Appendix D

IBI Scoring Sheets

Site: S1-082103
RM: 45.5
Drainage Area: 575 mi²
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IBI Boat Scoring System
Project: Mahoning River

Metric One: Total Number of Indigenous Fish Species
Number of fish species present- Exotic species are Not included.

14 + 1 exotic (carp). (carp - 8)

(14)

Bluegill - 4
Pumpkinseed - 1
Spotfin shiner - 2
Silver shiner - 1
Gizzard shad - 1

Walleye - 1
Smallmouth - 4
White sucker - 1
Rock bass - 10
Golden Redhorse - 8
Yellow perch - 2
N. hog sucker - 1
Johnny Darter - 1
Black Crappie - 1

Initial Score	Double Check	Triple Check	Final Score
3	3		

Metric Two: Proportion of Round-bodied Catostomidae
% of population 9/46 ⇒ 20%

Golden Red - 8
hog sucker - 1

9/46 = (19.6%)

Initial Score	Double Check	Triple Check	Final Score
3	3		

Metric Three: Number of Sunfish Species 5

(4)

Rockbass, (Smallmouth Bass), Blacke Crappie, Bluegill, Pumpkinseed

Initial Score	Double Check	Triple Check	Final Score
5	5		

46 total (92/km)

* Use low-end scoring *

Site: S1 - 082103
RM: 45.5
Drainage Area: 5.75 mi²

Metric Four: Number of Sucker Species 3

White Sucker
Golden Redhorse
Northern Hog Sucker

(3)

Initial Score	Double Check	Triple Check	Final Score
3	3		

Metric Five: Number of Intolerant Species

4

Golden Redhorse
Pumpkinseed
Northern Hog Sucker
Silver Shiner
-only
-1

Initial Score	Double Check	Triple Check	Final Score
3	1		

Metric Six: Percent Abundance of Tolerant Species (All) 9/46 ⇒ 20%

white sucker - 1
carp - 8

= 9/46 = 19.6%

Initial Score	Double Check	Triple Check	Final Score
3	3		

Metric Seven: Omnivore Metric (All)
Percent of total population. 10/46 ⇒ 22%

white sucker - 1
carp - 8
gizzard shad - 1

10/46 = 21.7%

Initial Score	Double Check	Triple Check	Final Score
3	3 (not omnivorous generalist spp.)		

Site: SI-OSR2103
RM: 45.5
Drainage Area: 575 mi²

Metric Eight: Proportion as Insectivores (All) 19/46 ⇒ 41%
Percent of total sample population.

Golden redhorse - 8
hog sucker - 1
Johnny Darter - 1
Bluegill - 4
Pumpkin - 1
Spotfin - 2
Silver - 1

18/46 = 39.1%

Initial Score	Double Check	Triple Check	Final Score
3	3 (not dom. by sunfish)		

Metric Nine: Top Carnivores 15/46 ⇒ 33%

Small mouth - 4
Rock bass - 10
Walleye - 1

15/46 = 32.6%

Initial Score	Double Check	Triple Check	Final Score
5	5 (did not use low end)		

Metric Ten: Number of Individuals (All) (92)/km
46 total @ 500 m

minus - white sucker - 1
carp - 8
46 - 9 = 37/500m = (74/km)

EXCLUDES

Initial Score	Double Check	Triple Check	Final Score
1	1		

Site: 51-0852103
RM: 45.5
Drainage Area: 575 mi²
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Metric Eleven: Proportion of Individuals as Simple Lithophilic Spawners 11/46 → 24%

White Sucker - 1
Golden Redhorse - 8
N. Hogsucker - 1
Silver Shiner - 1

11/46 = 23.9%

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric 12: Percent DELT Anomalies on all species.
Percent of total sample population with Deformities, Eroded fins, Lesions and Tumors OR # of individuals with sites having less than 200 individuals. 5/46 → 11%

4 lesions, 1 Anchorworm 4/46 = 8.7%

Initial Score	Double Check	Triple Check	Final Score
1	1		

IBI SCORE: 36
32

INITIALS: MA
SG

Neal S
Rechecked without
Rock - Redhorse

Site: 56-082603
RM: 44.3
Drainage Area: 576 mi²
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IBI Boat Scoring System
Project: Mahoning River

Metric One: Total Number of Indigenous Fish Species
Number of fish species present- Exotic species are Not included.

23 (common shiner) + 1 exotic (carp - 8)

Bluntnose - 11
Striped Shiner - 5
Green Sun - 3

Spotfin Shiner - 9
River Chub - 11
Yellow Perch - 3
White Crappie - 1
Yellow Bullhead - 2
E. sand darter - 1
Banded darter - 1
Largemouth Bass - 1
Bluegill Sun - 14

Golden Redhorse - 1
Black Redhorse - 1
Walleye - 2
Smallmouth Bass - 10
Hog Sucker - 5
White Sucker - 3
Silver Redhorse - 1
Rock Bass - 12
Grass Pickerel - 2
Pumpkinseed Sun - 6

(22)

Initial Score	Double Check	Triple Check	Final Score
5	5		

Metric Two: Proportion of Round-bodied Catostomidae
% of population 8/114 → 7%

8/113 = 7.1%

Golden Redhorse - 1
hog sucker - 5
black redhorse - 1
Silver Redhorse - 1

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric Three: Number of Sunfish Species 5

Green
W. Crappie
Bluegill
Pumpkinseed
Rock Bass
- 5

Initial Score	Double Check	Triple Check	Final Score
5	5		

113 total

Site: S6 - 082603
RM: 44.3
Drainage Area: 576 mi²

Metric Four: Number of Sucker Species 5

Golden Red
Black Red
Hog Sucker
White Sucker
Silver Red
-5

Initial Score	Double Check	Triple Check	**Final Score**
3	3		

Metric Five: Number of Intolerant Species 5

Riverchub
E. sand darter
Banded
Black Redhorse
-4

Initial Score	Double Check	Triple Check	**Final Score**
5	5		

Metric Six: Percent Abundance of Tolerant Species (All) 27/114 ⇒ 24%

Bluntnose - 11
Green Sun - 3
Yellow bull - 2
White sucker - 3
carp - 8

27/113 = 23.9%

Initial Score	Double Check	Triple Check	**Final Score**
3	3		

Metric Seven: Omnivore Metric (All) 22/114 ⇒ 19%
Percent of total population.

