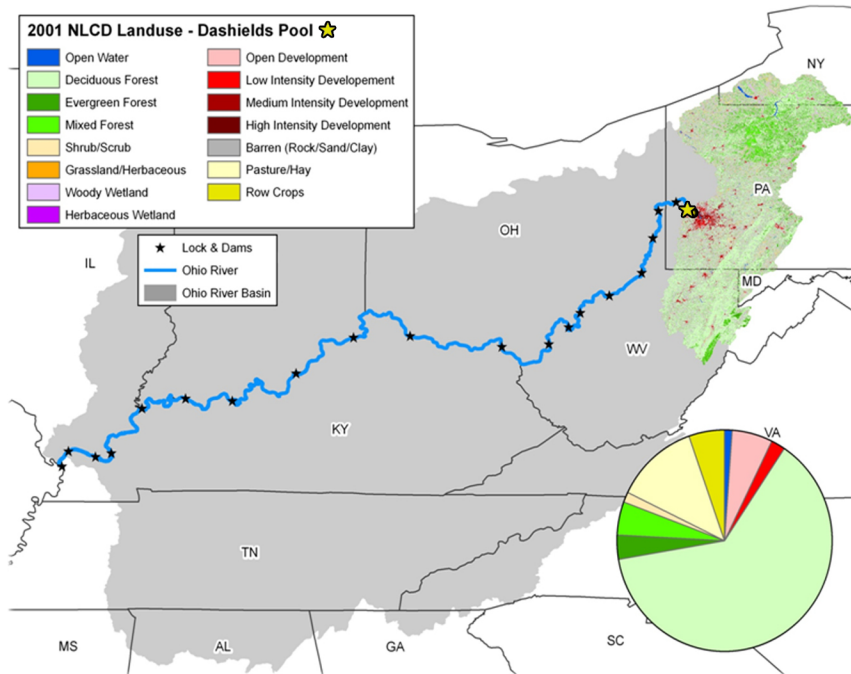
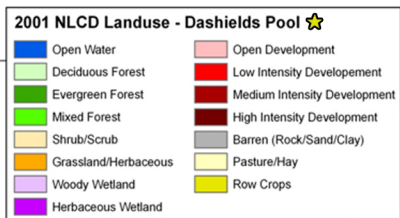


Dashiels Pool - 2013

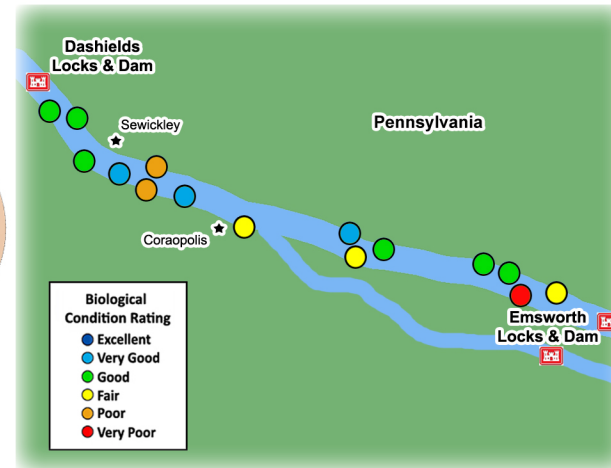
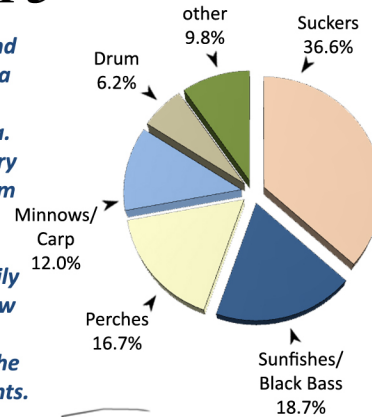
The Dashiels pool is 7.1 miles long, extending from Emsworth Locks and Dam (ORM 6.2) to Dashiels Locks and Dam (ORM 13.3). The pool has a gradient drop of 0.7 feet per mile and averages 1,467 feet wide and 14 feet deep (ORSANCO 1994). The entirety of the pool lies in Pennsylvania. This pool lies in a portion of the Ohio River heavily influenced by industry with a large amount of barge activity. The pool receives little water from tributaries. The shorelines of this pool support a moderate degree of aquatic vegetation, and where aquatic vegetation was observed, the dominant species was invasive (*Hydrilla* spp.). The watershed is primarily forested (60.7%), and is also comprised of pasture lands (12.0%) and row crops (5.2%). The Ohio Park Superfund site lies on the western tip of Neville Island, which creates a 3 mile back channel on the Ohio River. The site has been reclaimed to an extent by removing and isolating pollutants.



