PROJECT DATA

Results from Selected Sites in the Great Miami and Little Miami River Basins

(National Water-Quality Assessment Program)

ORGANIC COMPOUNDS AND TRACE ELEMENTS IN FISH TISSUE

Adult common carp (*Cyprinus carpio*) were collected for fish tissue analyses by electrofishing in a mapped reach at each site. More information regarding methods can be found in Crawford and Luoma (1994). Each sample for organochlorine analyses in fish tissue consists of a composite of four to eight whole fish. Laboratory procedures include (1) homogenization, (2) extractions by use of methylene chloride in a soxhlet apparatus, (3) clean-up by use of gel permeation chromatography, (4) fractionation by use of alumina/silica gel, and (5) analysis by gas chromatography with two dissimilar capillary columns coupled with an electron capture detector. Constituent concentrations are provided on a wet-weight (WW) basis and are not corrected for percent lipids. Each sample for trace element analyses consists of a composite of liver tissue taken from four to eight fish. Laboratory procedures include (1) drying, (2) digestion, and (3) analysis by use of inductively-coupled plasma-emission spectrometry (for Al, Ba, B, Cr, Cu, Fe, Mn, Sr, and Zn), inductively coupled plasma mass spectrometry (for Sb, As, Be, Cd, Co, Pb, Mo, Ni, Se, Ag, U, and V), and cold vapor atomic absorption (for Hg). Constituent concentrations are provided on a dry-weight (DRY WGT) basis. Concentrations are corrected for percent water.

CALENDAR YEAR 1998

STATION NUMBER	STATION NAME	LATITUDE	LONGITUDE	DRAINAGE AREA (mi^2)	DATE SEDIMENT SAMPLED	DATE FISH TISSUE SAMPLED
03245500	Little Miami River at Milford, Ohio	39°10'11"	84°17'52"	1,202	9/1/98	9/16/98
03246400	East Fork Little Miami River near Williamsburg, Ohio	39°03'32"	84°03'05"	234	9/1/98	9/8/98
392246084340100	Great Miami River Below Hamilton, Ohio	39°22'46"	84°34'01"	3,636	8/31/98	9/1/98
393259085101200	Whitewater River Near Nulltown, Indiana	39°32'59"	85°10'12"	533	9/8/98	9/15/98
393944084120700	Holes Creek At Huffman Park Near Kettering, Ohio	39°39'44"	84°12'07"	20	9/9/98	9/9/98
395433084175300	Stillwater River At Old Springfield Road Near Union, Ohio	39°54'33"	84°17'53"	643	9/10/98	9/17/98
395534084091400	Great Miami River Near Tipp City, Ohio	39°55'34"	84°09'14"	1,128	9/2/98	9/9/98
395650083504400	Mad River Near Highway 41 Near Springfield, Ohio	39°56'50"	83°50'44"	319	9/3/98	9/14/98

Results from Selected Sites in the Great Miami and Little Miami River Basins

(National Water-Quality Assessment Program)

ORGANIC COMPOUNDS IN WHOLE FISH

[Constituent names are abbreviated as follows: DDD, dichlorodiphenyldichloroethane; DDE, dichlorodiphenyldichloroethene; DCPA, dimethyl tetrachloroterephthalate; DDT, dicholorodiphenyltrichloroethane; HCH, hexachlorocyclohexane; PCB, polychlorinated biphenyls. Other abbreviations include: BED SED, bottom sediment; REC, recoverable; UG/G, micrograms per gram; UG/KG, micrograms per kilogram; G/KG, grams per kilogram; MM, millimeter; E, estimated; G, grams; WH ORG, whole organism; (55555), the USGS National Water Quality Laboratory parameter code.]

