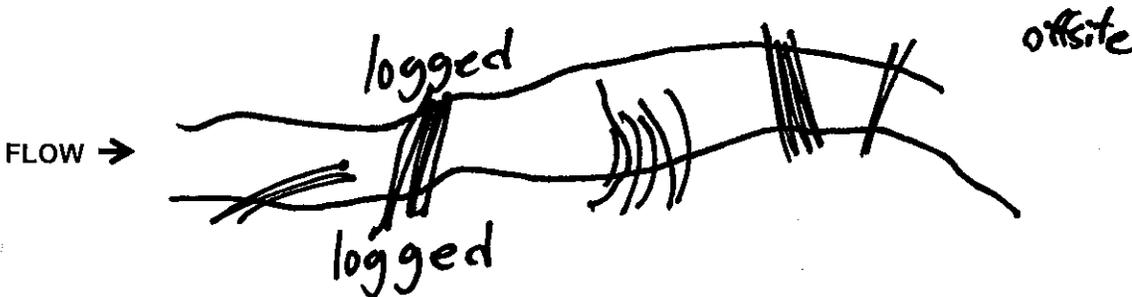
Performed? (Y/N) N (If yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID Number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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

56

SITE NAME / LOC. Wise Road, Green - Stream 3
SITE NUMBER
RIVER BASIN Tuscarawas River
Drainage Area(mi^2) 0.13
Length of Stream Reach 200 ft
Lat. 81.45630W
Long. 40.95143N
RIVER MILE
DATE 1/2/2012
SCORER Judith Mitchell
COMMENTS This stream was channelized some time ago.

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

STREAM CHANNEL [ ] NONE / NATURAL CHANNEL [x] 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 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.
TYPE PERCENT TYPE PERCENT
[ ] [ ] BLDR SLABS [16 pts]
[ ] [ ] BOULDER (>256 mm) [16 pts] 3%
[ ] [ ] BEDROCK [16 pts]
[ ] [ ] COBBLE (65-256 mm) [12 pts] 5%
[ ] [x] GRAVEL (2-64 mm) [9 pts] 28%
[x] [ ] SAND (<2 mm) [6 pts] 44%
[ ] [ ] SILT [3 pts] 10%
[ ] [ ] LEAF PACK/WOODY DEBRIS [3 pts] 10%
[ ] [ ] FINE DETRITUS [3 pts]
[ ] [ ] CLAY or HARDPAN [0 pts]
[ ] [ ] MUCK [0 pts]
[ ] [ ] ARTIFICIAL [3pts]
Total of Percentages of (A) (B)
Bldr Slabs, Boulder, Cobble, Bedrock = 8%
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 6
HHEI Metric Points
Substrate Max = 40
21
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]
[ ] >22.5 - 30 cm [30 pts]
[ ] >10 - 22.5 cm [25 pts]
[x] >5 cm - 10 cm [15 pts]
[ ] <5 cm [5 pts]
[ ] NO WATER/MOIST CHANNEL[0 pts]
COMMENTS:
MAXIMUM POOL DEPTH (centimeters) 9
Pool Depth Max=30
15
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):
[ ] >4.0 meters (13' ) [30 pts]
[ ] >3.0-4.0 m (>9' 7"-13' ) [25 pts]
[x] >1.5-3.0 m (>9' 7"-4' 8") [20 pts]
[ ] >1.0 m - 1.5 m (>3'3"-4'8") [15 pts]
[ ] ≤1.0 m (≤ 3'3") [5 pts]
COMMENTS:
AVERAGE BANKFULL WIDTH (meters) 2.1
Bankfull Width Max=30
20

This information must also be completed.

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

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

COMMENTS:

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

[x] Stream Flowing [ ] Moist channel, isolated pools, no flow (Intermittent)
[ ] Subsurface flow with isolated pools (Interstitial) [ ] Dry channel, no water, (Ephemeral)

COMMENTS: High recent precipitation

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

[x] None [ ] 1.0 [ ] 2.0 [ ] 3.0
[ ] 0.5 [ ] 1.5 [ ] 2.5 [ ] > 3

STREAM GRADIENT ESTIMATE

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

Location / Stream Name: Wise Road, Green - Stream 3

**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: Tuscarawas River 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 Quad Name: North Canton NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_  
County: Summit Township/City: Green

**MISCELLANEOUS**

Base Flow Conditions? (Y/N) Y Date of Last Precipitation: \_\_\_\_\_ Quantity: \_\_\_\_\_

Photograph Information: See Attached

Elevated Turbidity? (Y/N): N Canopy (% open): 0% open

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

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

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

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

**BIOTIC EVALUATION**

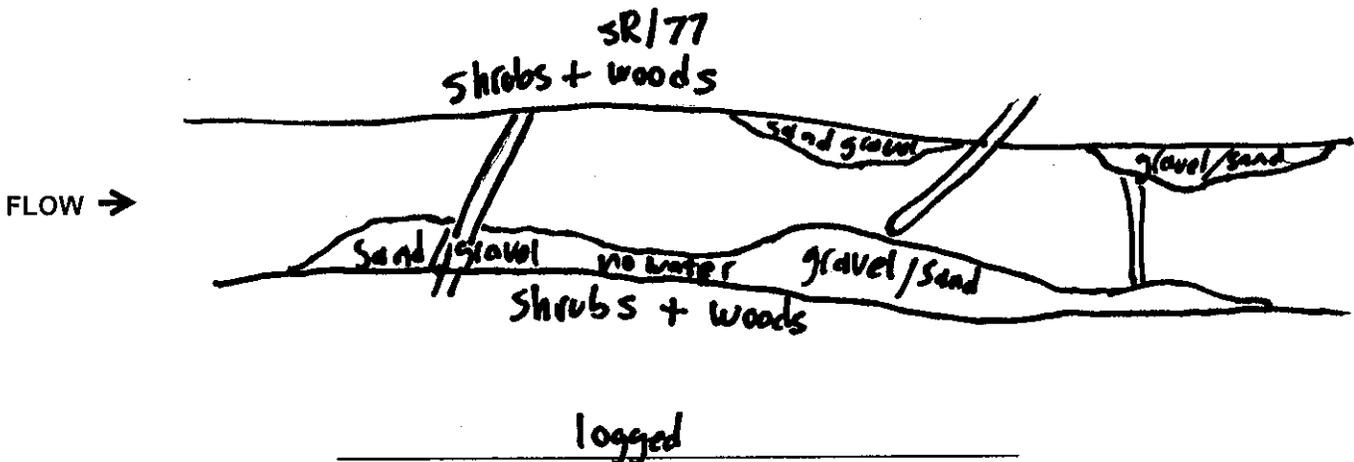
Performed? (Y/N) N (If yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID Number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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

19

SITE NAME / LOC. Wise Road, Green - Stream 4  
 SITE NUMBER \_\_\_\_\_ RIVER BASIN Tuscarawas River Drainage Area(mi<sup>2</sup>) <0.1  
 Length of Stream Reach 132 ft Lat. 81.45630W Long. 40.95143N RIVER MILE \_\_\_\_\_  
 DATE 1/2/2012 SCORER Judith Mitchell COMMENTS \_\_\_\_\_

**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH 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 32). 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"/> <input type="checkbox"/> BLDR SLABS [16 pts]	_____	<input type="checkbox"/> <input type="checkbox"/> SILT [3 pts]	10%
<input type="checkbox"/> <input type="checkbox"/> BOULDER (>256 mm) [16 pts]	_____	<input checked="" type="checkbox"/> <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	30%
<input type="checkbox"/> <input type="checkbox"/> BEDROCK [16 pts]	_____	<input type="checkbox"/> <input type="checkbox"/> FINE DETRITUS [3 pts]	_____
<input type="checkbox"/> <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	8%	<input type="checkbox"/> <input type="checkbox"/> CLAY or HARDPAN [0 pts]	_____
<input type="checkbox"/> <input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	15%	<input type="checkbox"/> <input checked="" type="checkbox"/> MUCK [0 pts]	32%
<input type="checkbox"/> <input type="checkbox"/> SAND (<2 mm) [6 pts]	5%	<input type="checkbox"/> <input type="checkbox"/> ARTIFICIAL [3pts]	_____

Total of Percentages of (A) \_\_\_\_\_ (B) \_\_\_\_\_  
 Bldr Slabs, Boulder, Cobble, Bedrock = 8%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **3** TOTAL NUMBER OF SUBSTRATE TYPES: **6**

**HHEI Metric Points**  
 Substrate Max = 40  
**9**  
 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):**

<input 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 checked="" type="checkbox"/> <5 cm [5 pts]	_____
<input type="checkbox"/> >10 - 22.5 cm [25 pts]	_____	<input type="checkbox"/> NO WATER/MOIST CHANNEL [0 pts]	_____

COMMENTS: \_\_\_\_\_ MAXIMUM POOL DEPTH (centimeters) **5**

**Pool Depth Max=30**  
**5**

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

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

COMMENTS: \_\_\_\_\_ AVERAGE BANKFULL WIDTH (meters) **0.5**

**Bankfull Width Max=30**  
**5**

This information must also be completed.