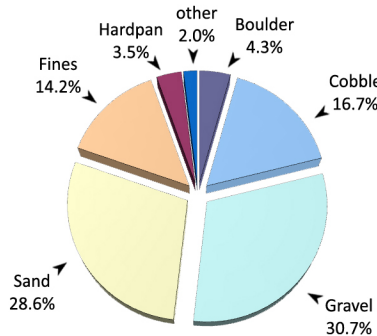
Land-use types within the Dashiels Pool watershed



sauger (*Sander canadensis*)



Locations of the 15 randomly chosen electrofishing sites in Dashiels Pool



streamline chub (*Erimystax dissimilis*)

Site Performance

Site No.	River Mile	Habitat Class	ORFIn Exp	ORFIn Obs	mORFIn Score
1	6.7	A	50.03	54.04	26.8
2	7.1	C	44.55	29.98	9.9
3	7.3	C	44.55	57.09	35.5
4	7.6	C	44.55	57.75	36.2
5	8.6	C	44.55	54.85	32.9
6	8.9	B	46.71	53.97	28.7
7	8.9	C	44.55	68.46	46.1
8	10	B	46.71	50.10	24.1
9	10.8	C	44.55	64.87	43.1
10	11.2	C	44.55	33.58	12.4
11	11.2	B	46.71	38.91	11.2
12	11.5	D	41.80	64.52	46.2
13	11.9	B	46.71	63.25	39.4
14	12.3	B	46.71	57.89	33.3
15	12.6	C	44.55	58.53	37.1

Average Pool mORFIn Score 30.8

Dashiels Pool - Results Overview

Sampling Results

Environmental Measures

Dominant Habitat Class: C - equal mix of coarse and fines
Notable Measures: Above average flows and poor water clarity were observed during the sampling period

Biological Measures

Total No. of Fish Species: 38
Average No. of Individuals: 134
Dominant Family (minus herring/shad): Suckers
Dominant Species (minus shad/shiners): sauger
Threatened and Endangered Species: mooneye & longear sunfish
Rare Ohio River Mainstem Species: streamline chub
Notable Catch: muskellunge & ohio lamprey

Assessment Results

Highest scoring ORFIn metric (minus DELTs): Sucker Species
Lowest scoring ORFIn metric (minus GR Species): % Invertivores
Sites Above 25th percentile (i.e. mORFIn Score = 20): 12
Sites Below 25th percentile (i.e. mORFIn Score = 20): 3
Aquatic Life-Use Designation: Met