STATION NUMBER	NUMBER IN COMPOSITE			MEAN TOTAL LENGTH OF FISH (MM)	MEAN WEIGHT OF FISH (G)	MEAN AGE OF FISH (YEARS)
	TOTAL	MALE	FEMALE			
03245500	4	3	1	630	3807	9.3
03246400	8	4	4	465	1253	5.6
392246084340100	5	3	2	600	3218	9.6
393259085101200	7	5	2	583	2869	7.7
393944084120700	8	2	6	451	1366	5.1
395433084175300	8	3	5	541	2212	8.1
395534084091400	6	5	1	451	1368	5.3
395650083504400	7	6	1	315	670	3.9

STATION NUMBER	ALDRIN, BIOTA, WH ORG WW, REC (UG/KG) (49353)	ALPHA BHC, WH ORG, WW, REC (UG/KG) (49366)	HEXA-CHLORO-BENZENE, BIOTA, WH ORG WW, REC (UG/KG) (49367)	BETA BHC, WH ORG WW, REC (UG/KG) (49365)	CIS-CHLORDANE, BIOTA, WH ORG WW, REC (UG/KG) (49380)	CIS-NON-ACHLOR, BIOTA, WH ORG WW, REC (UG/KG) (49359)	DCPA, BIOTA, WH ORG WW, REC (UG/KG) (49378)	DELTA-BHC, BIOTA, WH ORG WW, REC (UG/KG) (49364)	DIELDRIN,BIOTA, WH ORG WW, REC (UG/KG) (49371)
03245500	<5.0	<5.0	<5.0	<5.0	77	27	<5.0	<5.0	88
03246400	<5.0	<5.0	<5.0	<5.0	5.1	<5.0	<5.0	<5.0	14
392246084340100	e10	<5.0	24	<5.0	55	13	<5.0	<5.0	43
393259085101200	<5.0	<5.0	<5.0	<5.0	21	1	<5.0	<5.0	32
393944084120700	<5.0	<5.0	<5.0	<5.0	51	14	<5.0	<5.0	11
395433084175300	<5.0	<5.0	<5.0	<5.0	27	e13	<5.0	<5.0	110
395534084091400	<5.0	<5.0	<5.0	<5.0	35	11	5.0	<14	53
395650083504400	<5.0	<5.0	<5.0	<5.0	130	40	<5.0	<27	31

STATION NUMBER	ENDRIN, BIOTA, WH ORG WW, REC (UG/KG) (49370)	HEPTA-CHLOR EPOXIDE, BIOTA, WH ORG WW, REC (UG/KG) (49368)	HEPTA-CHLOR, BIOTA, WH ORG WW, REC (UG/KG) (49369)	LINDANE, BIOTA, WH ORG WW, REC (UG/KG) (49363)	LIPIDS, BIOTA, WH ORG WW, REC (PERCENT) (49289)	O,P'-METHOXY-CHLOR, BIOTA, WH ORG WW, REC (UG/KG) (49362)	P,P' METHOXY-CHLOR, BIOTA, WH ORG WW, REC (UG/KG) (49361)	MIREX BIOTA, WH ORG WW, REC (UG/KG) (49360)	O,P' DDD, BIOTA, WH ORG WW, REC (UG/KG) (49374)
03245500	<5.0	8.4	<5.0	<5.0	7.8	<5.0	<5.0	<5.0	<5.0
03246400	<5.0	<5.0	<5.0	<5.0	3.9	<5.0	<5.0	<5.0	<5.0
392246084340100	<5.0	17	<5.0	<5.0	16.0	<5.0	<5.0	<5.0	<15
393259085101200	<5.0	9.8	<5.0	<5.0	9.8	<5.0	<5.0	<5.0	<5.0
393944084120700	<5.0	6.4	<5.0	<5.0	2.8	<5.0	<5.0	<5.0	<5.0
395433084175300	<5.0	12	<5.0	<5.0	7.9	<5.0	<5.0	<5.0	<5.0
395534084091400	<5.0	8.8	<5.0	<5.0	9	<5.0	<5.0	<5.0	<5.0
395650083504400	<5.0	<5.0	<5.0	<5.0	7.6	<5.0	<5.0	<5.0	<5.0

PROJECT DATA

Results from Selected Sites in the Great Miami and Little Miami River Basins

(National Water-Quality Assessment Program)

