DIAGNOSTIC STUDY OF PIGEON CREEK WATERSHED

Harza Engineering, Inc.

August 1999 Data Sheets:

Qualitative Habitat Evaluation Index

Rapid Bioassessment Protocol II for Macroinvertebrates

Flow measurements, on-site tests, physical description

Procedure No.	WQPA-SWS-3	Date Issued	9-30-89
Revision No.	6	Date Effective	9-30-89

SAI
8/6/99

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If No: _____

Additional Comments/Pollution Impacts: _____

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

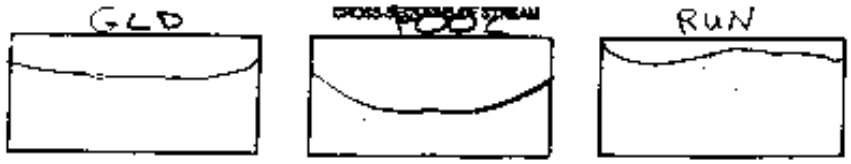
SUBJECTIVE RATING (1-10) ☐ AESTHETIC RATING (1-10) ☐

CANOPY (%OPEN) 95 GRADIENT ☒ LOW ☐ MODERATE ☐ HIGH PHOTOS: 19 + 20

STREAM MEASUREMENTS: AVERAGE WIDTH: _____ AVERAGE DEPTH: _____ MAX. DEPTH 1.8'

LENGTH	WIDTH	DEPTHS 1	2	3	4	5	6	7				POOL-GLD-RIF-RUN
70	6	3"	4"	5"	6"	3"						GLD
180	6	6"	7"	8"	11"	15"	6"					POOL
8	5	3	2			3						RUN
38	3	→ MAX			1.8	4						POOL
20	6											GLD

CROSS-SECTION OF STREAM



DRAWING OF STREAM

DT. 80699
Gap 26.63
DS .0317
DO 5.84
M 8.75

TM, 11914
SPC 488,000
DO 72.9
Dep .259
ORD 40.6

Flow is very slight – Flow Readings Not TAKEN

photos 19 + 20
End looking US = ~~20~~ 21
End looking DS = 19 – 20

HCi
8/15/99
Dep 8/15

Procedure No. WQPA–SWS–3 Date Issued 5-30-89
Revision No. 6 Date Effective 5-30-89

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If Not: _____

Additional Comments/Pollution Impacts: _____

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) AESTHETIC RATING (1-10)

CANOPY (%OPEN) 85 GRADIENT: X LOW O-MODERATE O-HIGH PHOTOS: 24, 25

STREAM MEASUREMENTS: AVERAGE WIDTH: 8 AVERAGE DEPTH: .5 MAX DEPTH: 1.2

LENGTH	WIDTH	DEPTHS 2	4	6	8	10					POOL/GLD/RF/RUN
235	6	.6	.2	.8							POOL
20	10	.4	.6	.5	.3	.3					GLD
40	8	.4	.6	1.0	1.0						POOL
70	10										GLD
30	10										POOL
30	8										GLD
10	8	.1	.1	.1	.1						RUN

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

Dist from RWE (ft)	Depth (ft)	Velocity (ft/sec)
RWE	—	—
.5	.6	-.01
1.0	.6	.00
1.5	.6	-.01
2.0	.5	.04
2.5	.5	.06
3.0	.5	.07
3.5	.5	.12
4.0	.5	.14
4.5	.5	.19
5.0	.5	.14
5.5	.5	.14
6.0	.5	.06
6.5	.4	-.02
7.0	.2	-.02
7.5	.1	—
8.0	.1	—

p = 30°C
= 15.2 mg/L (supersaturated)
= 1,060 µmhos

to 25 DS END looking US
to 24

WF3 Y
8/15/97

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If Not: _____

Additional Comments/Pollution Impacts: _____

	GEAR	DISTANC	WATER CLARITY	WATER STAGE	SUBJECTIVE RATING (1-10)	AESTHETIC RATING (1-10)
FIRST PASS						
SECOND PASS						
THIRD PASS						

CANOPY (%OPEN) 95% GRADIENT: O-LOW O-MODERATE O-HIGH PHOTOS: Fish Sing Camera 3 getting wet

STREAM MEASUREMENTS: AVERAGE WIDTH: _____ AVERAGE DEPTH: _____ MAX. DEPTH _____

LENGTH	WIDTH	DEPTHS @ 4	6	8	10	12	14	16	POOL/GLIDE/RIFFLE/RUN
300'	17'	1.4	1.6	1.6	1.6	1.6	1.4	1.4	1.2	1.2	POOL
15	10	.6	.7	.7	.8						RUN – very little flow

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

(A) Dist from LWE	(B) Depth	(C) Velocity
LWE		
.5	.4	
1.0	.6	.06
1.5	1.0	.06
2.0	1.3	.10
2.5	1.4	.08
3.0	1.5	.08
3.5	1.6	.07
4.0	1.5	.10
4.5	1.4	.09
5.0	1.3	.07
5.5	1.3	.10
6.0	1.3	.08
6.5	1.3	.08
7.0	1.4	.04
8.0	1.1	.09
9.0	.8	.03
10.0	.5	.01

= 6.70 mg/L
T = 27°C
= 700 µmhos

14, 12, 10, 8, 6 = DS END looking US

13, 11, 9, 7, 5 = DS END looking DS

WF2
8/15/99

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If not,

Additional Comments/Pollution Impacts:

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) AESTHETIC RATING (1-10)

CANOPY (%OPEN) 85 GRADIENT: LOW MODERATE HIGH PHOTOS: 26 & 27 General

STREAM MEASUREMENTS: AVERAGE WIDTH 15 AVERAGE DEPTH .8 MAX DEPTH 1.9

LENGTH	WIDTH	DEPTHS @ 6	9	12	15					POOL/GLIDE/RIFFLE/RUN
15	15	.3	.1	.2	.2	.1				RIF
165	15	.8	1.5	1.7	.7	.5				POOL
140	15	.1	.2	.3	.4	.3				RUN

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

Dist from LWE (ft)	Depth (ft)	Velocity (ft/sec)
LWE		
1.0	.3	.04
2.0	.7	.08
3.0	.8	.13
4.0	.6	.16
5.0	.7	.18
6.0	1.1	.20
7.0	1.2	.26
8.0	1.1	.20
9.0	1.0	.15
10.0	.7	.16
11.0	.5	.08
12.0	.3	.00
13.0	RWE	

* 28°C
FF Scale (>20mg/L)
960 Jumbos

17 - DS END looking US
26 - DS END looking DS

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If Not:

Additional Comments/Pollution Impacts:

	GEAR	DISTANC	WATER CLARITY	WATER STATE	SUBJECTIVE RATING (1-10)	AESTHETIC RATING (1-10)
FIRST PASS						
SECOND PASS						
THIRD PASS						

CANOPY (%OPEN) 90 GRADIENT: X-LOW 0-MODERATE 0-HIGH PHOTOS: 22, 23

STREAM MEASUREMENTS: AVERAGE WIDTH 12 AVERAGE DEPTH .6 MAX. DEPTH 1.3

LENGTH	WIDTH	DEPTHS @ 4	6	8	10	12	14	16	18	POOL/GLIDE/RIF/RUN
30	10	.2 .1	.11	.2	.1					RIF
205	12	.2 .2	.3	.3	.4	.2				RUN
15	8	.1 .1	.1	.1						RIF
25	10	.2 .3	.3	.2	.2					RUN
60	20	1.0 1.1	1.0	.7	.6	.6	.5	.5	.5	POOL

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

Dist from RWE (ft)	Depth (ft)	Velocity (ft/sec)
RWE	—	—
.5	.2	.00
1.0	.3	.00
1.5	.3	.12
2.0	.4	.21
2.5	.4	.39
3.0	.4	.57
3.5	.4	.75
4.0	.4	.79
4.5	.4	.74
5.0	.4	.72
5.5	.3	.71
6.0	.3	.65
6.5	.3	.48
7.0	.2	.38
7.5	.1	.23
8.0	.1	—
8.5		—

: 24°C
: 13.5 mg/L
= 830 µmhos

.23 DS END looking US
.22 DS END looking DS

SFS
8/11/94

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

In Reach Representative of Stream? (Y/N) Y If not:

Additional Comments/Pollution Impacts:

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) ☐ AESTHETIC RATING ☐

CANOPY (%OPEN) 30 GRADIENT: LOW O-MODERATE O-HIGH PHOTOS: 18, 19

STREAM MEASUREMENTS: AVERAGE WIDTH: 12 AVERAGE DEPTH: .7 MAX DEPTH .9+

LENGTH	WIDTH	DEPTH @ 2	4	6	8	10	12	14	16	18	POOL/GLIDE/RIF/RUN
25	4	.2	.2								RIF
85	15	.4	.4	.5	.5	.4	.3	.3	.2		GLD
40	12	.3	.8	1.2	2.0	1.8	1.6				POOL
90	20	.1	.2	.3	.3	.5	.5	.4	.4	.2	GLD
60	10	.5	1.6	2.1	1.5	.5					POOL
50	6	.2	.4	.4							GLD

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

Dist from LWE (ft)	Depth (ft)	Velocity (ft/sec)
LWE	—	—
.5	.1	—
1.0	.1	—
1.5	.3	.23
2.0	.4	.32
2.5	.4	.36
3.0	.6	.34
3.5	.6	.36
4.0	.5	.40
4.5	.4	.36
5.0	.3	.32
5.5	.2	.31
6.0	.1	—
6.5	RWE	

conductivity 2,000 umhos
temp - 28°C
DO - 7.10 mg/L

photo 19 DS END looking US
photo 18 DS END looking DS

SFR
8/14/99

Figure V-4-6.Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If not,

Additional Comments/Problem Impacts:

	GEAR	DISTANC	WATER CLARITY	WATER STAGE	SUBJECTIVE RATING (1-10)	AESTHETIC RATING (1-10)
FIRST PASS						
SECOND PASS						
THIRD PASS						

CANOPY (%OPEN) 65 GRADIENT: X LOW O-MODERATE O-HIGH PHOTOS: 47 1/6

STREAM MEASUREMENTS: AVERAGE WIDTH: 22 AVERAGE DEPTH: .5 MAX DEPTH 1.5

LENGTH	WIDTH	DEPTH @ 5	10	15	20	25	30				POOL/GLD/RIF/RUN
75	23	.9	1.2	1.4	1.2	1.3					POOL
9	2	.2	.3								RUN
145	25	1.2	.9	.9	.5	.2					POOL
120	28	.5	.6	.6	.8	.7	.4				GLD
24	5	.2	.3								RUN
9	5	.1	.2								RIF

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

Distance (m) LWE	Depth (m)	(m/sec) Velocity
LWE		
.4	.1	—
.8	.2	.33
1.2	.2	.36
1.6	.3	.47
2.0	.3	.49
2.4	.3	.57
2.8	.3	.56
3.2	.3	.54
3.6	.3	.60
4.0	.3	.47
4.4	.2	.33
4.8	.1	—
5.0	RWE	

=29°C
1.6 mS/L
1,780 µmhos

Photo
17 - upstream looking upstream
16 - upstream looking downstream

SF 1
8/14/99

Procedure No. WQPA-SWS-3 Date Issued 9-30-89
Revision No. 6 Date Effective 9-30-89

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

In Reach Representative of Stream? (Yes) Y If not: _____

Additional Comments/Pollution Impacts: _____

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) AESTHETIC RATING (1-10)

CANOPY (%OPEN) 10 GRADIENT: ~~X~~ LOW D-MODERATE D-HIGH PHOTOS: 14 + 15

STREAM MEASUREMENTS: AVERAGE WIDTH 25 AVERAGE DEPTH .6 MAX DEPTH 1.5

LENGTH	WIDTH	DEPTHS 3	6	9	12	15	18	21	24	27	POOL GLD RIF RUN
90	12	.1	.2	.3	.1						RUN
50	32	.4	.5	.6	.4	.3	.3	.3	.3	.3	GLD
120	27	.1	.3	.8	1.0	1.2	1.1	1.3	1.0	.8	POOL
85	35	.3	.3	.4	.5	.5	.3	.2	.5	.5	GLD

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

Dist (m) RWE	Depth	Velocity (ft/sec)
RWE	—	—
1	.1	—
2	.1	—
3	.1	—
4	.1	—
5	.2	.05
5.5	.3	.10
6.0	.3	.09
7.0	.2	.16
8.0	.2	.16
9.0	.3	.19
10.0	.4	.18
11.0	.4	.19
12.0	.4	.18
13.0	.2	.09
14.0	.1	—
15.0	LWE	

mp = 25°C
= 11.30 mg/L
= 1,400 µmhos

15 DS END looking US
14 DS END looking DS

1362
8/15/89

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If Not: _____

Additional Comments/Pollution Impacts: _____

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS	___	___	___	___
SECOND PASS	___	___	___	___
THIRD PASS	___	___	___	___

SUBJECTIVE RATING (1-10) ☐ AESTHETIC RATING (1-10) ☐

CANOPY (%OPEN) 10% GRADIENT: 0-LOW 0-MODERATE 0-HIGH PHOTOS: 22 & 23

STREAM MEASUREMENTS: AVERAGE WIDTH _____ AVERAGE DEPTH _____ MAX DEPTH _____

LENGTH	WIDTH	DEPTHS @ 6'	9'	12'	15'	18'	21'	24'	POOL/GLIDE/RIFF/RUN
150'	24'	.8	1.1	1.1	1.1	1.2	1.3	1.1	2.1	2.6	Pool
50'	25'	.6	.6	.5	.9	.5	.2	3	.3	.4	Glide
770											Pool

GROSS-SECTIONS OF STREAM

DRAWING OF STREAM

d 3200 umh
p 27.5 °C
) 7.0 mg/L

Flow - very slight but heading North

Photo
23 → upstream, taking picture of downstream
22 → same spot taking picture of upstream

QA Manual (8th Update) – Fish – September 30, 1989

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B G/

8/14/99

Figure V-4-6.Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

In Reach Representative of Stream? (Y/N) Y # Inc:

Additional Comments/Pollution Impacts:

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) AESTHETIC RATING (1-10)

CANOPY (%OPEN) 80 GRADIENT: X LOW O-MODERATE O-HIGH PHOTOS: 20, 21 Camera 3

STREAM MEASUREMENTS: AVERAGE WIDTH: 15 AVERAGE DEPTH: .8 MAX DEPTH 2.0

LENGTH	WIDTH	DEPTHS @ 3	6	9	12	15	18	21			POOL-GLD-RIF-RUN
88	20	.7	1.0	1.5	2.0	1.7	1.1	.5			POOL
37	10	.3	.5	.4							RUN
7	10	.1	.2	.2							RIF
20	6	.6	.8								RUN
28	10	.5	1.0	.8							POOL
30	8	.3	.6	.4							RUN
100	20	.5	.8	1.8	2.0	1.6	1.1	.5			POOL

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

Dist from LWE (ft)	Depth (ft)	Velocity (ft/sec)
LWE	—	—
.5	.2	.14
1.0	.3	.01
1.5	.5	.01
2.0	.5	-.03
2.5	.5	.13
3.0	.5	.94
3.5	.2	.89
4.0	.3	.74
4.5	.2	.54
5.0	.2	.47
5.5	.3	.46
6.0	.2	.42
6.5	.1	—
7.0	RWE	—

onductiv - 3225 umhos

emp - 28.5°C

DO - 5.6 mg/L

oto 21 DS END looking US

oto 20 DS END looking DS

SC!
8/11/90

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If Not:

Additional Comments/Pollution Sources:

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) AESTHETIC RATING (1-10)

CANOPY (%OPEN) GRADIENT: O-LOW O-MODERATE O-HIGH PHOTOS: 9, 10

STREAM MEASUREMENTS: AVERAGE WIDTH 20 AVERAGE DEPTH 0.8 MAX. DEPTH 2'

LENGTH	WIDTH	DEPTHS 5	10	15	20					POOL/GLIDE/RIFF/RUN
300	20	0.6	1.0	2.0	1.5					Pool

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

10 - DS END looking US
9 - DS END looking DS
8 - INDIANA BANANA

Temp - 25°C
DO - 7.70 mg/L
Cond - 3,800 µmhos

Dist from LWE (ft)	Depth (ft)	Velocity (ft/s)
1.0	0.4	0
2.0	1.0	0
3.0	0.7	0
4.0	0.9	-.01
5.0	1.0	.01
6.0	1.1	.06
7.0	1.3	.06
8.0	1.3	.06
9.0	1.3	.10
10.0	1.4	0.13
11.0	1.4	0.13
12.0	1.5	0.16
13.0	1.6	0.15
14.0	1.8	0.09

Dist from LWE (ft)	Depth (ft)	Velocity (ft/s)
16.0	1.7	0.11
17.0	1.5	0.16
18.0	1.2	0.10
19.0	0.6	0.08

RWE - 20.0 – ——

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Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area

Is Reach Representative of Stream? (Y/N) Y If Not:

Additional Comments/Pollution Inputs:

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10)

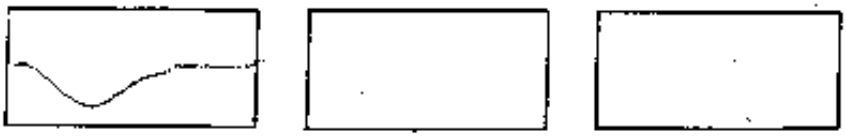
AESTHETIC RATING (1-10)

CANOPY (%OPEN) GRADIENT: 0-LOW 0-MODERATE 0-HIGH PHOTOS: 5 + 4

STREAM MEASUREMENTS: AVERAGE WIDTH: AVERAGE DEPTH: MAX DEPTH:

LENGTH	WIDTH	DEPTHS @									POOL/GLIDE/RIF/RUN
200'	3'	3"	4"	5"							GLD

CROSS-SECTIONS OF STREAM



DRAWING OF STREAM

Photo
5 – downstream looking upstream
4 – downstream looking downstream

25'
120 umhos
0.5 mg/L

SD1
8/13/99

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If Not:

Additional Comments/Pollution Impacts:

Appears to have a lot of flocculated solids drifting in the water column

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) AESTHETIC RATING (1-10)

CANOPY (%OPEN) 5 GRADIENT: ✓ LOW O-MODERATE O-HIGH PHOTOS: 27 + 26 - Camera 3

STREAM MEASUREMENTS: AVERAGE WIDTH 12' AVERAGE DEPTH .2' MAX DEPTH .6'

LENGTH	WIDTH	DEPTHS 3	6	9	12	15					POOL/GLIDE/RUN
65	15	.2	.2	.2	.1	.1					RUN
50	10	.2	.1	.1							RIF
100	6	.4	.6 .2								RUN
150	15	.2	.1	.2	.2	.1					RUN

3/99
11
00 µmhos
.3 mg/L
26°C

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

Dist (a) from LWE	Depth (a)	Velocity (ft/sec)
LWE	—	—
1	.1	—
2	.1	—
3 2.5	.6	.12
4	.6	.12
5	.5	.26
6	.5	.42
7	.4	.24
8	.4	.34
9	.3	.35
10	.2	.22
11	.1	—
12	.1	—
	RWE	—

d = 1130 µmhos
> = 2.10 mg/L
emp = 25°C

27 - US END looking US
26 - US END looking DS

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WDI 6/12/95

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If not,

Additional Comments/Pollution Impacts:

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10)

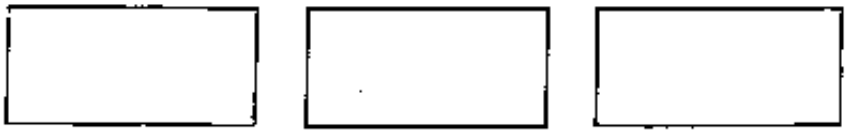
AESTHETIC RATING (1-10)

CANOPY (%OPEN) 85 GRADIENT (L-LOW O-MODERATE O-HIGH) L PHOTOS: 6 & 7

STREAM MEASUREMENTS: AVERAGE WIDTH 20 AVERAGE DEPTH 0.8' MAX DEPTH 2'

LENGTH	WIDTH	DEPTHS @ 0	5	10	15	20					POOL/GLIDE/RUN
300	20	.6	1.5	1.1	.6						POOL

CROSS-SECTIONS OF STREAM



DRAWING OF STREAM

Temp 25.5

Conduct – 400.0

DO – 2.80

No Flow

photo 7 DS END looking US

photo 6 DS END looking DS

Procedure No.	WQPA–SWS–3	Date Issued	9-30-89
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8/11/89
3C3

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

In Reach Representative of Stream? (Y/N) Y If Not: _____

Additional Comments/Pollution Impacts: _____

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) ☐ AESTHETIC RATING (1-10) ☐

CANOPY (%OPEN) 95 GRADIENT: X LOW O-MODERATE O-HIGH PHOTOS: 14 & 15

STREAM MEASUREMENTS: AVERAGE WIDTH 20 AVERAGE DEPTH .3 MAX DEPTH 2'

LENGTH	WIDTH	DEPTHS 5	10	15	20	25						POOL/GLD/RIF/RUN
140	25	1.1	1.6	2.0	1.1	0.6						POOL
70	20	0.8	0.6	0.5	0.2							GLD
38	20	.05	.1	.2	.3							RIF
100	15	.8	.5	.2								GLD

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

DT – 8:159
TMP 25.90
DS .316
D 3.63
H 8.59

TM .75625
SPC 478.00
DO% 44.5
DEP .233
ORP 81.1

No flow

photo 15 DS END looking US
photo 14

BC 2 9/10/99

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If not,

Additional Comments/Pollution Impacts:

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

BIOLOGICAL RATING (0-10) AESTHETIC RATING (0-10)

CANOPY (%OPEN) 15 GRADIENT: X LOW O-MODERATE O-HIGH PHOTOS: 18 19

STREAM MEASUREMENTS: AVERAGE WIDTH: 6 AVERAGE DEPTH: .5 MAX DEPTH: 2.7

LENGTH	WIDTH	DEPTHS @ 1	2	3	4	5	6	7	POOL/GLIDE/RIF/RUN
300	7	.3	.6	1.4	1.2	.6	.4	.2	POOL

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

1099 TM 144809
33.9 SpC 2191.0
.429 %DO 90.2
6.34 DEP .0413
9.35 ORP -14.7

photo 19 DS END looking US
photo 18 DS END looking DS

Dist from RWE (ft)	Depth (ft)	Velocity (ft/sec)
RWE	0	
	.2	.05
.5		
1.0	.9	.11
1.5	1.2	.21
2.0	1.5	.21
2.5	1.2	.18
3.0	1.7	.17
3.5	1.5	.15
4.0	1.5	.14
4.5	1.5	.12
5.0	1.0	.18
5.5	0.8	.16
6.0	0.7	.15
6.5	0.4	.13
7.0	0.3	.08
7.5	LWE	

BCI 8/4/99

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If Not: _____

Additional Comments/Pollution Impacts: _____

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) ☐ AESTHETIC RATING (1-10) ☐

CANOPY (%OPEN) 5 GRADIENT: X LOW O MODERATE O HIGH PHOTOS: 22 + 23

STREAM MEASUREMENTS: AVERAGE WIDTH: 10" AVERAGE DEPTH: 7" MAX. DEPTH 2.8"

LENGTH	WIDTH	DEPTHS 10	15	20	25	30					POOL/GLD/RF/RUN
50	30	3"	5"	8"	6"	3"	2"				GLD
35	20	4"	8"	14"	3"						POOL
105	25	4"	6"	7"	7"	3"					GLD
160	15	2.8"	1.5"	.3"							POOL
30	20	3"	5"	4"	2"						RUN

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

T 80999 TM 152428
SMP 24.17 SPC 19460
DS 1.266 DO% 58.0
DO 4.87 DEP .253
pH 8.56 ORP 61.3

Photo 23 DS END looking US
Photo 22 DS END looking DS

Dist from RWE (ft)	Depth (ft)	Vel
RWE	—	—
1	1.7	0.06
2	2.4	0.03
3	2.8	0.02
4	3.0	0.02
5	2.8	0.02
6	2.1	0.04
7	1.8	0.07
8	1.7	0.04
9	1.5	0.06
10	1.5	0.03
11	1.5	0.06
12	1.4	0.07
13	1.2	0.08
14	1.0	0.09

Distance	Depth	Velocity
15	1.0	.07
16	0.8	.05
17	0.6	—
18	0.2	-0.05
19	LWE	—

Procedure No.	WOPA–SWS–3	Date Issued	9-30-99
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LP2
8/8/99

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

No flow

Is Reach Representative of Stream? (Y/N) ____ If Not: ____

Additional Comments/Pollution Impacts: Riffle [illegible] dry

	GEAR	DISTANCE	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) ☐ AESTHETIC RATING (1-10) ☐

CANOPY (%OPEN) 5 GRADIENT: X LOW O-MODERATE O-HIGH PHOTOS: 4 & 3

STREAM MEASUREMENTS: AVERAGE WIDTH 20 AVERAGE DEPTH .5 MAX DEPTH 1.7

LENGTH	WIDTH	DEPTHS									POOL/GLIDE/RIF/RUN
800'	20'	.5	1	2	1	.5					POOL
40'	15'	.1	.2	.1	.2						Glide
100'	20'	.5	.2	1	1	.5					Pool
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]						Riffle

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

0899	TM	123442
13.48	SpC	327.00
0.215	DO%	18.3
1.57	DEP	0.428
8.43	ORP	85.1

No flow

Photo
5A- downstream looking upstream
4B- downstream looking downstream

Procedure No.	WQPA-SW5-3	Date Issued	9-30-89
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LPI
8/8/97

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) N If Not: _____

Additional Comments/Pollution Impacts: – Stream is a ditch, only origin and artificial fill over the only riffle

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

☐ SUBJECTIVE RATING (1-10) ☐ AESTHETIC RATING (1-10)

CANOPY (%OPEN) 10 GRADIENT: O-LOW O-MODERATE O-HIGH PHOTOS: 6 5

STREAM MEASUREMENTS: AVERAGE WIDTH: _____ AVERAGE DEPTH: _____ MAX. DEPTH _____

LENGTH	WIDTH	DEPTHS @	10	15	20	25	30	35	40	POOL/GLD/RF RUN
25'	10'	.2	.1	.2	.3	.2				☑ Rif
300'	40'	.5	1.5	2.5	4	4	2	1.5	1	Pool

CROSS-SECTIONS OF STREAM

0899 TM 102045
14.11 SpC 201.00
.131 DO% 39.9
.38 DEP 0.258
3.82 ORP 74.8

Photo

' downstream and looking upstream
& -downstream and looking downstream

DRAWING OF STREAM

Dist from LWE (a)	Depth (a)	Velocity (a/b)
LWE	—	—
1	.7	.02
3	1.3	.04
5	1.5	.04
7	1.6	—
9	1.8	.03
11	1.9	.07
13	2.1	.15
15	1.4	.27
17	1.1	.40
19	1.2	.32
21 .20	1.5 .16	— .17
23	1.0	.04
25	RWE	

Procedure No.	WQPA-SWS-3	Date Issued	9-30-89
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8/10/99

KC 2

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Yes) Y If Not: _____

Additional Comments/Pollution Impacts: _____

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) ☐ AESTHETIC RATING (1-10) ☐

CANOPY (%OPEN) 5% GRADIENT ☒ LOW O-MODERATE O-HIGH PHOTOS: 21/20

STREAM MEASUREMENTS: AVERAGE WIDTH: _____ AVERAGE DEPTH: _____ MAX. DEPTH _____

LENGTH	WIDTH	DEPTHS 2	4	6	8	10	12	14	16	18	POOL/GLD/RIF/RUN
150	15'	.2	1.1	1.2	1.0	1.0	.6	.3	.1		POOL
5	1'	1"									RUN
42	5'	2"	4'	2"							GLD
7	8"	1/4"									RUN
52	7'	4"	10"	4"							GLD
15	1'	1/2"									RUN
100	10	.5	.8	.8	.5						GLD

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

DT 81099
TEMP 23.69
TDS .256
DO 2.77
pH 8.51

TM 111318
SPC 394.00
DO% 32.0
Dep .280
ORP -11.4

photo of DS END
21 450 upstream photo looking upstream
20 150 upstream photo looking downstream

No velocity taken, slight velocity in riffle area

Procedure No.	WQPA-SWS-3	Date Issued	9-30-89
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LCI
8/3/97

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If not:

Additional Comments/Pollution Impacts:

	GEAR	DISTANCE	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

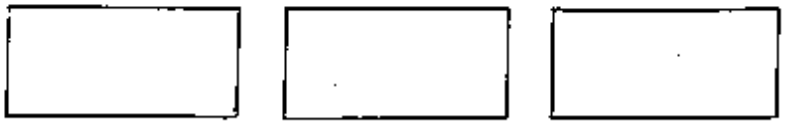
SUBJECTIVE RATING (1-10) AESTHETIC RATING (1-10)

CANOPY (%OPEN) 40 GRADIENT: LOW MODERATE HIGH PHOTOS: 3-7 – Camera ①

STREAM MEASUREMENTS: AVERAGE WIDTH 25 AVERAGE DEPTH 1' MAX. DEPTH 6"

LENGTH	WIDTH	DEPTHS 10	15	20	25						POOL/GLD/RIF/RUN
200	25	.5	1.0	1.0	1.0						POOL
40	25	.3	.2	.1	.4						RUN
100	15	1.5	6.0	2.0							POOL
		RIFFLES SAMPLED WERE ≈ 500 ft further up									
		(1st)	(2nd)	(3rd)							
15	3	1"	3"	1"							RIF

CROSS-SECTIONS OF STREAM



DRAWING OF STREAM

Dist from LWE (ft)	Depth (ft)	Vel (ft/sec)
LWE	—	—
1	.4	—
3	.7	.03
5	.8	.16
7	.8	.22
9	.9	.16
11	1.0	.13
13	1.0	.08
15	1.0	.08
17	1.0	.14
19	0.9	.11
21	.7	.08
23	.7	.04
24	.7	—
25	— RWE	—

IT 80899
Zne 23.58
DS .268
DO 3.01
pH 9.02

TM 74526
SoC 412
DO% 35.4
DEP .634
ORP

Photo ~~8~~ 9 DS END looking US

Photo ~~7~~ 8 DS END looking DS

RC-16
8/5/99

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If Not:

Additional Comments/Pollution Impacts:

	GEAR	DISTANC	WATER CLARITY	WATER STAGE	SUBJECTIVE RATING (1-10)	AESTHETIC RATING (1-10)
FIRST PASS						
SECOND PASS						
THIRD PASS						

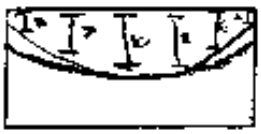
CANOPY (%OPEN) 95 GRADIENT: X LOW O-MODERATE O-HIGH PHOTOS: 26 - 27

STREAM MEASUREMENTS: AVERAGE WIDTH 16' AVERAGE DEPTH 2" MAX. DEPTH 10"

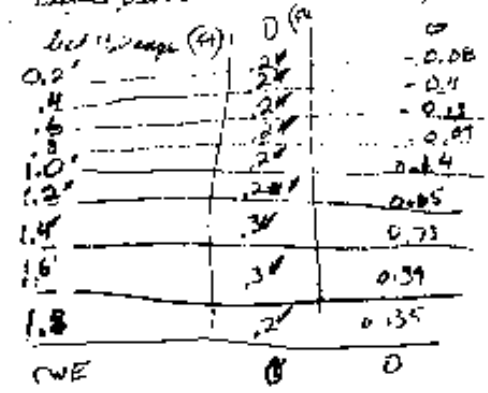
LENGTH WIDTH 0 DEPTHS 4 8 12 16 POOL/GLIDE/RIFFLE/RUN

500'	16'	2"	6"	8"	10"	10"	7"	6"	2"		GLD

CROSS-SECTIONS OF STREAM



DRAWING OF STREAM



DT - 80599
TEMP - 22.47
TDS - .466
DO 4.99
pH 7.90

TM 10 32 13
SpC 720.00
DO% 60.3%
DOP .199
ORP 121.9

PC-15 X
8/6/99

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If Not:

Additional Comments/Pollution Impacts:

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10)

AESTHETIC RATING (1-10)

CANOPY (%OPEN) 95% GRADIENT: X-LOW O-MODERATE O-HIGH PHOTOS: 22 & 21

STREAM MEASUREMENTS: AVERAGE WIDTH 8' AVERAGE DEPTH 5" MAX. DEPTH 16

LENGTH	WIDTH	DEPTHS 3	4	5	6	7	8	POOL/GLD/RIF/RUN
315	8'	6" 3"	3"	5"	6"	8"	10"	RUN
12	8	3" 3"	3"	2"	3"	2"	4"	RIF
10	6							RUN
12	8	3" 4"	10"	16"	17"	9"	3"	POOL
15	8							RIF

CROSS-SECTIONS OF STREAM

Pool Riffle Run

DRAWING OF STREAM

DT 80699
TMP 21.54
TDS 0.284
DO ~~5.09~~ 5.90
pH 8.78

TM 80916
SpC 436.00
DO% 57.5
DEP 0.307
ORP 84.0

21+22

End looking US = 22 23
End looking DS = 21 22

Dist from LWE (ft)	Velocity (ft/sec)	Depth (ft)
LWE	—	
0.2	0.04	0.2
0.4	0.24	0.5
0.6	0.44	0.6
0.8	1.15	0.6
1.0	1.33	0.7
1.2	1.08	0.6
1.4	1.15	0.6
1.6	1.13	0.6
1.8	1.38	0.7
2.0	1.48	0.7
2.2	1.56	0.6
2.4	1.65	0.6
2.6	1.44	0.6
2.8	1.33	0.5
3.0	0.94	0.5

Dist from LWE	Vel.	Depth
3.2	0.78	0.5
3.4	0.33	0.5
3.6	0.01	0.4
3.8	0.02	0.4
4.0	RWE	—

8/15/99 I-C 14

Figure V-4-8 Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If No:

Additional Comments/Pollution Impacts:

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) AESTHETIC RATING (1-10)

CANOPY (%OPEN) 95 GRADIENT: 0-LOW 0-MODERATE 0-HIGH PHOTOS: 20 21

STREAM MEASUREMENTS: AVERAGE WIDTH: 12 AVERAGE DEPTH: .5 MAX DEPTH: 1.2

LENGTH	WIDTH	DEPTHS @ 2	4	6	8	10	12				POOL/GLIDE/RIFFLE/RUN
30	10	.3	.6	.7	.5	.3					RUN
170	13	.7	1.0	1.1	.9	.8	.7				GLD
35	15	.2	.3	.6	.3	.2	.3				RUN
140	8	.6	.1	.3	.1						RIF

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

(A) Dist from LWE	(B) Depth	(C) Velocity ft/sec
RWE		
.5	.8	.12
1.0	.8	.21
1.5	.8	.53
2.0	.8	.77
2.5	.7	.94
3.0	.7	.88
3.5	.7	.73
4.0	.6	.66
4.5	.6	.55
5.0	.5	.68
6.5	.4	.64
6.0	.2	.31
6.5	.1	—
7.0	.1	—
7.5	LWE	—

tivity .590 mhos

? 28°C

16 mg/L

21 DS END looking US

20 DS END looking DS

PC-15 9/6/99

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If No:

Additional Comments/Pollution Impacts:

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) AESTHETIC RATING (1-10)

CANOPY (%OPEN) 95% GRADIENT: X LOW O-MODERATE O-HIGH PHOTOS: 22 + 21

STREAM MEASUREMENTS: AVERAGE WIDTH: 8' AVERAGE DEPTH: 5" MAX DEPTH 16

LENGTH	WIDTH	DEPTHS 3	4	5	6	7	8			POOL/CL/RIF/RUN
3.5'	8'	6"	3"	5"	1"	2"	8"	10"		RUN
12	8	3"	3"	3"	2"	3"	2"	4"		RIF
10	6									RUN
12	8	5"	9"	10"	16"	17"	9"	3"		POOL
15	8									RIF