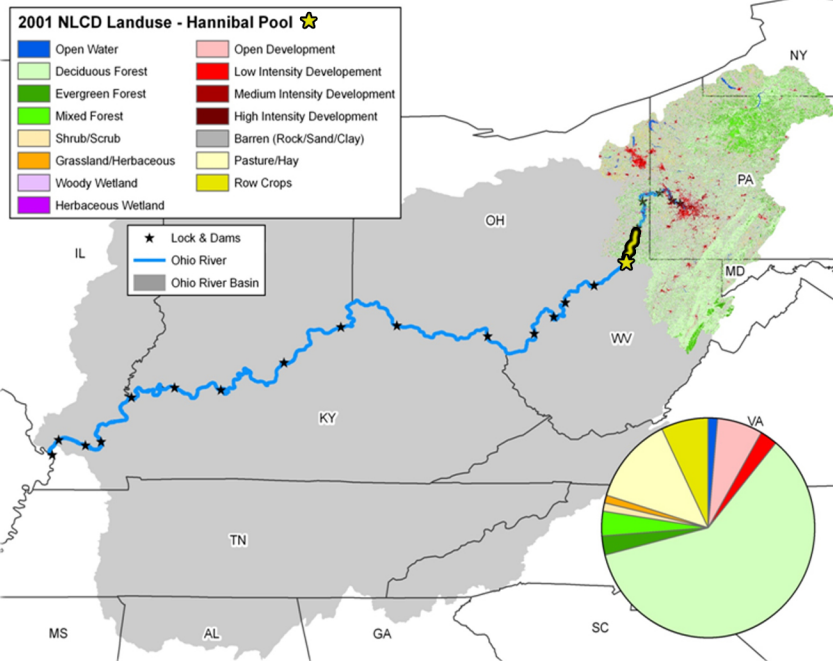
Overall Biological Condition Rating: Good



The shorelines of Dashiels Pool are lined with mooring cells, loading docks & other industrial infrastructure

Hannibal Pool - 2013

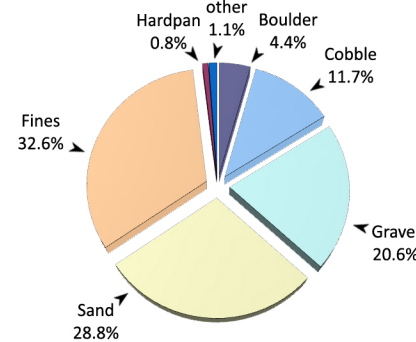
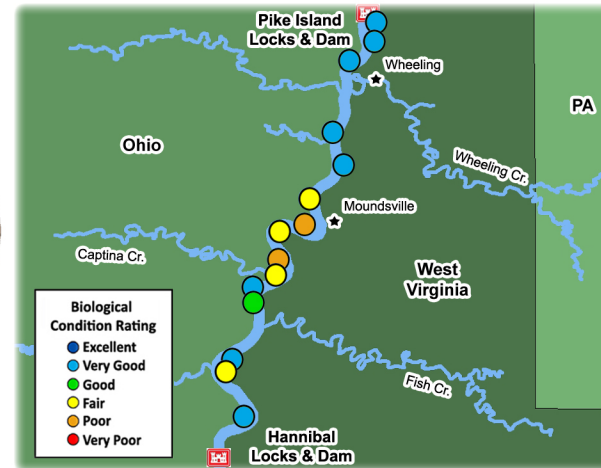
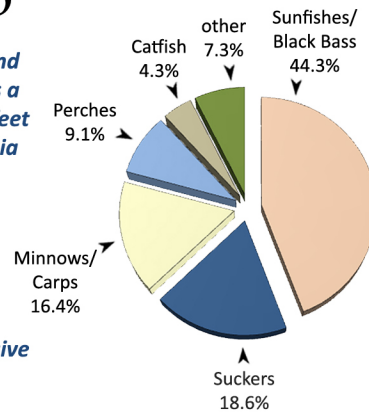
The Hannibal pool is 42.2 miles long, extending from Pike Island Locks and Dam (ORM 84.2) to Hannibal Locks and Dam (ORM 126.4). The pool has a gradient drop of 0.5 feet per mile and averages 1,133 feet wide and 21 feet deep (ORSANCO 1994). The pool is bordered by the states of West Virginia and Ohio and lies in a portion of the Ohio River heavily influenced by industry with a large amount of barge activity. The Hannibal pool directly receives water from numerous smaller tributaries draining approx. 1,120 square miles of the larger Ohio River basin: Wheeling Creeks (OH & WV), McMahon Creek, Grave Creek, Captina Creek, Fish Creek, and Sunfish Creek. Shorelines support a large amount of aquatic vegetation, and where observed, littoral zones were dominated by invasive species (*Hydrilla* spp.). The combined watershed is primarily forested (64.6%) and also contains pasture lands (12.7%) and row crops (7.0%).