ORGANIC COMPOUNDS IN WHOLE FISH—CONTINUED

[Constituent names are abbreviated as follows: DDD, dichlorodiphenyldichloroethane; DDE, dichlorodiphenyldichloroethene; DCPA, dimethyl tetrachloroterephthalate; DDT, dicholorodiphenyltrichloroethane; HCH, hexachlorocyclohexane; PCB, polychlorinated biphenyls. Other abbreviations include: BED SED, bottom sediment; REC, recoverable; UG/G, micrograms per gram; UG/KG, micrograms per kilogram; G/KG, grams per kilogram; MM, millimeter; E, estimated; G, grams; H ORG, whole organism; (55555), the USGS National Water Quality Laboratory parameter code.]

STATION NUMBER	O,P' DDE, BIOTA, WH ORG WW, REC (UG/KG) (49373)	O,P' DDT, BIOTA, WH ORG WW, REC (UG/KG) (49377)	OXY-CHLOR-DANE, BIOTA, WH ORG WW, REC (UG/KG) (49357)	P,P' DDD, BIOTA, WH ORG WW, REC (UG/KG) (49375)	P,P' DDE, BIOTA, WH ORG WW,REC (UG/KG) (49375)	P,P' DDT, BIOTA, WH ORG WW, REC (UG/KG) (49376)	PCB, BIOTA, WH ORG WW, REC (UG/KG) (49354)	PENTA-CHLORAN-ISOLE, BIOTA, WH ORG WW, REC (UG/KG) (49356)	TOXA-PHENE, BIOTA, WH ORG WW, REC (UG/KG) (49355)
03245500	<5.0	<5.0	11	12	53	<5.0	300	<5.0	<200
03246400	<5.0	<5.0	<5.0	<5.0	7.2	<5.0	190	<5.0	<200
392246084340100	<6.5	<5.0	12	20	89	<5.0	2300	8.4	<200
393259085101200	<5.0	<5.0	7.4	<5.0	9.2	<5.0	240	<5.0	<200
393944084120700	<5.0	<5.0	7.0	<5.0	43	<5.0	670	<5.0	<200
395433084175300	<5.0	<5.0	<5.0	18	100	<5.0	160	<5.0	<200
395534084091400	<6.4	<5.0	49	6.7	33	<5.0	615	<5.0	<200
395650083504400	<5.0	<5.0	11	31	280	<5.0	<50	<5.0	<200

STATION NUMBER	TRANS-CHLOR-DANE, BIOTA, WH ORG WW, REC (UG/KG) (49379)	TRANS-NONA-CHLOR BIOTA, WH ORG WW, REC (UG/KG) (49358)
03245500	28	110
03246400	<5.0	9.1
392246084340100	25	e70
393259085101200	12	36
393944084120700	17	55
395433084175300	12	42
395534084091400	11	31
395650083504400	45	230

Results from Selected Sites in the Great Miami and Little Miami River Basins

(National Water-Quality Assessment Program)

TRACE ELEMENTS IN FISH-LIVER COMPOSITES

[Constituent names are abbreviated as follows: DDD, dichlorodiphenyldichloroethane; DDE, dichlorodiphenyldichloroethene; DCPA, dimethyl tetrachloroterephthalate; DDT, dicholorodiphenyltrichloroethane; HCH, hexachlorocyclohexane; PCB, polychlorinated biphenyls. Other abbreviations include: BED SED, bottom sediment; REC, recoverable; UG/G, micrograms per gram; UG/KG, micrograms per kilogram; G/KG, grams per kilogram; MM, millimeter; E, estimated; G, grams; H ORG, whole organism; (55555), the USGS National Water Quality Laboratory parameter code.]