22/113 = (19.5%)

White sucker - 3
Carp - 8
Bluntnose - 11

Initial Score	Double Check	Triple Check	**Final Score**
3	3		

Site: 56 - 082603
RM: 44.3
Drainage Area: 576 mi²
Page 3 **of** 4

Metric Eight: Proportion as Insectivores (All)
Percent of total sample population. 61/114 ⇒ 54%

E Sand - 1
Banded - 1
goldan red - 1
hog sucker - 5
Bluegill - 14
Pumpkinseed - 12
Striped shiner - 5
Spotfin - 9
Green sun - 3
Black Redhorse - 1
yellow bull - 2
River chubs - 11
Silvered - 1

60/113 = 53.1%

Initial Score	Double Check	Triple Check	Final Score
3	3		

Metric Nine: Top Carnivores 27/114 ⇒ 24%

27/113 = 23.9%

Smallmouth - 10
Rock bass - 12
largemouth - 1
walleye - 2
grass pickerel - 2

(3)

Initial Score	Double Check	Triple Check	Final Score
5	5		

Metric Ten: Number of Individuals (All) 198/km

113 - 27 = 84/500m
= 172/km

EXCLUDES Carp - 8
Bluntnose - 11
Green - 3
white sucker - 3
yellow bull - 2

Initial Score	Double Check	Triple Check	Final Score
3	1		

Site: SL-082603
RM: 44.3
Drainage Area: 576 mi²
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Metric Eleven: Proportion of Individuals as Simple Lithophilic Spawners 19/114 ⇒ 17%

E Sand - 1
Banded - 1
White Sucker - 3
Golden red - 1
Hog Sucker - 5
Striped Shiner - 5
Spotfin Shiner - 9
Black Redhorse - 1
Silver Red - 1

27/113 = 23.9%

Initial Score	Double Check	Triple Check	Final Score
1	3		

Metric 12: Percent DELT Anomalies on all species.
Percent of total sample population with Deformities, Eroded fins, Lesions and Tumors OR # of individuals with sites having less than 200 individuals. 9/114 ⇒ 8%

9/113 = 7.1%

Initial Score	Double Check	Triple Check	Final Score
1	1		

IBI SCORE: 38
38

INITIALS: MA
SL

Site: 52-OR-3223
RM: 33.2/32.2
Drainage Area: 610 mi²
Page 1 of 4

IBI Boat Scoring System
Project: Mahoning River

Metric One: Total Number of Indigenous Fish Species
Number of fish species present- Exotic species are Not included.

14 + 1 exotic (Carp - 5)

Longear - 2
Warmouth - 1
Spotfin - 1
Brown bullhead - 2
Spotted sucker - 2

Smallmouth - 5
White sucker - 6
Grass Pickerel - 1
Bluegill - 7
Largemouth - 4
Pumpkinseed - 6
Green Sun - 1
Rock Bass - 5
Bluntnose - 1

(14)

Initial Score	Double Check	Triple Check	Final Score
3	3		

Metric Two: Proportion of Round-bodied Catostomidae
% of population 2/49 ≈ 4%

Spotted sucker - 2
2/49 = 4.1%

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric Three: Number of Sunfish Species 7

longear
warmouth
Bluegill

pumpkinseed
green
Rock bass - (6)

Initial Score	Double Check	Triple Check	Final Score
5	5		

Site: S2-082203
RM: 33.2 / 32.2
Drainage Area: 610 mi²
Page 2 of 4

Metric Four: Number of Sucker Species 2 spotted white - 2

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric Five: Number of Intolerant Species 0 - 0

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric Six: Percent Abundance of Tolerant Species (All) 15/49 → 31%

white sucker - 6
carp - 5
green sunn - 1
Bluntnose - 1
brown bullhead - 2

15/49 = 30.6%

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric Seven: Omnivore Metric (All)
Percent of total population. 12/49 24%

white sucker - 6
Carp - 5
Bluntnose - 1

12/49 = 24.5%

Initial Score	Double Check	Triple Check	Final Score
3	3 (not dom. by generalist feeders)		

Site: 52-082203
RM: 38.2 / 32.2
Drainage Area: 610 mi²

Metric Eight: Proportion as Insectivores (All)
Percent of total sample population. 21/49 → 43%

Bluegill - 7
Pumpkinseed - 4
Spotfin - 1
green - 1
longear - 2
Brownbull - 2
Spotted - 2

21/49 = 42.9%

Initial Score	Double Check	Triple Check	Final Score
3	3 (not dom. by spines)		

Metric Nine: Top Carnivores 16/49 → 33%

Smallmouth - 5
Rock bass - 5
Warmouth - 1
Largemouth - 4
grass pickerel - 1

16/49 = 32.7%

Initial Score	Double Check	Triple Check	Final Score
5	5 (didn't use for 2nd)		