Land-use types within the Hannibal Pool watershed



highfin carpsucker (*Carpiodes velifer*)



bluegill (*Lepomis macrochirus*)

Site Performance

Site No.	River Mile	Habitat Class	ORFIn Exp	ORFIn Obs	mORFIn Score
1	84.9	C	44.55	63.82	42.2
2	86.7	C	44.55	64.61	42.9
3	88.6	C	44.55	65.68	43.8
4	94.3	C	44.55	66.27	44.3
5	96.5	C	44.55	64.66	42.9
6	99.5	B	46.71	52.33	26.7
7	103.2	C	44.55	42.50	18.6
8	105.3	B	46.71	51.08	25.2
9	107.7	C	44.55	41.65	18.0
10	109.7	C	44.55	49.90	27.0
11	111.1	B	46.71	69.50	44.8
12	111.9	B	46.71	61.25	37.1
13	116.5	D	41.80	58.35	40.4
14	118.6	C	44.55	46.35	22.4
15	122.2	E	39.59	59.24	40.1
Average Pool mORFIn Score					34.4

Hannibal Pool - Results Overview

Sampling Results

Environmental Measures

Dominant Habitat Class: C - equal mix of coarse and fines
 Notable Measures: Above average flows and poor water clarity were observed during the sampling period

Biological Measures

Total No. of Fish Species: 48
 Average No. of Individuals: 169
 Dominant Family (*minus herring/shad*): Sunfishes/Black Bass
 Dominant Species (*minus shad/shiners*): bluegill
 Species of Concern (WV): highfin carpsucker
 Rare Ohio River Mainstem Species: greenside darter
 Notable Catch: river darter & channel darter (threatened in OH)

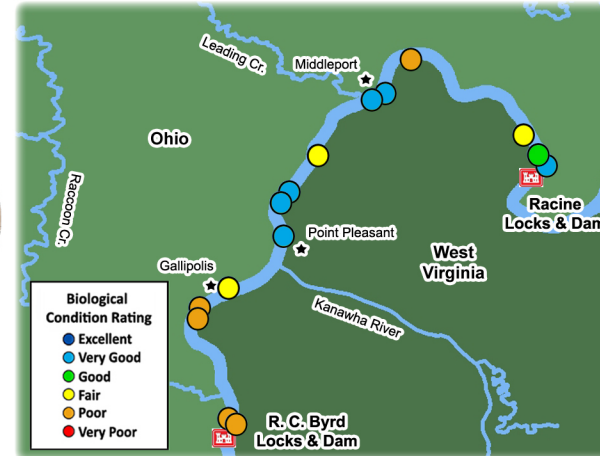
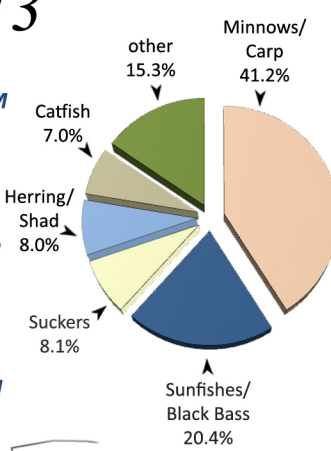
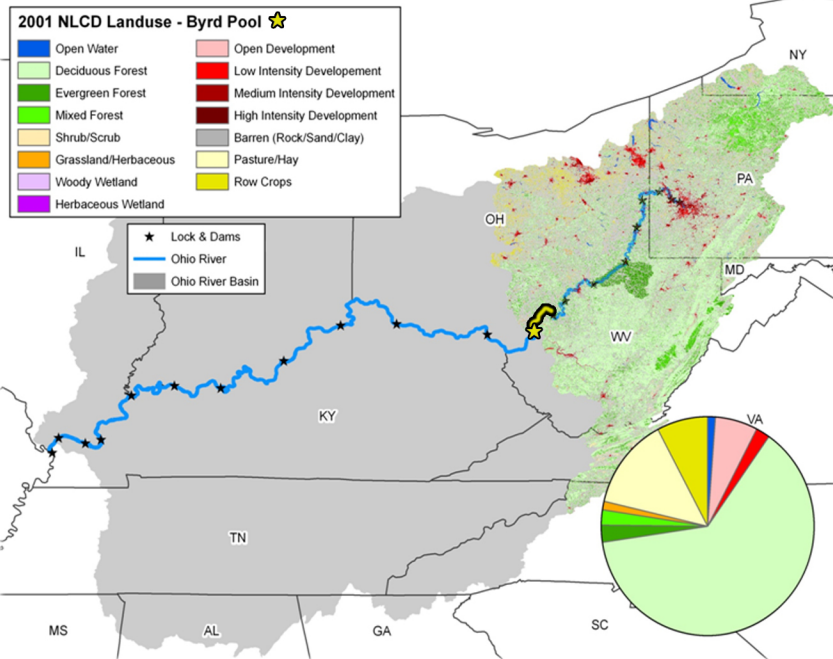
Assessment Results