CROSS-SECTIONS OF STREAM

Pool Riffle Run

DRAWING OF STREAM

DT 80699 TM 80916
TMP 21.54 SpC 436.00
TDS 0.284 DO% 57.5
DO ~~5.09~~ 5.90 DEP 0.307
pH 8.78 ORP 84.0

to 21+22

End looking US = 22 23
End looking DS = 21 22

Dist from LWE (ft)	Velocity (ft/sec)	Depth (ft)
LWE	—	
0.2	0.09	0.2
0.4	0.24	0.5
0.6	0.44	0.6
0.8	1.15	0.6
1.0	1.33	0.7
1.2	1.08	0.6
1.4	1.15	0.6
1.6	1.13	0.6
1.8	1.38	0.7
2.0	1.48	0.7
2.2	1.56	0.6
2.4	1.65	0.6
2.6	1.44	0.6
2.8	1.23	0.5
3.0	0.94	0.5

Dist from LWE	Vel.	Depth
3.2	0.78	0.5
3.4	0.33	0.5
3.6	0.03	0.4
3.8	0.02	0.4
4.0	RWE	—

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PC2 8/12/99

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If No:

Additional Comments/Pollution Impacts:

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) AESTHETIC RATING (1-10)

CANOPY (%OPEN) 40 GRADIENT: X LOW O MODERATE O HIGH PHOTOS: 2+3

STREAM MEASUREMENTS: AVERAGE WIDTH: 20 AVERAGE DEPTH: 1.0' MAX DEPTH 2.5'

LENGTH	WIDTH	DEPTHS D 5	10	15	20						POOL/GLD/RIF/RUN
75	20	.1	.2	.4	.8						RIF
120	20	.4	.6	.4	.5						RUN
150	20	2.0	2.2	1.8	1.2						POOL

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

up 29.5°C

d 1,500 umhos

7.4 mg/L

oto 3 DSEND looking US

oto 2 DSEND looking DS

oto 1 – Concretion formations in hardpan

Dist from RWE (ft)	Depth (ft)	Velocity (ft/sec)
RWE	-	-
1	.4	0.02
3	1.1	0.06
5	1.7	0.13
7	1.8	0.14
9	1.8	0.18
11	2.0	0.16
13	2.1	0.13
15	2.2	0.20
17	2.3	0.18
19	2.2	0.11
21	1.5	0.04
23	0.8	
24	LWE	

PC 11
9/11/99

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If No:

Additional Comments/Pollution Suspects:

Down stream of bridge, no riffle/run US of bridge

	GEAR	DISTANCE	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) AESTHETIC RATING (1-10)

CANOPY (%OPEN): 15 GRADIENT: 0-LOW 0-MODERATE 0-HIGH PHOTOS: 12 + 13

STREAM MEASUREMENTS: AVERAGE WIDTH: 20 AVERAGE DEPTH: .4 MAX. DEPTH: 1.1

LENGTH	WIDTH	DEPTHS @ 5	10	15	20	25	30				POOL/GLIDE/RIFFLE/RUN
300	30	1.0	.6	.4	.3	.4	.3				RUN

~1900 µmhos
~ 5.3 mg/l
~ 26°C

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

Dist from LWE (ft)	Depth (ft)	Velocity (ft/sec)
LWE	—	—
1	0.9	.63
3	0.8	.81
5	0.6	.75
7	0.4	.98
9	0.5	.96
11	0.5	1.23
13	0.5	1.27
15	0.4	1.03
17	0.5	1.10
19	0.3	0.76
21	0.4	1.08
23	0.5	0.65
25	0.3	0.56
26	RWE	

photo 11 - gasboogs at bridge

photo 13 DS END looking US

photo 12 DS END looking DS

PCQ 8/10/09

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If Not,

Additional Comments/Pollution Impacts:

	GEAR	DISTANC	WATER CLARITY	WATER STAGE	SUBJECTIVE RATING (1-10)	AESTHETIC RATING (1-10)
FIRST PASS						
SECOND PASS						
THIRD PASS						

CANOPY (%OPEN) GRADIENT: 0-LOW 0-MODERATE 0-HIGH PHOTOS: 16 & 17

STREAM MEASUREMENTS: AVERAGE WIDTH: 30 AVERAGE DEPTH: 3 MAX. DEPTH 5'

LENGTH	WIDTH	DEPTHS @ 10	15	20	25	30	35	POOL/GLIDE/RIFFLE/RUN
300'	35	2'	3	4	5'			POOL

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

DT - 81099
TM - 2757
TDS 1067
DO 4.51
pH 8.56

TM 16531
SOC 16410
DO 5.75
DEP .257
ORP 33.6

photo 17 - DS END looking US
photo 16 - DS END looking DS

PC 5

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area. 5/9/95

Is Reach Representative of Stream? (Y/N) Y If Not:

Additional Comments/Pollution Impacts:

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) AESTHETIC RATING (1-10)

CANOPY (%OPEN) 25 GRADIENT: 0-LOW 0-MODERATE 0-HIGH PHOTOS: 24, 25

STREAM MEASUREMENTS: AVERAGE WIDTH 40 AVERAGE DEPTH 2' MAX DEPTH 6'

LENGTH	WIDTH	DEPTHS @									POOL/GLIDE/RUN
390	45'	1.5'	3.5'	5.5'	5.5	2.5					POOL

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

0995 TM 13451

25.57 SpC 2136

1.391 DO% 365

.02 DEP .305

.49 ORP 60.4

Reading
No Flow too deep

photo 24 DS END looking US
photo 25 DS END looking DS

P C7
8-4-05

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If not:

Additional Comments/Pollution Impacts:

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) AESTHETIC RATING (1-10)

CANOPY (%OPEN) 30 GRADIENT: LOW O-MODERATE O-HIGH PHOTOS: 27+26 2nd Cam

STREAM MEASUREMENTS: AVERAGE WIDTH: 50 AVERAGE DEPTH: 3' MAX DEPTH 6'

LENGTH	WIDTH	DEPTHS @ 20	30	40	50					POOL/GLIDE/RIFFLE/RUN
300	50	1'	3'	6'	3'	1'				POOL

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

(A) Dist from LWE (A) Depth (optional) Velocity

Too Deep No Velocity Readings

TM 10.2004
SpC 1776.0
DO 2.92
Dep .632
ORP 4.2

2nd Camera
photo 27 DS END looking US
photo 26 DS END looking DS

RCG
9/9/99

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Segment (Y/N) Y If Not:

Additional Comments/Pollution Impacts:

Included bridge for macroinvert sampling

	GEAR	DISTANCE	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10)

AESTHETIC RATING (1-10)

CANOPY (%OPEN) 10 GRADIENT: LOW 0-MODERATE 0-HIGH PHOTOS: 1st #2 1st C

STREAM MEASUREMENTS: AVERAGE WIDTH: 50 AVERAGE DEPTH: MAX DEPTH:

DEPTHS 20 30 40 50

LENGTH	WIDTH									POOL/GLIDE/RIFFLE/RUN
300	50	1.0	2.5	>5	?	1.0				POOL

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

0999 TM 72850
24.92 SpC 1599.0
1.036 DO% 16.0
1.41 DEP 2.112
8.45 ORP 99.4

Velocities not taken
too deep (>5')

picture 2 - upstream looking upstream
picture 1 upstream looking downstream

Procedure No. WQPA-SWS-3 Date Issued 9-30-89
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8/7/99
PC 5

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (YES) Y If Not: _____

Additional Comments/Pollution Impacts: _____

	GEAR	DISTANCE	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) ☐ AESTHETIC RATING (1-10) ☐

CANOPY (%OPEN) 25% GRADIENT: X LOW O-MODERATE O-HIGH PHOTOS: 11 + 12

STREAM MEASUREMENTS: AVERAGE WIDTH: 50 AVERAGE DEPTH: .7' MAX DEPTH: 1.4'

LENGTH	WIDTH	DEPTHS 10	20	30	40	50	60				POOL GLD RF RUN
160	55	.5	1.0	.5	.5	.6	.2				RUN
79	45	.1	.2	.2	.1						RIF
61	50	.2	.3	.4	.3	.1					RUN
100	55	.3	.5	1.0	1.4	0.7					POOL

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

DT 80799
TMP 2781
TDS 1.397
DO 508
8.53

TM 144020
SPC 2153.0
DO% 65.0
DEP .177
ORP 687

12 13 → looking US from ' from DS END
11 12 → looking DS from ' from DS END

Dist from LWE (ft)	Depth (ft)	ft/sec Velocity
LWE	-	-
2	.1	0
4	.1	0 .13
5	.4 .2	0.11
6	.4	0.17
8	.6	0.26
10	.6	0.34
12	.9	0.54
14	1.0	0.64
16	.9	0.70
18	1.0	0.70
20	0.6	0.50
22	0.7	—
24	0.8	0.10
26	0.7	0.28
28	0.5	0.28
30	0.4	0.34
32		

Dist from LWE	Depth	Velocity
36	0.4	0.32
38	0.4	0.54
40	0.5	0.54
42	0.6	0.34
44	0.6	0.46
46	0.7	0.16
48	0.6	0.35
50	0.6	0.23
52	0.7	0.31
54	0.7	0.31
56	0.7	0.16
58	0.4	0.0
60	0.2	—
62	RWE	—

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PC4
8/7/99

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

(Began Fishing)

Is Reach Representative of Stream? (Y/N) ✓ If not: _____

Additional Comments/Pollution Impacts: _____

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) ☐ AESTHETIC RATING (1-10) ☐

CANOPY (%OPEN) 55 GRADIENT: X LOW O-MODERATE O-HIGH PHOTOS: 9+10

STREAM MEASUREMENTS: AVERAGE WIDTH: [illegible] AVERAGE DEPTH: [illegible] MAX. DEPTH 1[illegible]

LENGTH	WIDTH	DEPTHS 10 20 30 40 50 60									POOL/SLD/RIF/RUN
[illegible]	53	2"	5"	8"	6"	9"					[illegible]
64	25	2"	4"								RIF
55	35	4"	2"	4"							RUN
106	30	3"	3"	3"							[illegible]
											[illegible]
											[illegible]
											[illegible]

[illegible]

CROSS-SECTIONS OF STREAM

T 80799
P 2827
S 1394
4.89
8.65

TM 162831
SPC 2144.0
DO% 6.29
DEP .225
ORP 57.3

0 to 10 – DS END Looking US
10 to 9 – DS END Looking DS

DRAWING OF STREAM

Dist from LWE	(ft) Depth	ft/sec Velocity
LWE	–	–
2	.5	0.38
4	.6	0.44
6	.7	0.43
8	.7	0.45
10	.7	0.47
12	.7	0.52
14	.7	0.60
16	.7	0.50
18	.7	0.45
20	.7	0.44
22	.6	0.20
24	.7	0.52
26	.7	0.60
28	.7	0.37
31	.7	0.48
34	.7	0.34
37	.6	0.28

Dist	Dep	[illegible]
40	.3	[illegible]
43	[illegible]	[illegible]
46	.4	[illegible]
49	[illegible]	[illegible]
52	.1	
56	PLUS	

X

QA Manual (6th Update) – Fish – September 30, 1989

Procedure No. WQPA-SWS-3 Date Issued 9-30-89
Revision No. 5 Date Effective 9-30-89

PC3
8-7-99

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If Not: _____

Additional Comments/Pollution Impacts: _____

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) AESTHETIC RATING (1-10)

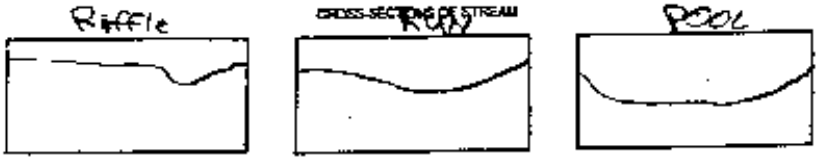
CANOPY (%OPEN) 60 GRADIENT: X LOW O-MODERATE O-HIGH PHOTOS: 16 + 15

STREAM MEASUREMENTS: AVERAGE WIDTH: 30 AVERAGE DEPTH: 1.0 MAX DEPTH 2.0

LENGTH	WIDTH	DEPTHS	0	5	10	15	20	25	30	35	40	POOL/GLD/RIF/RUN
60	20	.5"	2"	1.5								RUN
15	30	5"	8"	7"	6"	4"	2"					RIF
62	25	.5"	1.0	2.0	1.0							RUN
12	10	(2")	(3")	(3")	(3")	(4")						RIF
70	40	.5"	1.0"	2.0"	2.0	1.5"	1.0"	.5"	.2"			RUN
100	40											POOL

CROSS-SECTIONS OF STREAM

Riffle RUN POOL



DRAWING OF STREAM

Dist from LWE (ft)	Vel (ft/sec)	Depth (ft)
0	—	—
2	0.14	.6
4	0.14	.7
6	0.16	.8
8	0.16	1.6
10	0.20	1.9
12	0.16	2.1
14	0.17	2.1
16	0.17	2.3
18	0.18	2.2
20	0.17	2.0
22	0.15	2.0
25	0.17	1.9
28	0.14	1.8
31	0.13	1.7
34	0.08	0.8
37	0.06	0.5
40	[illegible]	0.4

Dist from LWE	Vel	Depth
43	0.03	0.4
46	—	0.1
47 RWE	—	—

88799
#2535
1.376
4.08
8.52

TM 93945
SpC 211780
DEP .342
ORP 64.6

Photo ~~16~~ 17: 50' upstream of DS END looking DS
Photo ~~15~~ 16: 50' upstream of DS END looking US

RC 2

Procedure No.	WOPA-SWS-3	Date Issued	9-30-89
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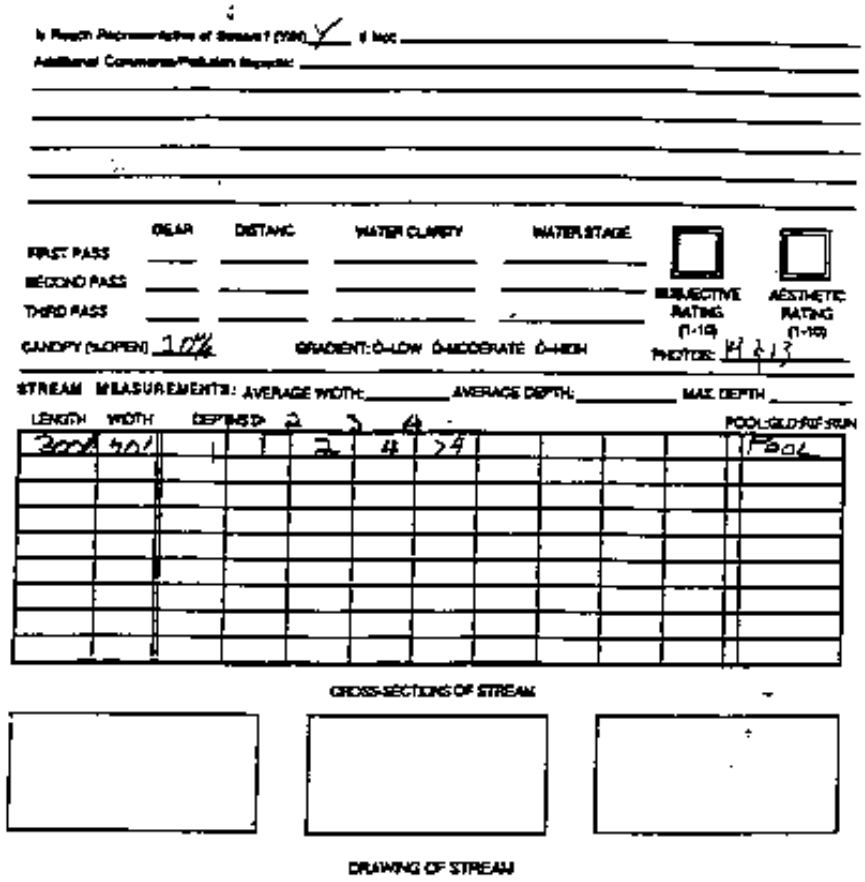
8-7-99

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.



Is Reach Representative of Stream? (Y/N) Y If Not: _____

Additional Comments/Pollution Impacts: _____

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) ☐ AESTHETIC RATING (1-10) ☐

CANOPY (%OPEN) 10% GRADIENT: O-LOW O-MODERATE O-HIGH PHOTOS: 14 & 13

STREAM MEASUREMENTS: AVERAGE WIDTH: _____ AVERAGE DEPTH: _____ MAX. DEPTH _____

LENGTH	WIDTH	DEPTHS	2	3	4						POOL:GLD:RIF:RUN
300	40	1	1	2	4	>4					Pool

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

T 80799
MO 27.84
DS 1.286
O 5.15
H 8.56

TM 114155
Sec 1980
DO% 65.8
DEP 729
Clp 72.3

Photos
15 ~~14~~ → upstream and looking upstream
14 ~~13~~ → upstream and looking downstream

Procedure No.	WQPA-SWS-3	Date Issued	9-30-89	PC 1
Revision No.	6	Date Effective	9-30-89	8-6-99

Figure V-4-6. Reverse side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record additional information about the sampling site and adjacent area.

Is Reach Representative of Stream? (Y/N) Y If Not: _____

Additional Comments/Pollution Impacts: _____

	GEAR	DISTANC	WATER CLARITY	WATER STAGE
FIRST PASS				
SECOND PASS				
THIRD PASS				

SUBJECTIVE RATING (1-10) ☐ AESTHETIC RATING (1-10) ☐

CANOPY (%OPEN) 60% GRADIENT: LOW D-MODERATE D-HIGH PHOTOS: 18 – 100 ft upstream

STREAM MEASUREMENTS: AVERAGE WIDTH 80' AVERAGE DEPTH _____ MAX DEPTH _____

Large wall

LENGTH	WIDTH	DEPTH									POOL/GLD/RIF/RUN
300'											POOL

CROSS-SECTIONS OF STREAM

DRAWING OF STREAM

IT B0699 TM 154930
SPC 889.00
R 30.74 DO% 67.3
.0578 Dep. 221
5.55 ORP. 51.6
8.87

Too deep to see transect – over 5' from 1' from above

Photo –
~~18~~ 100 ft up from down DS END – looking US ? opposite order
~~18~~ 100 ft upstream from DS END – looking DS from usual

SA1
8/6/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	(1)	2	3	4	Slimes	(0)	1	2	3	4
Filamentous Algae	0	1	2	(3)	4	Macroinvertebrates	0	1	(2)	3	4
Macrophytes	(0)	1	2	3	4	Fish	0	1	(2)	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta

Anisoptera

Gastropoda |||| – physa (4)
| – limpet (1)

Coleoptera HHT HHT HHT ||| (16)
Dryopidae – (16)
Elmidae – (2)

Zygoptera | – Coenagrionidae (1)

Bivalvia

Diptera HHT HHT HHT HHT HHT HHT HHT HHT HHT HHT HHT HHT HHT HHT HHT HHT HHT HHT HHT |
Bloodred – (36)
Other – (60)

Plecoptera

Ephemeroptera || – Caenidae (2)

Trichoptera |||| – Hydropsychidae (4)

Other Annelida || (2)

RIFFLE SAMPLE
FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers

Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 2

Total Org. in Sample 42

Observations

HCI
8/15/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	(2)	3	4	Slimes	(0)	1	2	3	4
Filamentous Algae	0	1	(2)	3	4	Macroinvertebrates	0	1	(2)	3	4
Macrophytes	0	(1)	2	3	4	Fish	0	1	(2)	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta		
Gastropoda ~~IIII IIII IIII IIII~~ Physa - ~~IIII IIII~~ IIII (34)	Anisoptera longbody - II - Aeshna (2)	Beetle Beetle - ~~IIII~~ (5)
	~~Bubbles~~	Coleoptera predacious - IIII (21)
		Dytiscidae - ~~IIII IIII IIII~~ II (2)
Bivalvia	Zygoptera Coenagrionidae - ~~IIII~~ II (2)	Crawling - ~~IIII~~ IIII (9)
		Diptera Bloodred - I (1)
	Plecoptera	other ~~IIII IIII IIII IIII IIII~~ (34)
Ephemeroptera other Baetid - II (2)		Culicidae - I (1)
	Trichoptera Hydropsychid - II (2)	
Other Daphnia - II (2)		

RIFFLE SAMPLE

FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers	Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 0	Total Org. in Sample 60
Observations	

Rapid Bioassessment Protocol II

WF3
8/15/99

Biosurvey Field Data Sheet

used bridge abutment riprap

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	2	3	4	Slimes	0	1	2	3	4
Filamentous Algae	0	1	2	3	4	Macroinvertebrates	0	1	2	3	4
Macrophytes	0	1	2	3	4	Fish	0	1	2	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta 1 (1)		
	Anisoptera	
Gastropoda		Coleoptera Grand II (3)
Physa II (2)	Calopteryx 1 (1)	Cyclonis [illegible] (21)
	Zygoptera	Riffle II (2)
Bivalvia 1 (1)	Coenagrionidae [illegible]	Diptera
	Plecoptera (45)	Dead [illegible] (5)
Ephemeroptera		Other [illegible] (20)
Rhetid 1 (1)	Trichoptera	
Other (5) diphetia [illegible] (1), decapod 1 (2), planarian 1 (1), Horse mair 1 (1), Brachium 1		

RIFFLE SAMPLE

FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers | Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 0 | Total Org. in Sample 60

Observations

WF2
8/15/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	(2)	3	4	Slimes	(1)				
Filamentous Algae	0	1	2	(3)	4	Macroinvertebrates	0	1	2	(3)	4
Macrophytes	0	(1)	2	3	4	Fish	0	1	(2)	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

		List Families Present/Indicate Abundance
Oligochaeta 1 (1)		
	Anisoptera	Belostomatidae - 1
Gastropoda physa - III (4)		Coleoptera Riffle - HHT I (6)
limpet - 1 Ancylidae (2) II		Crawling - HHT (5)
	Zygoptera Coenagrionidae - HH	Dytiscid - II (2)
Bivalvia - III (3)	Calopterygidae - 1 (1)	Diptera Blackfly d
	Plecoptera	other - HHT HHT HHT HHT HHT HHT
	(43)	HHT HHT III (48)
Ephemeroptera Caenid - II (2)	III	
	Trichoptera Hydropsychid - HHT HHT	
Other Planaria - III (3) Horsehair - 1 (1)		

RIFFLE SAMPLE

FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers | Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (indicate No. of Individuals Representing Group)

Shredders 0 | Total Org. in Sample 60

Observations

WF 1
8/16/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	(1)	2	3	4	Slimes	(0)	1	2	3	4
Filamentous Algae	0	1	(2)	3	4	Macroinvertebrates	0	1	(2)	3	4
Macrophytes	0	(1)	2	3	4	Fish	0	1	(2)	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

Oligochaeta - 1 (1)

Lymnaeidae

Gastropoda righthand - 1 (1)

Physa - IIII (4)

Bivalvia - ~~IIII~~ ~~IIII~~ (11)

Ephemeroptera Caenid - ~~IIII~~ ~~IIII~~ II (47)

Bortid - III (3)

Other Planaria - III (3)

Anisoptera longleg - 1 - Cordulegastridae (1)

Zygoptera coenagrionidae - ~~IIII~~ IIII (9)

Calopterygidae - ~~IIII~~ ~~IIII~~ II

Plecoptera (11)

Trichoptera - ~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ (22)

Horsehair - II Nematomorpha (2)

Last Families Present/Indicate Abundance

Predacious - II (3)

Coleoptera Riffle - II (2) Sand

Crawling - II (2)

Dytiscid - 1

Diptera Bloodred - 1 (1)

others - ~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ (3)

Simulidae - 1 Yes (1)

RIFFLE SAMPLE

FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers

Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 0

Total Org. in Sample 60

Observations

SF3
8/14/91

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	(2)	3	4	Silmes	(0)	1	2	3	4
Filamentous Algae	0	1	(2)	3	4	Macroinvertebrates	0	1	(2)	3	4
Macrophytes	(0)	1	2	3	4	Fish	0	1	(2)	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST List Families Present/Indicate Abundance

Oligochaeta		
	Anisopters (1)	riffle beetle / (1)
Gastropoda	long legs / - Corduliidae	Coleoptera
physa HH (5)		[illegible] Haliplidae (10)
large left handed snail	Zygopters (5)	dytiscids II (5)
Bivalvia	Coloptera [illegible]	Diptera
	Plecoptera	[illegible] (5)
		other HH HH HH III (19)
Ephemeroptera	1 - Philopot.	many [illegible] II - Tipulidae (2)
[illegible] HH HH II (13)	4 - Polycentr. Trichoptera other - HH	
Baetid I (1)	Hydros HH HH HH HH HH HH HH HH (40)	

Other isopoda HH megalopteran II, Heptagenid I, [illegible] / (1)

RIFFLE SAMPLE (2) (3) (1)

FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers	Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 20	Total Org. in Sample 60

Observations

SF2
8/14/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	2	3	4	Slimes	0	1	2	3	4
Filamentous Algae	0	1	2	3	4	Macroinvertebrates	0	1	2	3	4
Macrophytes	0	1	2	3	4	Fish	0	1	2	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta		
	Anisoptera Ipnalen - 11 Asshnidae (2)	
Gastropoda Physa - 11	Lung body - 1 Cordulegaster	Coleoptera Predacions - 11 (2) Riffle B - 11 (2)
11 (14)		Crawling - 11 (13)
	Zygoptera Coenagrionidae 11	~~Light body dark spots - 11~~
Bivalvia	Calopterydae - 11 (2)	Diptera Bloodred - 11 (2)
	Plecoptera	other - 11 (26)
Ephemeroptera Caenidae - 11 (1)		
Baetid - 11 (2)	Trichoptera	
Other Megaloptera - 11 (4)	Water penny - 1 (1)	

RIFFLE SAMPLE

FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers	Filtering Collectors

CPDM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 0	Total Org. in Sample 60
Observations	

SF 1
8/14/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	(2)	3	4	Slimes	(0)	1	2	3	4
Filamentous Algae	0	1	(2)	3	4	Macroinvertebrates	0	1	(2)	3	4
Macrophytes	(0)	1	2	3	4	Fish	0	1	(2)	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta		
	Anisoptera Longbody - I (Aeschnidae) (1)	~~[illegible]~~
Gastropoda Physa - 卌 卌 (16)	Whitetelong - II - Corduliid (2)	Dytiscid - 卌 卌 I (11)
Limpet - I (1)		Coleoptera Riffle beetle - 卌 卌 III (4)
		4-eyed - I
Bivalvia - 卌 卌 III I (14)	Zygoptera Coenagrionid - III (3)	
		Diptera Bloodrat II (2)
	Plecoptera	other - 卌 卌 卌 卌 I (21)
Ephemeroptera Canidae - 卌 卌 (10)		Culicid - I (1)
	卌 卌 卌 (25)	Tabanidae - III (3)
	Trichoptera Hydropsychid - 卌 卌	Tipulidae - II (2)

Other Megaloptera - III (3) Annelid - II (2)

RIFFLE SAMPLE
FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers | Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders (0) | Total Org. in Sample (60)

Observations

X

BG#
6/13/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	2	3	4	Slimes	0	1	2	3	4
Filamentous Algae	0	1	2	3	4	Macroinvertebrates	0	1	2	3	4
Macrophytes	0	1	2	3	4	Fish	0	1	2	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Relative Abundance

Oligochaeta II (2)		
	Anisoptera -1 Aeshnidae x (1)	
Gastropoda		Coleoptera
physial (1)		riffle ~~IIII IIII IIII IIII~~ (25)
	Zygoptera Coen ~~IIII IIII~~ (25)	aquatic III (3)
Bivalvia ~~IIII IIII IIII~~ III (23)	Calopteryx -1 III (4)	Diptera
	Plecoptera	hairy -1 Haliplidae (1) x
Ephemeroptera		Red Mites (6)
Caudatus ~~IIII IIII~~ (10)	Trichoptera Hydropsyche -1 (2)	Other ~~IIII IIII~~ III (13)

Other Leech 1, decapodia 1 - 1 (1) — double Dorsa x ↑ megalothera - III (3)

RIFFLE SAMPLE

FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers	Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 0	Total Org. in Sample 60

Observations

X

BG 1
8/14/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	2	3	4
Filamentous Algae	0	1	2	3	4
Macrophytes	0	1	2	3	4
Slimes	0	1	2	3	4
Macroinvertebrates	0	1	2	3	4
Fish	0	1	2	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta

Anisoptera longleg - 1 - Cordulidae (1)

Gastropoda physa - III (3)

Coleoptera

Elmidae (5)

Zygoptera calopteryidae - I (1)

Crawling - III III I (11) Halichidae

Bivalvia III III III (13)

Corgrea (16) III III III III

Diptera Bloodred - II (2)

Plecoptera

Dtae - III III III III III III III I (3)

Culicidae - II (2)

Ephemeroptera Caenidae - III III (5)

Trichoptera Hydrophychidae - III (3)

Organic - I - Leptocerridae (1)

Other megalopt III (3)

RIFFLE SAMPLE

FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers

Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders

Total Org. in Sample 60

Observations

SC1
8/11/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	2	3	4	Sewage	0	1	2	3	4
Filamentous Algae	0	1	2	3	4	Macroinvertebrates	0	1	2	3	4
Macrophytes	0	1	2	3	4	Fish	0	1	2	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta		
	Anisoptera	
Gastropoda		Coleoptera Riffle beetle - 卌 || (7) crawling
	Zygoptera Coenagrionidae - 卌 卌 卌 卌 卌 (34)	
Bivalvia - 卌 卌 卌 卌 卌 卌 ||| (33)	Calopteridae - 1 (1)	Diptera Bloodred - || (2) other - 卌 卌 卌 ||| (18) Hairy - 1
	Plecoptera	
Ephemeroptera		
Canidae - |||| (4)	Trichoptera Hydropsychidae - 卌 卌 卌 卌 卌 ||||| (28)	
Other Isopoda - ||| (3)	Decapoda - 1 (1)	Megaloptera - 卌 | (6)

RIFFLE SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers	Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 3	Total Org. in Sample 60
Observations	

X

WD1
8/12/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	(2)	3	4
Filamentous Algae	0	1	(2)	3	4
Macrophytes	(0)	1	2	3	4
Slimes	(0)	1	2	3	4
Macroinvertebrates	0	1	(2)	3	4
Fish	0	1	(2)	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta		
	(2)	
	Anisoptera – II – [illegible]	
Gastropoda		Coleoptera
[illegible] (5)		Hydroids [illegible] (23)
	Zygoptera – 5	Riffle [illegible] (27)
Bivalvia III (3)		Diptera
	Plecoptera	Blood – IIII (4)
Ephemeroptera Baetidae – III (4)		Other [illegible] (15)
Scrambler [illegible] (44)	Trichoptera	
Other Leeches [illegible] (13)	Amphipoda – IIII (4)	Water boatman – [illegible] (12)

RIFFLE SAMPLE

FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers	Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 2	Total Org. in Sample 60

Observations

X

BC3
8/11/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	2	3	4	Slimes	0	1	2	3	4
Filamentous Algae	0	1	2	3	4	Macroinvertebrates	0	1	2	3	4
Macrophytes	0	1	2	3	4	Fish	0	1	2	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta

Gastropoda physa - 卌 卌 卌 卌 (4)
ramhorn - 1 Planorbidae

Bivalvia 卌 卌 (9)

Ephemeroptera Baetidae - 卌 (4)
Scraper Heptanemidae - 卌 (5)
Corridae - 卌 卌 卌 卌 卌 (5)

Anisoptera - 卌 卌 卌 卌 → Aeshnidae
卌 (22)

Zygoptera Coenagronidae - 卌 卌 (14)

Plecoptera

Trichoptera

Coleoptera Dytiscidae - 卌 (2)
Crawling (4)

Diptera bleached - 卌 (6)
other - 卌 卌 卌 卌 卌 卌 卌 卌 (32)
longhaired - 卌

Other Isopoda - 卌 (1) Daphnia - 卌 卌 (6) Amphipoda - 卌 (2)

RIFFLE SAMPLE
FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers

Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 3

Total Org. in Sample 60

Observations

BC 2
8/10/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	(1)	2	3	4	Slimes	(0)	1	2	3	4
Filamentous Algae	0	(1)	2	3	4	Macroinvertebrates	0	1	(2)	3	4
Macrophytes	(0)	1	2	3	4	Fish	0	1	(2)	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta		
	→ Cordulegastrian - (1)	
	Anisoptera 1 - Longleg (1st one)	
Gastropoda limpet - 卌 (5)	→ 1 → Arshnidae - (1)	
physa - 卌卌卌卌 (16)	卌卌卌卌	Coleoptera Dytiscidae - 卌 (4)
Ramhorn - 11 (2)	卌卌卌卌卌卌卌卌	→ Riffle - (1)
Bivalvia - 卌卌卌卌	Zygoptera Coenagrionidae - 卌 (6)	
(2)		Diptera Blackfly - 卌卌卌卌卌卌卌 (3)
	Plecoptera	other - 卌 (7)
Ephemeroptera	→ pointed tail - 1	
Caudatid 1 (1)	Trichoptera Hydropsychid - 1 (1)	

Other Decapoda - 1 (1) Isopoda - 1 (1)

RIFFLE SAMPLE

FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers | Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 1 | Total Org. in Sample 60

Observations

BC 1
8/9/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	(1)	2	3	4	Slimes	(0)	1	2	3	4
Filamentous Algae	(0)	1	2	3	4	Macroinvertebrates	0	1	(2)	3	4
Macrophytes	(0)	1	2	3	4	Fish	0	1	(2)	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta ||| (3)		
		Dytiscidae - (9)
	Anisoptera	Elmidae - (4)
Gastropoda - ~~||||~~ |||		Coleoptera - ~~||||~~ ~~||||~~ |||
Physa - (8) ✓		
	Zygoptera ~~||||~~ ||	
Bivalvia ~~||||~~ ~~||||~~ (10)	Coenagrionidae (7)	Diptera - ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~
	Plecoptera	||| Blindred - (17)
		other - (7)
Ephemeroptera	Hydropsychidae - (40) ✓	
	Trichoptera - ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~	
Coriidae (2)	~~||||~~ ~~||||~~ |||| ~~||||~~	
Other Hemipteran - 11	Megalopteran - ~~||||~~ ||| (8)	

RIFFLE SAMPLE

FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers | Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 0 | Total Org. in Sample 60

Observations

BC1
8/9/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	(1)	2	3	4	Slimes	(0)	1	2	3	4
Filamentous Algae	(0)	1	2	3	4	Macroinvertebrates	0	1	(2)	3	4
Macrophytes	(0)	1	2	3	4	Fish	0	1	(2)	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta III (3)

Amphipoda

Ostracoda - (9)

Elmidae - (4)

Gastropoda - HHT III

Physa - (8)

Coleoptera - HHT HHT III

Zygoptera HHT II

Bivalva HHT HHT (10)

Crangonyx pseudo. (5)

Diptera - HHT HHT HHT HHT

III Blood red - (17)

Pupae - (2)

Plecoptera

Ephemeroptera

Hydropsychid - (10)+

Trichoptera - HHT HHT HHT HHT

Corixidae (3)

HHT HHT HHT

Other Hemipteran - II

Megaloptera - HHT III (8)

RIFFLE SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers

Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 0

Total Org. in Sample 60

Observations

X

LP2
8/8/99

Rapid Bioassesement Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	(1)	2	3	4
Filamentous Algae	0	(3)	2	3	4
Macrophytes	(0)	1	2	3	4
Slimes	(0)	1	2	3	4
Macroinvertebrates	0	1	(2)	3	4
Fish	0	(1)	2	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta - || (2)		
	Amisoptera	
Gastropoda		Coleoptera - ||| - [illegible] (4) - (1) - [illegible] (2)
	Zygoptera	
Bivalvia		Diptera - [illegible]
	Plecoptera	
Bulkhead [illegible] (56)		
Ephemeroptera - [illegible]		Blondrea - (23) -
	Trichoptera - |||| - [illegible] (2)	Other - (15) -
Sampling - [illegible] (27)		
Other Hemiptera - [illegible] (6)	Isopoda - ||| (4)	Amphipoda - (1) Daphnia (2) Seed Shrimp [illegible]

RIFFLE SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers	Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 6	Total Org. in Sample 60

Observations

Walked up to Bulkhead structure on the West Bank with green pipe in close proximity - purpose unknown