Metric Ten: Number of Individuals (All) 98/km

minus - whitesucker - 6
Carp - 5
green - 1
Bluntnose - 1
brownbull - 2

49 - 15
= 34/500m
= 68/km

EXCLUDES

Initial Score	Double Check	Triple Check	Final Score
1	1		

Site: S2-050203
RM: 33.2/32.2
Drainage Area: 610 mi.2
Page 4 of 4

Metric Eleven: Proportion of Individuals as Simple Lithophilic Spawners 8/49 → 16%

White sucker - 6
Spotted sucker - 2

8/49 = 16.32%

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric 12: Percent DELT Anomalies on all species.
Percent of total sample population with Deformities, Eroded fins, Lesions and Tumors OR # of individuals with sites having less than 200 individuals. 5/49 → 10%

5/49 = 10.20%

Initial Score	Double Check	Triple Check	Final Score
1	1		

IBI SCORE: 26 / 26

INITIALS: MA / SB

Site: 53-082203
RM: 29.5
Drainage Area: 858 mi²
Page 1 of 4

IBI Boat Scoring System
Project: Mahoning River

Metric One: Total Number of Indigenous Fish Species
Number of fish species present- Exotic species are Not included.

8 + 1 exotic (carp - 8)

(8)

Channel Cat - 3
black Redhorse - 1
bluegill sun - 6
green sun - 2
Pumpkinseed - 7
largemouth - 2
Spotfin - 1
Imgear - 2

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric Two: Proportion of Round-bodied Catostomidae
% of population 1/32.

black Redhorse - 1

1/32 = (3.1%)

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric Three: Number of Sunfish Species 4

bluegill
green
Pumpkinseed
Longear
- (4)

Initial Score	Double Check	Triple Check	Final Score
5	5		

Total = 32 (HA cm) * USE LOW-END SCORING *

Site: 53 - 082203
RM: 28.5
Drainage Area: 858 mi²
Page 2 of 4

Metric Four: Number of Sucker Species 1

Black Redhorse

(1)

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric Five: Number of Intolerant Species 1

(1) Black Redhorse

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric Six: Percent Abundance of Tolerant Species (All) 10/32 31% green - 2 Camp - 8

10/32 = (31.3%)

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric Seven: Omnivore Metric (All) 8/32 → 25%
Percent of total population.

Camp - 8/32 = (25%)

Initial Score	Double Check	Triple Check	Final Score
1	3 (general location not shown)		

Site: S3- 082203
RM: 28.5
Drainage Area: 858 mi²
Page 3 **of** 4

Metric Eight: Proportion as Insectivores (All) 19/32 → 59%
Percent of total sample population.

19/32 = 59.4%

bluegill - 6
Pumpkinseed - 7
Spotfin - 1
green - 2
longear - 2
black red - 1

Initial Score	Double Check	Triple Check	Final Score
1	5 (not dom. by shiners)		

Metric Nine: Top Carnivores 2/32 → 6%

largemouth - 2/32 = 6.3%

Initial Score	Double Check	Triple Check	Final Score
3	1 (low end)		

Metric Ten: Number of Individuals (All) 64/km

EXCLUDES green - 2 = 30/500m = 60/km

Initial Score	Double Check	Triple Check	Final Score
1	1		

Site: S3 - 062203
RM: 28.5
Drainage Area: 9.38 mi²

Metric Eleven: Proportion of Individuals as Simple Lithophilic Spawners 1/32 → 3%

Black redhorse - 1/32 = 3.1%

Initial Score	Double Check	Triple Check	**Final Score**
1	1		

Metric 12: Percent DELT Anomalies on all species.
Percent of total sample population with Deformities, Eroded fins, Lesions and Tumors OR # of individuals with sites having less than 200 individuals. 4/32 → 13%

4/32 = 12.5%

Initial Score	Double Check	Triple Check	**Final Score**
1	1		

IBI SCORE: 18
20

INITIALS: MA
SB

Site: S4 - 082503
RM: 19.2
Drainage Area: 1001 mi²
Page 1 of 4

IBI Boat Scoring System
Project: Mahoning River

Metric One: Total Number of Indigenous Fish Species
Number of fish species present- Exotic species are Not included.

12 - 2 exotic (carp-1, mirror carp 1) goldfish-1

Black Crappie - 1
yellow bull - 1
River chub - 1
bluegill sun - 5

pumpkinseed - 7
pumpkin x green - 1
green - 3

Spotfin - 2
gizzard shad - 3
Walleye - 3
largemouth - 1
smallmouth - 2

(11), not including hybrid

Initial Score	Double Check	Triple Check	Final Score
3	3		

Metric Two: Proportion of Round-bodied Catostomidae
% of population 0/33 - 0

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric Three: Number of Sunfish Species 5

(4) - not including hybrid

Black Crappie
bluegill
pumpkinseed
green

Initial Score	Double Check	Triple Check	Final Score
5	5		

Total = 33 (W/m)

Site: S4-082503
RM: 19.2
Drainage Area: 1001 Mi²
Page 2 **of** 4

Metric Four: Number of Sucker Species 0

Ø

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric Five: Number of Intolerant Species 1 river chub - 1

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric Six: Percent Abundance of Tolerant Species (All) 8/33 → 24%

yellow bull - 1
green sun - 3
carp - 2
goldfish - 1

7/33 = 21.2%
(not including hybrid)

Initial Score	Double Check	Triple Check	Final Score
3	3		

Metric Seven: Omnivore Metric (All) 6/33 ⇒ 18%
Percent of total population.

6/33 = 18.2%

carp - 2
goldfish - 1
gizzard shad - 3

Initial Score	Double Check	Triple Check	Final Score
1	3 (generalist feeding guild Dom.)		

Site: 54-082503
RM: 19.2
Drainage Area: 1001 sq. mi.