Highest scoring ORFIn metric (*minus DELTs*): % Non-natives
 Lowest scoring ORFIn metric (*minus GR Species*): % Lithophils
 Sites Above 25th percentile (i.e. mORFIn Score = 20): 13
 Sites Below 25th percentile (i.e. mORFIn Score = 20): 2
 Aquatic Life-Use Designation: Met

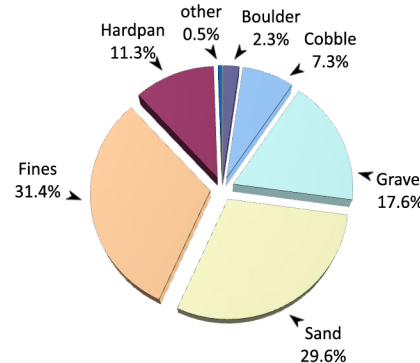
Overall Biological Condition Rating: Good

R. C. Byrd Pool - 2013

The R. C. Byrd pool is 41.7 miles long, extending from the Racine Locks and Dam (ORM 237.5) to the R.C. Byrd (formerly Gallipolis) Locks and Dam (ORM 279.2) on the downstream end. The pool has a gradient drop of 0.6 feet per mile and averages 1,154 feet wide and 26 feet deep (ORSANCO 1994). The pool is bordered by the states of West Virginia and Ohio. This pool lies in a portion of the Ohio River heavily influenced by industry with a large amount of barge activity. The Kanawha River empties into this pool at Ohio River mile-point 265.7 and has a drainage area of 12,200 square miles. R. C. Byrd pool also receives water from Leading Creek and Racoon Creek with drainage areas of 151 and 684 square miles respectively. These combined watersheds are primarily forested (65.8%), but also have a considerable amount of pasture lands (13.2%) and row crops (7.5%). Littoral zones were dominated by an invasive aquatic vegetation species (*Hydrilla*).



Locations of the 15 randomly chosen electrofishing sites in R. C. Byrd Pool



river redhorse (*Moxostoma carinatum*)

Site Performance

Site No.	River Mile	Habitat Class	ORFIn Exp	ORFIn Obs	mORFIn Score
1	238.7	C	44.55	64.54	42.8
2	239.2	C	44.55	52.95	30.8
3	240.8	B	46.71	50.13	24.1
4	249.7	D	41.80	39.90	18.1
5	252.5	C	44.55	72.29	49.3
6	253.0	C	44.55	63.21	41.7
7	258.0	E	39.59	47.85	27.6
8	260.9	C	44.55	66.87	44.8
9	261.3	D	41.80	63.79	45.5
10	263.9	D	41.80	64.35	46.0
11	268.6	E	39.59	47.29	27.0
12	270.3	D	41.80	41.16	19.4
13	270.9	D	41.80	32.03	10.5
14	278.0	E	39.59	36.05	15.0
15	278.1	C	44.55	43.81	19.5