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

RIPARIAN WIDTH (Per Bank)		(FLOODPLAIN QUALITY)			
L	R	L	R	L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wide > 10 m		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moderate 5 - 10 m		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Narrow < 5 m		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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: High recent precipitation

**SINUOSITY (Number of bends per 200 ft (61 m) 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**

<input type="checkbox"/> Flat (0.5 ft/100 ft)	<input type="checkbox"/> Flat to Moderate	<input checked="" type="checkbox"/> Moderate (2 ft/100 ft)	<input type="checkbox"/> Moderate to Severe	<input type="checkbox"/> Severe (10 ft/100 ft)
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**Location / Stream Name:** Wise Road, Green - Stream 4

**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: Tuscarawas River 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 Quad Name: North Canton NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_  
County: Summit Township/City: Green

**MISCELLANEOUS**

Base Flow Conditions? (Y/N) Y Date of Last Precipitation: \_\_\_\_\_ Quantity: \_\_\_\_\_

Photograph Information: See Attached

Elevated Turbidity? (Y/N): N Canopy (% open): 30% open

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

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

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

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

**BIOTIC EVALUATION**

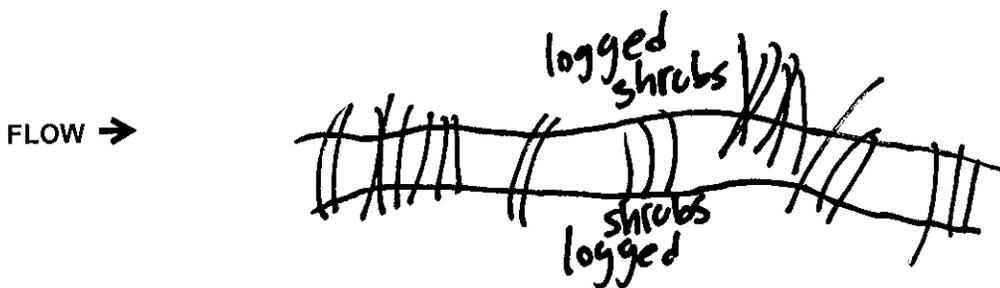
Performed? (Y/N) N (If yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID Number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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

72

SITE NAME / LOC. Wise Road, Green - Stream 5 Lower Reach
SITE NUMBER
RIVER BASIN Tuscarawas River
Drainage Area(mi^2) 0.22
Length of Stream Reach 200 ft
Lat. 81.45630W
Long. 40.95143N
RIVER MILE
DATE 1/2/2012
SCORER Judith Mitchell
COMMENTS

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

STREAM CHANNEL [ ] NONE / NATURAL CHANNEL [x] 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 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.
TYPE PERCENT TYPE PERCENT
[ ] [ ] BLDR SLABS [16 pts] 3% [ ] [ ] SILT [3 pts] 12%
[ ] [ ] BOULDER (>256 mm) [16 pts] 8% [ ] [ ] LEAF PACK/WOODY DEBRIS [3 pts] 7%
[ ] [ ] BEDROCK [16 pts] [ ] [ ] FINE DETRITUS [3 pts]
[ ] [ ] COBBLE (65-256 mm) [12 pts] 12% [ ] [ ] CLAY or HARDPAN [0 pts]
[x] [ ] GRAVEL (2-64 mm) [9 pts] 38% [ ] [ ] MUCK [0 pts]
[x] [ ] SAND (<2 mm) [6 pts] 20% [ ] [ ] ARTIFICIAL [3pts]
Total of Percentages of (A) (B)
Bldr Slabs, Boulder, Cobble, Bedrock = 23%
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 7
HHEI Metric Points
Substrate Max = 40
22
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]
[x] >22.5 - 30 cm [30 pts] [ ] <5 cm [5 pts]
[ ] >10 - 22.5 cm [25 pts] [ ] NO WATER/MOIST CHANNEL [0 pts]
COMMENTS: MAXIMUM POOL DEPTH (centimeters) 28
Pool Depth Max=30
30

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]
[ ] >3.0-4.0 m (>9' 7"-13') [25 pts] [ ] ≤1.0 m (≤ 3'3") [5 pts]
[x] >1.5-3.0 m (>9' 7"-4' 8") [20 pts]
COMMENTS: AVERAGE BANKFULL WIDTH (meters) 2.0
Bankfull Width Max=30
20

This information must also be completed.

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

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

COMMENTS:

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):
[x] Stream Flowing [ ] Moist channel, isolated pools, no flow (Intermittent)
[ ] Subsurface flow with isolated pools (Interstitial) [ ] Dry channel, no water, (Ephemeral)

COMMENTS: High recent precipitation

SINUOSITY (Number of bends per 200 ft (61 m) 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) [x] Flat to Moderate [ ] Moderate (2 ft/100 ft) [ ] Moderate to Severe [ ] Severe (10 ft/100 ft)

**Location / Stream Name:** Wise Road, Green - Stream 5 Lower Reach

**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: Tuscarawas River 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 Quad Name: North Canton NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_

County: Summit Township/City: Green

**MISCELLANEOUS**

Base Flow Conditions? (Y/N) Y Date of Last Precipitation: \_\_\_\_\_ Quantity: \_\_\_\_\_

Photograph Information: See Attached

Elevated Turbidity? (Y/N): N Canopy (% open): 0% open

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

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

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

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

**BIOTIC EVALUATION**

Performed? (Y/N) N (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)

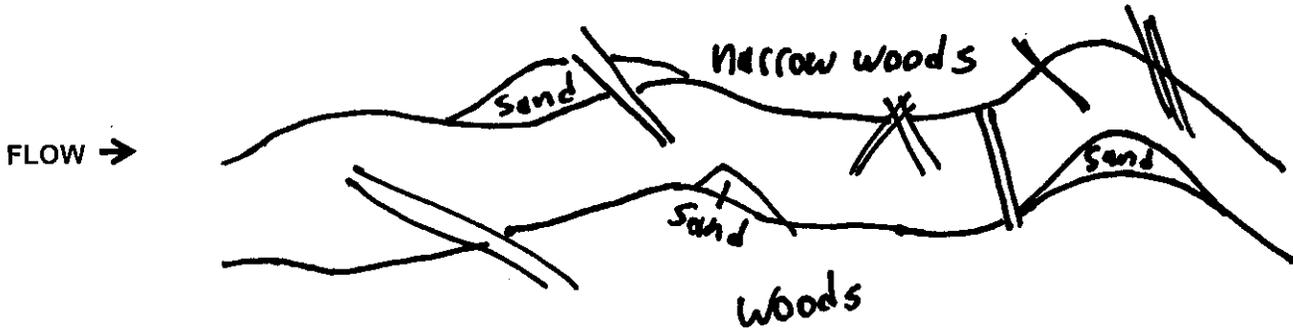
Fish Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Salamanders Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_