Metric Eight: Proportion as Insectivores (All)
Percent of total sample population. 20/33 → 61%

20/33 = 60.6%

bluegill - 5
pumpkinseed - 7
pumpkin x green - 1
green - 3
spotfin - 2
yellow bullhead - 1
River chub - 1

Initial Score	Double Check	Triple Check	Final Score
1	5 (not dominant by skirmish)		

Metric Nine: Top Carnivores 6/33 → 18%

6/33 = 18.2%

largemouth - 1
smallmouth - 2
walleye - 3

Initial Score	Double Check	Triple Check	Final Score
3	1 (low end)		

Metric Ten: Number of Individuals (All)

33

EXCLUDES carp 1
mirror carp - 1
goldfish - 1
pumpkin x green - 1

green - 3
spotted bullhead - 1

33 - 8 = 25/500m = 50/1km

Initial Score	Double Check	Triple Check	Final Score
1	1		

Site: S4-082507
RM: 19.2
Drainage Area: 150 mi²
Page 4 of 4

Metric Eleven: Proportion of Individuals as Simple Lithophilic Spawners 0

-0

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric 12: Percent DELT Anomalies on all species.
Percent of total sample population with Deformities, Eroded fins, Lesions and Tumors OR # of individuals with sites having less than 200 individuals. 6/33 → 18%

5 (not including anchor worm)

Initial Score	Double Check	Triple Check	Final Score
1	1		

IBI SCORE: 22
26

INITIALS: MA
SG

Site: 56 - 082593
RM: 12
Drainage Area: 1074 mi²
Page 1 of 4

IBI Boat Scoring System
Project: Mahoning River

Metric One: Total Number of Indigenous Fish Species
Number of fish species present- Exotic species are Not included.

20 - 2 exotic (Goldfish - 1 & Carp - 1)

20

Bluntnose - 1
Spottail - 2

logperch - 4
River Chub - 1
Rock Bass - 2
Bluegill - 9
Pumpkinseed - 3
Golden Shiner - 1
greenside darter - 1
Sand Shiner - 2

Channel Catfish - 7
flathead Cat - 1
Smallmouth - 4
yellow Perch - 1
green Sunfish - 1
largemouth bass - 1
N. hog Sucker - 1
Black Crappie - 3
White Sucker - 4
Silver Redhorse - 1

Initial Score	Double Check	Triple Check	Final Score
3	3		

Metric Two: Proportion of Round-bodied Catostomidae
% of population 2/57 ⇒ 4%

hogsucker - 1
Silver Redhorse - 1
2/59 = 3.4%

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric Three: Number of Sunfish Species 5

Rock Bass
Bluegill
Pumpkinseed
Green Sunfish
Black Crappie

(5)

Initial Score	Double Check	Triple Check	Final Score
5	5		

59 total

* USE LOWER SCORE *

Site: S5 - 082503
RM: 12
Drainage Area: 1574 mi²

Metric Four: Number of Sucker Species 3

N. Hog Sucker
White Sucker
Silver redhorse (-3)

Initial Score	Double Check	Triple Check	Final Score
3	3		

Metric Five: Number of Intolerant Species 3

River Chub (-1)

Initial Score	Double Check	Triple Check	Final Score
3	1		

Metric Six: Percent Abundance of Tolerant Species (All) 16/57 → 28%

White Sucker -6
Carp -6
goldfish -1
goldenshiner -1
green sun -1
Bluntnose -1

16/59 = (27.1%)

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric Seven: Omnivore Metric (All)
Percent of total population. 14/57 → 25%

14/59 = (23.7%)

White Sucker -6
Carp -6
bluntnose -1
goldfish -1

Initial Score	Double Check	Triple Check	Final Score
3	3		

Site: 55-08 2502
RM: 12
Drainage Area: 1074 km²
Page 3 **of** 4

Metric Eight: Proportion as Insectivores (All)
Percent of total sample population. 26/57 = 46%

26/59 = 44.1%

Silvercheek - 1
logperch - 4
golden shiner - 1
greenside - 1

Sandshiner - 2
N. hogsucker - 1
bluegill - 9
Pumpkinseed - 3
Spotfin - 2
green sun - 1
River chub - 1

Initial Score	Double Check	Triple Check	Final Score
3	3		

Metric Nine: Top Carnivores 8/57 14%

8/59 = 13.6%

Rock Bass - 2
Smallmouth - 4
largemouth - 1
flathead cat - 1

Initial Score	Double Check	Triple Check	Final Score
1	1 (low-ed)		

Metric Ten: Number of Individuals (All) 5

59 - 16 = 43/500m = 84/km

EXCLUDES bluntnose - 1
goldfish - 1
carp - 4

goldenshiner - 1
green sun - 1
white sucker - 4

Initial Score	Double Check	Triple Check	Final Score
1	1		

Site: SS - 08-2503
RM: 12
Drainage Area: 1074 mi²
Page 4 of 4

Metric Eleven: Proportion of Individuals as Simple Lithophilic Spawners 8/67 → 14%

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric 12: Percent DELT Anomalies on all species.
Percent of total sample population with Deformities, Eroded fins, Lesions and Tumors OR # of individuals with sites having less than 200 individuals. 9/57 → 16%

Initial Score	Double Check	Triple Check	Final Score
1	1		

IBI SCORE: 26 / 24

INITIALS: MA / SG

Metric Six: Percent Abundance of Tolerant Species (All) 12/36 = 33%

Initial Score	Double Check	Triple Check	Final Score
1	1 (33.3%)		

1 Brown Bullhead ✓
3 Green Sunfish ✓ 8 carp ✓

Metric Seven: Omnivore Metric (All) 8/36 22%
Percent of total population.