Average Pool mORFIn Score 30.8

R. C. Byrd Pool - Results Overview

Sampling Results

Environmental Measures

Dominant Habitat Class: C - equal mix of coarse and fines
 Notable Measures: The lowest performing sites were found downstream of the confluence of the Kanawha River

Biological Measures

Total No. of Fish Species: 33
 Average No. of Individuals: 121
 Dominant Family (minus herring/shad): Minnows/Carp
 Dominant Species (minus shad/shiners): bluegill
 Species of Concern: highfin carpsucker (WV) & river redhorse (OH)
 Rare Ohio River Mainstem Species: spottail shiner
 Notable Catch: striped bass (common in reservoirs & lower OH R.)

Assessment Results

Highest scoring ORFIn metric (minus DELTs): % Tolerants
 Lowest scoring ORFIn metric (minus GR Species): CPUE
 Sites Above 25th percentile (i.e. mORFIn Score = 20): 10
 Sites Below 25th percentile (i.e. mORFIn Score = 20): 5
 Aquatic Life-Use Designation: Met

Overall Biological Condition Rating: Good



white bass (*Morone chrysops*)

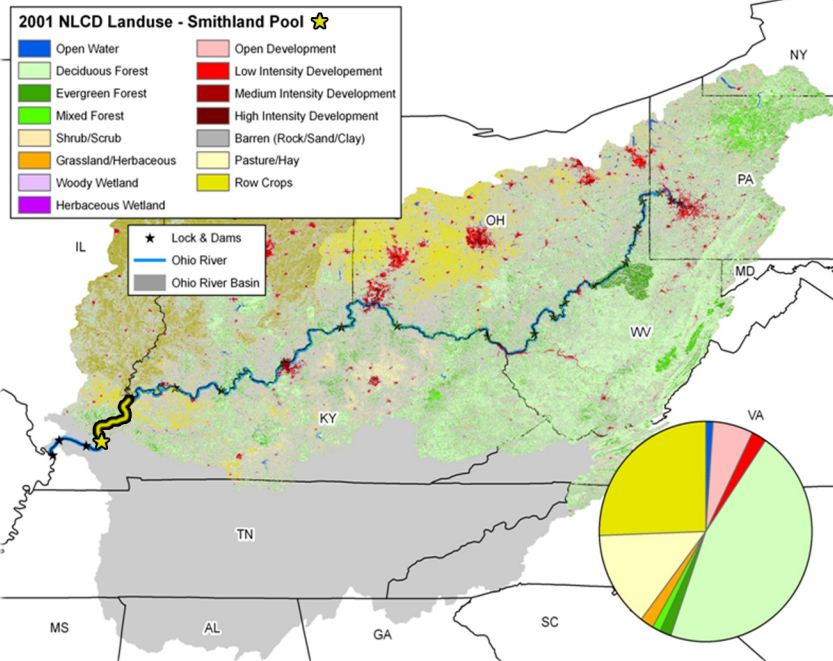
The waterfront of Pomeroy, OH
 a small river town upstream of Middleport, OH



Smithland Pool - 2013

The Smithland pool is 72.5 miles long, extending from J.T. Myers Locks and Dam (ORM 846.0) to Smithland Locks and Dam (ORM 918.5). The pool has a gradient drop of 0.3 feet per mile and averages 4,116 feet wide and 30 feet deep (ORSANCO 1994). The pool is bordered by the states of Kentucky, Illinois, and Indiana. Smithland pool lies in a portion of the Ohio River where the land cover consists primarily of deciduous forest (47.7%), but also has a considerable amount of row crops (25.0%) and pasture lands (13.7%).