Frogs/Tadpoles Observed? \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Aquatic Macroinvertebrates Observed? (Y/N) \_\_\_\_\_ 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):

46

SITE NAME / LOC. Wise Road, Green - Stream 5 Upper Reach  
 SITE NUMBER \_\_\_\_\_ RIVER BASIN Tuscarawas River Drainage Area(mi<sup>2</sup>) 0.22  
 Length of Stream Reach 200 ft Lat. 81.45630W Long. 40.95143N RIVER MILE \_\_\_\_\_  
 DATE 1/2/2012 SCORER Judith Mitchell COMMENTS \_\_\_\_\_

**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH 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 32). 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"/> <input type="checkbox"/> BLDR SLABS [16 pts]	_____	<input type="checkbox"/> <input type="checkbox"/> SILT [3 pts]	<u>20%</u>
<input type="checkbox"/> <input type="checkbox"/> BOULDER (>256 mm) [16 pts]	_____	<input type="checkbox"/> <input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<u>30%</u>
<input type="checkbox"/> <input type="checkbox"/> BEDROCK [16 pts]	_____	<input type="checkbox"/> <input type="checkbox"/> FINE DETRITUS [3 pts]	_____
<input type="checkbox"/> <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	_____	<input type="checkbox"/> <input type="checkbox"/> CLAY or HARDPAN [0 pts]	_____
<input type="checkbox"/> <input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	_____	<input checked="" type="checkbox"/> <input type="checkbox"/> MUCK [0 pts]	<u>50%</u>
<input type="checkbox"/> <input type="checkbox"/> SAND (<2 mm) [6 pts]	_____	<input type="checkbox"/> <input type="checkbox"/> ARTIFICIAL [3pts]	_____

Total of Percentages of (A) \_\_\_\_\_ (B) \_\_\_\_\_  
 Bldr Slabs, Boulder, Cobble, Bedrock = 0%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **3** TOTAL NUMBER OF SUBSTRATE TYPES: **3**

**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 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 checked="" type="checkbox"/> >10 - 22.5 cm [25 pts]	_____	<input type="checkbox"/> NO WATER/MOIST CHANNEL [0 pts]	_____

COMMENTS: \_\_\_\_\_ MAXIMUM POOL DEPTH (centimeters) **12**

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

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

COMMENTS: \_\_\_\_\_ AVERAGE BANKFULL WIDTH (meters) **1.1**

**HHEI Metric Points**

Substrate Max = 40

**6**

A + B

**Pool Depth Max=30**

**25**

**Bankfull Width Max=30**

**15**

This information must also be completed.

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

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

**SINUOSITY (Number of bends per 200 ft (61 m) 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)

**Location / Stream Name:** Wise Road, Green - Stream 5 Upper Reach

**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: Tuscarawas River 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 Quad Name: North Canton NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_  
County: Summit Township/City: Green

**MISCELLANEOUS**

Base Flow Conditions? (Y/N) Y Date of Last Precipitation: \_\_\_\_\_ Quantity: \_\_\_\_\_

Photograph Information: See Attached

Elevated Turbidity? (Y/N): N Canopy (% open): 0% open

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

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

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

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

**BIOTIC EVALUATION**

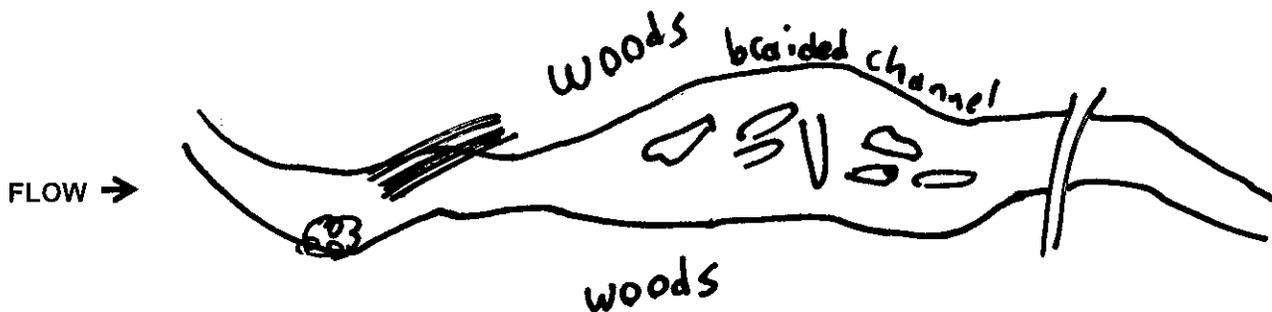
Performed? (Y/N) N (If yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID Number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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

32

SITE NAME / LOC. Wise Road, Green - Stream 5a
SITE NUMBER
RIVER BASIN Tuscarawas River
Drainage Area(mi^2) <1
Length of Stream Reach 44 ft
Lat. 81.45630W
Long. 40.95143N
RIVER MILE
DATE 1/2/2012
SCORER Judith Mitchell
COMMENTS

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

STREAM CHANNEL [ ] NONE / NATURAL CHANNEL [ ] RECOVERED [x] 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 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

Table with 4 columns: TYPE, PERCENT, TYPE, PERCENT. Includes categories like BLDR SLABS, BOULDER, BEDROCK, COBBLE, GRAVEL, SAND, SILT, LEAF PACK/WOODY DEBRIS, FINE DETRITUS, CLAY or HARDPAN, MUCK, ARTIFICIAL.

HHEI Metric Points

Substrate Max = 40

22

A + B

Total of Percentages of (A) Bldr Slabs, Boulder, Cobble, Bedrock = 5%

(A)

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15

TOTAL NUMBER OF SUBSTRATE TYPES: 7

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):

Options for pool depth: >30 centimeters [20 pts], >22.5 - 30 cm [30 pts], >10 - 22.5 cm [25 pts], >5 cm - 10 cm [15 pts], <5 cm [5 pts], NO WATER/MOIST CHANNEL [0 pts]

Pool Depth Max=30

5

COMMENTS:

MAXIMUM POOL DEPTH (centimeters)

5

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

Options for bank full width: >4.0 meters (13') [30 pts], >3.0-4.0 m (>9' 7"-13') [25 pts], >1.5-3.0 m (>9' 7"-4' 8") [20 pts], >1.0 m - 1.5 m (>3'3"-4'8") [15 pts], <=1.0 m (<= 3'3") [5 pts]

Bankfull Width Max=30

5

COMMENTS:

AVERAGE BANKFULL WIDTH (meters)

0.7

This information must also be completed.

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

Grid for Riparian Width and Floodplain Quality with checkboxes for categories like Wide > 10 m, Mature Forest, Wetland, Conservation Tillage, etc.

COMMENTS:

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

Options for flow regime: Stream Flowing, Subsurface flow with isolated pools (Interstitial), Moist channel, isolated pools, no flow (Intermittent), Dry channel, no water, (Ephemeral)

COMMENTS: High recent precipitation

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

Options for sinuosity: None, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, > 3

STREAM GRADIENT ESTIMATE

Options for stream gradient: Flat (0.5 ft/100 ft), Flat to Moderate, Moderate (2 ft/100 ft), Moderate to Severe, Severe (10 ft/100 ft)

**Location / Stream Name:** Wise Road, Green - Stream 5a

**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: Tuscarawas River 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 Quad Name: North Canton NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_  
County: Summit Township/City: Green