Rapid Bioassessment Protocol II

LP1

Biosurvey Field Data Sheet

8/8/99

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	2	3	4	Slimes	0	1	2	3	4
Filamentous Algae	0	1	2	3	4	Macroinvertebrates	0	1	2	3	4
Macrophytes	0	1	2	3	4	Fish	0	1	2	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta 3		
	Anisoptera	
Gastropoda 11 Physa		Coleoptera — Dryopidae 3
	Zygoptera	
Bivalvia		Diptera
65	Plecoptera	
Ephemeroptera		Bloodred - 13
Cenidae 8	Trichoptera - Hydropsychidae 2	other - 7
Baetidae 1		Culicidae - 8

Other amphipoda, Gerridae 1, Nemiterean, decapoda 2

RIFFLE SAMPLE 16

FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers | Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 3 | Total Org. in Sample 60

Observations

Sample taken in broken concrete, and not indicative of stream, only riffle available

X

LC 2
8/10/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	2	3	4
Filamentous Algae	0	1	2	3	4
Macrophytes	0	1	2	3	4
Slimes	0	1	2	3	4
Macroinvertebrates	0	1	2	3	4
Fish	0	1	2	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta 19		
	Arcaptera 1 - Archaidae 1	
Gastropoda		Coleoptera
Physa 1		
Rambo 20	Zygoptera	Cliffe 20
Bivalvia 9	Coenagrionidae 1	Dytiscidae 25
	Plecoptera	Diptera
		Blood red
Ephemeroptera		other 8
Hept - 1 - Sampler 1	Trichoptera	Tipulidae - 1

Other Amphipod 5, Isopod, H_2O group - 1, Nepidae 1, Sand shrimp 2, Dytiscidae - 1

RIFFLE SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers 19 | Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 20 | Total Org. in Sample 60

Observations

LCI
8/8/95

X

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	2	3	4
Filamentous Algae	0	1	2	3	4
Macrophytes	0	1	2	3	4
Slimes	0	1	2	3	4
Macroinvertebrates	0	1	2	3	4
Fish	0	1	2	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta (14)		
	Amnoptera	
Gastropoda - physa (13)		Coleoptera
	Zygoptera - Coenagrionidae (7)	Dryopidae (15) - Elmidae (1)
Bivalvia (13)		Diptera
	Plecoptera	Blanded (12) - other (6)
Ephemeroptera		
	Trichoptera (19) - Hydropsychidae	
Other (2) Ideal, Beatrix, Corixidae (7)	Isopoda (2)	

RIFFLE SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers | Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 2 | Total Org. in Sample 60

Observations

PC-16
8/5/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	(1)	2	3	4
Filamentous Algae	0	1	(2)	3	4
Macrophytes	(0)	1	2	3	4
Slimes	(0)	1	2	3	4
Macroinvertebrates	0	1	2	(3)	4
Fish	0	1	2	(3)	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

Madtom
Misquitoe fish
Blue gill
Large mouth bass
(spotted or redeye)

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta 1 (1)		
	Anisoptera 1 Aeshnidae (6)	
Physa (8) Gastropoda [illegible]		Coleoptera [illegible] Dryopidae - [illegible] (9)
limpet (5) [illegible]		Elmidae - [illegible] (3)
[illegible]	Zygoptera [illegible]	
Bivalvia	Caloptery gidae - (3) Coenagrionidae - (14)	Diptera
	Plecoptera	
Ephemeroptera 1 - Baetidae (2)		
	Trichoptera 1 - Hydropsychidae (1)	

Other 1 (Ingoptera) Bradmeae (1)

RIFFLE SAMPLE

FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers | Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 1 | Total Org. in Sample 61

Observations

X

PC15
8-6

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	(2)	3	4	Slimes	(0)	1	2	3	4
Filamentous algae	0	1	(2)	3	4	Macroinvertebrates	0	1	(2)	3	4
Macrophytes	0	(1)	2	3	4	Fish	0	1	(2)	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaete (1)		
	Anisoptera	
Gastropoda Aphysa (1)		Coleoptera Dryopidae - II (2)
		Elmidae - I (1)
	Zygoptera (3) Coleopterygidae - II	Dyt. - II (2)
Bivalvia (44)	Coenagrionidae - III (3)	Diptera Blood-Red - II (2)
	Plecoptera	Other - II (2)
Ephemeroptera Baetidae (20)		
Caenidae (12)	Poll Hydropsychidae	
	Trichoptera (20)	
Other Annelid leech (2)	Nepidae - (1)	

RIFFLE SAMPLE

FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers | Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 2 | Total Org. in Sample 60

Observations

PC 14
8/16/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	(1)	2	3	4	Seines	(0)	1	2	3	4
Filamentous Algae	0	1	2	(3)	4	Macroinvertebrates	0	1	(2)	3	4
Macrophytes	(0)	1	2	3	4	Fish	0	1	(2)	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta		
	(1)	
	Anisoptera longbody - 1 - Aeshnidae	
Gastropoda physa - 1111 (4)		Coleoptera crawling - 1111 (4)
		Riffle - 11 (2)
(21)	Zygoptera	
Bivalvia - 1111 1111 1111 1111		Diptera Bloodred - 1 (1)
1111 1111 1111 1111 (46)	Plecoptera	other - 1111 1111 1111 1111 1111 11 (27)
Ephemeroptera [illegible]		
Batid - 1111 1111 1111 1111	(3)	
Heptagineae - 111 (3) (27)	Trichoptera Hydropsychid - 111	
Other Planaria - 11 (2)		

RIFFLE SAMPLE

FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers	Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 1	Total Org. in Sample 60

Observations

PC13
9/13/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	2	3	4	Slimes	0	1	2	3	4
Filamentous Algae	0	1	2	3	4	Macroinvertebrates	0	1	2	3	4
Macrophytes	0	1	2	3	4	Fish	0	1	2	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

Oligochaeta		Use Relative Abundance Abundance
	Anisoptera	
Gastropoda Physa - III (3)		Cyprinidae (1)
		Coleoptera Riffle - IIII (11)
		Dytiscidae - III (3)
	Zygoptera Coenagrionidae - II (2)	Lloyd - I Haliplidae (1)
Bivalvia - IIII (9)		Diptera Blocked - IIII (4)
	Plecoptera	other - IIII IIII IIII IIII III
		Hairy - I
Ephemeroptera (12)		Haliplidae
Caenidae - IIII IIII III	Trichoptera - IIII IIII IIII IIII (43)	
Baetidae - III (3)		
Other Megaloptera - II (2)		

RIFFLE SAMPLE

FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers	Filtering Collectors
CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)	
Shredders 0	Total Org. in Sample 60

Observations:

PC12
8/12/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	(2)	3	4	Slimes	(0)	1	2	3	4
Filamentous Algae	0	(1)	2	3	4	Macroinvertebrates	0	1	(2)	3	4
Macrophytes	(0)	1	2	3	4	Fish	0	(1)	2	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta		
	Anisoptera	
Gastropoda		Coleoptera Riffle beetle - 卌卌卌卌卌卌 (37)
		Dytiscidae - 1 (1)
	Zygoptera Coenagrionidae - 1 (5)	
Bivalvia 卌 (5)		Diptera ~~Blackfly~~
	Plecoptera	other - 卌卌 (11)
Ephemeroptera (17)	(70) Hydropsyche	
Coenidae - 卌卌卌	Trichoptera - 卌卌卌卌卌卌卌卌卌卌卌卌卌卌卌卌	
Other Megaloptera - 1 (2)		

RIFFLE SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers	Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 0	Total Org. in Sample 60

Observations

PC 11
8/11/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	(1)	2	3	4	Slimes	(0)	1	2	3	4
Filamentous Algae	0	(1)	2	3	4	Macroinvertebrates	0	1	(2)	3	4
Macrophytes	(0)	1	2	3	4	Fish	0	1	(2)	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta		
	Anisoptera	
Gastropoda physa - 11 (2)		Coleoptera Riffle beetle - 卌 卌 卌 11 (15)
	Zygoptera	
Bivalvia		Diptera Blood red - 卌 卌 1 (11)
	Plecoptera	other - 1111 (4)
Ephemeroptera Baetidae - 111 (4)	other type - → Polycentrop - (1)	
Canidae - 卌 卌 卌 (16)	Trichoptera Hydropsychidae - 卌 (2)	
Scrapers → Heptat - 卌 1 (6)	卌 卌 卌 卌 卌 卌 卌 卌 卌 卌	
Other	→ organic house - 111	
	→ Leptoceridae - (3)	Megaloptera - 111 (3)

RIFFLE SAMPLE
FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers	Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 2	Total Org. in Sample 60

Observations

X

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

DC9

8/10/99

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	2	3	4
Filamentous Algae	0	1	2	3	4
Macrophytes	0	1	2	3	4
Slimes	0	1	2	3	4
Macroinvertebrates	0	1	2	3	4
Fish	0	1	2	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

		Lux Families Present/Indicate Abundance
Oligochaeta		
	Anisoptera	
Gastropoda		Coleoptera (29)
	Zygoptera	
Bivalvia	Gomphidae (11)	Diptera Diptistisides - (9)
	Plecoptera	
Ephemeroptera		Trichoptera (21)
Caenidae (5)	Trichoptera	
Batadae (1)	Hydropsychidae (1)	
Other Ciliophorida (9)	Rhyacophilidae (1)	Ephemeridae (1)

RIFFLE SAMPLE

FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers (17)

Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 5

Total Org. in Sample 60

Observations

X

PC 8
8/9/99

Rapid Bioassessment Protocol II

Water Duplicate Samp
DUP89 taken He

Biosurvey Field Data Sheet

Biota sampling included bridge abutment

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	(2)	3	4
Filamentous Algae	0	(1)	2	3	4
Macrophytes	(0)	1	2	3	4
Slimes	(0)	1	2	3	4
Macroinvertebrates	0	1	(2)	3	4
Fish	0	(1)	2	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta 11 (2)		Crawling - (4)
		Flamidae - (6)
	Anisoptera	Dragonflies - (17)
Gastropoda		Coleoptera 卌 卌 卌 卌 |||
	Zygoptera	
Bivalvia		Diptera - 卌 卌 卌 卌 卌 卌 |||
	Plecoptera	
Ephemeroptera 卌 ||||		Bloodend (3)
Caenidae (9)	卌 卌 卌 卌 卌 卌 卌	Chaoborus (26)
6	Trichoptera 卌 卌 卌 卌 卌 卌 卌 卌 卌	
	Hydropsychidae (34)	Soul Shrimp
Other Hemipteran - 11 (2)	Isopoda - 卌 (5)	Daphnia - 11 (2) Megaloptera - 11

RIFFLE SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers | Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 4 | Total Org. in Sample 60

Observations

X

OCD
8/9/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	(2)	3	4
Filamentous Algae	0	1	(2)	3	4
Macrophytes	(0)	1	2	3	4

Shrimp	0	1	2	3	4
Macroinvertebrates	0	1	(2)	3	4
Fish	0	1	(2)	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta [illegible] (6)		
	Anisopteris	
Gastropoda		Coleoptera [illegible]
	Zygoptera [illegible]	
Bivalvia	Corbicula [illegible] (8)	Diptera [illegible]
	Plecoptera	
Ephemeroptera		
[illegible]	Trichoptera [illegible]	[illegible]
Scapula	[illegible] (12)	[illegible]
Other annalid [illegible]	Sigiparia (1)	

Crenulida (2)
Elmidae (12)
Dytiscidae (12)

RIFFLE SAMPLE

FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers	Filtering Collectors

DPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders	Total Org. in Sample 60
Observations	

X

PCG
8/9/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

Included bridge abutment area for biotic sampling

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	(1)	2	3	4	Slimes	(0)	1	2	3	4
Filamentous Algae	0	1	(2)	3	4	Macroinvertebrates	0	1	(2)	3	4
Macrophytes	(0)	1	2	3	4	Fish	0	(1)	2	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta (3)		
	Anisoptera - Aeschnidae (2)	
Gastropoda - Limpets		Coleoptera - Elmidae (13)
Ansylidae (8)		dytiscid (9)
	Zygoptera -	
Bivalvia (2)	Coenagrionidae (9)	Diptera -
	Plecoptera	
Ephemeroptera -		Bloodred (5)
Caenidae (6)	Trichoptera	other (31)
Scraping - Heptagenidae (3)		
Other Isopoda -	Seed Shrimp (12)	Nematoda (2) Leeches (3)

RIFFLE SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers	Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 12	Total Org. in Sample 60

Observations

PC6
8/9/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

included bridge abutment area for biotic sampling

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	(1)	2	3	4	Slimes	(0)	1	2	3	4
Filamentous Algae	0	1	(2)	3	4	Macroinvertebrates	0	1	(2)	3	4
Macrophytes	(0)	1	2	3	4	Fish	0	(1)	2	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta 3		
	Anisoptera - Aeshnidae (2)	
Gastropoda - Limpets		Coleoptera - Elmidae (13) crawling (2) dyticid (9)
Ancylidae (6)		
	Zygoptera - Coenagrionidae (9)	
Bivalvia (2)		Diptera - Bloodred (5) other (31)
	Plecoptera	
Ephemeroptera - Coenidae (6)	Trichoptera	
Scraping - Heptaginidae (3)		
Other Isopoda - (31)	Seed Shrimp (12) Daphnia Hemiptecan (2) Beatman Leaches (3)	

RIFFLE SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers	Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 12	Total Org. in Sample 60

Observations

X

PC 5
8/7/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	(2)	3	4	Slimes	(0)	1	2	3	4
Filamentous Algae	0	1	(2)	3	4	Macroinvertebrates	0	1	2	(3)	4
Macrophytes	(0)	1	2	3	4	Fish	0	1	(2)	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta		
	Amnoptera	
Gastropoda		Coleoptera - 卌 卌 ||||
	Zygoptera - 1 Coenagrionida (1)	Elimidae - (1)
Bivalvia		Dryopidae - (1)
	Plecoptera	Diptera - 卌 |
		Bloodred - (3) -
Ephemeroptera - 卌 卌 |	Ad Pyrrhophyllidae (2)	other - (3) -
Caenidae - (3) -	卌 卌 卌 卌 卌 卌 卌	
Baetidae - (3) -	Trichoptera - 卌 卌 卌 卌	
Serapion - 1 (1) -	卌 卌 卌 卌 卌 卌 卌	

Other - Decapoda - 1 (1) Hemiptera - 1 (1) Annelid - 1 (1) Megaloptera - 1 (1)

RIFFLE SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers	Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 0	Total Org. in Sample 60

Observations

X

PC4
8/7/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	(2)	3	4
Filamentous Algae	0	1	(2)	3	4
Macrophytes	0	(1)	2	3	4
Slimes	(0)	1	2	3	4
Macroinvertebrates	0	1	2	(3)	4
Fish	0	1	(2)	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta

Anisoptera – 1 – Aeshnidae (1)

Gastropoda

Coleoptera – HHT HHT II
Drypidae – (12) –

Zygoptera

Bivalves

Diptera – HHT
Blood red (3) –
other – (0) –

Plecoptera

All Baetidae
Ephemeroptera – HHT HHT HHT HHT HHT II (27)

All Hydropsychidae
Trichoptera – HHT HHT HHT HHT HHT HHT HHT HHT HHT HHT HHT HHT HHT II (72)

Other Annelida – 1 (1)

RIFFLE SAMPLE
FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers | Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 0

Observations | Total Org. in Sample 60

PC 3
8/7/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	(1)	2	3	4	Slimes	(0)	1	2	3	4
Filamentous Algae	0	1	(2)	3	4	Macroinvertebrates	0	1	2	(3)	4
Macrophytes	0	(1)	2	3	4	Fish	0	1	(2)	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta 1 (1)

Amphipoda

Gastropoda 1 - limpet (1)

Zygoptera

Coleoptera IIII IIII IIII I
Dryopidae - (15)
Elmidae - (20)

Bivalvia IIII IIII (12)

Plecoptera

Diptera IIII IIII IIII I
Blackfly - (5)
other - (9)

Ephemeroptera IIII - Caenidae (4)

Trichoptera

Hydropsychidae

Collembola - (2)

IIII IIII IIII IIII IIII (25)

Other Isopoda - IIII (5) Amelid - II (2) Megaloptera - I (1)

RIFFLE SAMPLE
FUNCTIONAL FEEDING GROUPS

Indicate No. of Individuals Representing Group

Scrapers

Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 3

Total Org. in Sample 60

Observations

PC 2
8/7/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	1	2	3	4	Slimes	0	1	2	3	4
Filamentous Algae	0	1	2	3	4	Macroinvertebrates	0	1	2	3	4
Macrophytes	0	1	2	3	4	Fish	0	1	2	3	4

Algea scum on surface

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta II (2)		
	Anisoptera I Aeshnidae (1)	
Gastropoda		Coleoptera [illegible]
	Zygoptera II - Coenagionidae (12)	Elmidae (7) Dryopidae (12)
Bivalvia III (3)		Diptera [illegible]
	Plecoptera	
Ephemeroptera		Blood red (20)
	Trichoptera II Hydropsychidae (3)	other (5) Culicidae (6)
Other Annelid I (1) Gomphina [illegible] (14)	Amphipod III (3)	Hermipodium II - Corix (5)

RIFFLE SAMPLE
FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers	Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Shredders 2	Total Org. in Sample 50

Observations

PC 1.
8/6/99

Rapid Bioassessment Protocol II

Biosurvey Field Data Sheet

RELATIVE ABUNDANCE OF AQUATIC BIOTA

Periphyton	0	(1)	2	3	4
Filamentous Algae	0	1	(2)	3	4
Macrophytes	0	1	(2)	3	4
Slimes	(0)	1	2	3	4
Macroinvertebrates	0	1	(2)	3	4
Fish	0	1	(2)	3	4

0 = Absent/Not Observed 1 = Rare 2 = Common 3 = Abundant 4 = Dominant

MACROBENTHOS QUALITATIVE SAMPLE LIST

List Families Present/Indicate Abundance

Oligochaeta – II (2)

Gastropoda – 卌 卌 II – phyba (17)

Bivalvia

Ephemeroptera – 卌 – Cornidae (5)

Other Hemiptera – 卌 卌 卌 卌 Cornidae (25)

Anisoptera – II Aschnid (2)

Zygoptera – 卌 卌 卌 卌 卌 卌 III – Gomphidae

Plecoptera (33)

Trichoptera

Coleoptera – 卌 卌 III

Diptera – 卌 卌 III

Blood red – (3) (3)

other – (5) (5)

Culicidae – (5) (5)

Cstraccida (20)

Arachnid? – 卌 卌 卌 卌 – Seed Shrimp

RIFFLE SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Representing Group)

Scrapers

Filtering Collectors

CPOM SAMPLE FUNCTIONAL FEEDING GROUPS (Indicate No. of Individuals Represent. a Group)

Shredders 4

Total Org. in Sample 60

Observations

woody debris & roots only thing available

SA 1
8/6/99

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI)

Ohio EPA Site Description Sheet - Fish — QHEI SCORE: 37

Stream: Sand Creek — Rm ____ Date: 8/6/99 — River Code: ____

Location: 3.8 — Crew: ____

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Check all types present)

TYPE	POOL	RIFFLE
☐ BOULDER/SLABS [10]	____	____
☐ BOULDER [9]	____	____
☐ COBBLE [8]	____	____
☐ HARDPAN [4]	____	____
☐ MUCK [3]	____	____
☐ GRAVEL [7]	X	____
☐ SAND [6]	X	____
☐ BEDROCK [5]	____	____
☐ DETRITUS [3]	____	____
☐ ARTIFIC. [0]	____	____

SUBSTRATE QUALITY: ☐ SILT HEAVY [-2] ☐ SILT MODERATE [-1] ☐ SILT NORMAL [0] ☐ SILT FREE [1]

Substrate Origin (Check all): ☐ LIMESTONE [1] ☐ RIPRAP [0] ☐ HARDPAN [0] ☐ TILLS [1] ☐ SANDSTONE [0] ☐ SHALE [-1]

Silt Cover (Check One): ☐ EXTENSIVE [-2] ☐ MODERATE [-1] ☐ LOW [0] ☐ NONE [1]

Extent Of Embeddedness (Check One): ☐ EXTENSIVE [-2] ☐ MODERATE [-1]

SUBSTRATE SCORE: 2

TOTAL NUMBER OF SUBSTRATE TYPES: Do 4 [2] X <= 4 [0] ☐ COAL FINES [-2]

NOTE: (Ignore sludge that originated from point source); score is based on natural substrates)

COMMENTS: ____

COVER SCORE: 9

2) INSTREAM COVER

TYPE (Check All That Apply)

- ☐ UNDERCUT BANKS [1]
- X OVERHANGING VEGETATION [1]
- X SHALLOWS (IN SLOW WATER) [1]
- X DEEP POOLS [2]
- ☐ ROOTWADS [1]
- ☐ BOULDERS [1]
- ☐ OXBOWS [1]
- X AQUATIC MACROPHYTES [1]
- X LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE)

- ☐ EXTENSIVE > 75% [11]
- ☐ MODERATE 25-75% [7]
- X SPARSE 5-25% [3]
- ☐ NEARLY ABSENT < 5% [1]

COMMENTS: ____

CHANNEL: 6

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATION(S)/OTHER
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]	☐ SNAGGING
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☐ MODERATE [2]	☐ RELOCATION
☐ LOW [2]	☐ FAIR [3]	X RECOVERING [3]	X LOW [1]	☐ CANOPY REMOVAL
X NONE [1]	X POOR [1]	☐ RECENT OR NO RECOVERY [1]		☐ DREDGING

☐ IMPOUND. ☐ ISLANDS ☐ LEVEED ☐ BANK SHAPING ☐ ONE SIDE CHANNEL MODIFICATIONS

COMMENTS: ____

RIPARIAN: 6

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank)

"River Right Looking Downstream"

RIPARIAN WIDTH (L R (Per Bank))	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R (Most Predominant Per Bank))	(L R (Per Bank))	BANK EROSION
☐ WIDE >50m [4]	☐ FOREST, SWAMP [3]	☐ URBAN OR INDUSTRIAL [0]	☐ NONE OR LITTLE [3]
☐ MODERATE 10-50 [3]	X OPEN PASTURE/ ROW CROP [0]	☐ SHRUB OR OLD FIELD [2]	X MODERATE [2]
☐ NARROW 5-10m [2]	☐ RESID., PARK, NEW FIELD [1]	☐ CONSERV. TILLAGE [1]	☐ HEAVY OR SEVERE [1]
X VERY NARROW 1-5m [1]	☐ FENCED PASTURE [1]	☐ MINING/CONSTRUCTION [0]	
☐ NONE [0]			

COMMENTS: ____

POOL: 2

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH: (Check 1)

- ☐ >1m [6]
- ☐ 0.7-1m [4]
- X 0.4-0.7m [2]
- ☐ < 0.4m [1]
- ☐ >0.3m ? Pool = 0]

MORPHOLOGY (Check 1)

- ☐ POOL WIDTH > RIFFLE WIDTH [2]
- X POOL WIDTH = RIFFLE WIDTH [1]
- ☐ POOL WIDTH < RIFFLE W. [0]

POOL/RIFFLE CURRENT VELOCITY (Check All That Apply)

- ☐ TORRENTIAL [-1]
- ☐ FAST [1]
- ☐ MODERATE [1]
- ☐ SLOW [1]
- ☐ EDDIES [1]
- X INTERSTITIAL [-1]
- ☐ INTERMITTENT [-2]

☐ NO POOL [0]

COMMENTS: ____

RIFFLE: 0

RIFFLE/RUN DEPTH

- ☐ GENERALLY >10 cm, MAX>50 [4]
- ☐ GENERALLY >10 cm, MAX<50 [3]
- ☐ GENERALLY 5-10 cm [1]
- ☐ GENERALLY < 5 cm [Rille = 0]

RIFFLE/RUN SUBSTRATE

- ☐ STABLE (e.g., Cobble, Boulder) [2]
- ☐ MOD. STABLE (e.g., Pea Gravel) [1]
- ☐ UNSTABLE (Gravel, Sand) [0]

RIFFLE/RUN EMBEDDEDNESS

- ☐ EXTENSIVE [-1]
- ☐ MODERATE [0]
- ☐ LOW [1]
- ☐ NONE [2]

X NO RIFFLE [0]

COMMENTS: ____

GRADIENT: 2

6) Gradient (feet/mile): 66 — %POOL: 97 — %RIFFLE: ____ — %RUN: 3

EPA 4520

HC1
8/15

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish — QHEI SCORE: 44

Stream: Hurricane Creek — RM: — Date: 8/15/99 — River Code: —
Location: HC 1 — Crew: EAR/CWS

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES: Check all types present)

TYPE	POOL	RIFFLE
BLDR/SLABS[10]		
BOULDER [9]		
COBBLE [8]		
HARDPAN [4]	X	
MUCK [2]		
GRAVEL [7]	X	X
SAND [6]	X	X
BEDROCK[5]		
DETRITUS[3]		
ARTIFIC.[0]		

TOTAL NUMBER OF SUBSTRATE TYPES: Do 4 [2] Do < 4 [0] COAL FINES [-2]

Substrate Origin (Check all): LIMESTONE [1] RIP/RAP [0] HARDPAN [0] TILLS [1] SANDSTONE [0] SHALE [-1]

Silt Cover (Check One): SILT HEAVY [-2] SILT MODERATE [-1] SILT NORMAL [0] SILT FREE [1]

Extent Of Embeddedness (Check One): EXTENSIVE[-2] MODERATE[-1] LOW[0] NONE[1]

SUBSTRATE SCORE: 14

NOTE: (Ignore algae that originates from point sources; score is based on natural substrates)

COMMENTS:

COVER SCORE: 5

2) INSTREAM COVER

TYPE (Check All That Apply)

UNDERCUT BANKS [1]	DEEP POOLS [2]	LOGJAMS [1]
OVERHANGING VEGETATION [1]	ROOTWADS [1]	AQUATIC MACROPHYTES [1]
SHALLOWS (IN SLOW WATER) [1]	BOULDERS [1]	LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE)

EXTENSIVE > 75% [11]
MODERATE 25-75% [7]
SPARSE 5-25% [3]
NEARLY ABSENT < 5% [1]

COMMENTS:

CHANNEL: 8

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
HIGH [4]	EXCELLENT [7]	NONE [6]	HIGH [3]	SNAGGING
MODERATE [3]	GOOD [5]	RECOVERED [4]	MODERATE [2]	RELOCATION
LOW [2]	FAIR [3]	RECOVERING [3]	LOW [1]	CANOPY REMOVAL
NONE [1]	POOR [1]	RECENT OR NO RECOVERY [1]		DREDGING

MAPPED — STRAIGHTENED — LEVEED — BANK SHAPING — ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

RIPARIAN: 6

4) RIPARIAN ZONE AND BANK EROSION - (Check ONE box per bank or check 2 and AVERAGE per bank)

"River Right Looking Downstream"

RIPARIAN WIDTH (L R (Per Bank))	EROSION/BANKSIDE - FLOOD PLAIN QUALITY (L R (Most Predominant Per Bank))	L R (Per Bank)	BANK EROSION
WIDE >50m [4]	FOREST, SWAMP [3]	URBAN OR INDUSTRIAL[0]	NONE OR LITTLE [3]
MODERATE 10-50 [3]	OPEN PASTURE/ ROW CROP[0]	SHRUB OR OLD FIELD[2]	MODERATE [2]
NARROW 5-10m [2]	RESID.,PARK,NEW FIELD [1]	CONSERV. TILLAGE [1]	HEAVY OR SEVERE[1]
VERY NARROW 1-5m [1]	FENCED PASTURE [1]	MINING/CONSTRUCTION [0]	
NONE[0]			

COMMENTS:

POOL: 5

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (Check 1)

> 1m [6]	
0.7-1m [4]	
0.4-0.7m [2]	
< 0.4m [1]	
<0.2m (Pool = 0)	

MORPHOLOGY (Check 1)

POOL WIDTH > RIFFLE WIDTH [2]	
POOL WIDTH = RIFFLE WIDTH [1]	
POOL WIDTH < RIFFLE W. [0]	

POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply)

TORRENTIAL[-1]	EDDIES[1]
FAST[1]	INTERSTITIAL[-1]
MODERATE [1]	INTERMITTENT[-2]
SLOW [1]	

NO POOL[0]

COMMENTS:

RIFFLE: 2

RIFFLE/RUN DEPTH

GENERALLY >10 cm,MAX>50 [4]	
GENERALLY >10 cm,MAX<50 [3]	
GENERALLY 5-10 cm [1]	
GENERALLY < 5 cm [Pts = 0]	

RIFFLE/RUN SUBSTRATE

STABLE (e.g. Cobble, Boulder) [2]	
MOD. STABLE (e.g. Fine Gravel) [1]	
UNSTABLE (Gravel,Sand) [0]	

RIFFLE/RUN EMBEDDEDNESS

EXTENSIVE [-1]	MODERATE[0]
LOW, [1]	NONE[2]

NO RIFFLE[0]

COMMENTS:

GRADIENT: 4

6) Gradient (feet/mile): 1.853 — %POOL: 40 — %RIFFLE: — %RUN: 2

EPA 4520

UNF3 8/11/11

Figure V-4-5 Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 40

Stream: West Fork of Cesar RM: Date: River Code:
Location: Cnty:

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES: Check all types present);

TYPE	POOL/RIFFLE	POOL	RIFFLE	SUBSTRATE QUALITY
☐-BLDR/SLABS [10]	☐-GRAVEL [7]	X	X	Substrate Origin (Check all)
☐-BOULDER [9]	☐-SAND [6]	X	X	☐-LIMESTONE [1] ☐-RIPRAP [0]
☐-COBBLE [8]	☐-BEDROCK [5]			☒-TILLS [1] ☒-HARDPAN [0]
☒-HARDPAN [4]	X		X	☐-SANDSTONE [0]
☐-MUCK [2]	☐-DETRITUS [3]	X		☐-SHALE [-1]
	☐-ARTIFIC. [0]			☐-COAL FINES [-2]

SUBSTRATE SCORE: 15 11

Silt Cover (Check One):
☐-SILT HEAVY [-2] ☒-SILT MODERATE [-1]
☐-SILT NORMAL [0] ☐-SILT FREE [1]

Extent Of Embeddedness (Check One):
☐-EXTENSIVE [-1] ☐-MODERATE [-1]
X-LOW [0] ☐-NONE [1]

TOTAL NUMBER OF SUBSTRATE TYPES ☒ = [2] X = [0]
NOTE: Ignore sludge that originates from point-sources; score is based on natural substrates)
COMMENTS:

COVER SCORE: 6

2) INSTREAM COVER

Type (Check All That Apply)
☐-UNDERCUT BANKS [1]
☒-OVERHANGING VEGETATION [1]
☐-SHALLOWS (IN SLOW WATER) [1]
☒-DEEP POOLS [2]
☐-ROOTWADS [1]
☐-BOULDERS [1]
☐-OXBOWS [1]
☒-AQUATIC MACROPHYTES [1]
☒-LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE)
☐-EXTENSIVE > 75% [11]
☐-MODERATE 25-75% [7]
☒-SPARSE 5-25% [3]
☐-NEARLY ABSENT < 5% [1]

COMMENTS:

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE) CHANNEL: 4

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐-HIGH [4]	☐-EXCELLENT [7]	☐-NONE [6]	☐-HIGH [3]	☐-SNAGGING ☐-IMPOUND.
☐-MODERATE [3]	☐-GOOD [5]	☐-RECOVERED [4]	☐-MODERATE [2]	☐-RELOCATION ☐-ISLANDS
☐-LOW [2]	☐-FAIR [3]	☐-RECOVERING [3]	☒-LOW [1]	☐-CANOPY REMOVAL ☐-LEVEED
☒-NONE [1]	☒-POOR [1]	X-RECENT OR NO RECOVERY [1]		☐-DREDGING ☐-BANK SHAPING
				☐-ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank)
"River Right Looking Downstream"

RIPARIAN: X 4

RIPARIAN WIDTH L R (Per Bank)	EROSION/RUNOFF - FLOOD PLAIN QUALITY L R (Most Predominant Per Bank)	L R (Per Bank)	BANK EROSION
☐-WIDE >50m [4]	☐-FOREST, SWAMP [3]	☐-URBAN OR INDUSTRIAL [0]	☐-NONE OR LITTLE [3]
☐-MODERATE 10-50 [3]	☒-OPEN PASTURE/ROWCROP [0]	☐-SHRUB OR OLD FIELD [2]	☒-MODERATE [2]
☐-NARROW 5-10m [2]	☐-RESID./PARK/NEW FIELD [1]	☐-CONSERV. TILLAGE [1]	☐-HEAVY OR SEVERE [1]
☐-VERY NARROW 1-5m [1]	☐-FENCED PASTURE [1]	☐-MINING/CONSTRUCTION [0]	
☒-NONE [0]			

COMMENTS:

POOL/GLIDE AND RIFFLE/RUN QUALITY

POOL: 7

MAX DEPTH: (Check 1)
☐->1m [6]
☒-0.7-1m [4]
☐-0.4-0.7m [2]
☐-< 0.4m [1]
☐-=0.2m (Pool = 0)

MORPHOLOGY (Check 1)
☒-POOL WIDTH > RIFFLE WIDTH [2]
☐-POOL WIDTH = RIFFLE WIDTH [1]
☐-POOL WIDTH < RIFFLE W. [0]

POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply)
☐-TORRENTIAL [-1]
☐-FAST [1]
☐-MODERATE [1]
☒-SLOW [1]
☐-EDDIES [1]
☐-INTERSTITIAL [-1]
☐-INTERMITTENT [-2]

☐-NO POOL [0]

COMMENTS:

RIFFLE: 2

RIFFLE/RUN DEPTH
☐-GENERALLY >10 cm, MAX>50 [4]
☐-GENERALLY >10 cm, MAX<50 [3]
☒-GENERALLY 5-10 cm [1]
☐-GENERALLY < 5 cm (Rifle = 0)

RIFFLE/RUN SUBSTRATE
☐-STABLE (e.g., Cobble, Boulder) [2]
☐-MOD. STABLE (e.g., Pea Gravel) [1]
☒-UNSTABLE (Gravel, Sand) [0]

RIFFLE/RUN EMBEDDEDNESS
☐-EXTENSIVE [-1]
☒-LOW [1]
☐-MODERATE [0]
☐-NONE [2]

☐-NO RIFFLE [0]

COMMENTS:

GRADIENT: 4

6) Gradient (feet/mile): 2.00 %POOL: 95 %RIFFLE: %Run 5

EPA 4520

WF2
8/15/99

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish OHEI SCORE: 46

Stream: West Fork RM: Date: 8/15/99 River Code:
Location: WF 2 Crew: ES/CWS

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Check all types present)

TYPE	POOL	RIFFLE	POOL	RIFFLE
☐ BLDR/SLAB [10]			☐ GRAVEL [7]	
☐ BOULDER [9]			☐ SAND [6]	
☐ COBBLE [8]	X	X	☐ BEDROCK [5]	
☒ HARDPAN [4]	X	X	☐ DETRITUS [3]	
☐ MUCK [2]			☐ ARTIFICIAL [0]	

TOTAL NUMBER OF SUBSTRATE TYPES: 4 [2] (+ = 6 [0]) ☐ COAL FINES [-2]

NOTE: (Ignore sludge that originated from point-source(s); score is based on natural substrates)

COMMENTS:

SUBSTRATE QUALITY — Substrate Origin (Check all): ☐ LIMESTONE [1] ☐ TILLS [1] ☒ HARDPAN [0] ☐ SANDSTONE [0] ☐ SHALE [-1]

Silt Cover (Check One): ☐ SILT HEAVY [-2] ☐ SILT MODERATE [-1] ☐ SILT NORMAL [0] ☐ SILT FREE [1]

Extent Of Embeddedness (Check One): ☐ EXTENSIVE [-2] ☐ MODERATE [-1] ☒ LOW [0] ☐ NONE [1]

SUBSTRATE SCORE: 12

2) INSTREAM COVER

TYPE (Check All That Apply): ☐ UNDERCUT BANKS [1] ☒ OVERHANGING VEGETATION [1] ☒ SHALLOWS (IN SLOW WATER) [1] ☒ DEEP POOLS [2] ☐ ROOTWADS [1] ☐ BOULDERS [1] ☐ OXBOWS [1] ☒ AQUATIC MACROPHYTES [1] ☒ LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE): ☐ EXTENSIVE > 75% [11] ☐ MODERATE 25-75% [7] ☒ SPARSE 5-25% [3] ☐ NEARLY ABSENT < 5% [1]