Initial Score	Double Check	Triple Check	Final Score
1	3 (22.0%)		

1 carp ✓

Metric Eight: Proportion as Insectivores (All) 16/36 = 44.4%
Percent of total sample population.

Initial Score	Double Check	Triple Check	Final Score
1	3 (17/36 = 47.2%)		

1 Longnose ✓ 3 Green Sunfish ✓ 1 Sunfish ✓
1 Brown Bullhead ✓ 1 Bluegill ✓

Metric Nine: Top Carnivores 5/36 = 14%

Initial Score	Double Check	Triple Check	Final Score
1	1 (13.9%)		

2 SM Bass ✓ 1 Rockbass ✓
1 Walleye ✓ 1 Muskie ✓

Metric Ten: Number of Individuals
EXCLUDES tolerants, hybrids and exotics 36 − 13 = 23/sqm = 46/1km ✓

Initial Score	Double Check	Triple Check	Final Score
1	1		

1 Brown Bullhead ✓
1 Longnose ✓ 8 carp = 13
3 Green Sunfish ✓

Metric Eleven: Proportion of Individuals as Simple Lithophilic Spawners 0

Initial Score	Double Check	Triple Check	Final Score
1	1 (2.8%)		

Walleye ✓

Metric 12: Percent DELT Anomalies on all species. 3

Percent of total sample population with Deformities, Eroded fins, Lesions and Tumors OR # of individuals with sites having less than 200 individuals.

Initial Score | Double Check | Triple Check | Final Score

1 | | 4/36 = 11.1% |

IBI SCORE: 18 / 22 / ____

INITIALS: MA / SG / ____

IBI Boat Scoring System

148/500m = 296/1km

Project: USACE Mahoning River
Site: DS Lewistown dam 51-100703
RM: 45.5
Drainage Area: 575mi²
Page 1 of 2

Rockbass - 26 largemouth - 2
walleye - 4 Yellow perch - 3
white Sucker - 4 Warmouth - 3
Smallmouth - 13 Blackcrappie
green - 2 bluegill - 34
Silver Redhorse - 1 pumpkin - 3
spotfin - 11 grass pike -
Channel cat - 2 carp - 20
spotted Sucker - 5 River Chub -
Flathead - 1

Metric One: Total Number of Indigenous Fish Species

Number of fish species present- Exotic species are Not included. 19

Initial Score	Double Check	Triple Check	Final Score
3	3 (18)		

Metric Two: Proportion of Round-bodied Catostomidae

1 Silver redhorse ✓
5 spotted Sucker ✓
6/148 = 4%

% of population

Initial Score	Double Check	Triple Check	Final Score
1	1 (4.1%)		

Metric Three: Number of Sunfish Species

6 ✓

Initial Score	Double Check	Triple Check	Final Score
5	5		

Rock Bass ✓ Bluegill ✓
Green ✓
Warmouth ✓ Pumpkinseed ✓
Black Crappie ✓

Metric Four: Number of Sucker Species

3 ✓

Initial Score	Double Check	Triple Check	Final Score
3	3		

Spotted ✓
White ✓
Silver Redhorse ✓

Metric Five: Number of Intolerant Species

1 ✓

Initial Score	Double Check	Triple Check	Final Score
1	1		

River Chub ✓

Metric Six: Percent Abundance of Tolerant Species (All) (26 /148) = 17.6%

Initial Score	Double Check	Triple Check	Final Score
3	3		

17.6%

2 green sunfish ✓
20 carp ✓
4 White Sucker ✓

Metric Seven: Omnivore Metric (All) (24 / 148) = 16.2% ✓

Percent of total population.

Initial Score	Double Check	Triple Check	Final Score
3	3		

4 white sucker ✓
20 carp ✓

Metric Eight: Proportion as Insectivores (All) (57 /148) = 38.5% ✓

Percent of total sample population.

Initial Score	Double Check	Triple Check	Final Score
5	3		

2 green sunf. ply ✓
1 silver redhorse ✓
11 Afin ✓
5 spotted sucker ✓
24 Bluegill ✓
3 pumphinseed ✓
1 River chub ✓

Metric Nine: Top Carnivores 25/148 = 16.9%

Initial Score	Double Check	Triple Check	Final Score
5	5		

51/148 = 34.5%

4 walleye ✓ 1 flathead ✓ 3 warmouth ✓ * Rock bass - 26 ✓
13 Sm Bass ✓ 2 Lm Bass ✓ 2 grass pike ✓

Metric Ten: Number of Individuals 148 - 22 = 126 /500m → 252 /1km

EXCLUDES tolerants, hybrids and exotics

Initial Score	Double Check	Triple Check	Final Score
3	3		

148 - 26 = 122 = 244/1km

- 2 Green sunfish ✓
- 20 carp ✓

4 white sucker ✓

Metric Eleven: Proportion of Individuals as Simple Lithophilic Spawners 10/148 = 6.7%

Initial Score	Double Check	Triple Check	Final Score
1	1		

14/148 = 9.5%

1 silver redhorse ✓ 4 white sucker ✓
5 spotted sucker ✓

* walleye - 4 ✓

Metric 12: Percent DELT Anomalies on all species. 7/148 = 4.7%

Percent of total sample population with Deformities, Eroded fins, Lesions and Tumors OR # of individuals with sites having less than 200 individuals.

Initial Score	Double Check	Triple Check	Final Score
5	/	7/153 = 4.6%	

IBI SCORE: 38
32

INITIALS: MA
SG

10-1500m = 210/1km

IBI Boat Scoring System

Project: USACE – Mahoning River
Site: S6-100703
RM: 44.3
Drainage Area: 576 mi²
Page 1 of 2

Golden Red - 1
Smallmouth - 13
Bizzard Shad - 1
White Sucker - 5
Longmouth - 1
Yellow perch - 4
Walleye - 2
N. Hog Sucker - 1
18 - 1 (carp) = 17

Rock bass - 21
black crappie - 2
bluntnose - 14
spotfin - 19
River chub - 7
Grass Pickerel -
pumpkin/longear - 1
bluegill - 2
pumpkin - 5
Carp - 2

Metric One: Total Number of Indigenous Fish Species
Number of fish species present- Exotic species are Not included.