**MISCELLANEOUS**

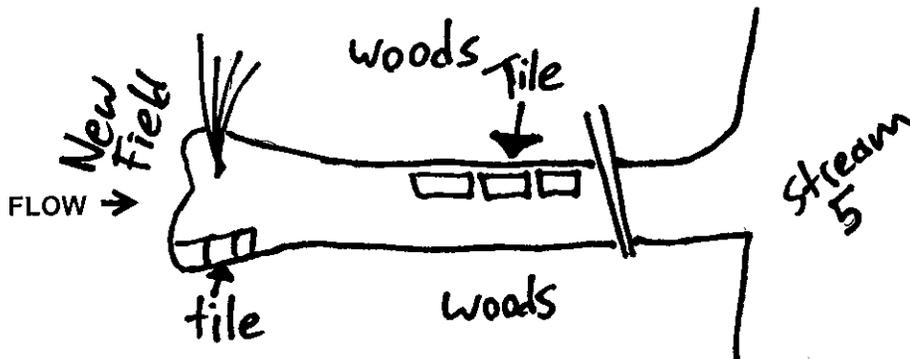
Base Flow Conditions? (Y/N) Y Date of Last Precipitation: \_\_\_\_\_ Quantity: \_\_\_\_\_  
Photograph Information: See Attached  
Elevated Turbidity? (Y/N): N Canopy (% open): 0% open  
Were samples collected for water chemistry?(Y/N) N (Note lab sample no. or id. and attach results) Lab No.: \_\_\_\_\_  
Field Measures: Temp (C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH(S.U.) \_\_\_\_\_ Conductivity(pmhos/cm) \_\_\_\_\_  
Is the sampling reach representative of the stream (Y/N)? Y If not, please explain: \_\_\_\_\_  
Additional comments/description pollution impacts: \_\_\_\_\_

**BIOTIC EVALUATION**

Performed? (Y/N) N (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) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Salamanders Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_  
Frogs/Tadpoles Observed? \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Aquatic Macroinvertebrates Observed? (Y/N) \_\_\_\_\_ 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):

17

SITE NAME / LOC. Wise Road, Green - Stream 5b
SITE NUMBER
RIVER BASIN Tuscarawas River
Drainage Area(mi^2) <1
Length of Stream Reach 138 ft
Lat. 81.45630W
Long. 40.95143N
RIVER MILE
DATE 1/2/2012
SCORER Judith Mitchell
COMMENTS Newly formed channel from stormwater

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

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

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.
TYPE PERCENT TYPE PERCENT
[ ] BLDR SLABS [16 pts] [ ] SILT [3 pts] 15%
[ ] BOULDER (>256 mm) [16 pts] [x] LEAF PACK/WOODY DEBRIS [3 pts] 25%
[ ] BEDROCK [16 pts] [ ] FINE DETRITUS [3 pts]
[ ] COBBLE (65-256 mm) [12 pts] [ ] CLAY or HARDPAN [0 pts]
[ ] GRAVEL (2-64 mm) [9 pts] [x] MUCK [0 pts] 40%
[ ] SAND (<2 mm) [6 pts] 20% [ ] ARTIFICIAL [3pts]
Total of Percentages of (A) (B)
Bldr Slabs, Boulder, Cobble, Bedrock = 0%
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 4 TOTAL NUMBER OF SUBSTRATE TYPES: 3
HHEI Metric Points
Substrate Max = 40
7
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] [x] ≤5 cm [5 pts]
[ ] >10 - 22.5 cm [25 pts] [ ] NO WATER/MOIST CHANNEL [0 pts]
COMMENTS:
MAXIMUM POOL DEPTH (centimeters) 4
Pool Depth Max=30
5

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]
[ ] >3.0-4.0 m (>9' 7"-13' ) [25 pts] [x] ≤1.0 m (≤ 3'3") [5 pts]
[ ] >1.5-3.0 m (>9' 7"-4' 8") [20 pts]
COMMENTS:
AVERAGE BANKFULL WIDTH (meters) 0.6
Bankfull Width Max=30
5

This information must also be completed.

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

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

COMMENTS: The majority of this stream drains through new field but a small part is surrounded by woods

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):
[x] Stream Flowing [ ] Moist channel, isolated pools, no flow (Intermittent)
[ ] Subsurface flow with isolated pools (Interstitial) [ ] Dry channel, no water, (Ephemeral)
COMMENTS: High recent precipitation

SINUOSITY (Number of bends per 200 ft (61 m) of channel) (Check ONLY one box):
[ ] None [ ] 1.0 [ ] 2.0 [ ] 3.0
[ ] 0.5 [x] 1.5 [ ] 2.5 [ ] > 3

STREAM GRADIENT ESTIMATE

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

**Location / Stream Name:** Wise Road, Green - Stream 5b

**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: Tuscarawas River 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 Quad Name: North Canton NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_  
County: Summit Township/City: Green

**MISCELLANEOUS**

Base Flow Conditions? (Y/N) Y Date of Last Precipitation: \_\_\_\_\_ Quantity: \_\_\_\_\_

Photograph Information: See Attached

Elevated Turbidity? (Y/N): N Canopy (% open): 80% open

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

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

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

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

**BIOTIC EVALUATION**

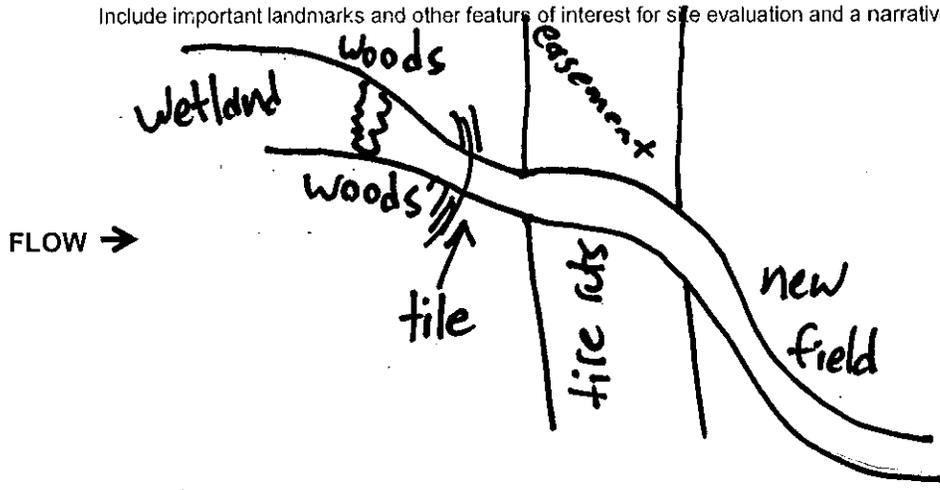
Performed? (Y/N) N (If yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID Number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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

16

SITE NAME / LOC. Wise Road, Green - Stream 5c
SITE NUMBER
RIVER BASIN Tuscarawas River
Drainage Area(mi^2)
Length of Stream Reach 105 ft
Lat. 81.45630W
Long. 40.95143N
RIVER MILE
DATE 1/2/2012
SCORER Judith Mitchell
COMMENTS Newly formed channel from stormwater

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

STREAM CHANNEL [X] 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 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.
TYPE PERCENT TYPE PERCENT
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BEDROCK [16 pts] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] SILT [3 pts] LEAF PACK/WOODY DEBRIS [3 pts] FINE DETRITUS [3 pts] CLAY or HARDPAN [0 pts] MUCK [0 pts] ARTIFICIAL [3pts]
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock = 0%
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 TOTAL NUMBER OF SUBSTRATE TYPES: 3
HHEI Metric Points Substrate Max = 40 6 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] >22.5 - 30 cm [30 pts] >10 - 22.5 cm [25 pts] >5 cm - 10 cm [15 pts] <=5 cm [5 pts] NO WATER/MOIST CHANNEL[0 pts]
COMMENTS: MAXIMUM POOL DEPTH (centimeters) 5
Pool Depth Max=30 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):
>4.0 meters (13' ) [30 pts] >3.0-4.0 m (>9' 7"-13' ) [25 pts] >1.5-3.0 m (>9' 7"-4' 8") [20 pts] >1.0 m - 1.5 m (>3'3"-4'8") [15 pts] <=1.0 m (<= 3'3") [5 pts]
COMMENTS: AVERAGE BANKFULL WIDTH (meters) 0.6
Bankfull Width Max=30 5

This information must also be completed.