COMMENTS:

COVER SCORE: 9

3) CHANNEL MORPHOLOGY (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]	☐ SNAGGING ☐ IMPOUND.
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☐ MODERATE [2]	☐ RELOCATION ☐ ISLANDS
☒ LOW [2]	☐ FAIR [3]	☒ RECOVERING [3]	☒ LOW [1]	☐ CANOPY REMOVAL ☐ LEVEED
☐ NONE [1]	☒ POOR [1]	☐ RECENT OR NO RECOVERY [1]		☐ DREDGING ☐ BANK SHAPING
				☐ ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

CHANNEL: 7

4) RIPARIAN ZONE AND BANK EROSION (Check ONE box per bank or check 2 and AVERAGE per bank) "River Right Looking Downstream"

RIPARIAN WIDTH L R (Per Bank)	EROSION/RUNOFF L R (Most Predominant Per Bank)	FLOOD PLAIN QUALITY L R (Per Bank)	BANK EROSION
☐ WIDE >50m [4]	☐ FOREST, SWAMP [3]	☐ URBAN OR INDUSTRIAL [0]	☐ NONE OR LITTLE [3]
☐ MODERATE 10-50 [3]	☒ OPEN PASTURE/ ROW CROP [0]	☐ SHRUB OR OLD FIELD [2]	☒ MODERATE [2]
☐ NARROW 5-10m [2]	☐ RESID., PARK, NEW FIELD [1]	☐ CONSERV. TILLAGE [1]	☐ HEAVY OR SEVERE [1]
☒ VERY NARROW 1-5m [1]	☐ FENCED PASTURE [1]	☐ MINING/CONSTRUCTION [0]	
☐ NONE [0]			

COMMENTS:

RIPARIAN: 6

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (Check 1): ☐ > 1m [6] ☒ 0.7-1m [4] ☐ 0.4-0.7m [2] ☐ < 0.4m [1] ☐ < 0.2m [Poor = 0]

MORPHOLOGY (Check 1): ☐ POOL WIDTH > RIFFLE WIDTH [2] ☒ POOL WIDTH = RIFFLE WIDTH [1] ☐ POOL WIDTH < RIFFLE W. [0]

POOL/RIFFLE CURRENT VELOCITY (Check All That Apply): ☐ TORRENTIAL [-1] ☐ FAST [1] ☐ MODERATE [1] ☒ SLOW [1] ☐ EDDIES [1] ☐ INTERSTITIAL [-1] ☐ INTERMITTENT [-2]

☐ NO POOL [0]

COMMENTS:

POOL: 6

RIFFLE/RUN DEPTH: ☐ GENERALLY > 10 cm, MAX > 50 [4] ☐ GENERALLY > 10 cm, MAX < 50 [3] ☒ GENERALLY 5-10 cm [1] ☐ GENERALLY < 5 cm [Poor = 0]

RIFFLE/RUN SUBSTRATE: ☒ STABLE (e.g. Cobble, Boulder) [2] ☐ MOD. STABLE (e.g. Pea Gravel) [1] ☐ UNSTABLE (Gravel, Sand) [0]

RIFFLE/RUN EMBEDDEDNESS: ☐ EXTENSIVE [-1] ☒ MOD. [1] ☐ MODERATE [0] ☐ NONE [2]

☐ NO RIFFLE [0]

COMMENTS: bridge abutment nearby

RIFFLE: 4

GRADIENT: 2

6) Gradient (feet/mile): 1.076 %POOL: 52 %RIFFLE: 5 %RUN: 43

EPA 4320

WF1
8/16/

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI)

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 41

Stream: West Fork of Pigeon RM: Date: 8/16/89 River Code:

Location: WF1 Comments: ESB/LWB

1) SUBSTRATE (Check ONLY Two Substrate *TYPE BOXES*; Check all types present)

TYPE	POOL	RIFFLE
☐ BLDR/SLABS [10]		
☐ BOULDER [9]		
☐ COBBLE [8]		
☐ HARDPAN [4]		
☐ MUCK [2]		
☐ GRAVEL [7]	X	X
☐ SAND [6]	X	X
☐ BEDROCK [5]		
☐ DETRITUS [3]		
☐ ARTIFIC. [0]		

SUBSTRATE QUALITY — Substrate Origin (Check all): ☐ LIMESTONE [1] ☐ RIPRAP [0] ☐ HARDPAN [0] ☐ TILLS [1] ☐ SANDSTONE [0] ☐ SHALE [-1] ☐ COAL FINES [-2]

Silt Cover (Check One): ☐ SILT HEAVY [-2] ☐ SILT MODERATE [-1] ☐ SILT NORMAL [0] ☐ SILT FREE [1]

Extent Of Embeddedness (Check One): ☐ EXTENSIVE [-2] ☐ MODERATE [-1] ☐ LOW [0] ☐ NONE [1]

TOTAL NUMBER OF SUBSTRATE TYPES: ☐ > 4 [2] ☐ <= 4 [0]

NOTE: Ignore sludge that originates from point-sources; score is based on natural substrates

COMMENTS:

SUBSTRATE SCORE: 14

2) INSTREAM COVER

TYPE (Check All That Apply): ☐ UNDERCUT BANKS [1] ☐ OVERHANGING VEGETATION [1] ☐ SHALLOWS (IN SLOW WATER) [1] ☐ DEEP POOLS [2] ☐ ROOTWADS [1] ☐ BOULDERS [1] ☐ OXBOWS [1] ☐ AQUATIC MACROPHYTES [1] ☐ LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE): ☐ EXTENSIVE > 75% [11] ☐ MODERATE 25-75% [7] ☐ SPARSE 5-25% [3] ☐ NEARLY ABSENT < 5% [1]

COMMENTS:

COVER SCORE: 9

3) CHANNEL MORPHOLOGY (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]	☐ SNAGGING ☐ IMPOUND.
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☐ MODERATE [2]	☐ RELOCATION ☐ ISLANDS
☐ LOW [2]	☐ FAIR [3]	☐ RECOVERING [3]	☐ LOW [1]	☐ CANOPY REMOVAL ☐ LEVEED
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]		☐ DREDGING ☐ BANK SHAPING
				☐ ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

CHANNEL: 4

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank and check 2 and AVERAGE per bank) "Facing Right Looking Downstream"

RIPARIAN WIDTH (L R (Per Bank))	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R (Most Predominant Per Bank))	(L R (Per Bank))	BANK EROSION
☐ ☐ WIDE > 50m [4]	☐ ☐ FOREST, SWAMP [3]	☐ ☐ URBAN OR INDUSTRIAL [0]	☐ ☐ NONE OR LITTLE [3]
☐ ☐ MODERATE 10-50 [3]	☐ ☐ OPEN PASTURE/ ROW CROP [0]	☐ ☐ SHRUB OR OLD FIELD [2]	☐ ☐ MODERATE [2]
☐ ☐ NARROW 5-10m [2]	☐ ☐ RESID., PARK, NEW FIELD [1]	☐ ☐ CONSERV. TILLAGE [1]	☐ ☐ HEAVY OR SEVERE [1]
☐ ☐ VERY NARROW 1-5m [1]	☐ ☐ FENCED PASTURE [1]	☐ ☐ MINING/CONSTRUCTION [0]	
☐ ☐ NONE [0]			

COMMENTS:

RIPARIAN: 6

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (Check 1): ☐ > 1m [6] ☐ 0.7-1m [4] ☐ 0.4-0.7m [2] ☐ < 0.4m [1] ☐ = 0.2m [Pool = 0]

MORPHOLOGY (Check 1): ☐ POOL WIDTH > RIFFLE WIDTH [2] ☐ POOL WIDTH = RIFFLE WIDTH [1] ☐ POOL WIDTH < RIFFLE W. [0]

POOL/RIFFLE CURRENT VELOCITY (Check All That Apply): ☐ TORRENTIAL [-1] ☐ FAST [1] ☐ MODERATE [1] ☐ SLOW [1] ☐ EDDIES [1] ☐ INTERSTITIAL [-1] ☐ INTERMITTENT [-2] ☐ NO POOL [0]

COMMENTS:

POOL: 4

5) RIFFLE/RUN DEPTH ☐ GENERALLY > 10 cm MAX > 50 [4] ☐ GENERALLY > 10 cm MAX < 50 [3] ☐ GENERALLY 5-10 cm [1] ☐ GENERALLY < 5 cm [Rifle = 0]

RIFFLE/RUN SUBSTRATE: ☐ STABLE (e.g., Cobble, Boulder) [2] ☐ MOD. STABLE (e.g., Fine Gravel) [1] ☐ UNSTABLE (Gravel, Sand) [0]

RIFFLE/RUN EMBEDDEDNESS: ☐ EXTENSIVE [-1] ☐ MODERATE [0] ☐ LOW [1] ☐ NONE [2] ☐ NO RIFFLE [0]

COMMENTS:

RIFFLE: 2

GRADIENT: 2

5) Gradient (feet/mile): 1.048 %POOL: 47 %RIFFLE: 38 %RUN: 15

EPA 4520

Procedure No.	WQPA–SWS–3	Date Issued	9-30-89
Revision No.	6	Date Effective	9-30-89

SF3

9/14/99

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish

QHEI SCORE: 63 61

Stream: Scioto Riv. Rm. Date: 9/14/99 River Code:

Location: Crew: ESD Lewis

1) SUBSTRATE (Check ONE, PTwo Successive *TYPE BOXES*; Check *all* types present)

TYPE	POOL	RIFFLE
BOULDER /SLABS[10]		
BOULDER [9]		
COBBLE [8]	X	X
HARDPAN [4]	X	X
MUCK [2]		
GRAVEL [7]	X	
SAND [6]	X	
BEDROCK[5]		
DETRITUS[3]		
ARTIFIC.[0]		

SUBSTRATE QUALITY — Substrate Origin (Check all): LIMESTONE [1] RIP/RAP [0] TILLS [1] HARDPAN [0] SANDSTONE [0] SHALE [-1] COAL FINES [-2]

Silt Cover (Check One): SILT HEAVY [-2] SILT NORMAL [0] SILT FREE [1]

Extent Of Embeddedness (Check One): EXTENSIVE [-2] MODERATE [-1] LOW [0] NONE [1]

TOTAL NUMBER OF SUBSTRATE TYPES: 4 [2] 4 [1] < 4 [0]

NOTE: Ignore algae that originates from point-sources; score is based on natural substrates

SUBSTRATE SCORE: 12

COMMENTS:

2) INSTREAM COVER

TYPE (Check All That Apply): UNDERCUT BANKS [1]; OVERHANGING VEGETATION [1]; SHALLOWS (IN SLOW WATER) [1]; DEEP POOLS [2]; RIFFLES [1]; BOULDERS [1]; OXBOWS [1]; AQUATIC MACROPHYTES [1]; LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE): EXTENSIVE >75% [11]; MODERATE 25-75% [7]; SPARSE 5-25% [3]; NEARLY ABSENT < 5% [1]

COVER SCORE: 13

COMMENTS:

3) CHANNEL MORPHOLOGY (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
HIGH [4]	EXCELLENT [7]	NONE [6]	HIGH [3]	SNAGGING; RELOCATION; CANOPY REMOVAL; DREDGING; ONE SIDE CHANNEL MODIFICATIONS
MODERATE [3]	GOOD [5]	RECOVERED [4]	MODERATE [2]	IMPOUND.; ISLANDS; LEVEED; BANK SHAPING
LOW [2]	FAIR [3]	RECOVERING [3]	LOW [1]	
NONE [1]	POOR [1]	RECENT OR NO RECOVERY [1]		

CHANNEL: 11

COMMENTS:

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank) "River Right Looking Downstream"

RIPARIAN WIDTH (L R)	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R) (Most Predominant Per Bank)	(L R) (Per Bank)	BANK EROSION
WIDE >50m [4]	FOREST, SWAMP [3]	URBAN OR INDUSTRIAL[0]	NONE OR LITTLE [3]
MODERATE 10-50 [3]	OPEN PASTURE/ ROW CROPS[0]	SHRUB OR OLD FIELD[2]	MODERATE [2]
NARROW 5-10m [2]	RESID.,PARK,NEW FIELD [1]	CONSERV. TILLAGE [1]	HEAVY OR SEVERE[1]
VERY NARROW 1-5m [1]	FENCED PASTURE [1]	MINING/CONSTRUCTION [0]	
NONE [0]			

RIPARIAN: 10

COMMENTS:

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (Check 1): >1m [6]; 0.7-1m [4]; 0.4-0.7m [2]; < 0.4m [1]; <0.2m (Pool = 0)

MORPHOLOGY (Check 1): POOL WIDTH > RIFFLE WIDTH [2]; POOL WIDTH = RIFFLE WIDTH [1]; POOL WIDTH < RIFFLE W. [0]

POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply): TORRENTIAL[-1]; FAST[1]; MODERATE [1]; SLOW [1]; EDDIES[1]; INTERSTITIAL[-1]; INTERMITTENT[-2]

NO POOL[0]

POOL: 9

COMMENTS:

RIFFLE DEPTH: GENERALLY >10 cm,MAX>50 [4]; GENERALLY >10 cm,MAX<50 [3]; GENERALLY 5-10 cm [1]; GENERALLY < 5 cm (Rifle = 0)

RIFFLE/RUN SUBSTRATE: STABLE (e.g.,Cobble, Boulder) [2]; MOD. STABLE (e.g.,Pea Gravel) [1]; UNSTABLE (Gravel,Sand) [0]

RIFFLE/RUN EMBEDDEDNESS: EXTENSIVE [-1]; MODERATE[0]; LOW. [1]; NONE[2]

NO RIFFLE[0]

RIFFLE: 2

COMMENTS:

GRADIENT: 4

6) Gradient (feet/mile): 1.692 %POOL: 93 %RIFFLE: 7 %RUN:

1 2 chic

EPA 4320

SF
8/14/

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 49

Stream: Smith Fork Rm: Date: 8/14/97 River Code:
Location: SC 2 Crew: BOICE

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES: Check all types present)

TYPE	POOL	RIFFLE		POOL	RIFFLE
☐ BOULDER [9]			☐ BED-GRAVEL [7]		X
☐ COBBLE [8]		X	☐ BEDROCK [5]		
☐ HARDPAN [4]			☐ DETRITUS [3]		
☐ MUCK [2]			☐ ARTIFIC. [0]		

TOTAL NUMBER OF SUBSTRATE TYPES: 4 [2] (4 or more = 0) [ ] COAL FINES [-2]
NOTE: Ignore sludge that originates from point sources; score is based on natural substrates

SUBSTRATE QUALITY (Check all) — Substrate Origin: ☐ LIMESTONE [1] ☐ RIPRAP [0] ☐ TILLS [1] ☐ HARDPAN [0]
Silt Cover (Check One): ☐ SILT HEAVY [-2] ☐ SILT MODERATE [-1] ☐ SILT NORMAL [0] ☐ SILT FREE [1]
Extent Of Embeddedness (Check One): ☐ EXTENSIVE [-2] ☐ MODERATE [-1] ☐ LOW [0] ☐ NONE [1]

SUBSTRATE SCORE: 11

COMMENTS:

2) INSTREAM COVER — **COVER SCORE:** 10

Type (Check All That Apply): ☐ UNDERCUT BANKS [1] ☐ OVERHANGING VEGETATION [1] ☐ SHALLOWS (IN SLOW WATER) [1] ☐ DEEP POOLS [2] ☐ ROOTWADS [1] ☐ BOULDERS [1] ☐ CABBOWS [1] ☐ AQUATIC MACROPHYTES [1] ☐ LOGS OR WOODY DEBRIS [1]

Amount (Check ONLY One or check 3 and AVERAGE): ☐ EXTENSIVE > 75% [11] ☐ MODERATE 25-75% [7] ☐ SPARSE 5-25% [3] ☐ NEARLY ABSENT < 5% [1]

COMMENTS:

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE) — **CHANNEL:** 19

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]	☐ SNAGGING ☐ BARS/ISLD.
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☐ MODERATE [2]	☐ RELOCATION ☐ ISLANDS
☐ LOW [2]	☐ FAIR [3]	☐ RECOVERING [3]	☐ LOW [1]	☐ CANOPY REMOVAL ☐ LEVEED
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]		☐ DREDGING ☐ BANK SHAPING
				☐ ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

4) RIPARIAN ZONE AND BANK EROSION (Check ONE box per bank or check 2 and AVERAGE per bank) — **RIPARIAN:** 6

"River Right Looking Downstream"

RIPARIAN WIDTH (L R Per Bank)	EROSION/RUNOFF (L R Slight Predominant Per Bank)	FLOOD PLAIN QUALITY (L R Per Bank)	BANK EROSION
☐ WIDE > 50m [4]	☐ FOREST, SWAMP [3]	☐ URBAN OR INDUSTRIAL [0]	☐ NONE OR LITTLE [3]
☐ MODERATE 10-50 [3]	☐ OPEN PASTURE/ ROW CROPS [0]	☐ SHRUB OR OLD FIELD [2]	☐ MODERATE [2]
☐ NARROW 5-10m [2]	☐ RESID., PARK, NEW FIELD [1]	☐ CONSERV. TILLAGE [1]	☐ HEAVY OR SEVERE [1]
☐ VERY NARROW 1-5m [1]	☐ FENCED PASTURE [1]	☐ MINING/CONSTRUCTION [0]	
☐ NONE [0]			

COMMENTS:

5) POOL/GLIDE AND RIFFLE/RUN QUALITY — **POOL:** 17

MAX DEPTH (Check 1): ☐ > 1m [6] ☐ 0.7-1m [4] ☐ 0.4-0.7m [2] ☐ < 0.4m [1] ☐ < 0.2m [Pool = 0]

MORPHOLOGY (Check 1): ☐ POOL WIDTH > RIFFLE WIDTH [2] ☐ POOL WIDTH = RIFFLE WIDTH [1] ☐ POOL WIDTH < RIFFLE W. [0]

POOL/RIFFLE CURRENT VELOCITY (Check All That Apply): ☐ TORRENTIAL [-1] ☐ FAST [1] ☐ MODERATE [1] ☐ SLOW [1] ☐ EDDIES [1] ☐ INTERSTITIAL [-1] ☐ INTERMITTENT [-2]

☐ NO POOL [0]

COMMENTS:

RIFFLE: 1

RIFFLE/RUN DEPTH: ☐ GENERALLY > 10 cm, MAX > 50 [4] ☐ GENERALLY > 10 cm, MAX < 50 [3] ☐ GENERALLY 5-10 cm [1] ☐ GENERALLY < 5 cm [Rifle = 0]

RIFFLE/RUN SUBSTRATE: ☐ STABLE (e.g., Cobble, Boulder) [2] ☐ MOD. STABLE (e.g., Fine Gravel) [1] ☐ UNSTABLE (Gravel, Sand) [0]

RIFFLE/RUN EMBEDDEDNESS: ☐ EXTENSIVE [-1] ☐ MODERATE [0] ☐ LOW [1] ☐ NONE [2]

☐ NO RIFFLE [0]

COMMENTS:

GRADIENT: 4

6) Gradient (feet/mile): 1.913 %POOL: 89 %RIFFLE: 2 %RUN: 9

Riffle 380

EPA 4520

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 46

Stream: Smith Fork RM: Date: 9/14/89 River Code:
Location: SF 1 Crew: ESB/CWB

I) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Check all types present)

TYPE	POOL	RIFFLE	TYPE	POOL	RIFFLE
☐ BOULDER [9]			☐ GRAVEL [7]		X
☐ COBBLE [8]			☐ SAND [6]		X
☐ HARDPAN [4]	X	X	☐ BEDROCK [5]		
☐ MUCK [2]			☐ DETRITUS [3]		
☐ SILT [2]			☐ ARTIFIC. [0]		

TOTAL NUMBER OF SUBSTRATE TYPES: ☐ 4 [2] ☐ 3 [1] ☐ 2 [0]

SUBSTRATE QUALITY: Substrate Origin (Check all): ☐ LIMESTONE [1] ☐ RIPRAP [0] ☐ SANDSTONE [0] ☐ TILLS [1] ☐ HARDPAN [0] ☐ SHALE [-1]

Silt Cover (Check One): ☐ SILT HEAVY [-2] ☐ SILT MODERATE [-1] ☐ SILT NORMAL [0] ☐ SILT FREE [1]

Extent Of Embeddedness (Check One): ☐ EXTENSIVE [-2] ☐ MODERATE [-1] ☐ LOW [0] ☐ NONE [1]

SUBSTRATE SCORE: 33 11

NOTE: Ignore sludge that originates from point-sources; score is based on natural substrates

COMMENTS:

II) INSTREAM COVER

TYPE (Check All That Apply): ☐ UNDERCUT BANKS [1] ☐ OVERHANGING VEGETATION [1] ☐ SHALLOWS (IN SLOW WATER) [1] ☐ DEEP POOLS [2] ☐ ROOTWADS [1] ☐ BOULDERS [1] ☐ OXBOWS [1] ☐ AQUATIC MACROPHYTES [1] ☐ LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE): ☐ EXTENSIVE > 75% [11] ☐ MODERATE 25-75% [7] ☐ SPARSE 5-25% [3] ☐ NEARLY ABSENT < 5% [1]

COVER SCORE: 7

COMMENTS:

III) CHANNEL MORPHOLOGY: (Check ONE or ONE PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]	☐ SNAGGING ☐ IMPOUND.
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☐ MODERATE [2]	☐ RELOCATION ☐ ISLANDS
☐ LOW [2]	☐ FAIR [3]	☐ RECOVERING [3]	☐ LOW [1]	☐ CANOPY REMOVAL ☐ LEVEED
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]		☐ DREDGING ☐ BANK SHAPING
				☐ ONE SIDE CHANNEL MODIFICATIONS

CHANNEL: 8

COMMENTS:

IV) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank) "River Right Looking Downstream"

RIPARIAN WIDTH (L R (Per Bank))	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R (Most Predominant Per Bank))	BANK EROSION (L R (Per Bank))
☐ ☐ WIDE >30m [4]	☐ ☐ FOREST, SWAMP [3]	☐ ☐ URBAN OR INDUSTRIAL [0]
☐ ☐ MODERATE 10-30 [3]	☐ ☐ OPEN PASTURE/ ROW CROP [0]	☐ ☐ SHRUB OR OLD FIELD [2]
☐ ☐ NARROW 5-10m [2]	☐ ☐ RESD., PARK, NEW FIELD [1]	☐ ☐ CONSERV. TILLAGE [1]
☐ ☐ VERY NARROW 1-5m [1]	☐ ☐ FENCED PASTURE [1]	☐ ☐ MINING/CONSTRUCTION [0]
☐ ☐ NONE [0]		

☐ ☐ NONE OR LITTLE [2]
☐ ☐ MODERATE [1]
☐ ☐ HEAVY OR SEVERE [0]

RIPARIAN: 12

COMMENTS:

V) POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (Check 1): ☐ >1m [6] ☐ 0.7-1m [4] ☐ 0.4-0.7m [2] ☐ < 0.4m [1] ☐ 0.2m [Pool = 0]

MORPHOLOGY (Check 1): ☐ POOL WIDTH > RIFFLE WIDTH [2] ☐ POOL WIDTH = RIFFLE WIDTH [1] ☐ POOL WIDTH < RIFFLE W. [0]

POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply): ☐ TORRENTIAL [-1] ☐ FAST [1] ☐ MODERATE [1] ☐ SLOW [1] ☐ EDDIES [1] ☐ INTERSTITIAL [-1] ☐ INTERMITTENT [-2]

☐ NO POOL [0]

POOL: 5

COMMENTS:

VI) RIFFLE/RUN DEPTH: ☐ GENERALLY > 10 cm, MAX > 50 [4] ☐ GENERALLY > 10 cm, MAX < 50 [3] ☐ GENERALLY 5-10 cm [1] ☐ GENERALLY < 5 cm [Rifle = 0]

RIFFLE/RUN SUBSTRATE: ☐ STABLE (e.g., Cobble, Boulder) [2] ☐ MOD. STABLE (e.g., Pea Gravel) [1] ☐ UNSTABLE (Gravel, Sand) [0]

RIFFLE/RUN EMBEDDEDNESS: ☐ EXTENSIVE [-1] ☐ MODERATE [0] ☐ LOW [1] ☐ NONE [2]

☐ NO RIFFLE [0]

RIFFLE: 1

COMMENTS:

VII) Gradient (feet/mile): 1.100 %POOL: 74 %RIFFLE: %RUN: 26

GRADIENT: 4

EPA 4520

Side

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 56

Stream Big Creek RM Date 8/23/11 River Code

Location BG2 Crew: EPA/Cabs

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Check all types present)

TYPE	POOL	RIFFLE
BLDR/SLABS[10]		
BOULDER [9]		
COBBLE [8]	X	
HARDPAN [4]	X	
MUCK [2]		
GRAVEL [7]		
SAND [6]		
BEDROCK[5]		
DETRITUS[3]	X	
ARTIFIC.[0]		

TOTAL NUMBER OF SUBSTRATE TYPES: < (2) X <= 4 (3) COAL FINES [-2]

NOTE: (Ignore sludge that originates from point-sources; score is based on natural substrates)

Substrate Origin (Check all): LIMESTONE [1] RIP/RAP [0] TILLS [1] HARDPAN [0] SANDSTONE [0] SHALE [-1]

Silt Cover (Check One): SILT HEAVY [-2] SILT MODERATE [-1] X SILT NORMAL [0] SILT FREE [1]

Extent Of Embeddedness (Check One): EXTENSIVE [-2] MODERATE [-1] X LOW [0] NONE [1]

SUBSTRATE SCORE: 13

COMMENTS

COVER SCORE: 14

2) INSTREAM COVER

TYPE (Check All That Apply)

- UNDERCUT BANKS [1]
- X OVERHANGING VEGETATION [1]
- X SHALLOWS (IN SLOW WATER) [1]
- X DEEP POOLS [2]
- X ROOTWADS [1]
- X BOULDERS [1]
- LOGS OR WOODY DEBRIS [1]
- OXBOWS [1]
- AQUATIC MACROPHYTES [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE)

- EXTENSIVE > 75% [11]
- X MODERATE 25-75% [7]
- SPARSE 5-25% [3]
- NEARLY ABSENT < 5% [1]

COMMENTS:

CHANNEL: 13

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
HIGH [4]	EXCELLENT [7]	NONE [6]	HIGH [3]	SNAGGING
MODERATE [3]	X GOOD [5]	X RECOVERED [4]	X MODERATE [2]	RELOCATION
X LOW [2]	FAIR [3]	RECOVERING [3]	LOW [1]	CANOPY REMOVAL
NONE [1]	POOR [1]	RECENT OR NO RECOVERY [1]		X LEVEED
				DREDGING
				BANK SHAPING
				ONE SIDE CHANNEL MODIFICATIONS
				X IMPOUND.
				ISLANDS

COMMENTS:

RIPARIAN: 6 6

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank)

"River Right Looking Downstream"

RIPARIAN WIDTH	EROSION/RUNOFF - FLOOD PLAIN QUALITY		BANK EROSION
L R (Per Bank)	L R (Most Predominant Per Bank)	L R (Per Bank)	
WIDE >30m [4]	FOREST, SWAMP [3]	URBAN OR INDUSTRIAL [0]	NONE OR LITTLE [3]
MODERATE 10-30 [3]	X OPEN PASTURE/ ROWCROP [0]	SHRUB OR OLD FIELD [2]	X MODERATE [2]
NARROW 5-10m [2]	RESID./PARK/ NEW FIELD [1]	CONSERV. TILLAGE [1]	HEAVY OR SEVERE [0]
X VERY NARROW 1-5m [1]	FENCED PASTURE [1]	MINING/CONSTRUCTION [0]	
NONE [0]			

COMMENTS:

POOL: 6

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (Pools)	MORPHOLOGY (Check 1)	POOL/RUN/RIFFLE CURRENT (VELOCITY) (Check All That Apply)	
X >1m [6]		TORRENTIAL [-1]	EDDIES [1]
0.7-1m [4]	POOL WIDTH > RIFFLE WIDTH [2]	FAST [1]	X INTERSTITIAL [-1]
0.4-0.7m [2]	X POOL WIDTH = RIFFLE WIDTH [1]	MODERATE [1]	INTERMITTENT [-2]
< 0.4m [1]	POOL WIDTH < RIFFLE W. [0]	SLOW [1]	
0 [Pool = 0]			

NO POOL [0]

COMMENTS:

RIFFLE: 0

RIFFLE/RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS
GENERALLY >10 cm [4]	STABLE (e.g.,Cobble, Boulder) [2]	EXTENSIVE [-1]
GENERALLY >10 cm,MAX <10 [3]	MOD. STABLE (e.g.,Pea Gravel) [1]	SLOW [1]
GENERALLY 5-10 cm [1]	UNSTABLE (Gravel,Sand) [0]	MODERATE [0]
GENERALLY < 5 cm [Rills = 0]		NONE [2]

NO RIFFLE [0]

COMMENTS

GRADIENT: 4

6) Gradient (feet/mile): 1.2-00 %POOL: 100 %RIFFLE: %RUN:

side

EPA 4520

BG1
8/14/99

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 45

Stream: Big Creek Rm Date 8/14/99 River Code
Location: BG 1 Cnty: CLE/LOR

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Check all types present):

TYPE	POOL	RIFFLE
BOULDER/SLABS [10]		
BOULDER [9]		
COBBLE [8]	X	X
HARDPAN [4]		
MUCK [2]		
GRAVEL [7]		X
SAND [6]		X
BEDROCK [5]		
DETRITUS [3]		
ARTIFIC. [0]		

SUBSTRATE QUALITY: Substrate Origin (Check all): LIMESTONE [1] RIPRAP [0] SANDSTONE [0] SHALE [-1] COAL FINES [-2]
TILLS [1] HARDPAN [0]

SUBSTRATE SCORE: 12

Silt Cover (Check One): SILT HEAVY [-2] SILT MODERATE [-1] SILT NORMAL [0] SILT FREE [1]

Extent Of Embeddedness (Check One): EXTENSIVE [-2] MODERATE [-1] LOW [0] NONE [1]

TOTAL NUMBER OF SUBSTRATE TYPES: 4 [2] 4 [0]

NOTE: Ignore sludge that originates from point-sources; score is based on natural substrates

COMMENTS:

2) INSTREAM COVER

TYPE (Check All That Apply):

- UNDERCUT BANKS [1]
- OVERHANGING VEGETATION [1]
- SHALLOWS (IN SLOW WATER) [1]
- DEEP POOLS [2]
- ROOTWADS [1]
- BOULDERS [1]
- OXBOWS [1]
- AQUATIC MACROPHYTES [1]
- LOGS OR WOODY DEBRIS [1]

COVER SCORE: 5

AMOUNT (Check ONLY One or check 2 and AVERAGE):

- EXTENSIVE > 75% [11]
- MODERATE 25-75% [7]
- SPARSE 5-25% [3]
- NEARLY ABSENT < 5% [1]

COMMENTS:

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

CHANNEL: 8

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
HIGH [4]	EXCELLENT [7]	NONE [6]	HIGH [3]	SNAGGING
MODERATE [3]	GOOD [5]	RECOVERED [4]	MODERATE [2]	RELOCATION
LOW [2]	FAIR [3]	RECOVERING [3]	LOW [1]	CANOPY REMOVAL
NONE [1]	POOR [1]	RECENT OR NO RECOVERY [1]		DREDGING

MODIFICATIONS/OTHER: IMPOUND. ISLANDS LEVEED BANK SHAPING ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank)

RIPARIAN: 6

"River Right Looking Downstream"

RIPARIAN WIDTH (L R (Per Bank))	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R (Most Predominant Per Bank))	L R (Per Bank)	BANK EROSION
WIDE > 50m [4]	FOREST, SWAMP [3]	URBAN OR INDUSTRIAL [0]	NONE OR LITTLE [3]
MODERATE 10-50 [2]	OPEN PASTURE/ ROWCROP [0]	SHRUB OR OLD FIELD [2]	MODERATE [2]
NARROW 5-10m [2]	RESID., PARK, NEW FIELD [1]	CONSERV. TILLAGE [1]	HEAVY OR SEVERE [1]
VERY NARROW 1-5m [1]	FENCED PASTURE [1]	MINING/CONSTRUCTION [0]	
NONE [0]			

COMMENTS:

POOL: 5

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (Check 1):

- > 1m [6]
- 0.7-1m [4]
- 0.4-0.7m [2]
- < 0.4m [1]
- < 0.2m [Pool = 0]

MORPHO. QUAL (Check 1):

- POOL WIDTH > RIFFLE WIDTH [2]
- POOL WIDTH = RIFFLE WIDTH [1]
- POOL WIDTH < RIFFLE W. [0]

POOL/RUN/RIFFLE CURRENT VELOCITY (Check all That Apply):

TORRENTIAL [-1] EDDIES [1]
FAST [1] INTERSTITIAL [-1]
MODERATE [1] INTERMITTENT [-2]
SLOW [1]

NO POOL [0]

RIFFLE: 2

RIFFLE/RUN DEPTH:

- GENERALLY > 10 cm, MAX > 50 [4]
- GENERALLY > 10 cm, MAX < 50 [3]
- GENERALLY 5-10 cm [1]
- GENERALLY < 5 cm (Rifle = 0)

RIFFLE/RUN SUBSTRATE:

- STABLE (e.g., Cobble, Boulder) [2]
- MOD. STABLE (e.g., Pea Gravel) [1]
- UNSTABLE (Gravel, Sand) [0]

RIFFLE/RUN EMBEDDEDNESS:

- EXTENSIVE [-1]
- MODERATE [0]
- LOW [1]
- NONE [2]

NO RIFFLE [0]

COMMENTS:

GRADIENT: 4

5) Gradient (feet/mile): 1.630 %POOL: 30 %RIFFLE: 2 %RUN: 18

Hide

EPA 4520

SC 1

Procedure No.	WQPA–SWS–3	Date Issued	9-30-89
Revision No.	4	Date Effective	9-30-89

8/11/99

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 57

Stream: Squaw Creek RM: Date: 8/11/99 River Code:

Location: SC 1 Crew: ESB, CWR, AS

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Check all types present): SUBSTRATE SCORE: 15

TYPE	POOL	RIFFLE	TYPE	POOL	RIFFLE
☐☐-BLDER/SLABS [10]			☒-GRAVEL [7]	X	
☐☐-BOULDER [9]			☒-SAND [6]	X	
☐☐-COBBLE [8]			☐☐-BEDROCK [5]		
☐☐-HARDPAN [4]	X		☐☐-DETRITUS [3]		
☐☐-MUCK [2]	X		☐☐-ARTIFIC [0]	X	

TOTAL NUMBER OF SUBSTRATE TYPES: ☒-4 [2] ☐-<=4 [0] ☐-COAL FINES [-2]

SUBSTRATE QUALITY

Substrate Origin (Check all): ☐-LIMESTONE [1] ☐-RIPRAP [0] ☒-TILLS [1] ☒-HARDPAN [0] ☐-SANDSTONE [0] ☐-SHALE [-1]

Silt Cover (Check One): ☐-SILT HEAVY [-2] ☒-SILT MODERATE [-1] ☐-SILT NORMAL [0] ☐-SILT FREE [1]

Extent Of Embeddedness (Check One): ☐-EXTENSIVE [-2] ☐-MODERATE [-1] ☒-LOW [0] ☐-NONE [1]

NOTE: (Ignore sludge that originates from point-sources; score is based on natural substrates)

COMMENTS:

2) INSTREAM COVER COVER SCORE: 10

TYPE (Check All That Apply): ☐-UNDERCUT BANKS [1] ☒-OVERHANGING VEGETATION [1] ☒-SHALLOWS (IN SLOW WATER) [1] ☒-DEEP POOLS [2] ☒-BOOTWADS [1] ☐-BOULDERS [1] ☐-OXBOWS [1] ☒-AQUATIC MACROPHYTES [1] ☒-LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE): ☐-EXTENSIVE > 75% [11] ☐-MODERATE 25-75% [7] ☒-SPARSE 5-25% [3] ☐-NEARLY ABSENT < 5% [1]

COMMENTS:

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE) CHANNEL: 10

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER	
☐-HIGH [4]	☐-EXCELLENT [7]	☐-NONE [6]	☐-HIGH [3]	☐-SNAGGING	☐-IMPOUND.
☐-MODERATE [3]	☐-GOOD [5]	☐-RECOVERED [4]	☒-MODERATE [2]	☐-RELOCATION	☐-ISLANDS
☒-LOW [2]	☒-FAIR [3]	☒-RECOVERING [3]	☐-LOW [1]	☐-CANOPY REMOVAL	☐-LEVEED
☐-NONE [1]	☐-POOR [1]	☐-RECENT OR NO RECOVERY [1]		☐-DREDGING	☐-BANK SHAPING
				☐-ONE SIDE CHANNEL MODIFICATIONS	

COMMENTS:

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN: 15

'River Right Looking Downstream'

RIPARIAN WIDTH L.R. (Per Bank)	EROSION/RUNOFF - FLOOD PLAIN QUALITY L.R. (Most Predominant Per Bank)	L.R. (Per Bank)	BANK EROSION
☐☐-WIDE>50m [4]	☐☐-FOREST, SWAMP [3]	☐☐-URBAN OR INDUSTRIAL [0]	☐☐-NONE OR LITTLE [3]
☐☐-MODERATE 10-50 [3]	☒-OPEN PASTURE/ ROWCROP [0]	☐☐-SHRUB OR OLD FIELD [2]	☒-MODERATE [2]
☐☐-NARROW 5-10m [2]	☐☐-RESIG. PARK/NEW FIELD [1]	☐☐-CONSERV. TILLAGE [1]	☐☐-HEAVY OR SEVERE [1]
☒-VERY NARROW 1-5m [1]	☐☐-FENCED PASTURE [1]	☐☐-MINING/CONSTRUCTION [0]	
☐☐-NONE [0]			

COMMENTS:

POOL/GLIDE AND RIFFLE/RUN QUALITY POOL: 6

MAX. DEPTH (Check 1)	MORPHOLOGY (Check 1)	POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply)		
☐->1m [6]	☐-POOL WIDTH > RIFFLE WIDTH [2]	☐-TORRENTIAL [-1]	☐-EDDIES [1]	☐-NO POOL [0]
☒-0.7-1m [4]	☒-POOL WIDTH = RIFFLE WIDTH [1]	☐-FAST [1]	☐-INTERSTITIAL [-1]	
☐-0.4-0.7m [2]	☐-POOL WIDTH < RIFFLE W. [0]	☐-MODERATE [1]	☐-INTERMITTENT [-2]	
☐-<0.4m [1]		☒-SLOW [1]		
☐-<0.2m (Pool = 0)				

COMMENTS:

RIFFLE/RUN DEPTH RIFFLE: 0

RIFFLE/RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS	
☐-GENERALLY >10 cm, MAX>50 [4]	☐-STABLE (e.g., Cobble, Boulder) [2]	☐-EXTENSIVE [-1]	☐-MODERATE [0]
☐-GENERALLY >10 cm, MAX<50 [3]	☐-MOD. STABLE (e.g., Pea Gravel) [1]	☐-LOW [1]	☐-NONE [2]
☐-GENERALLY 5-10 cm [1]	☐-UNSTABLE (Gravel, Sand) [0]		☒-NO RIFFLE [0]
☐-GENERALLY < 5 cm (Riffle = 0)			

COMMENTS:

GRADIENT: 4

6) Gradient (feet/mile): 1.158 %POOL: 100 %RIFFLE: %RUN:

EPA 4520

Procedure No. WQPA–SWS–3 Date Issued 9-30-89
Revision No. 6 Date Effective 9-30-89

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 32

Stream Little Darby Creek RM Date 8/12/ River Code
Lenson Crew: MFB/CWB

1) SUBSTRATE (Check ONLY two Substrate TYPE BOXES; Check all types present)

TYPE	POOL	RIFFLE	TYPE	POOL	RIFFLE
☐-BLDR/SLABS[10]	____	____	☒-GRAVEL [7]	X	____
☐-BOULDER [9]	____	____	☐-SAND [6]	____	____
☐-COBBLE [8]	____	____	☐-BEDROCK[5]	____	____
☐-HARDPAN [4]	____	____	☐-DETRITUS[3]	____	____
☒-MUCK [2]	X	____	☐-ARTIFIC.[0]	____	____

☐-LIMESTONE [1] ☐-RUBBLE [0] ☐-SHALE [-1]
☐-HARDPAN [0] ☐-SILT NORMAL [0] ☐-SILT FREE [1]
☐-SANDSTONE [0] ☒-SILT HEAVY [-2] ☒-SILT MODERATE [-1]

Substrate Octets (Check all)
☐-TILLS [1]

Silt Cover (Check One)
☐-SILT FREE [1]

Extent Of Embeddedness (Check One)
☐-EXTENSIVE [-2] ☒-MODERATE [-1]
☐-LOW [0] ☐-NONE [1]

TOTAL NUMBER OF SUBSTRATE TYPES: ☐> 4 [2] ☒<= 4 [0] ☐-COAL FINES [-2]
NOTE: (Ignore sludge that originates from point-sources; score is based on natural substrates)
COMMENTS

SUBSTRATE SCORE: 9

2) INSTREAM COVER

TYPE (Check All That Apply)			AMOUNT (Check ONLY One or check 2 and AVERAGE)
☐-UNDERCUT BANKS [1]	☐-DEEP POOLS [2]	☐-OXBOWS [1]	☐-EXTENSIVE > 75% [11]
☐-OVERHANGING VEGETATION [1]	☐-ROOTWADS [1]	☐-AQUATIC MACROPHYTES [1]	☐-MODERATE 25-75% [7]
☐-SHALLOWS (IN SLOW WATER) [1]	☐-BOULDERS [1]	☒-LOGS OR WOODY DEBRIS [1]	☐-SPARSE 5-25% [3]
			☒-NEARLY ABSENT < 5% [1]

COVER SCORE: 2

COMMENTS:

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ - HIGH [4]	☐ - EXCELLENT [7]	☐ - NONE [6]	☐ - HIGH [3]	☐ - SNAGGING ☐ - IMPOUND.
☐ - MODERATE [3]	☐ - GOOD [5]	☐ - RECOVERED [4]	☒ - MODERATE [2]	☐ - RELOCATION ☐ - ISLANDS
☒ - LOW [2]	☒ - FAIR [3]	☒ - RECOVERING [3]	☐ - LOW [1]	☐ - CANOPY REMOVAL ☐ - LEVEED
☐ - NONE [1]	☐ - POOR [1]	☐ - RECENT OR NO RECOVERY [1]		☐ - DREDGING ☐ - BANK SHAPING
				☐ - ONE SIDE CHANNEL MODIFICATIONS

CHANNEL: 4

COMMENTS:

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank)
"River Right Looking Downstream"

RIPARIAN WIDTH (L R Per Bank)	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R Most Predominant Per Bank)	BANK EROSION (L R Per Bank)
☐-WIDE >50m [4]	☒-FOREST, SWAMP [3]	☐-URBAN OR INDUSTRIAL [0]
☐-MODERATE 10-50 [3]	☒-OPEN PASTURE/ ROW CROP [0]	☐-SHRUB OR OLD FIELD [2]
☐-NARROW 5-10m [2]	☐-RESID.,PARK,NEW FIELD [1]	☐-CONSERV. TILLAGE [1]
☒-VERY NARROW 1-5m [1]	☐-FENCED PASTURE [1]	☐-MINING/CONSTRUCTION [0]
☐-NONE [0]		

☐-NONE OR LITTLE [3]
☒-MODERATE [2]
☐-HEAVY OR SEVERE [1]

RIPARIAN: 9

COMMENTS

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1)	MORPHOLOGY (Check 1)	POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply)	
☐ >1m [6]	☐-POOL WIDTH > RIFFLE WIDTH [2]	☐-TORRENTIAL [-1]	☐-EDDIES [1]
☐ 0.7-1m [4]	☒-POOL WIDTH = RIFFLE WIDTH [1]	☐-FAST [1]	☒-INTERSTITIAL [-1]
☐ 0.4-0.7m [2]	☐-POOL WIDTH < RIFFLE W. [0]	☐-MODERATE [1]	☐-INTERMITTENT [-2]
☒ < 0.4m [1]		☐-SLOW [1]	
☐ = 0.2 = Pool = 0			

☐-NO POOL [0]

POOL: 1

COMMENTS

RIFFLE/RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS
☐ - GENERALLY > 10 cm; MAX > 50 [4]	☐-STABLE (e.g.,Cobble, Boulder) [2]	☐-EXTENSIVE [-1] ☐-MODERATE [0]
☐ - GENERALLY > 10 cm; MAX < 50 [3]	☐-MOD. STABLE (e.g. Fine Gravel) [1]	☐-LOW. [1] ☐-NONE [2]
☐ - GENERALLY 5-10 cm [2]	☐-UNSTABLE (Gravel,Sand) [0]	
☐ - GENERALLY < 5 cm (Rille = 0)		☒-NO RIFFLE [0]

RIFFLE: 10

COMMENTS

GRADIENT: 2

6) Gradient (feet/mile): _____ %POOL: 100 %RIFFLE: _____ %RUN: _____

EPA 4520

SD1
8/13/

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 45

Stream Schaller Ditch RM Date 8/13/09 River Code
Location SD1 Crew ZST CWR

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Check all types present)

TYPE	POOL	RIFFLE
☐ O-BLDER/SLABS [10]		
☐ O-BOULDER [9]		
☐ O-COBBLE [8]		X
☐ O-HARDPAN [4]		
☐ O-MUCK [2]		
☒ O-GRAVEL [7]		X
☐ O-SAND [6]		
☐ O-BEDROCK [5]		
☐ O-DETRITUS [3]		
☐ O-ARTIFIC [0]		

SUBSTRATE QUALITY — SUBSTRATE SCORE: 12

Substrate Origin (Check all): ☐ O-LIMESTONE [1] ☐ O-RIPRAP [0] ☐ O-TILLS [1] ☐ O-HARDPAN [0] ☐ O-SANDSTONE [0] ☐ O-SHALE [-1]

Silt Cover (Check One): ☐ O-SILT HEAVY [-2] ☒ O-SILT MODERATE [-1] ☐ O-SILT NORMAL [0] ☐ O-SILT FREE [1]

Extent Of Embeddedness (Check One): ☐ O—EXTENSIVE [-2] ☒ O—MODERATE [-1] ☐ O—LOW [0] ☐ O—NONE [1]

TOTAL NUMBER OF SUBSTRATE TYPES: ☐ 0 - 2 [2] ☒ 3 or 4 [0] ☐ O-COAL FINES [-2]

[NOTE: Ignore sludge that originated from point-sources; score is based on natural substrates]

COMMENTS

COVER SCORE: 6

2) INSTREAM COVER

TYPE (Check All That Apply)

☐ O-UNDERCUT BANKS [1]
☐ O-OVERHANGING VEGETATION [1]
☒ O-SHALLOWS (IN SLOW WATER) [1]
☐ O-DEEP POOLS [2]
☒ O-ROOTWADS [1]
☐ O-BOULDERS [1]
☐ O-OXBOWS [1]
☐ O-AQUATIC MACROPHYTES [1]
☒ O-LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE)

☐ O - EXTENSIVE > 75% [11]
☐ O - MODERATE 25-75% [7]
☒ O - SPARSE 5-25% [3]
☐ O - NEARLY ABSENT < 5% [1]

COMMENTS:

CHANNEL: 10

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ O - HIGH [4]	☐ O - EXCELLENT [7]	☐ O - NONE [6]	☐ O - HIGH [3]	☐ O - SNAGGING ☐ O - IMPOUND.
☐ O - MODERATE [3]	☐ O - GOOD [5]	☐ O - RECOVERED [4]	☒ O - MODERATE [2]	☐ O - RELOCATION ☐ O - ISLANDS
☒ O - LOW [2]	☒ O - FAIR [3]	☒ O - RECOVERING [3]	☐ O - LOW [1]	☐ O - CANOPY REMOVAL ☐ O - LEVEED
☐ O - NONE [1]	☐ O - POOR [1]	☐ O - RECENT OR NO RECOVERY [1]		☐ O - DREDGING ☐ O - BANK SHAPING
				☐ O - ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

RIPARIAN: 12

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank)

"River Right Looking Downstream"

RIPARIAN WIDTH (L R (Per Bank))	EROSION/RUNOFF - FLOOD PLAIN QUALITY (Most Predominant Per Bank) L R (Per Bank)	BANK EROSION
☐ ☐ O'-WIDE > 50m [4]	☒ ☒ O-FOREST, SWAMP [3]	☐ ☐ O-NONE OR LITTLE [3]
☐ ☐ O'-MODERATE 10-50 [3]	☐ ☐ O-OPEN PASTURE/ ROW CROPS [0]	☒ ☒ O-MODERATE [2]
☐ ☐ O'-NARROW 5-10m [2]	☐ ☐ O- RESID./PARK/NEW FIELD [1]	☐ O-HEAVY OR SEVERE [1]
☒ ☒ O'-VERY NARROW 1-5m [1]	☐ ☐ O-FENCED PASTURE [1]	
☐ ☐ O'-NONE [0]	☐ ☐ O-SHRUB OR OLD FIELD [2]	
	☐ ☐ O-CONSERV. TILLAGE [1]	
	☐ ☐ O-MINING/CONSTRUCTION [0]	

COMMENTS:

POOL: 0

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (Check 1)
☐ O- > 1m [6]
☐ O- 0.7-1m [4]
☐ O- 0.4-0.7m [2]
☐ O- < 0.4m [1]
☐ O- 0.2m [Pool = 0]

MORPHOLOGY (Check 1)
☐ O'-POOL WIDTH > RIFFLE WIDTH [2]
☐ O'-POOL WIDTH = RIFFLE WIDTH [1]
☐ O'-POOL WIDTH < RIFFLE W. [0]

POOL/RIFFLE/RUN CURRENT VELOCITY (Check All That Apply)
☐ O'-TORRENTIAL [-1]
☐ O'-FAST [1]
☐ O'-MODERATE [1]
☐ O'-SLOW [1]
☐ O'-EDDIES [1]
☐ O'-INTERSTITIAL [-1]
☐ O'-INTERMITTENT [-2]
☒ NO POOL [0]

COMMENTS:

RIFFLE: 1

RIFFLE/RUN DEPTH
☐ O - GENERALLY > 10 cm MAX > 50 [4]
☐ O - GENERALLY > 10 cm MAX < 50 [2]
☒ O - GENERALLY 5-10 cm [1]
☐ O - GENERALLY < 5 cm [Pole = 0]

RIFFLE/RUN SUBSTRATE
☐ O-STABLE (e.g., Cobble, Boulder) [2]
☐ O-MOD. STABLE (e.g., Pea Gravel) [1]
☒ O-UNSTABLE (Gravel, Sand) [0]

RIFFLE/RUN EMBEDDEDNESS
☐ O-EXTENSIVE [-1]
☒ O-MODERATE [0]
☐ O-LOW [1]
☐ O-NONE [2]
☐ O-NO RIFFLE [0]

COMMENTS

GRADIENT: 4

5) Gradient (feet/mile): .0002 %POOL: 0 %RIFFLE: 14 %RUN: 86

WD1
8/12/99

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI)

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 31

Stream Winnegsheimer Ditch RM Date 8/12/99 River Code
Location WD1 Crew: CWB/ESB

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Check all types present)

TYPE	POOL	RIFFLE	TYPE	POOL	RIFFLE
☐ BLDR/SLAB [10]			☐ GRAVEL [7]		
☐ BOULDER [9]			☐ SAND [6]		
☐ COBBLE [8]			☐ BEDROCK [5]		
☐ HARDPAN [4]			☐ DETRITUS [3]		
☐ MUCK [2]	X		☐ ARTIFIC [0]	X	

SUBSTRATE QUALITY
Substrate Origin (Check all): ☐ LIMESTONE [1] ☐ RIP/RAP [0] ☐ TILLS [1] ☐ HARDPAN [0] ☐ SANDSTONE [0] ☐ SHALE [-1]
Silt Cover (Check One): ☐ SILT HEAVY [-2] ☐ SILT MODERATE [-1] ☐ SILT NORMAL [0] ☐ SILT FREE [1]
Extent Of Embeddedness (Check One): ☐ EXTENSIVE [-2] ☐ MODERATE [-1] ☐ LOW [0] ☐ NONE [1]

SUBSTRATE SCORE: 1

TOTAL NUMBER OF SUBSTRATE TYPES: ☐ > 4 [2] ☐ <= 4 [0] ☐ COAL FINES [-2]
NOTE: (Ignore sludge that originated from point-sources; score is based on natural substrates)
COMMENTS

COVER SCORE: 5

2) INSTREAM COVER

TYPE (Check All That Apply)
☐ UNDERCUT BANKS [1] ☐ DEEP POOLS [2] ☐ OXBOWS [1] ☐ AQUATIC MACROPHYTES [1] ☐ SHALLOWS (IN SLOW WATER) [1] ☐ LOGS OR WOODY DEBRIS [1] ☐ OVERHANGING VEGETATION [1] ☐ ROOTWADS [1] ☐ BOULDERS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE)
☐ EXTENSIVE > 75% [11] ☐ MODERATE 25-75% [7] ☐ SPARSE 5-25% [3] ☐ NEARLY ABSENT < 5% [1]

COMMENTS:

CHANNEL: 9

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]	☐ SNAGGING ☐ IMPOUND.
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☐ MODERATE [2]	☐ RELOCATION ☐ ISLANDS
☐ LOW [2]	☐ FAIR [3]	☐ RECOVERING [3]	☐ LOW [1]	☐ CANOPY REMOVAL ☐ LEVEED
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]		☐ DREDGING ☐ BANK SHAPING ☐ ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank)
"River Right Looking Downstream"

RIPARIAN WIDTH (L R Per Bank)	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R Most Predominant Per Bank)	(L R Per Bank)	BANK EROSION
☐ ☐ WIDE >50m [4]	☐ ☐ FOREST, SWAMP [3]	☐ ☐ URBAN OR INDUSTRIAL [0]	☐ NONE OR LITTLE [3]
☐ ☐ MODERATE 10-50 [3]	☐ ☐ OPEN PASTURE/ ROW CROP [2]	☐ ☐ SHRUB OR OLD FIELD [2]	☐ MODERATE [2]
☐ ☐ NARROW 5-10m [2]	☐ ☐ RESIC., PARK, NEW FIELD [1]	☐ ☐ CONSERV. TILLAGE [1]	☐ HEAVY OR SEVERE [1]
☐ ☐ VERY NARROW 1-5m [1]	☐ ☐ FENCED PASTURE [1]	☐ ☐ MINING/CONSTRUCTION [0]	
☐ ☐ NONE [0]			

COMMENTS:

POOL: 12

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (Pool or Run)
☐ > 1m [6]
☐ 0.7-1m [4]
☐ 0.4-0.7m [2]
☐ < 0.4m [1]
☐ < 0.2m [Pool = 0]

MORPHOLOGY (Check 1)
☐ POOL WIDTH > RIFFLE WIDTH [2]
☐ POOL WIDTH = RIFFLE WIDTH [1]
☐ POOL WIDTH < RIFFLE W. [0]

POOL/RIFFLE CURRENT VELOCITY (Check All That Apply)
☐ TORRENTIAL [-1] ☐ EDDIES [1]
☐ FAST [1] ☐ INTERSTITIAL [-1]
☐ MODERATE [1] ☐ INTERMITTENT [-2]
☐ SLOW [1]

☐ NO POOL [0]

COMMENTS:

RIFFLE: 0

RIFFLE/RUN DEPTH
☐ GENERALLY > 10 cm, MAX > 50 [4]
☐ GENERALLY > 10 cm, MAX < 50 [3]
☐ GENERALLY 5-10 cm [1]
☐ GENERALLY < 5 cm [Rate = 0]

RIFFLE/RUN SUBSTRATE
☐ STABLE (e.g., Cobble, Boulder) [2]
☐ MOD. STABLE (e.g., Pea Gravel) [1]
☐ UNSTABLE (Gravel/Sand) [0]

RIFFLE/RUN EMBEDDEDNESS
☐ EXTENSIVE [-1] ☐ MODERATE [0]
☐ LOW [1] ☐ NONE [2]

☐ NO RIFFLE [0]

COMMENTS

GRADIENT: 2

6) Gradient (feet/mile): 2.625 %POOL: 100 %RIFFLE: %RUN:

EPA 4500

BC3
8/11/99

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 48

Stream Brushy Creek RM Date 8/11/99 River Code
Location BC3 Crew CWB/ESB

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES: Check all types present);

TYPE	POOL	RIFFLE
BOULDER [9]	X	
COBBLE [8]	X	
GRAVEL [7]	X	X
SAND [6]	X	X
BEDROCK [5]		
DETRITUS [3]		
ARTIFIC. [0]	X	

SUBSTRATE QUALITY: Substrate Origin (Check all): LIMESTONE [1]; RIPRAP [0]; HARDPAN [0]; TILLS [1]; SANDSTONE [0]; SHALE [-1]; COAL FINES [-2]

SUBSTRATE SCORE: 13

Silt Cover (Check One): SILT HEAVY [-2]; SILT MODERATE [-1]; SILT NORMAL [0]; SILT FREE [1]

Extent Of Embeddedness (Check One): EXTENSIVE [-2]; MODERATE [-1]; LOW [0]; NONE [1]

TOTAL NUMBER OF SUBSTRATE TYPES: 4 [2]

NOTE: Ignore sludge worm organisms from point-sources; score is based on natural substrates)

COMMENTS

COVER SCORE: 9

2) INSTREAM COVER

TYPE (Check ALL That Apply)			AMOUNT (Check ONLY One or check 2 and AVERAGE)
UNDERCUT BANKS [1]	DEEP POOLS [2]	OXBOWS [1]	EXTENSIVE > 75% [11]
OVERHANGING VEGETATION [1]	ROOTWADS [1]	AQUATIC MACROPHYTES [1]	MODERATE 25-75% [7]
SHALLOWS (IN SLOW WATER) [1]	BOULDERS [1]	LOGS OR WOODY DEBRIS [1]	SPARSE 5-25% [3]
			NEARLY ABSENT < 5% [1]

COMMENTS:

CHANNEL: 10

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
HIGH [4]	EXCELLENT [7]	NONE [6]	HIGH [3]	SHADING	IMPOUND.
MODERATE [3]	GOOD [5]	RECOVERED [4]	MODERATE [2]	RELOCATION	ISLANDS
LOW [2]	FAIR [3]	RECOVERING [3]	LOW [1]	CANOPY REMOVAL	LEVEED
NONE [1]	POOR [1]	RECENT OR NO RECOVERY [1]		DREDGING	BANK SHAPING
				ONE SIDE CHANNEL MODIFICATIONS	

COMMENTS:

RIPARIAN: 6

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank)
"River Right Looking Downstream"

RIPARIAN WIDTH (L R (Per Bank))	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R (Most Predominant Per Bank))	(L R (Per Bank))	BANK EROSION
WIDE >50m [4]	FOREST, SWAMP [3]	URBAN OR INDUSTRIAL [0]	NONE OR LITTLE [3]
MODERATE 10-50 [3]	OPEN PASTURE/ ROW CROP [0]	SHRUB OR OLD FIELD [2]	MODERATE [2]
NARROW 5-10m [2]	RESID., PARK, NEW FIELD [1]	CONSERV. TILLAGE [1]	HEAVY OR SEVERE [1]
VERY NARROW 1-5m [1]	FENCED PASTURE [1]	MINING/CONSTRUCTION [0]	
NONE [0]			

COMMENTS:

POOL: 5

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1):
- > 1m [6]
- 0.7-1m [4]
- 0.4-0.7m [2]
- < 0.4m [1]
- 0.2m (Pool = 0)

MORPHOLOGY (Check 1):
- POOL WIDTH > RIFFLE WIDTH [2]
- POOL WIDTH = RIFFLE WIDTH [1]
- POOL WIDTH < RIFFLE W. [0]

POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply):
- TORRENTIAL [-1]
- FAST [1]
- MODERATE [1]
- SLOW [1]
- EDDIES [1]
- INTERSTITIAL [-1]
- INTERMITTENT [-2]

NO POOL [0]

COMMENTS

RIFFLE: 1

RIFFLE/RUN DEPTH:
- GENERALLY > 10 cm, MAX > 50 [4]
- GENERALLY > 10 cm, MAX < 50 [3]
- GENERALLY 5-10 cm [1]
- GENERALLY < 5 cm (Rare = 0)

RIFFLE/RUN SUBSTRATE:
- STABLE (e.g., Cobble, Boulder) [2]
- MOD. STABLE (e.g., Fine Gravel) [1]
- UNSTABLE (Gravel, Sand) [0]

RIFFLE/RUN EMBEDDEDNESS:
- EXTENSIVE [-1]
- MODERATE [0]
- LOW [1]
- NONE [2]

NO RIFFLE [0]

COMMENTS

GRADIENT: 4

6) Gradient (feet/mile): 1.294 %POOL: 87 %RIFFLE: %RUN: 13

Glide

EPA 4220

340

Procedure No.	WQPA–SW5–3	Date Issued	9-30-89
Revision No.	6	Date Effective	9-30-89

3C 2
5/10/95

Figure V-4-5 Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 83 45 41

Stream _____ RM _____ Date 5/10/95 River Code _____

Location _____ Crew _____

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Check all types present)

TYPE	POOL	RIFFLE
BLDR/SLABS [10]	___	___
BOULDER [9]	___	___
COBBLE [8]	___	___
HARDPAN [4]	___	___
MUCK [2]	___	___
GRAVEL [7]	X	___
SAND [6]	___	X
BEDROCK [5]	___	___
DETRITUS [3]	___	___
ARTIFIC [0]	___	___

TOTAL NUMBER OF SUBSTRATE TYPES: 3 [2] 4-5 [1] 6+ [0]

NOTE: (Ignore sludge run originates from point-source; score is based on natural substrate)

SUBSTRATE QUALITY: Substrate Origin (Check all): LIMESTONE [1] RIP/RAP [0] HARDPAN [0] BOULDERS [1] HEAVY [-2] MODERATE [-1] NORMAL [0] FREE [1] SANDSTONE [0] SHALE [-1] COAL FINES [-2]

SUBSTRATE SCORE: 15 14 7

Silt Cover (Check One): SILT HEAVY [-2] SILT MODERATE [-1] SILT NORMAL [0] SILT FREE [1]

Extent Of Embeddedness (Check One): EXTENSIVE [-2] MODERATE [-1] LOW [0] NONE [1]

COMMENTS: _____

COVER SCORE: 9

2) INSTREAM COVER

TYPE (Check ALL That Apply): UNDERCUT BANKS [1] OVERHANGING VEGETATION [1] SHALLOWS (IN SLOW WATER) [1] DEEP POOLS [2] ROOTWADS [1] BOULDERS [1] LOGS OR WOODY DEBRIS [1] AQUATIC MACROPHYTES [1] RIFFLES [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE): EXTENSIVE > 75% [11] MODERATE 25-75% [7] SPARSE 5-25% [3] NEARLY ABSENT < 5% [1]

COMMENTS: _____

CHANNEL: 11

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
HIGH [4]	EXCELLENT [7]	NONE [6]	HIGH [3]	SNAGGING
MODERATE [3]	GOOD [5]	RECOVERED [4]	MODERATE [2]	RELOCATION
LOW [2]	FAIR [3]	RECOVERING [3]	LOW [1]	CANOPY REMOVAL
NONE [1]	POOR [1]	RECENT OR NO RECOVERY [1]		DREDGING

CHANNEL MODIFICATIONS/OTHER: CHANNELIZED, BERMED, LEVEED, BANK SHAPING, ONE SIDE CHANNEL MODIFICATIONS

COMMENTS: _____

RIPARIAN: 6

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank)

"River Right Looking Downstream"

RIPARIAN WIDTH (L R (Per Bank))	EROSION/RUNOFF - (L R (Most Predominant Per Bank))	FLOOD PLAIN QUALITY (L R (Per Bank))	BANK EROSION
WIDE >50m [4]	FOREST, SWAMP [3]	URBAN OR INDUSTRIAL [0]	NONE OR LITTLE [3]
MODERATE 10-50 [3]	OPEN PASTURE/ ROW CROPS [2]	SHRUB OR OLD FIELD [2]	MODERATE [2]
NARROW 5-10m [2]	RESID., PARK, NEW FIELD [1]	CONSERV. TILLAGE [1]	HEAVY OR SEVERE [1]
VERY NARROW 1-5m [1]	FENCED PASTURE [1]	MINING/CONSTRUCTION [0]	
NONE [0]			

COMMENTS: _____

POOL: 6

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (Check 1):
- > 1m [6]
- 0.7-1m [4]
- 0.4-0.7m [2]
- < 0.4m [1]
- < 0.2m (Pool = 0)

MORPHOLOGY (Check 1):
- POOL WIDTH > RIFFLE WIDTH [2]
- POOL WIDTH = RIFFLE WIDTH [1]
- POOL WIDTH < RIFFLE W. [0]

POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply): TORRENTIAL [-1] FAST [1] MODERATE [1] SLOW [1] EDDIES [1] INTERSTITIAL [-1] INTERMITTENT [-2]

NO POOL [0]

COMMENTS: _____

RIFFLE: 0

RIFFLE/RUN DEPTH:
- GENERALLY > 10 cm, MAX > 50 [4]
- GENERALLY > 10 cm, MAX < 50 [3]
- GENERALLY 5-10 cm [1]
- GENERALLY < 5 cm [Rifle = 0]

RIFFLE/RUN SUBSTRATE:
- STABLE (e.g., Cobble, Boulder) [2]
- MOD. STABLE (e.g., Fine Gravel) [1]
- UNSTABLE (Gravel, Sand) [0]

RIFFLE/RUN EMBEDDEDNESS: EXTENSIVE [-1] MODERATE [0] LOW [1] NONE [2]

NO RIFFLE [0]

COMMENTS: _____

GRADIENT: 2

6) Gradient (feet/mile): 7.33 %POOL: 100 %RIFFLE: _____ %RUN: _____

EPA 4570

BC1
8/9/99

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 56 57

Stream Blue Creek RM Date 8/9/99 River Code

Location BC1 Cnty CLW 8/ESG

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Check all types present)

TYPE	POOL	RIFFLE		POOL	RIFFLE	SUBSTRATE QUALITY
☐ BOULDER (9)			☐ GRAVEL (7)			Substrate Origin (Check all)
☐ COBBLE (8)			☒ SAND (6)	X		☐ LIMESTONE (1) ☐ RIPRAP (0)
☐ HARDPAN (4)			☐ BEDROCK (5)			☐ HARDPAN (0)
☐ MUCK (2)			☐ DETRITUS (3)			☒ SANDSTONE (0)
			☐ ARTIFIC. (0)			☐ SHALE (-1)

TOTAL NUMBER OF SUBSTRATE TYPES: ☐ ≥ 4 (2) ☐ ≤ 3 (0) ☒ COAL FINES (-2)

NOTE: (Ignore sludge that originates from point-source; score is based on natural substrates)

COMMENTS

SUBSTRATE SCORE: 9

Silt Cover (Check One)
☐ SILT HEAVY (-2) ☒ SILT MODERATE (-1) ☐ SILT NORMAL (0) ☐ SILT FREE (1)

Extent Of Embeddedness (Check One)
☐ EXTENSIVE (-2) ☒ MODERATE (-1) ☐ LOW (0) ☐ NONE (1)

2) INSTREAM COVER

TYPE (Check ALL That Apply)
☐ UNDERCUT BANKS (1) ☒ DEEP POOLS (2) ☐ OXBOWS (1)
☐ OVERHANGING VEGETATION (1) ☒ RIFFLES (1) ☐ AQUATIC MACROPHYTES (1)
☒ SHALLOWS (IN SLOW WATER) (1) ☐ BOULDERS (1) ☒ LOGS OR WOODY DEBRIS (1)

AMOUNT (Check ONLY One or check 2 and AVERAGE)
☐ EXTENSIVE ≥ 75% (11)
☐ MODERATE 25-75% (7)
☒ SPARSE 5-25% (3)
☐ NEARLY ABSENT < 5% (1)

COVER SCORE: 8

COMMENTS:

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ HIGH (4)	☐ EXCELLENT (7)	☐ NONE (6)	☐ HIGH (2)	☐ SNAGGING ☐ IMPOUND.
☒ MODERATE (3)	☒ GOOD (5)	☒ RECOVERED (4)	☒ MODERATE (1)	☐ RELOCATION ☐ ISLANDS
☐ LOW (2)	☐ FAIR (3)	☐ RECOVERING (3)	☐ LOW (0)	☐ CANOPY REMOVAL ☐ LEVEED
☐ NONE (1)	☐ POOR (1)	☐ RECENT OR NO RECOVERY (1)		☐ DREDGING ☐ BANK SHAPING
				☐ ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

CHANNEL: 24 -1

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank)
"Poor Right Looking Downstream"

RIPARIAN WIDTH (L R Per Bank)	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R Most Predominant Per Bank)	(L R Per Bank)	BANK EROSION
☐ ☐ WIDE ≥50m (4)	☒ ☐ FOREST, SWAMP (3)	☐ ☐ URBAN OR INDUSTRIAL (0)	☐ ☐ NONE OR LITTLE (3)
☐ ☐ MODERATE 10-30 (3)	☐ ☐ OPEN PASTURE/ ROW CROP (0)	☐ ☐ SHRUB OR OLD FIELD (2)	☒ ☒ MODERATE (2)
☐ ☐ NARROW 5-10m (2)	☐ ☐ RESID./PARK/NEW FIELD (1)	☐ ☐ CONSERV. TILLAGE (1)	☐ ☐ HEAVY OR SEVERE (1)
☒ ☒ VERY NARROW 1-5m (1)	☐ ☐ FENCED PASTURE (1)	☐ ☐ MINING/CONSTRUCTION (0)	
☐ ☐ NONE (0)			

COMMENTS

RIPARIAN: 12

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1)	MORPHOLOGY (Check 1)	POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply)	
☐ > 1m (5)	☐ POOL WIDTH > RIFFLE WIDTH (2)	☐ TORRENTIAL (-1)	☐ EDDIES (1)
☒ 0.7-1m (4)	☒ POOL WIDTH = RIFFLE WIDTH (1)	☐ FAST (1)	☐ INTERSTITIAL (-1)
☐ 0.4-0.7m (2)	☐ POOL WIDTH < RIFFLE W. (0)	☐ MODERATE (1)	☐ INTERMITTENT (-2)
☐ < 0.4m (1)		☒ SLOW (1)	
☐ 0.2m (Poor = 0)			

☐ NO POOL (0)

COMMENTS

POOL: 6

RIFFLE/RUN DEPTH
☐ GENERALLY > 10 cm, MAX > 50 (4)
☐ GENERALLY > 10 cm, MAX < 50 (3)
☐ GENERALLY 5-10 cm (1)
☐ GENERALLY < 5 cm (Riffle = 0)

RIFFLE/RUN SUBSTRATE
☐ STABLE (e.g., Cobble, Boulder) (2)
☐ MOD. STABLE (e.g., Fine Gravel) (1)
☐ UNSTABLE (Gravel, Sand) (0)

RIFFLE/RUN EMBEDDEDNESS
☐ EXTENSIVE (-1) ☐ MODERATE (0)
☐ LOW (1) ☐ NONE (2)

☒ RIFFLE (0)

COMMENTS

GRADIENT: 4

RIFFLE: 0

6) Gradient (feet/mile): 1.692 %POOL: 92 %RIFFLE: 0 %RUN: 8

Epa 4520

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish — QHEI SCORE: 94

Stream: Little Pigeon — RM: — Date: 8/8/99 — River Code: —

Location: LP2 — Diagram: CW B, CW E

1) SUBSTRATE (Check ONLY Five Substrate *TYPE BOXES*; Check all types present)

TYPE	POOL	RIFFLE		POOL	RIFFLE
☐ BOULDER/SLABS [10]	___	___	☐ GRAVEL [7]	X	X
☐ BOULDER [9]	___	___	☐ SAND [6]	___	X
☐ COBBLE [8]	___	___	☐ BEDROCK [5]	___	___
☐ HARDPAN [4]	X	___	☐ DETRITUS [3]	___	___
☐ MUCK [2]	___	___	☐ ARTIFIC. [0]	___	___