Initial Score	Double Check	Triple Check	Final Score
3	3	(16)	

Metric Two: Proportion of Round-bodied Catostomidae 2/105 = 2%
% of population

Initial Score	Double Check	Triple Check	Final Score
1	1	(1.9%)	

1 golden redhorse ✓
1 N Hog Sucker ✓

Metric Three: Number of Sunfish Species 4

Initial Score	Double Check	Triple Check	Final Score
5	5	(4)	

Rock bass ✓ Pumpkinseed & longear black crappie ✓
Bluegill ✓ Pumpkinseed ✓

Metric Four: Number of Sucker Species 3

Initial Score	Double Check	Triple Check	Final Score
3	3	(3)	

golden redhorse ✓
white ✓
N Hog sucker ✓

Metric Five: Number of Intolerant Species 1

Initial Score	Double Check	Triple Check	Final Score
1	1	(1)	

River chub

Metric Six: Percent Abundance of Tolerant Species (All) 21/105 = 20% ✓

Initial Score	Double Check	Triple Check	Final Score
3	3		

5 White sucker ✓ 2 carp ✓
14 Bluntnose minnow ✓

Metric Seven: Omnivore Metric (All) 8/105 = 7.6%
Percent of total population.

Initial Score	Double Check	Triple Check	Final Score
5	3	22/105 = 21%	

2 carp ✓ 1 gizzard shad ✓
5 White sucker ✓ Bluntnose - 14 ✓

Metric Eight: Proportion as Insectivores (All) 36/105 = 34%
Percent of total sample population.

Initial Score	Double Check	Triple Check	Final Score
3	3	34.3%	

1 Golden Redhorse ✓ 7 River chub ✓ 5 pumpkinseed ✓
1 Hog Sucker ✓ 1 Pumpkin x longear ✓
19 spottail shiner ✓ 2 Bluegill ✓

Metric Nine: Top Carnivores 41/105 = 39%

Initial Score	Double Check	Triple Check	Final Score
5	5	39.1%	

13 Sm Bass ✓ 2 walleye ✓ 4 Grass Pike ✓
1 Lm Bass ✓ 21 Rock Bass ✓

Metric Ten: Number of Individuals 105 - 22 = 83 /500m ⇒ 165/km ✓
EXCLUDES tolerants, hybrids and exotics

Initial Score	Double Check	Triple Check	Final Score
1	1		

-5 White Sucker ✓
-14 Bluntnose minnow ✓ - 2 carp ✓ = 22
-1 hybrid ✓

Metric Eleven: Proportion of Individuals as Simple Lithophilic Spawners 7/105 = 6.7%

Initial Score	Double Check	Triple Check	Final Score
1	1	9/105 = 8.6%	

1 golden redhorse ✓
5 White Sucker ✓ + walleye = 7 ✓
1 ✓ Hog Sucker ✓

Metric 12: Percent DELT Anomalies on all species. 0 ✓

Percent of total sample population with Deformities, Eroded fins, Lesions and Tumors OR # of individuals with sites having less than 200 individuals.

Initial Score	Double Check	Triple Check	Final Score
5	5		

IBI SCORE: 36 / 34

INITIALS: MA / SB

IBI Boat Scoring System

Project: USACE - Mahoning River
Site: S2-100803 West Park Rd
RM: 33.2
Drainage Area: 610 mi²
Page 1 of 2

Carp - 3
spotfin - 9
bluntnose - 17
Stripedshiner - 1
Pike, - 1
Channel Cat - 2
Smallmouth - 4
Muskellunge - 1
Walleye - 3
white sucker - 1
Brook Silver - 8
longear - 1
pumpkinseed - 3
largemouth - 4
Bluegill - 21
bizzard - 1
Pumpkin/Blue - 1
black Crappie - 17
green - 1
19 → 17

Metric One: Total Number of Indigenous Fish Species
Number of fish species present- Exotic species are Not included.

Initial Score	Double Check	Triple Check	Final Score
3	3	17	

- 1 Pump x Blgl - 1 carp

Metric Two: Proportion of Round-bodied Catostomidae 0/99 = 0%
% of population

Initial Score	Double Check	Triple Check	Final Score
1	1	0	

Metric Three: Number of Sunfish Species 6

Initial Score	Double Check	Triple Check	Final Score
5	5	5	

Bluegill Pumpkinseed Pumpkin x Bluegill
Green Longear
Black Crappie

Metric Four: Number of Sucker Species 1

Initial Score	Double Check	Triple Check	Final Score
1	1	1	

white sucker

Metric Five: Number of Intolerant Species 0

Initial Score	Double Check	Triple Check	Final Score
1	1	0	

Metric Six: Percent Abundance of Tolerant Species (All) 22/99 = 20%

Initial Score	Double Check	Triple Check	Final Score
3	3 (22.2%)		

3 carp 1 white sucker
17 Bluntnose minnows
1 Green Sunfish

Metric Seven: Omnivore Metric (All) 22/99 = 22%
Percent of total population.

Initial Score	Double Check	Triple Check	Final Score
3	3 (22.2)		

3 carp 17 Bluntnose
1 white sucker 1 Gizzard shad

Metric Eight: Proportion as Insectivores (All) 43/99 = 43%
Percent of total sample population.