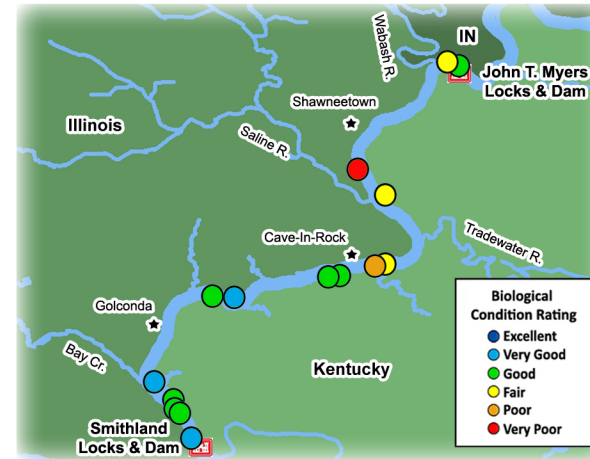
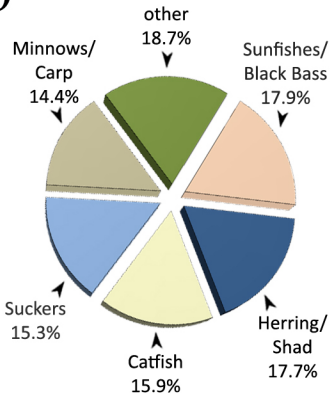
The Smithland pool receives water from the following tributaries: Wabash River at mile point 848.0 with a drainage area of 33,100 square miles, Saline River at mile point 867.3 with a drainage area of 1,170 square miles and Tradewater River at mile point 873.5 with a drainage area of 1,000 square miles. The shorelines of this pool contained very little observable aquatic vegetation within littoral zones.



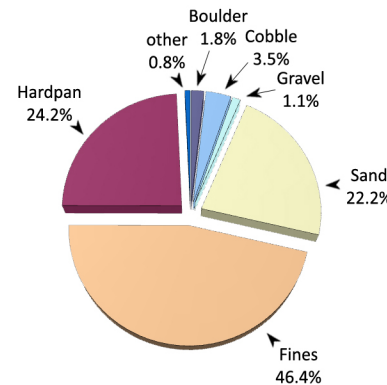
Land-use types within the Smithland Pool watershed



spotted gar (*Lepisosteus platostomus*)



Locations of the 15 randomly chosen electrofishing sites in Smithland Pool



goldeye (*Hiodon alosoides*)

Site Performance

Site No.	River Mile	Habitat Class	ORFIn Exp	ORFIn Obs	mORFIn Score
1	846.8	E	39.59	54.78	34.9
2	847.1	D	41.80	45.04	24.1
3	863.0	E	39.59	30.99	0.0
4	866.9	D	41.80	49.11	29.2
5	878.1	D	41.80	48.86	28.9
6	878.4	D	41.80	39.56	17.8
7	882.2	E	39.59	53.15	33.0
8	883.3	E	39.59	50.99	30.5
9	893.7	D	41.80	59.39	41.4
10	895.9	D	41.80	57.79	39.9
11	909.9	D	41.80	58.46	40.5
12	912.9	E	39.59	55.76	36.0
13	913.5	D	41.80	50.37	30.8
14	914.0	E	39.59	56.79	37.2
15	917.7	B	46.71	68.31	43.8

Average Pool mORFIn Score 31.2

Smithland Pool - Results Overview

Sampling Results

Environmental Measures

Dominant Habitat Class: D - shallow sand/fines

Notable Measures: vast areas of submerged trees and stumps are common along the shorelines of Smithland pool

Biological Measures

Total No. of Fish Species: 36 (abundances were unusually even)

Average No. of Individuals: 168

Dominant Family (*minus herring/shad*): Sunfishes/Black Bass

Dominant Species (*minus shad/shiners*): channel catfish

Threatened and Endangered Species: Mississippi silverside (T)

Rare Ohio River Mainstem Species: spotted gar & threadfin shad

Notable Observation: numerous large invasive/exotic silver carp

Assessment Results

Highest scoring ORFIn metric (*minus DELTs*): % Tolerants

Lowest scoring ORFIn metric (*minus GR Species*): % Lithophils

Sites Above 25th percentile (i.e. mORFIn Score = 20): 13

Sites Below 25th percentile (i.e. mORFIn Score = 20): 2

Aquatic Life-Use Designation: Met

Overall Biological Condition Rating: Good