TOTAL NUMBER OF SUBSTRATE TYPES: Check 4 [2] — Check <= 4 [0]

NOTE: Ignore sludge that originates from point-sources; score is based on natural substrates

COMMENTS: Has a gravel bed but no water

SUBSTRATE SCORE: 9

Substrate Origin (Check all): ☐ LIMESTONE [1] ☐ RIPRAP [0] ☐ TILLS [1] ☐ HARDPAN [0] ☐ SANDSTONE [0] ☐ SHALE [-1] ☐ COAL FINES [-2]

Silt Cover (Check One): ☐ SILT HEAVY [-2] ☐ SILT MODERATE [-1] ☐ SILT NORMAL [0] ☐ SILT FREE [1]

Effect Of Embeddedness (Check One): ☐ EXTENSIVE [-2] ☐ MODERATE [-1] ☐ LOW [0] ☐ NONE [1]

2) INSTREAM COVER

TYPE (Check All That Apply): ☐ UNDERCUT BANKS [1] ☐ OVERHANGING VEGETATION [1] ☐ SHALLOWS (IN SLOW WATER) [1] ☐ DEEP POOLS [2] ☐ ROOTWADS [1] ☐ BOULDERS [1] ☐ OXBOWS [1] ☐ AQUATIC MACROPHYTES [1] ☐ LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE): ☐ EXTENSIVE > 75% [11] ☐ MODERATE 25-75% [7] ☐ SPARSE 5-25% [3] ☐ NEARLY ABSENT < 5% [1]

COVER SCORE: 9

COMMENTS: —

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]	☐ SNAGGING ☐ IMPOUND
☐ MODERATE [2]	☐ GOOD [5]	☐ RECOVERED [4]	☒ MODERATE [2]	☐ RELOCATION ☐ ISLANDS
☒ LOW [1]	☒ FAIR [3]	☒ RECOVERING [3]	☐ LOW [1]	☐ CANOPY REMOVAL ☐ LEVEED
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]		☐ DREDGING ☐ BANK SHAPING
				☐ ONE SIDE CHANNEL MODIFICATIONS

CHANNEL: 10

COMMENTS: —

4) RIPARIAN ZONE AND BANK EROSION – (check ONE box per bank or check 2 and AVERAGE per bank)

"Facing Right Looking Downstream"

RIPARIAN WIDTH (L R) (Per Bank)	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R) (Most Predominant Per Bank)	(L R) (Per Bank)	BANK EROSION
☐ ☐ WIDE >50m [4]	☐ ☐ FOREST, SWAMP [3]	☐ ☐ URBAN OR INDUSTRIAL [0]	☐ ☐ NONE OR LITTLE [2]
☐ ☐ MODERATE 10-50 [3]	☒ ☒ OPEN PASTURE/ ROW CROP [2]	☐ ☐ SHRUB OR OLD FIELD [2]	☒ ☒ MODERATE [2]
☐ ☐ NARROW 5-10m [2]	☐ ☐ RESID., PARK, NEW FIELD [1]	☐ ☐ CONSERV. TILLAGE [1]	☐ ☐ HEAVY OR SEVERE [1]
☒ ☒ VERY NARROW 1-5m [1]	☐ ☐ FENCED PASTURE [1]	☐ ☐ MINING/CONSTRUCTION [0]	
☐ ☐ NONE [0]			

RIPARIAN: 12

COMMENTS: — —

POOL: 4

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1): ☐ > 1m [6] ☒ 0.7-1m [4] ☐ 0.4-0.7m [2] ☐ < 0.4m [1] ☐ 0.2m (Pool = 0)

MORPHOLOGY (Check 1): ☒ POOL WIDTH > RIFFLE WIDTH [2] ☐ POOL WIDTH = RIFFLE WIDTH [1] ☐ POOL WIDTH < RIFFLE W. [0]

POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply): ☐ TORRENTIAL [-1] ☐ FAST [1] ☐ MODERATE [1] ☐ SLOW [1] ☐ EDDIES [1] ☐ INTERSTITIAL [-1] ☒ INTERMITTENT [-2]

No Flow

☐ NO POOL [0]

COMMENTS: —

RIFFLE: 0

RIFFLE/RUN DEPTH: ☐ GENERALLY > 10 cm, MAX > 50 [4] ☐ GENERALLY > 10 cm, MAX < 50 [3] ☐ GENERALLY 5-10 cm [1] ☒ GENERALLY < 5 cm [Riffle = 0] No Waste

RIFFLE/RUN SUBSTRATE: ☐ STABLE (e.g., Cobble, Boulder) [2] ☐ MOD. STABLE (e.g., Pea Gravel) [1] ☒ UNSTABLE (Gravel, Sand) [0]

RIFFLE/RUN EMBEDDEDNESS: ☐ EXTENSIVE [-1] ☒ MODERATE [0] ☐ LOW [1] ☐ NONE [2] ☐ NO RIFFLE [0]

COMMENTS: —

GRADIENT: 2

5) Gradient (feet/mile): 1.379 — %POOL: 100 — %RIFFLE: — — %RUN: —

Glide

EPA 4529

LP1
8/6/99

Figure V-4-5 Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 54 54.47

Stream Little Pigeon RM Date 8/6/99 River Code

Location LP1 Crew CWB/CAB

1) SUBSTRATE [Check One; If Two Substrate *TYPE BOXES*; Check all types present]:

TYPE	POOL	RIFFLE		POOL	RIFFLE
☐-BLDR/SLABS[10]	___	___	☒-GRAVEL [7]	X	X
☐-BOULDER [9]	___	X	☒-SAND [6]	X	___
☐-COBBLE [8]	___	X	☐-SHED ROCKS[5]	___	___
☒-HARDPAN [4]	X	___	☐-DETRITUS[3]	___	___
☐-MUCK [2]	___	___	☐-ARTIFIC.[0]	X	X

☐-LIMESTONE [1] ☐-RIPRAP [0] ☐-SHALE [-1] ☐-COAL FINES [-2]

Substrate Origin (Check all): ☐-SILT HEAVY [-2] ☒-SILT MODERATE [-1] ☐-SILT NORMAL [0] ☐-SILT FREE [1] ☒-HARDPAN [0]

Extent Of Embeddedness (Check One): ☐-EXTENSIVE[-2] ☒-MODERATE[-1] ☐-LOW[0] ☐-NONE[1]

TOTAL NUMBER OF SUBSTRATE TYPES: ☒-4 [2] ☐-5 or 6 [0]

NOTE: (Ignore sludge that originates from point sources; score is based on natural substrates)

COMMENTS:

SUBSTRATE SCORE: 14.5

COVER SCORE: 9

2) INSTREAM COVER

TYPE (Check *All* That Apply)			AMOUNT (Check *ONLY* One or check 2 and *AVERAGE*)
☐-UNDERCUT BANKS [1]	☒-DEEP POOLS [2]	☐-OXBOWS [1]	☐-EXTENSIVE > 75% [11]
☒-OVERHANGING VEGETATION [1]	☐-ROOTWADS [1]	☐-AQUATIC MACROPHYTES [1]	☐-MODERATE 25-75% [7]
☐-SHALLOWS (IN SLOW WATER) [1]	☒-BOULDERS [1]	☒-LOGS OR WOODY DEBRIS [1]	☒-SPARSE 5-25% [3]
			☐-NEARLY ABSENT < 5% [1]

COMMENTS:

CHANNEL: 9

3) CHANNEL MORPHOLOGY: (Check *ONLY* One PER Category OR check 2 and *AVERAGE*)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER	
☐-HIGH [4]	☐-EXCELLENT [7]	☐-NONE [6]	☐-HIGH [3]	☐-SNAGGING	☐-IMPOUND.
☐-MODERATE [3]	☐-GOOD [5]	☐-RECOVERED [4]	☒-MODERATE [2]	☐-RELOCATION	☐-ISLANDS
☒-LOW [2]	☐-FAIR [3]	☒-RECOVERING [3]	☐-LOW [1]	☐-CANOPY REMOVAL	☐-LEVEED
☐-NONE [1]	☒-POOR [1]	☐-RECENT OR NO RECOVERY [1]		☐-DREDGING	☐-BANK SHAPING
				☐-ONE SIDE CHANNEL MODIFICATIONS	

COMMENTS:

RIPARIAN: 8

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank) "River Right Looking Downstream"

RIPARIAN WIDTH L R (Per Bank)	EROSION/RUNOFF - FLOOD PLAIN QUALITY L R (Most Predominant Per Bank)	L R (Per Bank)	BANK EROSION
☐-WIDE >50m [4]	☐-FOREST, SWAMP [3]	☒-URBAN OR INDUSTRIAL [0]	☐-NONE OR LITTLE [3]
☐-MODERATE 10-50 [3]	☐-OPEN PASTURE/ ROW CROP [0]	☐-SHRUB OR OLD FIELD [2]	☒-MODERATE [2]
☐-NARROW 5-10m [2]	☒-RESID., PARK, NEW FIELD [1]	☐-CONSERV. TILLAGE [1]	☐-HEAVY OR SEVERE [1]
☐-VERY NARROW 1-5m [1]	☐-FENCED PASTURE [1]	☐-MINING/CONSTRUCTION [0]	
☒-NONE [0]			

COMMENTS:

POOL: 9

#POOL/RIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH: (Check 1)	MORPHOLOGY (Check 1)	FLOW/PLANKTONIC CURRENT VELOCITY (Check *All* That Apply)		
☒->1m [6]	☒-POOL WIDTH > RIFFLE WIDTH [2]	☐-TORRENTIAL [-1]	☐-ECDIES [1]	☐-NO POOL [0]
☐-0.7-1m [4]	☐-POOL WIDTH = RIFFLE WIDTH [1]	☐-FAST [1]	☐-INTERSTITIAL [-1]	
☐-0.4-0.7m [2]	☐-POOL WIDTH < RIFFLE W. [0]	☒-MODERATE [1]	☐-INTERMITTENT [-2]	
☐-<0.4m [1]		☐-SLOW [1]		
☐-<0.2m [Pool = 0]				

COMMENTS:

RIFFLE: 3

RIFFLE/RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS	
☐-GENERALLY >10 cm, MAX >50 [6]	☒-STABLE (e.g., Cobble, Boulder) [2]	☐-EXTENSIVE [-1]	☒-MODERATE [0]
☐-GENERALLY >10 cm, MAX <50 [3]	☐-MOD. STABLE (e.g., Pea Gravel) [1]	☐-LOW [1]	☐-NONE [2]
☒-GENERALLY 5-10 cm [1]	☐-UNSTABLE (Gravel/Sand) [0]		☐-NO RIFFLE [0]
☐-GENERALLY < 5 cm [Rifle = 0]			

COMMENTS

GRADIENT: 4

6) Gradient (feet/mile): 2.640 %POOL: 93 %RIFFLE: 8 %RUN:

EPA 4320

LC 2
2/10/99

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish — **QHEI SCORE: 40**

Stream: Locust Creek — Rm: — Date: 2/10/99 — River Code: —

Location: LC 2 — Crew: —

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Check all types present)

Type	POOL	RIFFLE
BOULDER/SLABS[10]		
BOULDER [9]		
COBBLE [8]		
HARDPAN [4]		
MUCK [2]		
GRAVEL [7]		X
SAND [6]		X
BEDROCK[5]		
DETRITUS[3]		
ARTIFIC.[0]		

SUBSTRATE QUALITY — SUBSTRATE SCORE: 12

Substrate Origin (Check all): LIMESTONE [1] RIPRAP [0] TILLS [1] HARDPAN [0] SANDSTONE [0] SHALE [-1]

Silt Cover (Check One): SILT HEAVY [-2] SILT MODERATE [-1] SILT NORMAL [0] SILT FREE [1]

Extent Of Embeddedness (Check One): EXTENSIVE[-2] MODERATE[-1] LOW[0] NONE[1]

TOTAL NUMBER OF SUBSTRATE TYPES: 4 [2] 4 [0] COAL FINES [-2]

NOTE: (check things that originated from point-sources; score is based on natural substrates)

COMMENTS: —

COVER SCORE: 9

2) INSTREAM COVER

TYPE (Check All That Apply)

- UNDERCUT BANKS [1]
- OVERHANGING VEGETATION [1]
- SHALLOWS (IN SLOW WATER) [1]
- DEEP POOLS [2]
- ROOTWADS [1]
- BOULDERS [1]
- OXBOWS [1]
- AQUATIC MACROPHYTES [1]
- LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE)

- EXTENSIVE > 75% [11]
- MODERATE 25-75% [7]
- SPARSE 5-25% [3]
- NEARLY ABSENT < 5% [1]

COMMENTS: —

CHANNEL: 11

3) CHANNEL MORPHOLOGY: (Check ONE Box PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
HIGH [4]	EXCELLENT [7]	NONE [6]	HIGH [3]	SNAGGING — IMPOUND.
MODERATE [2]	GOOD [5]	RECOVERED [4]	MODERATE [2]	RELOCATION — ISLANDS
LOW [1]	FAIR [3]	RECOVERING [3]	LOW [1]	CANOPY REMOVAL — LEVEED
NONE [1]	POOR [1]	RECENT OR NO RECOVERY [1]		DREDGING — BANK SHAPING
				ONE SIDE CHANNEL MODIFICATIONS

COMMENTS: —

RIPARIAN: 6

4) RIPARIAN ZONE AND BANK EROSION -(check ONE box per bank or check 2 and AVERAGE per bank)

"River Right Looking Downstream"

RIPARIAN WIDTH (L R (Per Bank))	EROSION/RUNOFF - (L R (Most Predominant Per Bank))	FLOOD PLAIN QUALITY (L R (Per Bank))	BANK EROSION
WIDE >50m [4]	FOREST, SWAMP [3]	URBAN OR INDUSTRIAL [0]	NONE OR LITTLE [3]
MODERATE 10-50 [3]	OPEN PASTURE/ ROW CROP [2]	SHRUB OR OLD FIELD [2]	MODERATE [2]
NARROW 5-10m [2]	RESID.,PARK,NEW FIELD [1]	CONSERV. TILLAGE [1]	HEAVY OR SEVERE [1]
VERY NARROW 1-5m [1]	FENCED PASTURE [1]	MINING/CONSTRUCTION [0]	
NONE [0]			

COMMENTS: —

POOL: 7

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (Pool Only)

- >1m [6]
- 0.7-1m [4]
- 0.4-0.7m [2]
- <0.4m [1]
- <0.2m (Pool = 0)

MORPHOLOGY (Check 1)

- POOL WIDTH > RIFFLE WIDTH [2]
- POOL WIDTH = RIFFLE WIDTH [1]
- POOL WIDTH < RIFFLE W. [0]

POOL/RIFFLE CURRENT VELOCITY (Check All That Apply)

- TORRENTIAL [-1]
- FAST [1]
- MODERATE [1]
- SLOW [1]
- EDDIES [1]
- INTERSTITIAL [-1]
- INTERMITTENT [-2]

NO POOL [0]

COMMENTS: —

RIFFLE: 0

RIFFLE/RUN DEPTH

- GENERALLY >10 cm, MAX>50 [4]
- GENERALLY >10 cm, MAX<50 [3]
- GENERALLY 5-10 cm [1]
- GENERALLY < 5 cm [Rifle = 0]

RIFFLE/RUN SUBSTRATE

- STABLE (e.g., Cobble, Boulder) [2]
- MOD. STABLE (e.g., Pea Gravel) [1]
- UNSTABLE (Gravel,Sand) [0]

RIFFLE/RUN EMBEDDEDNESS

- EXTENSIVE [-1]
- MODERATE [0]
- LOW [1]
- NONE [2]

NO RIFFLE [0]

COMMENTS: —

GRADIENT: 4

5) Gradient (feet/mile): 2.4 [4]

%POOL: 93

%RIFFLE: —

%RUN: 7

Lake

EPA 4520

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 53

Stream LOCUST RM Date 8/8/99 River Code

Location LOC 1 Crew: E.SW, C.W.B.

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES: Check all types present)

TYPE	POOL	RIFFLE	TYPE	POOL	RIFFLE
☐ BOULDER/SLABS [10]			☒ GRAVEL [7]	X	X
☐ BOULDER [9]	X		☐ SAND [6]	X	X
☐ COBBLE [8]	X	X	☐ BEDROCK [3]		
☒ HARDPAN [4]	X	X	☐ DETRITUS [3]		
☐ MUCK [2]			☐ ARTIFICIAL [3]		

TOTAL NUMBER OF SUBSTRATE TYPES: ☒ 4 [2] ☐ — or 4 [0] ☐ COAL FINES [-2]

NOTE: (Ignore sludge that originates from point-sources; score is based on natural substrates)

SUBSTRATE QUALITY: Substrate Origin (Check all): ☐ LIMESTONE [1] ☐ RIP/RAP [0] ☐ HARDPAN [0] ☐ TILLS [1] ☐ SANDSTONE [0] ☐ SHALE [-1]

Silt Cover (Check One): ☐ SILT HEAVY [-2] ☒ SILT MODERATE [-1] ☐ SILT NORMAL [0] ☐ SILT FREE [1]

Extent Of Embeddedness (Check One): ☐ EXTENSIVE [-2] ☒ MODERATE [-1] ☐ LOW [0] ☐ NONE [1]

SUBSTRATE SCORE: 12

COMMENTS:

COVER SCORE: 11

2) INSTREAM COVER

TYPE (Check All That Apply): ☐ UNDERCUT BANKS [1] ☒ OVERHANGING VEGETATION [1] ☒ SHALLOWS (IN SLOW WATER) [1] ☒ DEEP POOLS [2] ☒ ROOTWADS [1] ☒ BOULDERS [1] ☐ OXBOWS [1] ☒ AQUATIC MACROPHYTES [1] ☒ LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE): ☐ EXTENSIVE > 75% [11] ☐ MODERATE 25-75% [7] ☒ SPARSE 5-25% [3] ☐ NEARLY ABSENT < 5% [1]

COMMENTS:

CHANNEL: 11

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]	☐ SNAGGING ☐ IMPOUND.
☒ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☒ MODERATE [2]	☐ RELOCATION ☐ ISLANDS
☐ LOW [2]	☒ FAIR [3]	☒ RECOVERING [3]	☐ LOW [1]	☐ CANOPY REMOVAL ☐ LEVEED
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]		☐ DREDGING ☐ BANK SHAPING
				☐ ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

RIPARIAN: 6

4) RIPARIAN ZONE AND BANK EROSION - (Check ONE box per bank or check 2 and AVERAGE per bank) "River Right Looking Downstream"

RIPARIAN WIDTH (L R (Per Bank))	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R (Most Predominant Per Bank))	L R (Per Bank)	BANK EROSION
☐ WIDE >50m [4]	☐ FOREST, SWAMP [3]	☐ URBAN OR INDUSTRIAL [0]	☐ NONE OR LITTLE [3]
☐ MODERATE 10-50 [3]	☒ OPEN PASTURE/ ROWCROP [0]	☐ SHRUB OR OLD FIELD [2]	☒ MODERATE [2]
☐ NARROW 5-10m [2]	☐ RESID./PARK/NEW FIELD [1]	☐ CONSERV. TILLAGE [1]	☐ HEAVY OR SEVERE [1]
☒ VERY NARROW 1-5m [1]	☐ FENCED PASTURE [1]	☐ MINING/CONSTRUCTION [0]	
☐ NONE [0]			

COMMENTS:

POOL: 9

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (Check 1): ☒ >1m [6] ☐ 0.7-1m [4] ☐ 0.4-0.7m [2] ☐ <0.4m [1] ☐ <0.2m [Pool = 0]

MORPHOLOGY (Check 1): ☒ POOL WIDTH > RIFFLE WIDTH [2] ☐ POOL WIDTH = RIFFLE WIDTH [1] ☐ POOL WIDTH < RIFFLE W. [0]

POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply): ☐ TORRENTIAL [-1] ☐ FAST [1] ☐ MODERATE [1] ☒ SLOW [1] ☐ EDDIES [1] ☐ INTERSTITIAL [-1] ☐ INTERMITTENT [-2]

☐ NO POOL [0]

COMMENTS:

RIFFLE: 2

RIFFLE/RUN DEPTH: ☐ GENERALLY >10 cm; MAX >50 [4] ☐ GENERALLY >10 cm; MAX <50 [3] ☐ GENERALLY 5-10 cm [1] ☒ GENERALLY < 5 cm [Rifle = 0]

RIFFLE/RUN SUBSTRATE: ☐ STABLE (e.g., Cobble, Boulder) [2] ☒ MOD. STABLE (e.g., Fine Gravel) [1] ☐ UNSTABLE (Gravel/Sand) [0]

RIFFLE/RUN EMBEDDEDNESS: ☐ EXTENSIVE [-1] ☒ LOW [1] ☐ MODERATE [0] ☐ NONE [2]

☐ NO RIFFLE [0]

COMMENTS:

GRADIENT: 2

5) Gradient (feet/mile): ____ %POOL: 85 %RIFFLE: 4 %RUN: 11

EPA 4520

PC16
8/5/99

QA Manual (6th Update) – Fish – September 30, 1989

Procedure No.	WQPA-SW/S-3	Date Issued	9-30-89
Revision No.	5	Date Effective	9-30-89

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 43

Stream Pigeon Creek RM Date 8/5/99 River Code

Location PC-16 Cnty ESR, CWB

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Check all types present):

TYPE	POOL	RIFFLE
☐ BLDR/SLABS [10]		
☐ BOULDER [9]		
☐ COBBLE [8]		✓
☐ HARDPAN [4]		✓
☐ MUCK [2]		
☐ GRAVEL [7]		
☐ SAND [6]	✓	
☐ BEDROCK [5]		
☐ DETRITUS [3]	✓	
☐ ARTIFIC [0]		

SUBSTRATE QUALITY: Substrate Origin (Check all): ☐ LIMESTONE [1] ☐ RIP/RAP [0] ☐ TILLS [1] ☐ HARDPAN [0] ☐ SANDSTONE [0] ☐ SHALE [-1]

Silt Cover (Check One): ☐ SILT HEAVY [-2] ☐ SILT MODERATE [-1] ☐ SILT NORMAL [0] ☐ SILT FREE [1]

Extent Of Embeddedness (Check One): ☐ EXTENSIVE [-2] ☐ MODERATE [-1] ☐ LOW [0] ☐ NONE [1]

SUBSTRATE SCORE: 14

TOTAL NUMBER OF SUBSTRATE TYPES: ☐ 4 [2] ☐ 5 or 6 [1] ☐ COAL FINES [-2]

NOTE: Ignore sludge that originates from point sources; score 1 (based on natural substrates)

COMMENTS:

2) INSTREAM COVER

TYPE (Check All That Apply): ☐ UNDERCUT BANKS [1] ☐ OVERHANGING VEGETATION [1] ☐ SHALLOWS (IN SLOW WATER) [1] ☐ DEEP POOLS [2] ☐ ROOTWADS [1] ☐ BOULDERS [1] ☐ OXBOWS [1] ☐ AQUATIC MACROPHYTES [1] ☐ LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE): ☐ EXTENSIVE > 75% [11] ☐ MODERATE 25-75% [7] ☐ SPARSE 5-25% [3] ☐ NEARLY ABSENT < 5% [1]

COVER SCORE: 7 7

COMMENTS:

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]	☐ SNAGGING ☐ RIPBOUND
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☐ MODERATE [2]	☐ RELOCATION ☐ ISLANDS
☐ LOW [2]	☐ FAIR [3]	☐ RECOVERING [3]	☐ LOW [1]	☐ CANOPY REMOVAL ☐ LEVEED
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]		☐ DREDGING ☐ BANK SHAPING
				☐ ONE SIDE CHANNEL MODIFICATIONS

CHANNEL: 8

COMMENTS:

4) RIPARIAN ZONE AND BANK EROSION - (Check ONE box per bank or check 2 and AVERAGE per bank) "Facing Right Looking Downstream"

RIPARIAN WIDTH (L R Per Bank)	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R Most Predominant Per Bank)	FLOOD PLAIN QUALITY (L R Per Bank)	BANK EROSION
☐ WIDE >50m [4]	☐ FOREST, SWAMP [3]	☐ URBAN OR INDUSTRIAL [0]	☐ NONE OR LITTLE [3]
☐ MODERATE 10-50 [3]	☐ OPEN PASTURE/ ROWCROP [0]	☐ SHRUB OR OLD FIELD [2]	☐ MODERATE [2]
☐ NARROW 5-10m [2]	☐ RESID./PARK/NEW FIELD [1]	☐ CONSERV. TILLAGE [1]	☐ HEAVY OR SEVERE [1]
☐ VERY NARROW 1-5m [1]	☐ FENCED PASTURE [1]	☐ MINING/CONSTRUCTION [0]	
☐ NONE [0]			

RIPARIAN: 6

COMMENTS:

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (Check 1): ☐ >1m [4] ☐ 0.7-1m [4] ☐ 0.4<0.7m [2] ☐ 0.4m [1] ☐ <0.2m [Pool = 0]

MORPHOLOGY (Check 1): ☐ POOL WIDTH > RIFFLE WIDTH [2] ☐ POOL WIDTH = RIFFLE WIDTH [1] ☐ POOL WIDTH < RIFFLE W. [0]

POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply): ☐ TORRENTIAL [-1] ☐ FAST [1] ☐ MODERATE [1] ☐ SLOW [1] ☐ EDDIES [1] ☐ INTERSTITIAL [-1] ☐ INTERMITTENT [-2]

☐ NO POOL [0]

POOL: 4

COMMENTS:

RIFFLE/RUN DEPTH: ☐ GENERALLY > 10 cm, MAX > 50 [4] ☐ GENERALLY > 10 cm, MAX < 50 [3] ☐ GENERALLY 5-10 cm [1] ☐ GENERALLY < 5 cm [Rifle = 0]

RIFFLE/RUN SUBSTRATE: ☐ STABLE (e.g. Cobble, Boulder) [2] ☐ MOD. STABLE (e.g. Fine Gravel) [1] ☐ UNSTABLE (Gravel, Sand) [0]

RIFFLE/RUN EMBEDDEDNESS: ☐ EXTENSIVE [-1] ☐ MODERATE [0] ☐ LOW [1] ☐ NONE [2]

☐ NO RIFFLE [0]

RIFFLE: 0

COMMENTS:

GRADIENT: 4

6) Gradient (feet/mile): 4 %POOL: 100 %RIFFLE: %RUN:

EPA 4320

Cam#1 Photo 27: DS end looking US

Photo 26 DS end looking DS

DS end where Riprap shore ends

Photo 24+25 Mosquitofish schooling Near Bluegill beds

PC-15
8/6/99

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish — QHEI SCORE: 46

Stream: Pinson — RM: ____ Date: 9/6/99 — River Code: ____

Location: RM 15 — Crew: ESB, CMB

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Check all types present)

TYPE	POOL	RIFFLE	SUBSTRATE QUALITY	POOL	RIFFLE
☐ BOULDER/SLABS [10]			☐ Substrate Origin (Check all)		
☐ BOULDER [9]			☐ LIMESTONE [1] ☐ Ady/Rip [0]		
☐ COBBLE [8]			☐ TILLS [1] ☐ HARDPAN [0]		
☐ HARDPAN [4]			☐ SANDSTONE [0]		
☐ MUCK [2]			☐ SHALE [-1]		
TOTAL NUMBER OF SUBSTRATE TYPES: ☐ > 4 [2] ☐ <= 4 [0]			☐ COAL FINES [-2]		

☒ GRAVEL [7]	X	X	Substrate Origin (Check all)
☒ SAND [6]	X	X	☐ LIMESTONE [1] ☐ Ady/Rip [0]
☐ BEDROCK [5]			☐ TILLS [1] ☐ HARDPAN [0]
☐ DETRITUS [3]	X		☒ SANDSTONE [0]
☐ ARTIFIC [0]			☐ SHALE [-1]
			☐ COAL FINES [-2]

SUBSTRATE SCORE: 15

Silt Cover (Check One)
☐ SILT HEAVY [-2] ☐ SILT MODERATE [-1]
☐ SILT NORMAL [0] ☐ SILT FREE [1]

Extent of Embeddedness (Check One)
☐ EXTENSIVE [-2] ☐ MODERATE [-1]
☐ LOW [0] ☒ NONE [1]

NOTE. (Ignore sludge that originates from point sources; score is based on natural substrates)

COMMENTS: _____

COVER SCORE: 9

2) INSTREAM COVER

TYPE (Check All That Apply)

☐ UNDERCUT BANKS [1]	☒ DEEP POOLS [2]	☐ OXBOWS [1]
☒ OVERHANGING VEGETATION [1]	☐ ROOTWADS [1]	☒ AQUATIC MACROPHYTES [1]
☒ SHALLOWS (IN SLOW WATER) [1]	☐ BOULDERS [1]	☒ LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE)
☐ EXTENSIVE > 75% [11]
☐ MODERATE 25-75% [7]
☒ SPARSE 5-25% [3]
☐ NEARLY ABSENT < 5% [1]

COMMENTS: _____

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

CHANNEL: 7

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER	
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]	☐ SNAGGING	☐ IMPOUND.
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☒ MODERATE [2]	☐ RELOCATION	☐ ISLANDS
☐ LOW [2]	☐ FAIR [3]	☒ RECOVERING [3]	☐ LOW [1]	☐ CANOPY REMOVAL	☐ LEVEED
☒ NONE [7]	☒ POOR [1]	☐ RECENT OR NO RECOVERY [1]		☐ DREDGING	☐ BANK SHAPING
				☐ ONE SIDE CHANNEL MODIFICATIONS	

COMMENTS: _____

4) RIPARIAN ZONE AND BANK EROSION - (Check ONE box per bank or check 2 and AVERAGE per bank)

RIPARIAN: 6

"River Right Looking Downstream"

RIPARIAN WIDTH (L R (Per Bank))	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R (Per Bank))		BANK EROSION
☐ ☐ WIDE > 50m [4]	☐ ☐ FOREST, SWAMP [3]	☐ ☐ URBAN OR INDUSTRIAL [0]	☐ ☐ NONE OR LITTLE [3]
☐ ☐ MODERATE 10-50 [3]	☒ ☒ OPEN PASTURE/ ROW CROP [2]	☐ ☐ SHRUB OR OLD FIELD [2]	☒ ☒ MODERATE [2]
☐ ☐ NARROW 5-10m [2]	☐ ☐ RESID., PARK, NEW FIELD [1]	☐ ☐ CONSERV. TILLAGE [1]	☐ ☐ HEAVY OR SEVERE [1]
☒ ☒ VERY NARROW 1-5m [1]	☐ ☐ FENCED PASTURE [1]	☐ ☐ MINING/CONSTRUCTION [0]	
☐ ☐ NONE [0]			

COMMENTS: _____

POOL/GLIDE AND RIFFLE/RUN QUALITY

POOL: 4

MAX DEPTH (Check One)	WIDTH (Check 1)	POOL/RIFFLE, CURRENT VELOCITY (Check All That Apply)	
☐ > 1m [6]	☐ POOL WIDTH > RIFFLE WIDTH [2]	☐ TORRENTIAL [-1]	☐ EDDIES [1]
☐ 0.7-1m [4]	☒ POOL WIDTH = RIFFLE WIDTH [1]	☐ FAST [1]	☐ INTERSTITIAL [-1]
☒ 0.4-0.7m [2]	☐ POOL WIDTH < RIFFLE W. [0]	☐ MODERATE [1]	☐ INTERMITTENT [-2]
☐ < 0.4m [1]		☒ SLOW [1]	☐ NO POOL [0]
☐ < 0.2m [Pool = 0]			

COMMENTS: _____

RIFFLE: 3

RIFFLE/RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS
☐ GENERALLY > 10 cm, MAX > 50 [4]	☐ STABLE (e.g., Cobble, Boulder) [2]	☐ EXTENSIVE [-1] ☐ MODERATE [0]
☐ GENERALLY > 10 cm, MAX < 50 [3]	☐ MOD. STABLE (e.g., Fine Gravel) [1]	☐ LOW [1] ☒ NONE [2]
☒ GENERALLY 5-10 cm [1]	☒ UNSTABLE (Gravel/Sand) [0]	☐ NO RIFFLE [0]
☐ GENERALLY < 5 cm [Riffle = 0]		

COMMENTS: _____

GRADIENT: 4

6) Gradient (feet/mile): 1.517 — %POOL: 3 — %RIFFLE: 7 — %RUN: 90

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PC14
8/16/99

QA Manual (6th Update) – Fish – September 30, 1989

Procedure No	WQPA-SWS-1	Date Issued	9-30-89
Revision No.	A	Date Effective	9-30-89

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish — QHEI SCORE: 42

Stream: [illegible] Creek — RM: — Date: 8/16/99 — River Code: —

Location: PC14 — County: CLE/GEA

1) SUBSTRATE (Check ONE / Two Subtypes *TYPE BOXES*: Check all types present);

TYPE	POOL	RIFFLE
☐ BEDROCK/SLABS (10)	☐	☐
☐ BOULDER (9)	☐	☐
☐ COBBLE (8)	☐	☐
☐ HARDPAN (4)	X	☐
☐ MUCK (2)	☐	☐
☐ GRAVEL (7)	X	X
☐ SAND (6)	X	X
☐ BEDROCK (5)	☐	X
☐ DETRITUS (3)	☐	☐
☐ ARTIFIC (0)	☐	☐

Substrate Origin (Check all): ☐ LIMESTONE (1) ☐ RIPRAP (0) ☐ TILLS (1) ☐ HARDPAN (0) ☐ SANDSTONE (0) ☐ SHALE (-1) ☐ COAL FINES (-2)

Silt Cover (Check One): ☐ SILT HEAVY (-2) ☐ SILT MODERATE (-1) ☐ SILT NORMAL (0) ☐ SILT FREE (1)

Extent Of Embeddedness (Check One): ☐ EXTENSIVE (-2) ☐ MODERATE (-1) X LOW (0) ☐ NONE (1)

TOTAL NUMBER OF SUBSTRATE TYPES: ☐ 4 (2) X 5 or 6 (0) ☐ > 6 (-1)

NOTE: Ignore sludge worm segments from point-source; score as (based on natural substrates)

COMMENTS: [illegible]

SUBSTRATE SCORE: 13

2) INSTREAM COVER

TYPE (Check All That Apply): ☐ UNDERCUT BANKS (1) ☐ OVERHANGING VEGETATION (1) X SHALLOWS (IN SLOW WATER) (1) X DEEP POOLS (2) ☐ ROOTWADS (1) ☐ BOULDERS (1) ☐ LOGS OR WOODY DEBRIS (1)

AMOUNT (Check ONE, If One or check 2 and AVERAGE): ☐ EXTENSIVE > 75% (11) ☐ MODERATE 25-75% (7) X SPARSE 5-25% (3) ☐ NEARLY ABSENT < 5% (1)

COVER SCORE: 3

COMMENTS: [illegible]

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ HIGH (4)	☐ EXCELLENT (7)	☐ NONE (6)	☐ HIGH (3)	☐ SNAGGING ☐ IMPOUND.
☐ MODERATE (3)	☐ GOOD (5)	☐ RECOVERED (4)	☐ MODERATE (2)	☐ RELOCATION ☐ ISLANDS
☐ LOW (2)	☐ FAIR (3)	X RECOVERING (3)	X LOW (1)	☐ CANOPY REMOVAL ☐ LEVEED
X NONE (1)	X POOR (1)	☐ RECENT OR NO RECOVERY (1)		☐ DREDGING ☐ BANK SHAPING
				☐ ONE SIDE CHANNEL MODIFICATIONS

CHANNEL: 6

COMMENTS: [illegible]

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank) "River Right Looking Downstream"

RIPARIAN WIDTH (L R (Per Bank))	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R (Most Predominant Per Bank))	(L R (Per Bank))	BANK EROSION
☐ WIDE >50m (4)	☐ FOREST, SWAMP (3)	☐ URBAN OR INDUSTRIAL (0)	☐ NONE OR LITTLE (3)
☐ MODERATE 10-50 (3)	X OPEN PASTURE/ ROW CROP (0)	☐ SHRUB OR OLD FIELD (2)	X MODERATE (2)
☐ NARROW 5-10m (2)	☐ RESID./PARK, NEW FIELD (1)	☐ CONSERV. TILLAGE (1)	☐ HEAVY OR SEVERE (1)
X VERY NARROW 1-5m (1)	☐ FENCED PASTURE (1)	☐ MINING/CONSTRUCTION (0)	
☐ NONE (0)			