Initial Score	Double Check	Triple Check	Final Score
3	3 (45/99 = 45.5%)		

2 (1 wagill ✓ 1 Pumpkinseed (3) ✓ 1 Striped Shiner ✓
1 Pumpkin x Bluegill ✓ 1 Longear ✓ 9 spottail shiners ✓ * not predominated by shiners
1 Green ✓ 1 Brook silverside ✓

Metric Nine: Top Carnivores 9/99 = 9%

Initial Score	Double Check	Triple Check	Final Score
3	5 (13/99 = 13.1%)		

1 Northern Pike ✓ 1 Muskie ✓ 4 LM Bass ✓
4 SM Bass ✓ 3 walleye ✓

Metric Ten: Number of Individuals
EXCLUDES tolerants, hybrids and exotics 99 - 23 = 76 / 500km ⇒ 152/1km ✓

Initial Score	Double Check	Triple Check	Final Score
1	1		

- 1 white sucker - 17 Bluntnose minnows
- 1 hybrid - 3 Carp - 1 Green sunfish

Metric Eleven: Proportion of Individuals as Simple Lithophilic Spawners 1/99

Initial Score	Double Check	Triple Check	Final Score
1	1 (5/99 = 5.1%)		

white sucker
walleye-3 Striped shiner-1

Metric 12: Percent DELT Anomalies on all species. 1/99

Percent of total sample population with Deformities, Eroded fins, Lesions and Tumors OR # of individuals with sites having less than 200 individuals.

Initial Score	Double Check	Triple Check	Final Score
5	5 (1%)		

IBI SCORE: 27
32

INITIALS: MA
SL

69/500 = 150/km * Low end scoring *

IBI Boat Scoring System

Project: USACE - Mahoning River
Site: S3-100803 McDonald Steel
RM: 28.7/.5
Drainage Area: 858 mi²
Page 1 of 2

Carp - 9
Spotfin - 3
Channel - 1
Flathead - 1
Silver Red - 1
Spotted Sucker - 1
White Sucker - 2
Golden Redhorse - 1
Brown bullhead - 1
Gizzard Shad - 1
Black Crappie - 1
Bluegill - 7
pumpkinseed - 19
pumpkin/longeared
largemouth - 1
Bluegill/Green -
Yellow Rush -
Brook Silver -
Bluntnose - 5
Blackstripe Top

Metric One: Total Number of Indigenous Fish Species 20 - 1 = 19
Number of fish species present- Exotic species are Not included.

Initial Score	Double Check	Triple Check	Final Score
3	3 (17)		

Carp

Metric Two: Proportion of Round-bodied Catostomidae 3/69 = 4.3%
% of population

Initial Score	Double Check	Triple Check	Final Score
1	1 (44%)		

1 Silver Redhorse 1 Golden Redhorse
1 Spotted Sucker

Metric Three: Number of Sunfish Species 4

Initial Score	Double Check	Triple Check	Final Score
5	3 (3)		

Bluegill ~~Pumpkinseed~~ ?
Pumpkinseed ~~Bluegill & Green~~
Black Crappie -

Metric Four: Number of Sucker Species 4 Spotted Golden White Silver

Initial Score	Double Check	Triple Check	Final Score
3	3 (4)		

Sunfish

Metric Five: Number of Intolerant Species 0 ✓

Initial Score	Double Check	Tri
1	1	

include hybrid w/new parent or not?

Metric Six: Percent Abundance of Tolerant Species (All) 17/69 = 24.6%

Initial Score	Double Check	Triple Check	Final Score
3	3 (24.6%)		

2 White Sucker ✓ / 5 Bluntnose minnow ✓
1 Brown Bullhead ✓ / 9 Carp ✓

Metric Seven: Omnivore Metric (All) 17/69 = 24.6%
Percent of total population.

Initial Score	Double Check	Triple Check	Final Score
3	3 (24.6%)		

2 Whitesucker ✓ / 1 Gizzard Shad ✓
9 Carp ✓
5 Bluntnose minnows ✓

Metric Eight: Proportion as Insectivores (All) 43/69 = 62%
Percent of total sample population.

Initial Score	Double Check	Triple Check	Final Score
5	5 (44/69 = 63.8%)		

1 Silver redhorse ✓ / 7 Bluegill ✓ / 2 Brook silverside ✓
1 Red Sucker ✓ / 18 pumpkinseed / 19 ✓ / 4 Blacketripe Topminnow ✓
1 Golden Redhorse ✓ / 4 pumpkin x longear ✓ / 3 Johnson shiner ✓
1 Brown Bullhead ✓ / 1 Bluegill x green ✓

Metric Nine: Top Carnivores 2/69 = 2.8%

Initial Score	Double Check	Triple Check	Final Score
1	1 (2.9%)		

1 flathead ✓
1 Lm Bass ✓

Metric Ten: Number of Individuals 69 - 21 = 48
EXCLUDES tolerants, hybrids and exotics

Initial Score	Double Check	Triple Check	Final Score
1	1 (69-22 = 47/500 = 94/1km)		

- 2 White sucker ✓ - 5 Bluntnose ✓
- 1 Brown Bullhead ✓ - 9 carp ✓ = 21
- 5 hybrids ✓

Metric Eleven: Proportion of Individuals as Simple Lithophilic Spawners 5/69 = 7.2%

Initial Score	Double Check	Triple Check	Final Score
1	1 (7.3%)		

1 spotted Sucker ✓ / 2 white Sucker ✓
1 Silver Redhorse ✓
1 Golden " " ✓

4

Metric 12: Percent DELT Anomalies on all species.

Percent of total sample population with Deformities, Eroded fins, Lesions and Tumors OR # of individuals with sites having less than 200 individuals.