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

RIPARIAN WIDTH (Per Bank) L R FLOODPLAIN QUALITY (Most Predominant per Bank) 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: High recent precipitation

SINUOSITY (Number of bends per 200 ft (61 m) 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)

**Location / Stream Name:** Wise Road, Green - Stream 5c

**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: Tuscarawas River 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 Quad Name: North Canton NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_  
County: Summit Township/City: Green

**MISCELLANEOUS**

Base Flow Conditions? (Y/N) Y Date of Last Precipitation: \_\_\_\_\_ Quantity: \_\_\_\_\_

Photograph Information: See Attached

Elevated Turbidity? (Y/N): N Canopy (% open): 0% open

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

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

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

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

**BIOTIC EVALUATION**

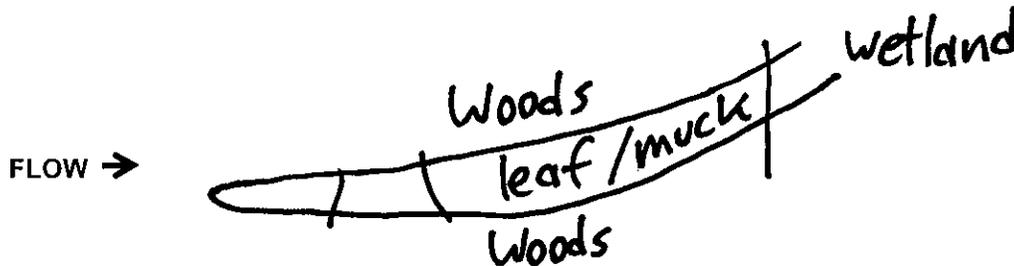
Performed? (Y/N) N (If yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID Number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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

33

SITE NAME / LOC. Wise Road, Green - Stream 6
SITE NUMBER
RIVER BASIN Tuscarawas River
Drainage Area(mi^2) <0.1
Length of Stream Reach 69 ft
Lat. 81.45630W
Long. 40.95143N
RIVER MILE
DATE 1/2/2012
SCORER Judith Mitchell
COMMENTS

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

STREAM CHANNEL [ ] NONE / NATURAL CHANNEL [ ] RECOVERED [x] 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 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

Table with 4 columns: TYPE, PERCENT, TYPE, PERCENT. Includes categories like BLDR SLABS, BOULDER, BEDROCK, COBBLE, GRAVEL, SAND, SILT, LEAF PACK/WOODY DEBRIS, FINE DETRITUS, CLAY or HARDPAN, MUCK, ARTIFICIAL.

HHEI Metric Points

Substrate Max = 40

23

A + B

Total of Percentages of (A) 16 (B) 7
Bldr Slabs, Boulder, Cobble, Bedrock = 23%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 16 TOTAL NUMBER OF SUBSTRATE TYPES: 7

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):

Pool depth options: >30 centimeters [20 pts], >22.5 - 30 cm [30 pts], >10 - 22.5 cm [25 pts], >5 cm - 10 cm [15 pts], <=5 cm [5 pts], NO WATER/MOIST CHANNEL [0 pts]

Pool Depth Max=30

5

COMMENTS: MAXIMUM POOL DEPTH (centimeters) 4

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

Bankfull width options: >4.0 meters [30 pts], >3.0-4.0 m [25 pts], >1.5-3.0 m [20 pts], >1.0 m - 1.5 m [15 pts], <=1.0 m [5 pts]

Bankfull Width Max=30

5

COMMENTS: 1-2' AVERAGE BANKFULL WIDTH (meters) 0.5

This information must also be completed.

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

RIPARIAN WIDTH (Per Bank) and (FLOODPLAIN QUALITY) options: Wide > 10 m, Moderate 5 - 10 m, Narrow < 5 m, None, Mature Forest, Wetland, Immature Forest, Shrub or Old Field, Residential, Park, New Field, Fenced Pasture, Conservation Tillage, Urban or Industrial, Open Pasture, Row Crop, Mining or Construction

COMMENTS:

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

Flow regime options: Stream Flowing, Subsurface flow with isolated pools (Interstitial), Moist channel, isolated pools, no flow (Intermittent), Dry channel, no water, (Ephemeral)

COMMENTS: High recent precipitation

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

Sinuosity options: None, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, > 3

STREAM GRADIENT ESTIMATE

Stream gradient options: Flat (0.5 ft/100 ft), Flat to Moderate, Moderate (2 ft/100 ft), Moderate to Severe, Severe (10 ft/100 ft)

**Location / Stream Name:** Wise Road, Green - Stream 6

**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: Tuscarawas River 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 Quad Name: North Canton NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_  
County: Summit Township/City: Green

**MISCELLANEOUS**

Base Flow Conditions? (Y/N) Y Date of Last Precipitation: \_\_\_\_\_ Quantity: \_\_\_\_\_

Photograph Information: See Attached

Elevated Turbidity? (Y/N): N Canopy (% open): 100% open

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

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

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

Additional comments/description pollution impacts: Boulders have been placed in the stream, artificially raising score.

**BIOTIC EVALUATION**

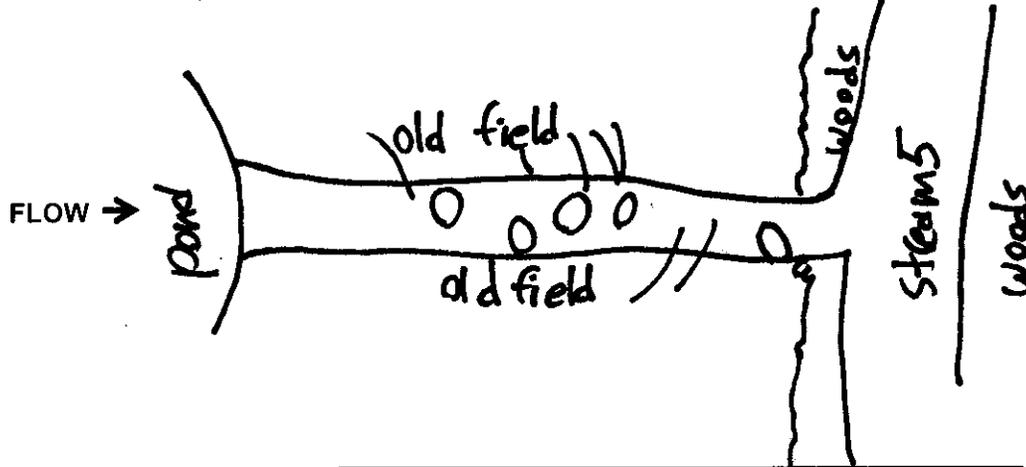
Performed? (Y/N) N (If yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID Number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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

28

SITE NAME / LOC. Wise Road, Green - Stream 7
SITE NUMBER
RIVER BASIN Tuscarawas River
Drainage Area(mi^2) <0.1
Length of Stream Reach 70 ft
Lat. 81.45630W
Long. 40.95143N
RIVER MILE
DATE 1/2/2012
SCORER Judith Mitchell
COMMENTS

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

STREAM CHANNEL [X] 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 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

Table with 4 columns: TYPE, PERCENT, TYPE, PERCENT. Rows include BLDR SLABS, BOULDER, BEDROCK, COBBLE, GRAVEL, SAND, SILT, LEAF PACK/WOODY DEBRIS, FINE DETRITUS, CLAY or HARDPAN, MUCK, ARTIFICIAL.

HHEI Metric Points

Substrate Max = 40

18

A + B

Total of Percentages of (A) Bldr Slabs, Boulder, Cobble, Bedrock = 15

(A)

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12

TOTAL NUMBER OF SUBSTRATE TYPES: 6

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):

Form with checkboxes for pool depth ranges: >30 centimeters, >22.5 - 30 cm, >10 - 22.5 cm, >5 cm - 10 cm, <=5 cm, NO WATER/MOIST CHANNEL.

Pool Depth Max=30

5

COMMENTS:

MAXIMUM POOL DEPTH (centimeters) 5

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

Form with checkboxes for bank full width ranges: >4.0 meters, >3.0-4.0 m, >1.5-3.0 m, >1.0 m - 1.5 m, <=1.0 m.