RIPARIAN: 6

COMMENTS: [illegible]

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (Check 1): ☐ > 1m (6) ☐ 0.7-1m (4) X 0.4-0.7m (2) ☐ < 0.4m (1) ☐ 0.2m (Pool = 0)

MORPHOLOGY (Check 1): X POOL WIDTH > RIFFLE WIDTH (2) ☐ POOL WIDTH = RIFFLE WIDTH (1) ☐ POOL WIDTH < RIFFLE W. (0)

POOL/RIFFLE CURRENT VELOCITY (Check All That Apply): ☐ TORRENTIAL (-1) ☐ FAST (1) ☐ MODERATE (1) X SLOW (1) ☐ EDDIES (1) ☐ INTERSTITIAL (-1) ☐ INTERMITTENT (-2)

☐ NO POOL (0)

POOL: 5

COMMENTS: [illegible]

RIFFLE:

RIFFLE/RUN DEPTH: ☐ GENERALLY > 10 cm, MAX > 50 (4) ☐ GENERALLY > 10 cm, MAX < 50 (2) X GENERALLY 5-10 cm (1) ☐ GENERALLY < 5 cm (Rare = 0)

RIFFLE/RUN SUBSTRATE: ☐ STABLE (e.g., Cobble, Boulder) (2) ☐ MOD. STABLE (e.g., Fine Gravel) (1) X UNSTABLE (Gravel, Sand) (0)

RIFFLE/RUN EMBEDDEDNESS: ☐ EXTENSIVE (-1) ☐ MODERATE (0) X LOW (1) ☐ NONE (2)

☐ NO RIFFLE (0)

GRADIENT: 2

COMMENTS: [illegible]

6) Gradient (feet/mile): 4.46 — %POOL: 47 — %RIFFLE: 38 — %RUN: 15

EPA 4520

PC13
8/13/99

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 64 STR

Stream: Pigeon Creek RM: Date: 8/13/99 River Code:

Location: PC13 Other: SB, CWB

1) SUBSTRATE (Check ONE PTwo Subtypes TYPE BOXES; Check all types present):

TYPE	POOL	RIFFLE
☐-BLDER/SLABS[10]	___	___
☐-BOULDER [9]	___	___
☐-COBBLE [8]	X	___
☐-HARDPAN [4]	___	___
☐-MUCK [2]	___	___
☐-GRAVEL [7]	X	X
☐-SAND [6]	X	X
☐-BEDROCK[5]	___	___
☐-DETRITUS[3]	___	___
☐-ARTIFIC.[0]	X	X

SUBSTRATE QUALITY

Substrate Origin (Check all): ☐-LIMESTONE [1] ☐-RIPRAP [0] ☐-SANDSTONE [0] ☐-TILLS [1] ☐-HARDPAN [0] ☐-SHALE [-1]

Silt Cover (Check One): ☐-SILT HEAVY [-2] ☐-SILT MODERATE [-1] ☐-SILT NORMAL [0] ☐-SILT FREE [1]

Extent Of Embeddedness (Check One): ☐—EXTENSIVE[-2] ☐—MODERATE[-1] ☐—LOW[0] ☐—NONE[1]

SUBSTRATE SCORE: 16 14

TOTAL NUMBER OF SUBSTRATE TYPES: X = 4 [2] ☐ <= 4 [0] ☐-COAL FINES [-2]

NOTE: (Ignore sludge that originates from point-sources; score is based on natural substrates)

COMMENTS:

COVER SCORE: 9

2) INSTREAM COVER

TYPE (Check All That Apply): ☐-UNDERCUT BANKS [1] ☐-OVERHANGING VEGETATION [1] ☐-SHALLOWS (IN SLOW WATER) [1] ☐-DEEP POOLS [2] ☐-ROOTWADS [1] ☐-BOULDERS [1] ☐-OXBOWS [1] ☐-AQUATIC MACROPHYTES [1] ☐-LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE): ☐ - EXTENSIVE > 75% [11] ☐ - MODERATE 25-75% [7] ☐ - SPARSE 5-25% [3] ☐ - NEARLY ABSENT < 5% [1]

COMMENTS:

CHANNEL: 7

3) CHANNEL MORPHOLOGY: (Check ONE, Two PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ - HIGH [4]	☐ - EXCELLENT [7]	☐ - NONE [6]	☐ - HIGH [3]	☐ - SNAGGING ☐ - IMPOUND
☐ - MODERATE [3]	☐ - GOOD [5]	☐ - RECOVERED [4]	☐ - MODERATE [2]	☐ - RELOCATION ☐ - ISLANDS
☐ - LOW [2]	☐ - FAIR [3]	☐ - RECOVERING [3]	☐ - LOW [1]	☐ - CANOPY REMOVAL ☐ - LEVEED
☐ - NONE [1]	☐ - POOR [1]	☐ - RECENT OR NO RECOVERY [1]		☐ - DREDGING ☐ - BANK SHAPING ☐ - ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

RIPARIAN: 12

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank) "River Right Looking Downstream"

RIPARIAN WIDTH (L R (Per Bank))	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R (Most Predominant Per Bank))	L R (Per Bank)	BANK EROSION
☐-WIDE>50m [4]	☐-FOREST, SWAMP [3]	☐-URBAN OR INDUSTRIAL [0]	☐-NONE OR LITTLE [3]
☐-MODERATE 10-50 [3]	☐-OPEN PASTURE/ AGWCROP[0]	☐-SHRUB OR OLD FIELD[2]	☐-MODERATE[2]
☐-NARROW 5-10m [2]	☐-RESID.,PARK,NEW FIELD [1]	☐-CONSERV. TILLAGE [1]	☐-HEAVY OR SEVERE[1]
☐-VERY NARROW 1-5m [1]	☐-FENCED PASTURE [1]	☐-MINING/CONSTRUCTION [0]	
☐-NONE[0]			

COMMENTS:

POOL: 6

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1): ☐ >1m [6] ☐ 0.7-1m [4] ☐ 0.4-0.7m [2] ☐ < 0.4m [1] ☐—<0.2m (Pool = 0)

MORPHOLOGY (Check 1): ☐-POOL WIDTH > RIFFLE WIDTH [2] ☐-POOL WIDTH = RIFFLE WIDTH [1] ☐-POOL WIDTH < RIFFLE W. [0]

POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply): ☐-TORRENTIAL[-1] ☐-FAST[1] ☐-MODERATE [1] ☐-SLOW[1] ☐-EDDIES[1] ☐-INTERSTITIAL[-1] ☐-INTERMITTENT[-2]

☐-NO POOL[0]

COMMENTS:

RIFFLE: 2

RIFFLE/RUN DEPTH: ☐ - GENERALLY >10 cm, MAX>50 [4] ☐ - GENERALLY >10 cm, MAX< 50 [3] ☐ GENERALLY 5-10 cm [1] ☐ - GENERALLY < 5 cm (Fills = 0)

RIFFLE/RUN SUBSTRATE: ☐-STABLE (e.g.,Cobble, Boulder) [2] ☐-MOD. STABLE (e.g.,Pea Gravel) [1] ☐-UNSTABLE (Gravel,Sand) [0]

RIFFLE/RUN EMBEDDEDNESS: ☐-EXTENSIVE [-1] ☐-MODERATE[0] ☐-LOW. [1] ☐-NONE[2]

☐-NO RIFFLE[0]

COMMENTS:

GRADIENT: 2

6) Gradient (feet/mile): 7.51 %POOL: 74 %RIFFLE: 8 %RUN: 18

EPA 4520

370

PC12
8/12/99

Figure V-4-5 Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 55

Stream: Pigeon Creek RM: Date: 8/12/99 River Code:
Location: PC12 Crew: AS, CWB, CAB

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Check all types present)

TYPE	POOL	RIFFLE
☐ BOULDER/SLABS [10]		
☐ BOULDER [9]		
☐ COBBLE [8]		
☒ HARDPAN [4]	X	X
☐ MUCK [2]		
☐ GRAVEL [7]	X	X
☒ SAND [6]	X	X
☐ BEDROCK [5]		
☐ DETRITUS [3]		
☐ ARTIFICIAL [0]		

SUBSTRATE QUALITY — Substrate Origin (Check all): ☐ LIMESTONE [1] ☐ RIPRAP [0] ☐ SANDSTONE [0] ☐ SHALE [-1]
SUBSTRATE SCORE: 11
Silt Cover (Check One): ☐ SILT HEAVY [-2] ☒ SILT MODERATE [-1] ☐ SILT NORMAL [0] ☐ SILT FREE [1]
Extent Of Embeddedness (Check One): ☐ EXTENSIVE [-2] ☒ MODERATE [-1] ☐ LOW [0] ☐ NONE [1]

TOTAL NUMBER OF SUBSTRATE TYPES: ☒ 4 [2] ☐ 3 [1] ☐ 2 [0] ☐ COAL FINES [-2]
NOTE: Ignore sludge that originated from point-source; assess substrate based on natural substrates
COMMENTS:

2) INSTREAM COVER — COVER SCORE: 8

TYPE (Check All That Apply):
☐ UNDERCUT BANKS [1] ☒ DEEP POOLS [2] ☐ OXBOWS [1]
☐ OVERHANGING VEGETATION [1] ☒ ROOTWADS [1] ☐ AQUATIC MACROPHYTES [1]
☒ SHALLOWS (IN SLOW WATER) [1] ☐ BOULDERS [1] ☒ LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE):
☐ EXTENSIVE > 75% [11]
☐ MODERATE 25-75% [7]
☒ SPARSE 5-25% [3]
☐ NEARLY ABSENT < 5% [1]

COMMENTS:

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE) — CHANNEL: 8

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]	☐ SHADING ☐ IMPOUND.
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☒ MODERATE [2]	☐ RELOCATION ☐ ISLANDS
☒ LOW [2]	☐ FAIR [3]	☒ RECOVERING [3]	☐ LOW [1]	☐ CANOPY REMOVAL ☐ LEVEED
☐ NONE [1]	☒ POOR [1]	☐ RECENT OR NO RECOVERY [1]		☐ DREDGING ☐ BANK SHAPING
				☐ ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

4) RIPARIAN ZONE AND BANK EROSION - (Check ONE box per bank or check 2 and AVERAGE per bank) — RIPARIAN: 12
"River Right Looking Downstream"

RIPARIAN WIDTH (L R (Per Bank))	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R (Per Bank))	BANK EROSION
☐ WIDE >50m [4]	☒ FOREST, SWAMP [3]	☐ NONE OR LITTLE [3]
☐ MODERATE 10-50 [3]	☐ OPEN PASTURE/ ROWC ROP [0]	☒ MODERATE [2]
☐ NARROW 5-10m [2]	☐ RESD., PARK, NEW FIELD [1]	☐ HEAVY OR SEVERE [1]
☒ VERY NARROW 1-5m [1]	☐ FENCED PASTURE [1]	
☐ NONE [0]	☐ URBAN OR INDUSTRIAL [0]	
	☐ SHRUB OR OLD FIELD [2]	
	☐ CONSERV. TILLAGE [1]	
	☐ MINING/CONSTRUCTION [0]	

COMMENTS:

POOL/GLIDE AND RIFFLE/RUN QUALITY — POOL: 6

MAX DEPTH (Check 1):
☐ >1m [6]
☒ 0.7-1m [4]
☐ 0.4-0.7m [2]
☐ <0.4m [1]
☐ 0.2m [Pool = 0]

MORPHOLOGY (Check 1):
☐ POOL WIDTH > RIFFLE WIDTH [2]
☒ POOL WIDTH = RIFFLE WIDTH [1]
☐ POOL WIDTH < RIFFLE W. [0]

POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply):
☐ TORRENTIAL [-1] ☐ EDDIES [1]
☐ FAST [1] ☐ INTERSTITIAL [-1]
☒ MODERATE [1] ☐ INTERMITTENT [-2]
☐ SLOW [1]

☐ NO POOL [0]

COMMENTS:

RIFFLE: 6

RIFFLE/RUN DEPTH:
☐ GENERALLY > 10 cm, MAX > 50 [4]
☒ GENERALLY > 10 cm, MAX < 50 [3]
☐ GENERALLY 5-10 cm [1]
☐ GENERALLY < 5 cm [Rare = 0]

RIFFLE/RUN SUBSTRATE:
☒ STABLE (e.g., Cobble, Boulder) [2]
☐ MOD. STABLE (e.g., Pea Gravel) [1]
☐ UNSTABLE (Gravel, Sand) [0]

RIFFLE/RUN EMBEDDEDNESS:
☐ EXTENSIVE [-1] ☐ MODERATE [0]
☒ LOW. [1] ☐ NONE [2]

☐ NO RIFFLE [0]

COMMENTS:

GRADIENT: 4

6) Gradient (feet/mile): 2 %POOL: 43 %RIFFLE: 22 %RUN: 35

EPA 4520

345 Dup 8D

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish — **QHEI SCORE: 53**

Stream: Pigeon Creek RM: Date: 8/11/99 River Code:

Location: PC 11 Crew: ESB/CWA

1) SUBSTRATE (Check ONLY Two Substrate *TYPE BOXES*; Check all types present)

TYPE	POOL	RIFFLE		POOL	RIFFLE
☐ BOULDER/SLABS [10]			☒ GRAVEL [7]		X
☐ BOULDER [9]			☒ SAND [6]		X
☐ COBBLE [8]			☐ BEDROCK [5]		
☐ HARDPAN [4]		X	☐ DETRITUS [3]		
☐ MUCK [2]			☐ ARTIFIC. [0]		

TOTAL NUMBER OF SUBSTRATE TYPES: ☐ ≤ 1 [2] ☒ ≥ 4 [0] ☐ COAL FINES [-2]

NOTE: Ignore sludge that originates from point sources; score is based on natural substrates

Substrate Origin (Check all): ☐ LIMESTONE [1] ☐ RIPRAP [0] ☐ TILLS [1] ☒ HARDPAN [0] ☐ SANDSTONE [0] ☐ SHALE [-1]

Substrate Quality — Silt Cover (Check One): ☐ SILT HEAVY [-2] ☐ SILT MODERATE [-1] ☒ SILT NORMAL [0] ☐ SILT FREE [1]

Extent Of Embeddedness (Check One): ☐ EXTENSIVE [-2] ☐ MODERATE [-1] ☒ LOW [0] ☐ NONE [1]

SUBSTRATE SCORE: 14

COMMENTS:

COVER SCORE: 6

2) INSTREAM COVER

TYPE (Check All That Apply): ☐ UNDERCUT BANKS [1] ☐ OVERHANGING VEGETATION [1] ☒ SHALLOWS (IN SLOW WATER) [1] ☐ DEEP POOLS [2] ☒ ROOTWADS [1] ☐ BOULDERS [1] ☐ OXBOWS [1] ☐ AQUATIC MACROPHYTES [1] ☒ LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE): ☐ EXTENSIVE > 75% [11] ☐ MODERATE 25-75% [7] ☒ SPARSE 5-25% [3] ☐ NEARLY ABSENT < 5% [1]

COMMENTS:

CHANNEL: 10

3) CHANNEL MORPHOLOGY (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]	☐ SNAGGING ☐ IMPOUND.
☐ MODERATE [2]	☐ GOOD [5]	☐ RECOVERED [4]	☒ MODERATE [2]	☐ RELOCATION ☐ ISLANDS
☒ LOW [1]	☒ FAIR [3]	☒ RECOVERING [3]	☐ LOW [1]	☐ CANOPY REMOVAL ☐ LEVEED
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]		☐ DREDGING ☐ BANK SHAPING
				☐ ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

RIPARIAN: 10

4) RIPARIAN ZONE AND BANK EROSION (Check ONE box per bank or check 2 and AVERAGE per bank)

"River Right Looking Downstream"

RIPARIAN WIDTH (L R [Per Bank])	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R [Most Predominant Per Bank])	BANK EROSION (L R [Per Bank])
☐ ☐ WIDE >50m [4]	☒ ☒ FOREST, SWAMP [3]	☐ ☐ NONE OR LITTLE [3]
☐ ☐ MODERATE 10-50 [3]	☐ ☐ OPEN PASTURE/ ROW CROP [3]	☒ ☒ MODERATE [2]
☐ ☐ NARROW 5-10m [2]	☐ ☐ RESID., PARK, NEW FIELD [1]	☐ ☐ HEAVY OR SEVERE [1]
☐ ☐ VERY NARROW 1-5m [1]	☐ ☐ FENCED PASTURE [1]	
☒ ☒ NONE [0]	☐ ☐ URBAN OR INDUSTRIAL [0]	
	☐ ☐ SHRUB OR OLD FIELD [2]	
	☐ ☐ CONSERV. TILLAGE [1]	
	☐ ☐ MINING/CONSTRUCTION [0]	

COMMENTS:

POOL: 7

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1): ☐ > 1m [6] ☒ 0.7-1m [4] ☐ 0.4-0.7m [2] ☐ < 0.4m [1] ☐ 0 m [Poor = 0]

MORPHOLOGY (Check 1): ☒ POOL WIDTH > RIFFLE WIDTH [2] ☐ POOL WIDTH = RIFFLE WIDTH [1] ☐ POOL WIDTH < RIFFLE W. [0]

POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply): ☐ TORRENTIAL [-1] ☐ FAST [1] ☒ MODERATE [1] ☐ SLOW [1] ☐ EDDIES [1] ☐ INTERSTITIAL [-1] ☐ INTERMITTENT [-2]

☐ NO POOL [-1]

COMMENTS:

RIFFLE: 2

RIFFLE/RUN DEPTH: ☐ GENERALLY > 10 cm; MAX > 50 [4] ☐ GENERALLY > 10 cm; MAX < 50 [3] ☒ GENERALLY 5-10 cm [1] ☐ GENERALLY < 5 cm [Rille = 0]

RIFFLE/RUN SUBSTRATE: ☐ STABLE (e.g. Cobble, Boulder) [2] ☐ MOD. STABLE (e.g. Pea Gravel) [1] ☒ UNSTABLE (Gravel, Sand) [0]

RIFFLE/RUN EMBEDDEDNESS: ☐ EXTENSIVE [-1] ☐ MODERATE [0] ☒ LOW, [1] ☐ NONE [2]

☐ NO RIFFLE [0]

COMMENTS:

GRADIENT: 4

6) Gradient (feet/mile): 16.58 %POOL: %RIFFLE: %RUN: 100

EPA 4500

PC 9 8/10/95

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 74 42 41

Stream: Pigeon Creek RM: Date: 8/10/95 River Code:
Location: Cover: 1st SB/CnR

I) SUBSTRATE (Check ONLY Two Substrate *TYPE BOXES*; Check all types present)

TYPE	POOL	RIFFLE	TYPE	POOL	RIFFLE
☐ BOULDER/SLABS [10]			☐ GRAVEL [7]		
☐ BOULDER [9]			☒ SAND [6]	X	
☐ COBBLE [8]			☐ BEDROCK [5]		
☒ HARDPAN [4]	X		☐ DETRITUS [3]	X	
☐ MUCK [2]			☐ ARTIFICIAL [0]		

TOTAL NUMBER OF SUBSTRATE TYPES: ☐ ≥ 4 [2] ☒ ≤ 4 [0]

SUBSTRATE QUALITY — SUBSTRATE SCORE: 16 4

Substrate Origin (Check all): ☐ LIMESTONE [1] ☐ RIPRAP [0] ☒ HARDPAN [0] ☐ SANDSTONE [0] ☐ SHALE [-1] ☐ COAL FINES [-2]

Silt Cover (Check One): ☒ SILT HEAVY [-2] ☐ SILT MODERATE [-1] ☐ SILT NORMAL [0] ☐ SILT FREE [1]

Extent Of Embeddedness (Check One): ☐ EXTENSIVE [-2] ☒ MODERATE [-1] ☐ LOW [0] ☐ NONE [1]

NOTE: Ignore algae that originates from point-sources; score is based on natural substrates)

COMMENTS:

II) INSTREAM COVER — COVER SCORE: 15

TYPE (Check All That Apply)

☒ UNDERCUT BANKS [1] ☒ DEEP POOLS [2] ☐ OXBOWS [1] ☐ AQUATIC MACROPHYTES [1] ☐ OVERHANGING VEGETATION [1] ☒ ROOTWADS [1] ☐ LOGS OR WOODY DEBRIS [1] ☐ SHALLOWS (IN SLOW WATER) [1] ☐ BOULDERS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE)

☐ EXTENSIVE > 75% [11] ☐ MODERATE 25-75% [7] ☒ SPARSE 5-25% [3] ☐ NEARLY ABSENT < 5% [1]

COMMENTS:

III) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE) — CHANNEL: 10

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]	☐ SNAGGING ☐ CLIPPED
☒ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☒ MODERATE [2]	☐ RELOCATION ☐ ISLANDS
☐ LOW [2]	☒ FAIR [3]	☒ RECOVERING [3]	☐ LOW [1]	☐ CANOPY REMOVAL ☐ LEVEED
☐ NONE [1]	☒ POOR [1]	☐ RECENT OR NO RECOVERY [1]		☐ DREDGING ☐ BANK SHAPING
				☐ ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

IV) RIPARIAN ZONE AND BANK EROSION – (check ONE box per bank or check 2 and AVERAGE per bank) — RIPARIAN: 8 -12

River Right Looking Downstream

RIPARIAN WIDTH (L R (Per Bank))	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R (Most Predominant Per Bank))	L R (Per Bank)	BANK EROSION
☐ ☐ WIDE > 30m [4]	☐ ☐ FOREST, SWAMP [3]	☐ ☐ URBAN OR INDUSTRIAL [0]	☐ ☐ NONE OR LITTLE [3]
☐ ☐ MODERATE 10-30 [3]	☒ ☒ OPEN PASTURE/ ROWCROP [2]	☐ ☐ SHRUB OR OLD FIELD [2]	☒ ☒ MODERATE [2]
☐ ☐ NARROW 5-10m [2]	☐ ☐ RESID., PARK, NEW FIELD [1]	☐ ☐ CONSERV. TILLAGE [1]	☐ ☐ HEAVY OR SEVERE [1]
☒ ☒ VERY NARROW 1-5m [1]	☐ ☐ FENCED PASTURE [1]	☐ ☐ MINING/CONSTRUCTION [0]	
☐ ☐ NONE [0]			

COMMENTS:

V) POOL/GLIDE AND RIFFLE/RUN QUALITY — POOL: 6

MAX DEPTH (Check 1):
- ☒ > 1m [6]
- ☐ 0.7-1m [4]
- ☐ 0.4-0.7m [2]
- ☐ < 0.4m [1]
- ☐ 0.2m (Pool = 0)

MORPHOLOGY (Check 1):
- ☐ POOL WIDTH > RIFFLE WIDTH [2]
- ☒ POOL WIDTH = RIFFLE WIDTH [1]
- ☐ POOL WIDTH < RIFFLE W. [0]

POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply):
- ☐ TORRENTIAL [-1]
- ☐ FAST [1]
- ☐ MODERATE [1]
- ☒ SLOW [1]
- ☐ EDDIES [1]
- ☐ INTERSTITIAL [-1]
- ☐ INTERMITTENT [-2]

☐ NO POOL [0]

COMMENTS:

VI) RIFFLE/RUN QUALITY — RIFFLE: 0

RIFFLE/RUN DEPTH:
- ☐ GENERALLY > 10 cm, MAX > 50 [4]
- ☐ GENERALLY > 10 cm, MAX < 50 [3]
- ☐ GENERALLY 5-10 cm [1]
- ☐ GENERALLY < 5 cm [Rifle = 0]

RIFFLE/RUN SUBSTRATE:
- ☐ STABLE (e.g. Cobble, Boulder) [2]
- ☐ MOD. STABLE (e.g. Fine Gravel) [1]
- ☐ UNSTABLE (Gravel/Sand) [0]

RIFFLE/RUN EMBEDDEDNESS:
- ☐ EXTENSIVE [-1]
- ☐ MODERATE [0]
- ☐ LOW [1]
- ☐ NONE [2]
- ☒ NO RIFFLE [0]

COMMENTS:

GRADIENT: 2

6) Gradient (feet/mile): 4.17 %POOL: 100 %RIFFLE: %RUN:

EPA 4520

8/9/99
PC8

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 84 - 1.5

Stream Pigeon Creek RM Date 8/9/99 River Code

Location PC8 Crew C.W.B., E.S.B.

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Check all types present)

TYPE	POOL	RIFFLE
BOULDER/SLABS [10]		
BOULDER [9]		
COBBLE [8]		
HARDPAN [4]	X	
MUCK [2]		
GRAVEL [7]		
SAND [6]	X	
BEDROCK [5]		
DETRITUS [3]	X	
ARTIFIC. [0]		

POOL	RIFFLE	Substrate Origin (Check all)
		LIMESTONE [1]
		TILLS [1]
		SANDSTONE [0]
		SHALE [-1]
		COAL FINES [-2]

RIFFLE: RIPRAP [0] HARDPAN [0]

Silt Cover (Check One): SILT HEAVY [-2] SILT MODERATE [-1] SILT NORMAL [0] SILT FREE [1]

Extent Of Embeddedness (Check One): EXTENSIVE [-1] MODERATE [-1] LOW [0] NONE [1]

TOTAL NUMBER OF SUBSTRATE TYPES: Qty = 4 [2] Qty <> 4 [0]

NOTE: Ignore sludge worms and algae/mats from point-sources; score is based on natural substrates)

COMMENTS:

SUBSTRATE SCORE: 12 - 8

2) INSTREAM COVER

TYPE (Check All That Apply)			AMOUNT (Check ONE, If One or check 2 and AVERAGE)
UNDERCUT BANKS [1]	DEEP POOLS [2]	OXBOWS [1]	EXTENSIVE > 75% [11]
OVERHANGING VEGETATION [1]	ROOTWADS [1]	AQUATIC MACROPHYTES [1]	MODERATE 25-75% [7]
SHALLOWS (IN SLOW WATER) [1]	BOULDERS [1]	LOGS OR WOODY DEBRIS [1]	SPARSE 5-25% [3]
			NEARLY ABSENT < 5% [1]

COVER SCORE: 5

COMMENTS:

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
HIGH [4]	EXCELLENT [7]	NONE [6]	HIGH [3]	SNAGGING
MODERATE [3]	GOOD [5]	RECOVERED [4]	MODERATE [2]	RELOCATION
LOW [2]	FAIR [3]	RECOVERING [3]	LOW [1]	CANOPY REMOVAL
NONE [1]	POOR [1]	RECENT OR NO RECOVERY [1]		DREDGING
				ONE SIDE CHANNEL MODIFICATIONS
				BARS/POINT
				ISLANDS
				LEVEED
				BANK SHAPING

CHANNEL: 10

COMMENTS:

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank) "River Right Looking Downstream"

RIPA BANK WIDTH (L R (Per Bank))	EROSION/RUNOFF - FLOODPLAIN QUALITY (L R (Most Predominant Per Bank))	FLOODPLAIN QUALITY (L R (Per Bank))	BANK EROSION
WIDE > 50m [4]	FOREST, SWAMP [3]	URBAN OR INDUSTRIAL [0]	NONE OR LITTLE [3]
MODERATE 10-50 [3]	OPEN PASTURE/ ROWCROPS [2]	SHRUB OR OLD FIELD [2]	MODERATE [2]
NARROW 5-10m [2]	RESID., PARK, NEW FIELD [1]	CONSERV. TILLAGE [1]	HEAVY OR SEVERE [1]
VERY NARROW 1-5m [1]	FENCED PASTURE [1]	MINING/CONSTRUCTION [0]	
NONE [0]			

RIPARIAN: 7

COMMENTS:

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (Check 1)	MORPHOLOGY (Check 1)	POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply)
> 1m [6]	POOL WIDTH > RIFFLE WIDTH [2]	TORRENTIAL [-1]
0.7-1m [4]	POOL WIDTH = RIFFLE WIDTH [1]	FAST [1]
0.4-0.7m [2]	POOL WIDTH < RIFFLE W. [0]	MODERATE [1]
< 0.4m [1]		SLOW [1]
<0.2m (Pool = 0)		EDDIES [1]
		INTERSTITIAL [-1]
		INTERMITTENT [-2]

NO POOL [0]

POOL: 8

COMMENTS:

RIFFLE/RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS
GENERALLY > 10 cm, MAX > 50 [4]	STABLE (e.g., Cobble, Boulder) [2]	EXTENSIVE [-1]
GENERALLY > 10 cm, MAX < 50 [3]	MOD. STABLE (e.g., Fea Gravel) [1]	LOW [1]
GENERALLY 5-10 cm [1]	UNSTABLE (Gravel, Sand) [0]	MODERATE [0]
GENERALLY < 5 cm (Riffle = 0)		NONE [2]

NO RIFFLE [0]

COMMENTS

RIFFLE: 0

GRADIENT: 4.

6) Gradient (feet/mile): 16.2 %POOL: 100 %RIFFLE: %RUN:

EPA 4520

PC 7
8/9/99

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 42

Stream Pre trib Craig R Rm Date 8/9/99 River Code
Location RF7 Crew CWR / ESB

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Check all types present): SUBSTRATE SCORE: 4

TYPE	POOL	RIFFLE		POOL	RIFFLE
☐ BLDR/SLABS [10]			☐ GRAVEL [7]		
☐ BOULDER [9]			☐ SAND [6]	X	
☐ COBBLE [8]			☐ BEDROCK [5]		
☒ HARDPAN [4]	X		☐ DETRITUS [3]	X	
☐ MUCK [2]			☐ ARTIFICIAL [0]		

Substrate Origin (Check all): ☐ LIMESTONE [1] ☐ RIPRAP [0] ☐ SHALE [+1]

SUBSTRATE QUALITY: ☐ SILT HEAVY [-2] ☐ SILT MODERATE [-1] ☐ HARDPAN [0] ☐ SILT NORMAL [0] ☐ SILT FREE [1] ☐ SANDSTONE [0]

Silt Cover (Check One): ☐ EXTENSIVE [-2] ☐ MODERATE [-1] ☐ LOW [0] ☐ NONE [1]

Extent Of Embeddedness (Check One): ☐ EXTENSIVE [-2] ☐ MODERATE [-1] ☐ LOW [0] ☐ NONE [1]

TOTAL NUMBER OF SUBSTRATE TYPES: ☐ > 4 [2] ☐ 3 or 4 [0] ☐ COAL FINES [-2]

NOTE: (Ignore sludge that originates from point-sources; score is based on natural substrates)

COMMENTS:

COVER SCORE: 9

2) INSTREAM COVER

TYPE (Check ALL That Apply): ☐ UNDERCUT BANKS [1] ☐ OVERHANGING VEGETATION [1] ☒ SHALLOWS (IN SLOW WATER) [1] ☒ DEEP POOLS [2] ☒ ROOTWADS [1] ☐ BOULDERS [1] ☐ OXBOWS [1] ☐ AQUATIC MACROPHYTES [1] ☒ LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE): ☐ EXTENSIVE > 75% [11] ☐ MODERATE 25-75% [7] ☒ SPARSE 5-25% [3] ☐ NEARLY ABSENT < 5% [1]

COMMENTS:

CHANNEL: 10

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]	☐ SNAGGING ☐ IMPOUND.
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☒ MODERATE [2]	☐ RELOCATION ☐ ISLANDS
☒ LOW [2]	☒ FAIR [3]	☒ RECOVERING [3]	☐ LOW [1]	☐ CANOPY REMOVAL ☒ LEVEED
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]		☐ DREDGING ☐ BANK SHAPING
				☐ ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

RIPARIAN: 10

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank) "River Right Looking Downstream"

RIPARIAN WIDTH (L R (Per Bank))	EROSION/INDEX - FLOOD PLAIN QUALITY (L R (Most Predominant Per Bank))	FLOOD PLAIN QUALITY (L R (Per Bank))	BANK EROSION
☐ ☐ WIDE >50m [4]	☒ FOREST, SWAMP [3]	☐ ☐ URBAN OR INDUSTRIAL [0]	☐ NONE OR LITTLE [3]
☐ ☐ MODERATE 10-50 [3]	☐ ☐ OPEN PASTURE/ ROW CROP [0]	☐ ☐ SHRUB OR OLD FIELD [2]	☒ MODERATE [2]
☐ ☐ NARROW 5-10m [2]	☐ RESID., PARK, NEW FIELD [1]	☐ ☐ CONSERV. TILLAGE [1]	☐ HEAVY OR SEVERE [1]
☒ ☐ VERY NARROW 1-5m [1]	☐ ☐ FENCED PASTURE [1]	☐ ☐ MINING/CONSTRUCTION [0]	
☐ ☐ NONE [0]			

COMMENTS:

POOL: 9

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (Check 1): ☒ >1m [6] ☐ 0.7-1m [4] ☐ 0.4-0.7m [2] ☐ ≤ 0.4m [1] ☐ <0.2m (Pool = 0)

MORPHOLOGY (Check 1): ☐ POOL WIDTH > RIFFLE WIDTH [2] ☒ POOL WIDTH = RIFFLE WIDTH [1] ☐ POOL WIDTH < RIFFLE W. [0]

POOL/RUN/RIFFLE CURRENT VELOCITY (Check ALL That Apply): ☐ TORRENTIAL [-1] ☐ FAST [1] ☐ MODERATE [1] ☒ SLOW [1] ☐ EDDIES [1] ☐ INTERSTITIAL [-1] ☐ INTERMITTENT [-2]

☐ NO POOL [0]

COMMENTS:

RIFFLE: 0

RIFFLE/RUN DEPTH: ☐ GENERALLY > 10 cm, MAX > 50 [4] ☐ GENERALLY > 10 cm, MAX < 50 [3] ☐ GENERALLY 5-10 cm [1] ☐ GENERALLY < 5 cm [Rare = 0]

RIFFLE/RUN SUBSTRATE: ☐ STABLE (e.g., Cobble, Boulder) [2] ☐ MOD. STABLE (e.g., Pea Gravel) [1] ☐ UNSTABLE (Gravel, Sand) [0]

RIFFLE/RUN EMBEDDEDNESS: ☐ EXTENSIVE [-1] ☐ MODERATE [0] ☐ LOW [1] ☐ NONE [2]

☒ NO RIFFLE [0]

COMMENTS:

GRADIENT: 2

6) Gradient (feet/mile): 9.56 %POOL: 100 %RIFFLE: %RUN:

EPA 4570

PC 5
8/7/19

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish

QHEI SCORE: 53

Stream: Pigeon RM: Date: 8/7/19 Rivet Code:

Location: PC 5 Crew: EJB, CWB

[] SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Check all types present):

TYPE	POOL	RIFFLE
☐ BLDR/SLABS [10]	☐	☐
☐ BOULDER [9]	X	X
☒ COBBLE [8]	X	X
☐ HARDPAN [4]	X	☐
☐ MUCK [2]	☐	☐
☐ GRAVEL [7]	X	X
☐ SAND [6]	X	X
☐ BEDROCK [5]	☐	☐
☐ DETRITUS [3]	☐	☐
☐ ARTIFIC. [0]	☐	☐

SUBSTRATE QUALITY — Substrate Origin (Check all): ☐ LIMESTONE [1] ☒ RIP/RAP [0] ☐ TILLS [1] ☐ HARDPAN [0] ☐ SANDSTONE [0] ☐ SHALE [1]

Silt Cover (Check One): ☐ SILT HEAVY [-2] ☒ SILT MODERATE [-1] ☐ SILT NORMAL [0] ☐ SILT FREE [1]

Extent Of Embeddedness (Check One): ☐ EXTENSIVE [-2] ☐ MODERATE [-1] ☐ LOW [0] ☐ NONE [1]

TOTAL NUMBER OF SUBSTRATE TYPES: ☒ ≥ 4 [2] ☐ = 3 [1] ☐ = 2 [0] ☐ COAL FINES [-2]

NOTE: Ignore sludge that originates from point sources; score is based on natural substrates

COMMENTS:

SUBSTRATE SCORE: 14

2) INSTREAM COVER

Type (Check All That Apply):