Initial Score	Double Check	Triple Check	Final Score
1	1	4/69 = 5.8%	

IBI SCORE: 28
26

INITIALS: MA
SG

36/500m 72/1km * low end scoring

IBI Boat Scoring System

Project: USACE - Mahoning River
Site: S4 - 100903
RM: 19.3/.2
Drainage Area: 1001 mi²
Page 1 of 2

smallmouth - 2
walleye - 1
channel cat - 3
pumpkinseed - 11
brown bull - 1
yellow perch - 1
green/blue - 1
green - 3
bluegill - 1
Rockbass - 1
spotfin - 1
Carp - 8
whitecrappie - 1
Muskie - 1

14 - 2

Metric One: Total Number of Indigenous Fish Species
Number of fish species present- Exotic species are Not included.

Initial Score	Double Check	Triple Check	Final Score
3	3	(12)	

- Carp
- hybrid 12

Metric Two: Proportion of Round-bodied Catostomidae 0/30
% of population

Initial Score	Double Check	Triple Check	Final Score
1	1	(0)	

Metric Three: Number of Sunfish Species 4

Initial Score	Double Check	Triple Check	Final Score
5	5	(5)	

Rockbass ✓
Pumpkinseed ✓ Green ✓ White Crappie ✓
Bluegill ✓

Metric Four: Number of Sucker Species 0 ✓

Initial Score	Double Check	Triple Check	Final Score
1	1		

Metric Five: Number of Intolerant Species 0 ✓

Initial Score	Double Check	Triple Check	Final Score
1	1		

97/500m = 11.1/1km low-end

IBI Boat Scoring System

Project: USACE - Mahoning River
Site: 65-100613
RM: 12.0/11.5
Drainage Area: 1074 mi²
Page 1 of 2

Channelcat-7, walleye-1, white sucker-6, golden red-1, Rock bass-12, bluegill-2, River chub-1, Spotfin-40, Carp-6, Smallmouth-8
N. hogsucker-1, largemouth-1, brown bull-2, green sun-2, bluntnose-2, Rainbow Darter-1, silvershiner-1, Stoneroller-1, N. Pike-1, Greenside Dar-

Metric One: Total Number of Indigenous Fish Species 21 - 1 = 20

Number of fish species present- Exotic species are Not included.

Initial Score	Double Check	Triple Check	Final Score
5	3 (19)		

-1 Carp

Metric Two: Proportion of Round-bodied Catostomidae 2/97 = 2%

% of population

Initial Score	Double Check	Triple Check	Final Score
1	1 (2.1%)		

1 golden redhorse ✓
1 N Hog Sucker ✓

Metric Three: Number of Sunfish Species 3 ✓

Initial Score	Double Check	Triple Check	Final Score
3	3		

Rock bass ✓
Bluegill ✓
Green ✓

Metric Four: Number of Sucker Species 3 ✓

Initial Score	Double Check	Triple Check	Final Score
3	3		

White sucker ✓
Golden redhorse ✓
N Hogsucker ✓

Metric Five: Number of Intolerant Species 2 ✓

Initial Score	Double Check	Triple Check	Final Score
3	3		

River chub ✓
Silver shiner ✓

Metric Six: Percent Abundance of Tolerant Species (All) 18/97 = 18.5%

Initial Score	Double Check	Triple Check	Final Score
3	3 (18.6%)		

6 white sucker ✓ 2 Bluntnose minnow ✓
6 Carp ✓
2 Green Sunfish ✓ 2 Brown Bullhead ✓

Metric Seven: Omnivore Metric (All) 14/97 = 14%.
Percent of total population.

Initial Score	Double Check	Triple Check	Final Score
5	5 (14.4%)		

6 white sucker ✓
6 Carp ✓
2 Bluntnose minnow ✓

Metric Eight: Proportion as Insectivores (All) 72/97 = 74%
Percent of total sample population.

Initial Score	Double Check	Triple Check	Final Score
1	1 (52/97 = 53.6%)		

10 ~~60~~ 40 ✓ 2 green sunfish ✓ 1 greenside darter ✓
2 rock bass ✓ 1 N Hog sucker ✓
1 River Chub ✓ 2 Brown Bullhead ✓ 1 rainbow darter ✓
1 Silver shiner ✓

Metric Nine: Top Carnivores

Initial Score	Double Check	Triple Check	Final Score
5 * did not meet 10% and 194/1km	5 (23.7%)		

1 walleye ✓ 1 Lm Bass ✓
12 Rock Bass ✓ 1 Northern Pike ✓
8 Sm Bass ✓

Metric Ten: Number of Individuals 23/97 = 23.7%
EXCLUDES tolerants, hybrids and exotics 97 - 18 = 79 / 500m = 158/km

Initial Score	Double Check	Triple Check	Final Score
1	1 (158/km)		

- 6 white sucker ✓
- 6 carp ✓
- 2 Brown Bullhead ✓
- 2 Green Sunfish ✓
- 2 Bluntnose minnow ✓

Metric Eleven: Proportion of Individuals as Simple Lithophilic Spawners 11/97 = 11%

Initial Score	Double Check	Triple Check	Final Score
1	1 (12/97 = 12.4%)		

1 N Hog Sucker ✓ 1 Silver Shiner ✓
1 Greenside Darter ✓ 1 Golden Redhorse ✓ * walleye - 1 ✓
1 Rainbow Darter ✓ 6 White Sucker ✓

Metric 12: Percent DELT Anomalies on all species. 4

Percent of total sample population with Deformities, Eroded fins, Lesions and Tumors OR # of individuals with sites having less than 200 individuals.

Initial Score	Double Check	Triple Check	Final Score
1	1	4 1.2%	

IBI SCORE: 32
30

INITIALS: MA
SB