Bankfull Width Max=30

5

COMMENTS:

AVERAGE BANKFULL WIDTH (meters) 0.6

This information must also be completed.

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

Form for Riparian Width and Floodplain Quality with checkboxes for L and R banks across various categories like Wide/Moderate/Narrow, Mature/Immature Forest, Residential, Fenced Pasture, Conservation Tillage, etc.

COMMENTS:

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

Form with checkboxes for flow regimes: Stream Flowing, Subsurface flow with isolated pools, Moist channel, Dry channel.

COMMENTS: High recent precipitation

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

Form with checkboxes for sinuosity values: None, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, > 3.

STREAM GRADIENT ESTIMATE

Form with checkboxes for stream gradient estimates: Flat (0.5 ft/100 ft), Flat to Moderate, Moderate (2 ft/100 ft), Moderate to Severe, Severe (10 ft/100 ft).

**Location / Stream Name:** Wise Road, Green - Stream 7

**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: Tuscarawas River 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 Quad Name: North Canton NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_  
County: Summit Township/City: Green

**MISCELLANEOUS**

Base Flow Conditions? (Y/N) Y Date of Last Precipitation: \_\_\_\_\_ Quantity: \_\_\_\_\_

Photograph Information: See Attached

Elevated Turbidity? (Y/N): N Canopy (% open): 0% open

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

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

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

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

**BIOTIC EVALUATION**

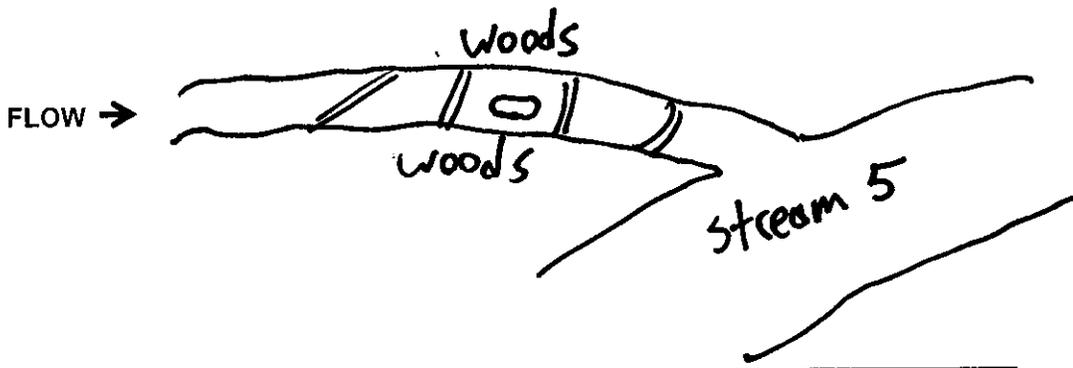
Performed? (Y/N) N (If yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID Number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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

48

SITE NAME / LOC. Wise Road, Green - Stream 8
SITE NUMBER
RIVER BASIN Tuscarawas River
Drainage Area(mi^2) 0.03
Length of Stream Reach 200 ft
Lat. 81.45630W
Long. 40.95143N
RIVER MILE
DATE 1/2/2012
SCORER Judith Mitchell
COMMENTS

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

STREAM CHANNEL [ ] NONE / NATURAL CHANNEL [x] 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 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

Table with 4 columns: TYPE, PERCENT, TYPE, PERCENT. Includes categories like BLDR SLABS, BOULDER, BEDROCK, COBBLE, GRAVEL, SAND, SILT, LEAF PACK/WOODY DEBRIS, FINE DETRITUS, CLAY or HARDPAN, MUCK, ARTIFICIAL.

HHEI Metric Points

Substrate Max = 40

8

A + B

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock = 13%

(A)

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 0

TOTAL NUMBER OF SUBSTRATE TYPES: 8

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):

Form with checkboxes for pool depth categories: >30 centimeters, >22.5 - 30 cm, >10 - 22.5 cm, >5 cm - 10 cm, <5 cm, NO WATER/MOIST CHANNEL.

Pool Depth Max=30

25

COMMENTS:

MAXIMUM POOL DEPTH (centimeters) 12

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

Form with checkboxes for bank full width categories: >4.0 meters, >3.0-4.0 m, >1.5-3.0 m, >1.0 m - 1.5 m, <=1.0 m.

Bankfull Width Max=30

15

COMMENTS:

AVERAGE BANKFULL WIDTH (meters) 1.1

This information must also be completed.

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

Form for Riparian Width and Floodplain Quality with checkboxes for categories like Wide > 10 m, Mature Forest, Wetland, Conservation Tillage, etc.

COMMENTS:

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

Form with checkboxes for flow regime categories: Stream Flowing, Subsurface flow, Moist channel, Dry channel.

COMMENTS: High recent precipitation

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

Form with checkboxes for sinuosity categories: None, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, > 3.

STREAM GRADIENT ESTIMATE

Form with checkboxes for stream gradient categories: Flat, Flat to Moderate, Moderate, Moderate to Severe, Severe.

**Location / Stream Name:** Wise Road, Green - Stream 8

**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: Tuscarawas River 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 Quad Name: North Canton NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_  
County: Summit Township/City: Green

**MISCELLANEOUS**

Base Flow Conditions? (Y/N) Y Date of Last Precipitation: \_\_\_\_\_ Quantity: \_\_\_\_\_

Photograph Information: See Attached

Elevated Turbidity? (Y/N): N Canopy (% open): 0% open

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

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

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

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

**BIOTIC EVALUATION**

Performed? (Y/N) N (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)

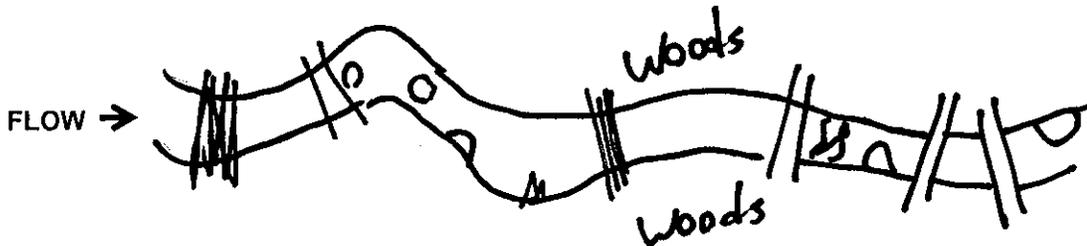
Fish Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Salamanders Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_

Frogs/Tadpoles Observed? \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Aquatic Macroinvertebrates Observed? (Y/N) \_\_\_\_\_ 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):

18

SITE NAME / LOC. Wise Road, Green - Stream 9
SITE NUMBER
RIVER BASIN Tuscarawas River
Drainage Area(mi^2) <0.1
Length of Stream Reach 200 ft
Lat. 81.45630W
Long. 40.95143N
RIVER MILE
DATE 1/2/2012
SCORER Judith Mitchell
COMMENTS

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

STREAM CHANNEL [ ] NONE / NATURAL CHANNEL [ ] RECOVERED [x] 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 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.
TYPE PERCENT TYPE PERCENT
[ ] [ ] BLDR SLABS [16 pts] [ ] [ ] SILT [3 pts] 10%
[ ] [ ] BOULDER (>256 mm) [16 pts] [ ] [x] LEAF PACK/WOODY DEBRIS [3 pts] 30%
[ ] [ ] BEDROCK [16 pts] [ ] [ ] FINE DETRITUS [3 pts]
[ ] [ ] COBBLE (65-256 mm) [12 pts] 5% [ ] [ ] CLAY or HARDPAN [0 pts]
[ ] [ ] GRAVEL (2-64 mm) [9 pts] 15% [x] [ ] MUCK [0 pts] 40%
[ ] [ ] SAND (<2 mm) [6 pts] [ ] [ ] ARTIFICIAL [3pts]
Total of Percentages of (A) (B)
Bldr Slabs, Boulder, Cobble, Bedrock = 5%
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 TOTAL NUMBER OF SUBSTRATE TYPES: 5
HHEI Metric Points
Substrate Max = 40
8
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] [x] <=5 cm [5 pts]
[ ] >10 - 22.5 cm [25 pts] [ ] NO WATER/MOIST CHANNEL [0 pts]
COMMENTS: MAXIMUM POOL DEPTH (centimeters) 5
Pool Depth Max=30
5

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]
[ ] >3.0-4.0 m (>9' 7"-13' ) [25 pts] [x] <=1.0 m (<= 3'3") [5 pts]
[ ] >1.5-3.0 m (>9' 7"-4' 8") [20 pts]
COMMENTS: AVERAGE BANKFULL WIDTH (meters) 0.8
Bankfull Width Max=30
5

This information must also be completed.