☐ UNDERCUT BANKS [1] ☒ DEEP POOLS [2] ☒ OXBOWS [1]
☒ OVERHANGING VEGETATION [1] ☒ ROOTWADS [1] ☐ AQUATIC MACROPHYTES [1]
☒ SHALLOWS (IN SLOW WATER) [1] ☒ BOULDERS [1] ☒ LOGS OR WOODY DEBRIS [1]

Amount (Check ONLY One or check 2 and AVERAGE):
☐ EXTENSIVE > 75% [11]
☐ MODERATE 25-75% [7]
☒ SPARSE 5-25% [3]
☐ NEARLY ABSENT < 5% [1]

COMMENTS:

COVER SCORE: 11

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]	☐ SNAGGING ☐ IMPOUND.
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☒ MODERATE [2]	☐ RELOCATION ☐ ISLANDS
☒ LOW [2]	☒ FAIR [3]	☒ RECOVERING [3]	☐ LOW [1]	☐ CANOPY REMOVAL ☐ LEVEED
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]		☐ DREDGING ☐ BANK SHAPING
				☐ ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

CHANNEL: 10

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank)

"River Right Looking Downstream"

RIPARIAN WIDTH (L R) (Per Bank)	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R) (Most Predominant Per Bank)	BANK EROSION (L R) (Per Bank)
☐ WIDE >50m [4]	☐ FOREST, SWAMP [3]	☒ URBAN OR INDUSTRIAL [0]
☐ MODERATE 10-50 [3]	☐ OPEN PASTURE/ ROW CROP [2]	☐ SHRUB OR OLD FIELD [2]
☐ NARROW 5-10m [2]	☒ RESID., PARK, NEW FIELD [1]	☐ CONSERV. TILLAGE [1]
☒ VERY NARROW 1-5m [1]	☐ FENCED PASTURE [1]	☐ MINING/CONSTRUCTION [0]
☐ NONE [0]		

☐ NONE OR LITTLE [3]
☒ MODERATE [2]
☐ HEAVY OR SEVERE [1]

COMMENTS:

RIPARIAN: 6

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (Check 1):
☐ >1m [6]
☐ 0.7-1m [4]
☒ 0.4-0.7m [2]
☐ <0.4m [1]
☐ <0.2m [Pool = 0]

MORPHOLOGY (Check 1):
☒ POOL WIDTH > RIFFLE WIDTH [2]
☐ POOL WIDTH = RIFFLE WIDTH [1]
☐ POOL WIDTH < RIFFLE W. [0]

POOL/GLIDE MAXIMUM CURRENT VELOCITY (Check All That Apply):
☐ TORRENTIAL [-1] ☐ EDDIES [1]
☐ FAST [1] ☐ INTERSTITIAL [-1]
☒ MODERATE [1] ☐ INTERMITTENT [-2]
☐ SLOW [1]

☐ NO POOL [0]

COMMENTS:

POOL: 5

RIFFLE/RUN DEPTH

☐ GENERALLY >10 cm (MAX > 50) [4]
☐ GENERALLY >10 cm (MAX < 50) [3]
☒ GENERALLY 5-10 cm [1]
☐ GENERALLY < 5 cm [Rate = 0]

RIFFLE/RUN SUBSTRATE

☒ STABLE (e.g. Cobble, Boulder) [2]
☐ MOD. STABLE (e.g. Pea Gravel) [1]
☐ UNSTABLE (Gravel, Sand) [0]

RIFFLE/RUN EMBEDDEDNESS

☐ EXTENSIVE [-1] ☒ MODERATE [0]
☐ LOW [1] ☐ NONE [2]

☐ NO RIFFLE [0]

COMMENTS:

RIFFLE: 3

GRADIENT: 2

6) Gradient (feet/mile): _____ %POOL: 25 %RIFFLE: 20 %RUN: 55

EPA 4529

PCG
8/9/99

Figure V-4-5 Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 58.5 58.42

Stream Piqua RM Date 8/9/99 River Code

Location PCG Crew CWB/EGH

1) SUBSTRATE (Check ONLY Two Substrate *TYPE BOXES*; Check All types present):

TYPE	POOL	RIFFLE	TYPE	POOL	RIFFLE
☐ BOULDER/SLABS [10]			☐ GRAVEL [7]		
☐ BOULDER [9]			☐ SAND [6]		
☒ COBBLE [8]		X	☐ BEDROCK [5]		
☐ HARDPAN [4]			☐ DETRITUS [3]		
☐ MUCK [2]		X	☐ ARTIFIC. [0]		

TOTAL NUMBER OF SUBSTRATE TYPES ☐ = 6 [3] ☒ = 4 [2] ☐ = 2 [1]

NOTE: (Ignore sludge that originates from point-sources; score is based on natural substrates)

SUBSTRATE QUALITY (Check all): ☐ LIMESTONE [1] ☐ RIPRAP [0] ☒ SILT HEAVY [-2] ☐ SILT MODERATE [-1] ☐ TILLS [1] ☒ HARDPAN [0] ☐ SILT NORMAL [0] ☐ SILT FREE [1] ☐ SANDSTONE [0] ☐ SHALE [-1]

Silt Cover (Check One): ☒ SILT HEAVY [-2] ☐ SILT MODERATE [-1] ☐ SILT NORMAL [0] ☐ SILT FREE [1]

Extent Of Embeddedness (Check One): ☒ EXTENSIVE [-2] ☐ MODERATE [-1] ☐ LOW [0] ☐ NONE [1]

SUBSTRATE SCORE: 7

COMMENTS

COVER SCORE: 8

2) INSTREAM COVER

TYPE (Check All That Apply)

☐ UNDERCUT BANKS [1] ☒ DEEP POOLS [2] ☐ OXBOWS [1]
☒ OVERHANGING VEGETATION [1] ☒ ROOTWADS [1] ☐ AQUATIC MACROPHYTES [1]
☐ SHALLOWS (IN SLOW WATER) [1] ☐ BOULDERS [1] ☒ LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE)

☐ EXTENSIVE > 75% [11]
☐ MODERATE 25-75% [7]
☒ SPARSE 5-25% [3]
☐ NEARLY ABSENT < 5% [1]

COMMENTS:

CHANNEL: 11

3) CHANNEL MORPHOLOGY: (Check ONE Box PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]	☐ SNAGGING ☐ IMPOUND.
☒ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☒ MODERATE [2]	☐ RELOCATION ☐ ISLANDS
☐ LOW [2]	☒ FAIR [3]	☒ RECOVERING [3]	☐ LOW [1]	☐ CANOPY REMOVAL ☐ LEVEED
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]		☐ DREDGING ☐ BANK SHAPING
				☐ ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

RIPARIAN: 6

4) RIPARIAN ZONE AND BANK EROSION – (Check ONE box per bank or check 2 and AVERAGE per bank) "River Right Looking Downstream"

RIPARIAN WIDTH (L R) (Per Bank)	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R) (Most Predominant Per Bank)	(L R) (Per Bank)	BANK EROSION
☐ WIDE >50m [4]	☒ FOREST, SWAMP [3]	☐ URBAN OR INDUSTRIAL [0]	☐ NONE OR LITTLE [3]
☐ MODERATE 10-50 [3]	☐ OPEN PASTURE/ ROW CROP [0]	☐ SHRUB OR OLD FIELD [2]	☒ MODERATE [2]
☐ NARROW 5-10m [2]	☐ RESID., PARK, NEW FIELD [1]	☐ CONSERV. TILLAGE [1]	☐ HEAVY OR SEVERE [1]
☒ VERY NARROW 1-5m [1]	☐ FENCED PASTURE [1]	☐ MINING/CONSTRUCTION [0]	
☐ NONE [0]			

COMMENTS

POOL: 9

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (POOL):
☒ >1m [5]
☐ 0.7-1m [4]
☐ 0.4-0.7m [2]
☐ < 0.4m [1]
☐ =0.2m [Pool = 0]

MORPHOLOGY (Check 1) No Riffle
☐ POOL WIDTH > RIFFLE WIDTH [2]
☒ POOL WIDTH = RIFFLE WIDTH [1]
☐ POOL WIDTH < RIFFLE W. [0]

POOL CURRENT & CURRENT VELOCITY (Check All That Apply)
☐ TORRENTIAL [-1] ☐ EDDIES [1]
☐ FAST [1] ☐ INTERSTITIAL [-1]
☐ MODERATE [1] ☐ INTERMITTENT [-2]
☒ SLOW [1]

☐ NO POOL [0]

COMMENTS:

RIFFLE: 0

RIFFLE/RUN DEPTH
☐ GENERALLY > 10 cm, MAX > 50 [4]
☐ GENERALLY > 10 cm, MAX < 50 [3]
☐ GENERALLY 5-10 cm [1]
☐ GENERALLY < 5 cm [Riffle = 0]

RIFFLE/RUN SUBSTRATE
☐ STABLE (e.g., Cobble, Boulder) [2]
☐ MOD. STABLE (e.g., Pea Gravel) [1]
☐ UNSTABLE (Gravel, Sand) [0]

RIFFLE/RUN EMBEDDEDNESS
☐ EXTENSIVE [-1] ☐ MODERATE [0]
☐ LOW [1] ☐ NONE [2]

☒ NO RIFFLE [0]

flats

COMMENTS

GRADIENT: 2

6) Gradient (feet/mile): 1.900 %POOL: 100 %RIFFLE: %RUN:

EPA 4520

Procedure No.	WQPA-SWS-3	Date Issued	9-30-89
Revision No.	6	Date Effective	9-30-89

PC 5
8/7/1

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish

QHEI SCORE: 53

Stream: Pigeon Run RM: Date: 8/7/99 River Code:

Location: PC 5 Crew: SJE, KWB

1) SUBSTRATE (Check ONLY Two Substrate *TYPE BOXES*; Check all types present);

TYPE	POOL	RIFFLE	TYPE	POOL	RIFFLE
☐ BOULDER [9]			☒ GRAVEL [7]	X	X
☐ COBBLE [8]	X	X	☐ SAND [6]	X	
☐ HARDPAN [4]	X		☐ BEDROCK [5]		
☐ MUCK [2]			☐ DETRITUS [3]		
			☐ ARTIFICIAL [0]		

SUBSTRATE QUALITY: Substrate Origin (Check all): ☐ LIMESTONE [1] ☒ RIPRAP [0] ☐ TILLS [1] ☐ HARDPAN [0] ☐ SANDSTONE [0] ☐ SHALE [-1]

SUBSTRATE SCORE: 16

Silt Cover (Check One): ☐ SILT HEAVY [-2] ☒ SILT MODERATE [-1] ☐ SILT NORMAL [0] ☐ SILT FREE [1]

Extent Of Embeddedness (Check One): ☐ EXTENSIVE [-2] ☒ MODERATE [-1] ☐ LOW [0] ☐ NONE [1]

TOTAL NUMBER OF SUBSTRATE TYPES: ☒ ≥ 4 [2] ☐ < 4 [0] ☐ COAL FINES [-2]

NOTE: (Ignore sludge worms originating from point-sources; score is based on natural substrates)

COMMENTS:

2) INSTREAM COVER

COVER SCORE: 11

TYPE (Check All That Apply):
- ☐ UNDERCUT BANKS [1]
- ☒ OVERHANGING VEGETATION [1]
- ☒ SHALLOWS (IN SLOW WATER) [1]
- ☒ DEEP POOLS [2]
- ☒ RIFFLES [1]
- ☒ BOULDERS [1]
- ☒ LOW FLOW [1]
- ☐ AQUATIC MACROPHYTES [1]
- ☒ LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE):
- ☐ EXTENSIVE > 75% [11]
- ☐ MODERATE 25-75% [7]
- ☒ SPARSE 5-25% [3]
- ☐ NEARLY ABSENT < 5% [1]

COMMENTS:

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

CHANNEL: 10

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]	☐ SNAGGING ☐ IMPOUND
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☒ MODERATE [2]	☐ RELOCATION ☐ ISLANDS
☒ LOW [2]	☒ FAIR [3]	☒ RECOVERING [3]	☐ LOW [1]	☐ CANOPY REMOVAL ☐ LEVEED
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]		☐ DREDGING ☐ BANK SHAPING
				☐ ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

4) RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank)

RIPARIAN: 6

"River Right Looking Downstream"

RIPARIAN WIDTH (L R Per Bank)	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R Most Predominant Per Bank) (L R Per Bank)	BANK EROSION
☐ ☐ WIDE > 50m [4]	☐ ☐ FOREST, SWAMP [3]	☒ ☐ URBAN OR INDUSTRIAL [0] ☐ NONE OR LITTLE [3]
☐ ☐ MODERATE 10-50 [3]	☐ ☐ OPEN PASTURE/ ROW CROP [2]	☐ ☐ SHRUB OR OLD FIELD [2] ☒ MODERATE [2]
☐ ☐ NARROW 5-10m [2]	☒ ☐ RESID., PARK, NEW FIELD [1]	☐ ☐ CONSERV. TILLAGE [1] ☐ HEAVY OR SEVERE [1]
☒ ☐ VERY NARROW 1-5m [1]	☐ ☐ FENCED PASTURE [1]	☐ ☐ MINING/CONSTRUCTION [0]
☐ ☒ NONE [0]		

COMMENTS:

POOL/GLIDE AND RIFFLE/RUN QUALITY

POOL: 5

MAX. DEPTH (Check 1)	MORPHOLOGY (Check 1)	POOL/RIFFLE CURRENT VELOCITY (Check All That Apply)	
☐ > 1m [6]	☒ POOL WIDTH > RIFFLE WIDTH [2]	☐ TORRENTIAL [-1]	☐ EDDIES [1]
☐ 0.7-1m [4]	☐ POOL WIDTH = RIFFLE WIDTH [1]	☐ FAST [1]	☐ INTERSTITIAL [-1]
☒ 0.4-0.7m [2]	☐ POOL WIDTH < RIFFLE W. [0]	☒ MODERATE [1]	☐ INTERMITTENT [-2]
☐ < 0.4m [1]		☐ SLOW [1]	☐ NO POOL [0]
☐ < 0.2m (Pool = 0)			

COMMENTS:

RIFFLE: 3

RIFFLE DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS
☐ GENERALLY > 10 cm, MAX > 50 [4]	☒ STABLE (e.g. Cobble, Boulder) [2]	☐ EXTENSIVE [-1] ☒ MODERATE [0]
☐ GENERALLY > 10 cm, MAX < 50 [3]	☐ MOD. STABLE (e.g. Pea Gravel) [1]	☐ LOW [1] ☐ NONE [2]
☒ GENERALLY 5-10 cm [1]	☐ UNSTABLE (Gravel, Sand) [0]	☐ NO RIFFLE [0]
☐ GENERALLY < 5 cm (Ripple = 0)		

COMMENTS:

GRADIENT: 2

5) Gradient (feet/mile): _____ %POOL: 25 %RIFFLE: 20 %RUN: 55

EPA 4520

P22
8/7/59

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish — QHEI SCORE: 44

Stream: P22 — Rm: — Date: 8/7/91 — River Code: —

Location: Paint Creek — Crew: ESS/JC/MR

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Check all types present)

TYPE	POOL	RIFFLE	TYPE	POOL	RIFFLE
☐ BOULDER/SLABS [10]			☐ GRAVEL [7]	X	
☐ BOULDER [9]			☒ SAND [6]	X	
☐ COBBLE [8]			☐ BEDROCK [5]		
☒ HARDPAN [4]	X		☐ DETRITUS [3]	X	
☐ MUCK [2]			☐ ARTIFIC. [0]	X	

TOTAL NUMBER OF SUBSTRATE TYPES: 4 [2] — [4] [0]

NOTE: Ignore muddy silt impoundment from point-source; score is based on natural substrates

COMMENTS:

SUBSTRATE QUALITY (Check all): ☐ Substrate Octets ☐ LIMESTONE [1] ☐ RIPRAP [0] ☐ TILLS [1] ☒ HARDPAN [0] ☐ SANDSTONE [0] ☐ SHALE [-1] ☐ COAL FINES [-2]

SUBSTRATE SCORE: 11

Silt Cover (Check One): ☐ SILT HEAVY [-2] ☒ SILT MODERATE [-1] ☐ SILT NORMAL [0] ☐ SILT FREE [1]

Extent Of Embeddedness (Check One): ☐ EXTENSIVE [-2] ☒ MODERATE [-1] ☐ LOW [0] ☐ NONE [1]

COVER SCORE: 12

2) INSTREAM COVER

TYPE (Check All That Apply)

☐ UNDERCUT BANKS [1] ☒ OVERHANGING VEGETATION [1] ☐ SHALLOWS (IN SLOW WATER) [1] ☒ DEEP POOLS [2] ☒ ROOTWADS [1] ☐ BOULDERS [1] ☐ SNAGS (1) ☐ AQUATIC MACROPHYTES [1] ☒ LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE): ☐ EXTENSIVE > 75% [11] ☒ MODERATE 25-75% [7] ☐ SPARSE 5-25% [3] ☐ NEARLY ABSENT < 5% [1]

COMMENTS:

CHANNEL: 7

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER	
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]	☐ SNAGGING	☐ SNAGGING
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☐ MODERATE [2]	☐ RELOCATION	☐ ISLANDS
☒ LOW [2]	☐ FAIR [3]	☒ RECOVERING [3]	☒ LOW [1]	☐ CANOPY REMOVAL	☒ LEVEED
☐ NONE [1]	☒ POOR [1]	☐ RECENT OR NO RECOVERY [1]		☐ DREDGING	☐ BANK SHAPING
				☒ ONE SIDE CHANNEL MODIFICATIONS	

COMMENTS: Right upstream

RIPARIAN: 4

4) RIPARIAN ZONE AND Bank EROSION - (check One box per bank or check 2 and AVERAGE per bank) "River Right Looking Downstream"

RIPARIAN WIDTH (L R (Per Bank))	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R (Most Predominant Per Bank))	(L R (Per Bank))	BANK EROSION
☐ WIDE >50m [4]	☐ FOREST, SWAMP [3]	☒ URBAN OR INDUSTRIAL [0]	☐ NONE OR LITTLE [3]
☐ MODERATE 10-50 [3]	☐ OPEN PASTURE/ ROW CROP [0]	☐ SHRUB OR OLD FIELD [2]	☒ MODERATE [2]
☐ NARROW 5-10m [2]	☐ RESID./PARK, NEW FIELD [1]	☐ CONSERV. TILLAGE [1]	☐ HEAVY OR SEVERE [1]
☐ VERY NARROW 1-5m [1]	☐ FENCED PASTURE [1]	☐ MINING/CONSTRUCTION [0]	
☒ NONE [0]			

COMMENTS:

POOL: 8

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (Check 1): ☒ > 1m [6] ☐ 0.7-1m [4] ☐ 0.4-0.7m [2] ☐ < 0.4m [1] ☐ 0 [Pool = 0]

MORPHOLOGY (Check 1): ☐ POOL WIDTH > RIFFLE WIDTH [2] ☒ POOL WIDTH = RIFFLE WIDTH [1] ☐ POOL WIDTH < RIFFLE W. [0]

POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply): ☐ TORRENTIAL [-1] ☐ FAST [1] ☐ MODERATE [1] ☒ SLOW [1] ☐ EDDIES [1] ☐ INTERSTITIAL [-1] ☐ INTERMITTENT [-2]

☐ NO POOL [0]

COMMENTS:

RIFFLE: 0

RIFFLE/RUN DEPTH: ☐ GENERALLY > 10 cm, MAX > 50 [4] ☐ GENERALLY > 10 cm, MAX < 50 [2] ☐ GENERALLY 5-10 cm [1] ☐ GENERALLY < 5 cm [Rare = 0]

RIFFLE/RUN SUBSTRATE: ☐ STABLE (e.g. Cobble, Boulder) [2] ☐ MOD. STABLE (e.g. Fine Gravel) [1] ☐ UNSTABLE (Gravel/Sand) [0]

RIFFLE/RUN EMBEDDEDNESS: ☐ EXTENSIVE [-1] ☐ MODERATE [0] ☐ LOW, [1] ☐ NONE [2]

☐ NO RIFFLE [0]

COMMENTS:

GRADIENT: 29

6) Gradient (feet/mile): 29.0 — %POOL: 100 — %RIFFLE: — %RUN:

EPA 4520

PC1
6/16/94

OA Manual (6th Update) – Fish – September 30, 1989

Procedure No. WQPA-SWS-3 Date Issued 9-30-89
Revision No. 6 Date Effective 9-30-89

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish **QHEI SCORE: 47**

Stream Pigeon Creek RM ____ Date 6/6/94 River Code ____
Location PC1 Crew: ESW/EC

† SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Check all types present)

TYPE	POOL	RIFFLE
BOULDER/SLABS(10)	____	____
BOULDER [9]	____	____
COBBLE [8]	____	____
HARDPAN [4]	X	____
MUCK [2]	____	____
GRAVEL [7]	X	____
SAND [6]	X	____
BEDROCK[5]	____	____
DETRITUS[3]	X	____
ARTIFC.[0]	____	____

TOTAL NUMBER OF SUBSTRATE TYPES: ≥ 4 [2] 2 – 3 [1] 1 [0]

Substrate Origin (Check all)
LIMESTONE [1] RIPRAP [0] SILT HEAVY [-2]
TILLS [1] HARDPAN [0] SILT NORMAL [0]
SANDSTONE [0] SILT FREE [1]
SHALE [-1]

SUBSTRATE SCORE: 8

Silt Cover (Check One)
SILT MODERATE [-1]
Extent Of Embeddedness (Check One)
EXTENSIVE [-2] MODERATE[-1]
LOW[0] NONE[1]

NOTE: Ignore sludge that originated from point-sources; score is based on natural substrates)
COMMENTS ____

COVER SCORE: 11

2) INSTREAM COVER

Type (Check All That Apply)
UNDERCUT BANKS [1]
OVERHANGING VEGETATION [1]
SHALLOWS (IN SLOW WATER) [1]
DEEP POOLS [2]
ROOTWADS [1]
BOULDERS [1]
OXBOWS [1]
AQUATIC MACROPHYTES [1]
LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE)
EXTENSIVE > 75% [11]
MODERATE 25-75% [7]
SPARSE 5-25% [3]
NEARLY ABSENT < 5%[1]

COMMENTS: ____

CHANNEL: 10

3) CHANNEL MORPHOLOGY: (Check ONE One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER	
HIGH [4]	EXCELLENT [7]	NONE [6]	HIGH [3]	SNAGGING	CHANNELIZED
MODERATE [3]	GOOD [5]	RECOVERED [4]	MODERATE [2]	RELOCATION	ISLANDS
LOW [2]	FAIR [3]	RECOVERING [3]	LOW [1]	CANOPY REMOVAL	LEVEED
NONE [1]	POOR [1]	RECENT OR NO RECOVERY [1]		DREDGING	BANK SHAPING
				ONE SIDE CHANNEL MODIFICATIONS	

COMMENTS: ____

RIPARIAN: 6

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank)
"River Right Looking Downstream"

RIPARIAN WIDTH (L R (Per Bank))	EROSION/RUNOFF - (L R (Most Predominant Per Bank))	FLOODPLAIN QUALITY (L R (Per Bank))	BANK EROSION
WIDE >50m [4]	FOREST, SWAMP [3]	URBAN OR INDUSTRIAL[0]	NONE OR LITTLE [3]
MODERATE 10-50 [3]	OPEN PASTURE/ ROWCROP[0]	SHRUB OR OLD FIELD[2]	MODERATE[2]
NARROW 5-10m [2]	RESD.,PARK,NEW FIELD [1]	CONSERV. TILLAGE [1]	HEAVY OR SEVERE[1]
VERY NARROW 1-5m [1]	FENCED PASTURE [1]	MINING/CONSTRUCTION [0]	
NONE[0]			

COMMENTS: ____

POOL: 8

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX. DEPTH (Check 1)
≥ 1m [5]
0.7-1m [4]
0.4-0.7m [2]
< 0.4m [1]
=0.2m (Pool = 0)

MORPHOLOGY (Check 1)
POOL WIDTH > RIFFLE WIDTH [2]
POOL WIDTH = RIFFLE W. [1]
POOL WIDTH < RIFFLE W. [0]

POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply)
TORRENTIAL[-1]
FAST [1]
MODERATE [1]
SLOW [1]
EDDIES[1]
INTERSTITIAL[-1]
INTERMITTENT[-2]

NO POOL[0]

COMMENTS: ____

RIFFLE: 0

RIFFLE/RUN DEPTH
GENERALLY >10 cm, MAX>50 [4]
GENERALLY >50 cm, MAX>90 [3]
GENERALLY 5-10 cm [1]
GENERALLY < 5 cm [Rmk = 0]

RIFFLE/RUN SUBSTRATE
STABLE (e.g., Cobble, Boulder) [2]
MOD. STABLE (e.g., Fine Gravel) [1]
UNSTABLE (Gravel,Sand) [0]

RIFFLE/RUN EMBEDDEDNESS
EXTENSIVE [-1] MODERATE[0]
LOW, [1] NONE[2]

NO RIFFLE[0]

COMMENTS: ____

GRADIENT: 14

6) Gradient (feet/mile): 1.100 %POOL: 100 %RIFFLE: ____ %RUN ____

EPA 4520

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish — **QHEI SCORE:** 51

Stream: Pigeon Run — Rm: — Date: 8/7 — River Code: —

Location: RC1 — Crew: JSB CWB

1) SUBSTRATE (Check ONLY Two Substrate *TYPE BOXES*; Check all Types present):

Type	POOL	RIFFLE
BOULDER/SLABS [10]		
BOULDER [9]	X	X
COBBLE [8]	X	X
HARDPAN [4]	X	X
MUCK [2]		

Type	POOL	RIFFLE
GRAVEL [7]	X	X
SAND [6]	X	X
BEDROCK [5]		
DETRITUS [3]		
ARTIFIC. [0]		

Substrate Origin (Check all)	
LIMESTONE [1]	HARDPAN [0]
TILLS [1]	SANDSTONE [0]
SHALE [-1]	COAL FINES [-2]

SUBSTRATE QUALITY — **SUBSTRATE SCORE:** 17

Silt Cover (Check One):
SILT HEAVY [-2] — SILT MODERATE [-1] — SILT NORMAL [0] — SILT FREE [1]

Extent Of Embeddedness (Check One):
EXTENSIVE [-1] — MODERATE [-1] — LOW [0] — NONE [1]

TOTAL NUMBER OF SUBSTRATE TYPES: 4 [2] — <= 4 [0]

NOTE: (Ignore sludge that originates from point-sources; score is based on natural substrates)

COMMENTS:

COVER SCORE: 6

2) INSTREAM COVER

TYPE (Check All That Apply)

- UNDERCUT BANKS [1]
- OVERHANGING VEGETATION [1]
- SHALLOWS (IN SLOW WATER) [1]
- DEEP POOLS [2]
- ROOTWADS [1]
- BOULDERS [1]
- OXBOWS [1]
- AQUATIC MACROPHYTES [1]
- LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE)

- EXTENSIVE > 75% [11]
- MODERATE 25-75% [7]
- SPARSE 5-25% [3]
- NEARLY ABSENT < 5% [1]

COMMENTS:

CHANNEL: 10

3) CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
HIGH [4]	EXCELLENT [7]	NONE [6]	HIGH [3]	SNAGGING — IMPOUND.
MODERATE [3]	GOOD [5]	RECOVERED [4]	MODERATE [2]	RELOCATION — ISLANDS
LOW [2]	FAIR [3]	RECOVERING [3]	LOW [1]	CANOPY REMOVAL — LEVEED
NONE [1]	POOR [1]	RECENT OR NO RECOVERY [1]		DREDGING — BANK SHAPING
				ONE SIDE CHANNEL MODIFICATIONS

COMMENTS:

RIPARIAN: 7

4) RIPARIAN ZONE AND BANK EROSION - (check ONE box per bank or check 2 and AVERAGE per bank)

"River Right Looking Downstream"

RIPARIAN WIDTH (L R)	EROSION/RUNOFF - FLOOD PLAIN QUALITY (L R)	BANK EROSION
WIDE > 50m [4]	FOREST, SWAMP [3]	URBAN OR INDUSTRIAL [0] — NONE OR LITTLE [3]
MODERATE 10-50 [3]	OPEN PASTURE/ ROW CROP [0]	SHRUB OR OLD FIELD [2] — MODERATE [2]
NARROW 5-10m [2]	RESID., PARK, NEW FIELD [1]	CONSERV. TILLAGE [1] — HEAVY OR SEVERE [1]
VERY NARROW 1-5m [1]	FENCED PASTURE [1]	MINING/CONSTRUCTION [0]
NONE [0]		

COMMENTS:

POOL: 5

POOL/GLIDE AND RIFFLE/RUN QUALITY

MAX DEPTH (Check 1)

- > 1m [6]
- 0.7-1m [4]
- 0.4-0.7m [2]
- < 0.4m [1]
- <0.2m [Pool = 0]

MORPHOLOGY (Check 1)

- POOL WIDTH > RIFFLE WIDTH [2]
- POOL WIDTH = RIFFLE WIDTH [1]
- POOL WIDTH < RIFFLE W. [0]

POOL/RIFFLE CURRENT VELOCITY (Check All That Apply)

- TORRENTIAL [-1]
- FAST [1]
- MODERATE [1]
- SLOW [1]
- EDDIES [1]
- INTERSTITIAL [-1]
- INTERMITTENT [-2]

NO POOL [0]

COMMENTS:

RIFFLE: 2

RIFFLE/RUN DEPTH

- GENERALLY > 10 cm, MAX > 50 [4]
- GENERALLY > 10 cm, MAX < 50 [3]
- GENERALLY 5-10 cm [1]
- GENERALLY < 5 cm [Rifle = 0]

RIFFLE/RUN SUBSTRATE

- STABLE (e.g., Cobble, Boulder) [2]
- MOD. STABLE (e.g., Fine Gravel) [1]
- UNSTABLE (Gravel, Sand) [0]

RIFFLE/RUN EMBEDDEDNESS

- EXTENSIVE [-1]
- MODERATE [0]
- LOW [1]
- NONE [2]

NO RIFFLE [0]

COMMENTS:

GRADIENT: 4

6) Gradient (feet/mile): 1.57 — %POOL: 0 — %RIFFLE: 54 — %RUN: 46

EPA 4520

PC3 X
8/2/99

Figure V-4-5. Front side of the Ohio EPA Site Description Sheet for evaluating the geographical and physical characteristics of fish sampling locations. This is used to record information for the calculation of the Qualitative Habitat Evaluation Index (QHEI).

Ohio EPA Site Description Sheet - Fish QHEI SCORE: 70 41

Stream Pigeon RM Date 8/5/99 River Code

Location RC 7 Time 1:52 Crew CWB

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES: Check All types present)

TYPE	POOL	RIFFLE	SUBSTRATE QUALITY	SUBSTRATE SCORE: 18
☒ BLDR/SLABS [10]	X	☐ GRAVEL [7]	X	Substrate Origin (Check all)
☐ BOULDER [9]		☐ SAND [6]	X	☐ LIMESTONE [1] ☐ RIP/RAP [0]
☐ COBBLE [8]		☐ BEDROCK [5]		☐ TILLE [1] ☒ HARDPAN [0]
☐ HARDPAN [4]	X	☐ DETRITUS [3]		☐ SANDSTONE [0]
☐ MUCK [2]		☐ ARTIFIC [0]		☐ SHALE [-1]

Silt Cover (Check One): ☐ SILT HEAVY [-2] ☒ SILT MODERATE [-1] ☐ SILT NORMAL [0] ☐ SILT FREE [1]

Extent Of Embeddedness (Check One): ☐ EXTENSIVE [-2] ☒ MODERATE [-1] ☐ LOW [0] ☐ NONE [1]

TOTAL NUMBER OF SUBSTRATE TYPES: ☒ 4 [2] ☐ ≤ 4 [0] ☐ COAL FINES [-2]

NOTE: Ignore sludge that originates from point-sources; score is based on natural substrates

COMMENTS

2) INSTREAM COVER — **COVER SCORE: 10**

TYPE (Check All That Apply): ☐ UNDERCUT BANKS [1] ☒ DEEP POOLS [2] ☐ OXBOWS [1] ☐ OVERHANGING VEGETATION [1] ☒ ROOTWADS [1] ☒ AQUATIC MACROPHYTES [1] ☒ SHALLOWS (IN SLOW WATER) [1] ☒ BOULDERS [1] ☒ LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONLY One or check 2 and AVERAGE): ☐ EXTENSIVE > 75% [11] ☐ MODERATE 25-75% [7] ☒ SPARSE 5-25% [3] ☐ NEARLY ABSENT < 5% [1]

COMMENTS

3) CHANNEL MORPHOLOGY (Check ONLY One PER Category OR check 2 and AVERAGE) — **CHANNEL: 20**

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	MODIFICATIONS/OTHER
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]	☐ SNAGGING ☐ BARBOUND.
☒ MODERATE [3]	☐ GOOD [5]	☒ RECOVERED [4]	☒ MODERATE [2]	☐ RELOCATION ☐ ISLANDS
☐ LOW [2]	☒ FAIR [3]	☐ RECOVERING [3]	☐ LOW [1]	☐ CANOPY REMOVAL ☐ LEVEED
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]		☐ DREDGING ☐ BANK SHAPING ☐ ONE SIDE CHANNEL MODIFICATIONS

COMMENTS

4) RIPARIAN ZONE AND BANK EROSION (check ONE box per bank or check 2 and AVERAGE per bank) — **RIPARIAN: 5**

"River Right Looking Downstream"

RIPARIAN WIDTH (L R) (Per Bank)	EROSION/RUNOFF (L R) (Most Predominant Per Bank)	FLOOD PLAIN QUALITY (L R) (Per Bank)	BANK EROSION
☐ WIDE >50m [4]	☐ FOREST, SWAMP [3]	☒ URBAN OR INDUSTRIAL [0]	☐ NONE OR LITTLE [3]
☐ MODERATE 10-50 [3]	☐ OPEN PASTURE/ ROW CROP [2]	☐ SHRUB OR OLD FIELD [2]	☒ MODERATE [2]
☐ NARROW 5-10m [2]	☒ RESID., PARK, NEW FIELD [1]	☐ CONSERV. TILLAGE [1]	☐ HEAVY OR SEVERE [1]
☐ VERY NARROW 1-5m [1]	☐ FENCED PASTURE [1]	☐ MINING/CONSTRUCTION [0]	
☒ NONE [0]			

COMMENTS

POOL/GLIDE AND RIFFLE/RUN QUALITY — **POOL: 7**

MAX. DEPTH (Check 1)	MORPHOLOGY (Check 1)	POOL/RUN/RIFFLE CURRENT VELOCITY (Check All That Apply)	
☐ ≥1m [5]	☒ POOL WIDTH > RIFFLE WIDTH [2]	☐ TORRENTIAL [-1]	☐ EDDIES [1]
☒ 0.7-1m [4]	☐ POOL WIDTH = RIFFLE WIDTH [1]	☐ FAST [1]	☐ INTERSTITIAL [-1]
☐ 0.4-0.7m [2]	☐ POOL WIDTH < RIFFLE W. [0]	☒ MODERATE [1]	☐ INTERMITTENT [-2]
☐ ≤0.4m [1]		☐ SLOW [1]	☐ NO POOL [0]
☐ ≤0.2m [Pool = 0]			

COMMENTS

RIFFLE/RUN DEPTH — **RIFFLE: 4**

RIFFLE/RUN DEPTH	RIFFLE/RUN SUBSTRATE	RIFFLE/RUN EMBEDDEDNESS	
☐ GENERALLY >10 cm, MAX >50 [4]	☒ STABLE (e.g., Cobble, Boulder) [2]	☐ EXTENSIVE [-1]	☐ MODERATE [0]
☐ GENERALLY >10 cm, MAX <50 [3]	☐ MOD. STABLE (e.g., Fine Gravel) [1]	☒ LOW [1]	☐ NONE [2]
☒ GENERALLY 5-10 cm [1]	☐ UNSTABLE (Gravel, Sand) [0]		☐ NO RIFFLE [0]
☐ GENERALLY < 5 cm [Rule = 0]			

COMMENTS

GRADIENT: 4

5) Gradient (feet/mile): 1.37 % POOL: 31 % RIFFLE: 8 % RUN: 61

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