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

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

COMMENTS:

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):
[x] Stream Flowing [ ] Moist channel, isolated pools, no flow (Intermittent)
[ ] Subsurface flow with isolated pools (Interstitial) [ ] Dry channel, no water, (Ephemeral)

COMMENTS: High recent precipitation

SINUOSITY (Number of bends per 200 ft (61 m) of channel) (Check ONLY one box):
[ ] None [ ] 1.0 [ ] 2.0 [ ] 3.0
[x] 0.5 [ ] 1.5 [ ] 2.5 [ ] > 3

STREAM GRADIENT ESTIMATE

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

**Location / Stream Name:** Wise Road, Green - Stream 9

**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: Tuscarawas River 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 Quad Name: North Canton NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_  
County: Summit Township/City: Green

**MISCELLANEOUS**

Base Flow Conditions? (Y/N) Y Date of Last Precipitation: \_\_\_\_\_ Quantity: \_\_\_\_\_

Photograph Information: See Attached

Elevated Turbidity? (Y/N): N Canopy (% open): 0% open

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

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

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

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

**BIOTIC EVALUATION**

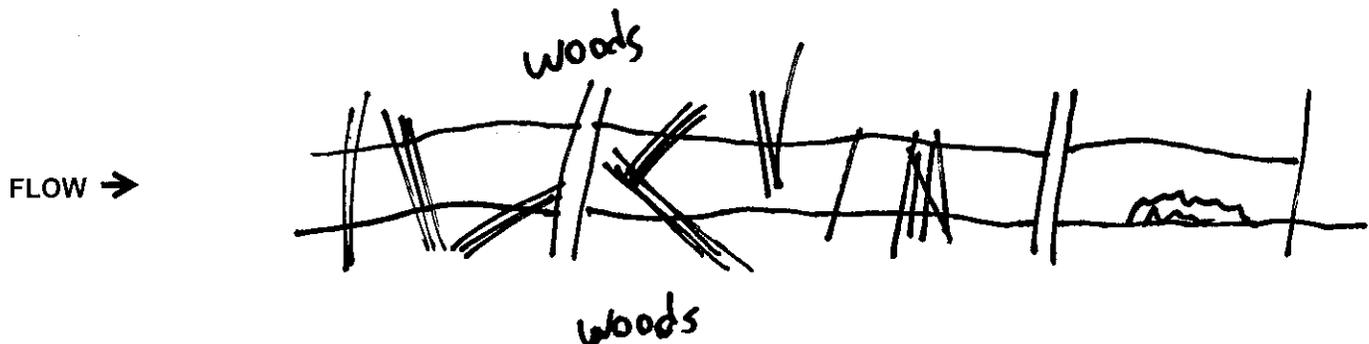
Performed? (Y/N) N (If yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID Number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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

66

SITE NAME / LOC. Wise Road, Green - Stream 10
SITE NUMBER
RIVER BASIN Tuscarawas River
Drainage Area(mi^2) 0.7
Length of Stream Reach 200 ft
Lat. 81.45630W
Long. 40.95143N
RIVER MILE
DATE 1/2/2012
SCORER Judith Mitchell
COMMENTS

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

STREAM CHANNEL [ ] NONE / NATURAL CHANNEL [x] 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 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

Table with 4 columns: TYPE, PERCENT, TYPE, PERCENT. Includes categories like BLDR SLABS, BOULDER, BEDROCK, COBBLE, GRAVEL, SAND, SILT, LEAF PACK/WOODY DEBRIS, FINE DETRITUS, CLAY or HARDPAN, MUCK, ARTIFICIAL.

HHEI Metric Points

Substrate Max = 40

21

A + B

Total of Percentages of (A) 15 (B) 6
Bldr Slabs, Boulder, Cobble, Bedrock = 17%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 6

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):

Checkboxes for pool depth categories: >30 centimeters [20 pts], >22.5 - 30 cm [30 pts], >10 - 22.5 cm [25 pts], >5 cm - 10 cm [15 pts], <5 cm [5 pts], NO WATER/MOIST CHANNEL [0 pts]

Pool Depth Max=30

25

COMMENTS: MAXIMUM POOL DEPTH (centimeters) 20

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

Checkboxes for bank full width categories: >4.0 meters (13') [30 pts], >3.0-4.0 m (>9' 7"-13') [25 pts], >1.5-3.0 m (>9' 7"-4' 8") [20 pts], >1.0 m - 1.5 m (>3'3"-4'8") [15 pts], <=1.0 m (<= 3'3") [5 pts]

Bankfull Width Max=30

20

COMMENTS: AVERAGE BANKFULL WIDTH (meters) 2.1

This information must also be completed.

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

Form for Riparian Width and Floodplain Quality with checkboxes for categories like Wide > 10 m, Mature Forest, Wetland, Conservation Tillage, etc.

COMMENTS:

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

Checkboxes for flow regime: Stream Flowing, Subsurface flow with isolated pools (Interstitial), Moist channel, isolated pools, no flow (Intermittent), Dry channel, no water, (Ephemeral)

COMMENTS: High recent precipitation

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

Checkboxes for sinuosity: None, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, > 3

STREAM GRADIENT ESTIMATE

Checkboxes for 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)

**Location / Stream Name:** Wise Road, Green - Stream 10

**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: Tuscarawas River 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 Quad Name: North Canton NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_  
County: Summit Township/City: Green

**MISCELLANEOUS**

Base Flow Conditions? (Y/N) Y Date of Last Precipitation: \_\_\_\_\_ Quantity: \_\_\_\_\_

Photograph Information: See Attached

Elevated Turbidity? (Y/N): N Canopy (% open): 0% open

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

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

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

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

**BIOTIC EVALUATION**

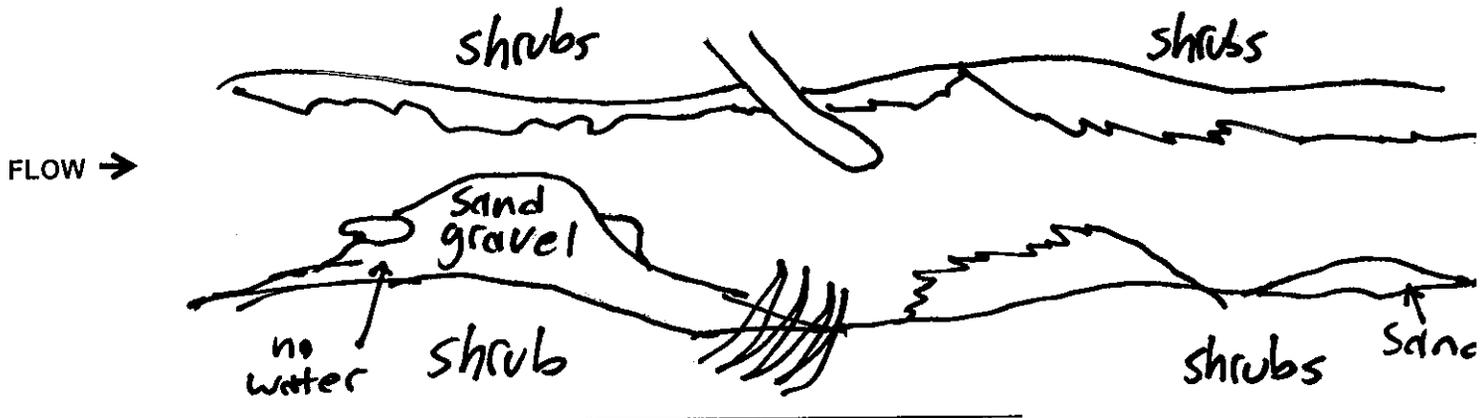
Performed? (Y/N) N (If yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID Number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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

66

SITE NAME / LOC. Wise Road, Green - Stream 11
SITE NUMBER
RIVER BASIN Tuscarawas River
Drainage Area(mi^2) <0.1
Length of Stream Reach 125 ft
Lat. 81.45630W
Long. 40.95143N
RIVER MILE
DATE 1/2/2012
SCORER Judith Mitchell
COMMENTS

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

STREAM CHANNEL [ ] NONE / NATURAL CHANNEL [x] 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 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

Table with 4 columns: TYPE, PERCENT, TYPE, PERCENT. Includes categories like BLDR SLABS, BOULDER, BEDROCK, COBBLE, GRAVEL, SAND, SILT, LEAF PACK/WOODY DEBRIS, FINE DETRITUS, CLAY or HARDPAN, MUCK, ARTIFICIAL.

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock = 11%
25

(A) 15 TOTAL NUMBER OF SUBSTRATE TYPES: (B) 6

HHEI Metric Points

Substrate Max = 40

21
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):

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

COMMENTS:

MAXIMUM POOL DEPTH (centimeters)

15

Pool Depth Max=30

25

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

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

COMMENTS:

AVERAGE BANKFULL WIDTH (meters)

1.8

Bankfull Width Max=30

20

This information must also be completed.

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

RIPARIAN WIDTH (Per Bank) and (FLOODPLAIN QUALITY) options including Wide > 10 m, Mature Forest, Wetland, Conservation Tillage, etc.

COMMENTS:

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

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

COMMENTS: High recent precipitation

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

Options: None, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, > 3

STREAM GRADIENT ESTIMATE

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

**Location / Stream Name:** Wise Road, Green - Stream 11

**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: Tuscarawas River 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 Quad Name: North Canton NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_  
County: Summit Township/City: Green

**MISCELLANEOUS**

Base Flow Conditions? (Y/N) Y Date of Last Precipitation: \_\_\_\_\_ Quantity: \_\_\_\_\_

Photograph Information: See Attached

Elevated Turbidity? (Y/N): N Canopy (% open): 10% open

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

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

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

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

**BIOTIC EVALUATION**

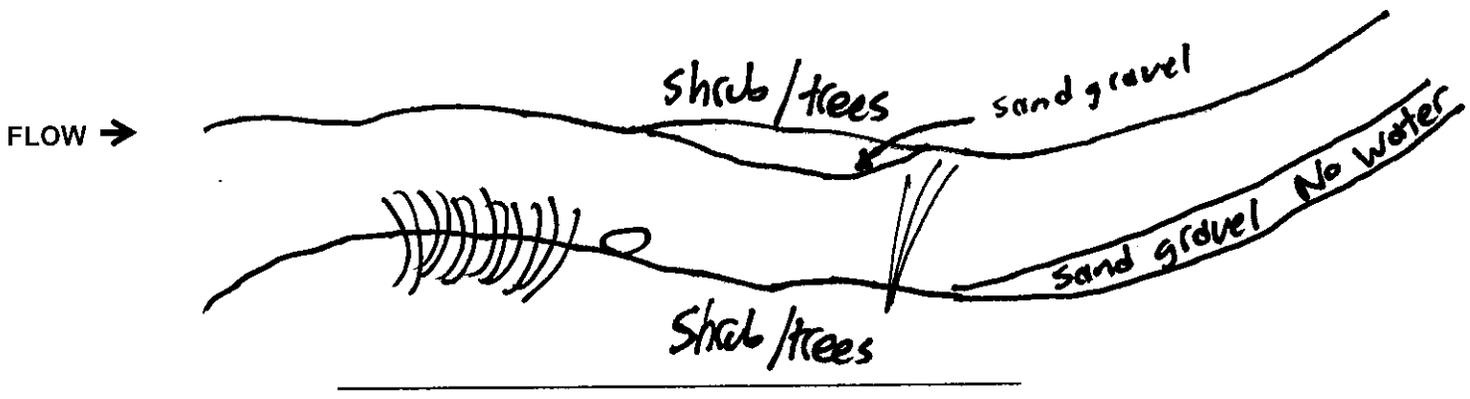
Performed? (Y/N) N (If yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID Number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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

18

SITE NAME / LOC. Wise Road, Green - Stream 12
SITE NUMBER
RIVER BASIN Tuscarawas River
Drainage Area(mi^2) <0.1
Length of Stream Reach 47 ft
Lat. 81.45630W
Long. 40.95143N
RIVER MILE
DATE 1/2/2012
SCORER Judith Mitchell
COMMENTS

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

STREAM CHANNEL [ ] NONE / NATURAL CHANNEL [x] 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 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.
TYPE PERCENT TYPE PERCENT
[ ] [ ] BLDR SLABS [16 pts] [ ] [ ] SILT [3 pts] 15%
[ ] [ ] BOULDER (>256 mm) [16 pts] [ ] [ ] LEAF PACK/WOODY DEBRIS [3 pts] 16%
[ ] [ ] BEDROCK [16 pts] [ ] [ ] FINE DETRITUS [3 pts]
[ ] [ ] COBBLE (65-256 mm) [12 pts] [ ] [ ] CLAY or HARDPAN [0 pts]
[ ] [ ] GRAVEL (2-64 mm) [9 pts] [ ] [ ] MUCK [0 pts] 45%
[ ] [ ] SAND (<2 mm) [6 pts] 10% [ ] [ ] ARTIFICIAL [3pts] 14%
Total of Percentages of (A) (B)
Bldr Slabs, Boulder, Cobble, Bedrock = 0%
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 TOTAL NUMBER OF SUBSTRATE TYPES: 5
HHEI Metric Points
Substrate Max = 40
8
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] [x] <5 cm [5 pts]
[ ] >10 - 22.5 cm [25 pts] [ ] NO WATER/MOIST CHANNEL[0 pts]
COMMENTS: MAXIMUM POOL DEPTH (centimeters) 3
Pool Depth Max=30
5

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]
[ ] >3.0-4.0 m (>9' 7"-13' ) [25 pts] [x] ≤1.0 m (≤ 3'3") [5 pts]
[ ] >1.5-3.0 m (>9' 7"-4' 8") [20 pts]
COMMENTS: AVERAGE BANKFULL WIDTH (meters) 0.6
Bankfull Width Max=30
5

This information must also be completed.

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

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

COMMENTS:

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):
[x] Stream Flowing [ ] Moist channel, isolated pools, no flow (Intermittent)
[ ] Subsurface flow with isolated pools (Interstitial) [ ] Dry channel, no water, (Ephemeral)

COMMENTS: High recent precipitation

SINUOSITY (Number of bends per 200 ft (61 m) 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) [x] Flat to Moderate [ ] Moderate (2 ft/100 ft) [ ] Moderate to Severe [ ] Severe (10 ft/100 ft)

Location / Stream Name: Wise Road, Green - Stream 12

**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: Tuscarawas River 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 Quad Name: North Canton NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_  
County: Summit Township/City: Green

**MISCELLANEOUS**

Base Flow Conditions? (Y/N) Y Date of Last Precipitation: \_\_\_\_\_ Quantity: \_\_\_\_\_

Photograph Information: See Attached

Elevated Turbidity? (Y/N): N Canopy (% open): 0% open

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

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

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

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

**BIOTIC EVALUATION**

Performed? (Y/N) N (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) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Salamanders Observed? (Y/N) \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_  
Frogs/Tadpoles Observed? \_\_\_\_\_ Voucher? (Y/N) \_\_\_\_\_ Aquatic Macroinvertebrates Observed? (Y/N) \_\_\_\_\_ 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.