STATION NUMBER	NUMBER IN COMPOSITE			MEAN TOTAL LENGTH OF FISH (MM)	MEAN WEIGHT OF FISH (G)	MEAN AGE OF FISH (YEARS)
	TOTAL	MALE	FEMALE			
03245500	4	1	3	630	3807	9.3
03246400	8	2	6	454	1306	5
392246084340100	5	1	4	566	2288	9.2
393259085101200	5	3	2	568	2567	7.7
393944084120700	8	5	3	442	1175	5.6
395433084175300	8	2	6	517	1858	8.1
395534084091400	6	5	1	441	1260	5.8
395650083504400	5	3	2	345	854	4.6

STATION NUMBER	WATER PRESENT TISSUE, BIOTA, DRY WGT,REC (PERCENT) (49237)	ALUMINUM, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49237)	ANTIMONY, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49246)	ARSENIC, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49247)	BARIUM, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49238)	BERYLLIUM, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49248)	BORON, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49239)
03245500	72.9	6.5	<0.2	0.6	0.1	<0.2	0.6
03246400	72.8	11.3	<0.2	1.0	0.5	<0.2	<0.2
392246084340100	76.3	7.9	<0.2	0.7	9.6	<0.2	0.5
393259085101200	73.7	13.1	<0.2	0.9	0.1	<0.2	0.4
393944084120700	74.0	4.8	<0.2	0.8	0.1	<0.2	0.3
395433084175300	72.3	18.7	<0.2	1.3	0.2	<0.2	0.7
395534084091400	71.6	2.2	<0.2	0.9	4.4	<0.2	0.3
395650083504400	74.2	6.0	<0.2	0.5	0.2	<0.2	0.2

STATION NUMBER	CADMIUM, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49249)	CHROMIUM, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49240)	COBALT, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49250)	COPPER, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49241)	IRON, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49242)	LEAD, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49251)	MANGANESE, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49243)
03245500	3.9	0.5	0.2	96.7	791	0.4	7.2
03246400	5.5	<0.5	0.2	133	631	0.3	5.8
392246084340100	12.1	0.5	0.3	98.8	1242	0.4	5.1
393259085101200	4.8	0.6	0.3	157	672	0.4	6.9
393944084120700	3.0	<0.5	0.2	163	1155	0.5	5.5
395433084175300	12.0	<0.5	0.3	143	715	0.3	5.8
395534084091400	11.5	<0.5	<0.2	113	620	0.3	4.3
395650083504400	1.0	1.0	<0.2	119	620	<0.2	6.3

PROJECT DATA

Results from Selected Sites in the Great Miami and Little Miami River Basins

(National Water-Quality Assessment Program)

TRACE ELEMENTS IN FISH-LIVER COMPOSITES—CONTINUED

[Constituent names are abbreviated as follows: DDD, dichlorodiphenyldichloroethane; DDE, dichlorodiphenyldichloroethene; DCPA, dimethyl tetrachloroterephthalate; DDT, dicholorodiphenyltrichloroethane; HCH, hexachlorocyclohexane; PCB, polychlorinated biphenyls. Other abbreviations include: BED SED, bottom sediment; REC, recoverable; UG/G, micrograms per gram; UG/KG, micrograms per kilogram; G/KG, grams per kilogram; MM, millimeter; E, estimated; G, grams; H ORG, whole organism; (55555), the USGS National Water Quality Laboratory parameter code.]

STATION NUMBER	MERCURY, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49258)	MOLYBDENUM, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49252)	NICKEL, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49253)	SELENIUM, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49254)	SILVER, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49255)	STRONTIUM, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49244)	VANADIUM, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49465)
03245500	0.34	1.6	<0.2	5.9	1.5	1.0	0.5
03246400	0.31	1.7	<0.2	6.2	0.3	1.0	1.3
392246084340100	0.30	2.1	<0.2	10.2	0.3	1.4	1.5
393259085101200	0.32	2.2	<0.2	7.3	2.0	0.6	0.5
393944084120700	0.23	1.3	<0.2	8.7	0.3	0.8	0.9
395433084175300	0.35	1.4	<0.2	7.9	0.8	2.2	0.7
395534084091400	0.20	1.0	<0.2	5.9	0.6	1.4	0.6
395650083504400	0.31	1.1	<0.2	9.4	1.5	0.8	0.5

STATION NUMBER	ZINC, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49245)	URANIUM, BIOTA, TISSUE, DRY WGT, REC (UG/G) (49257)
03245500	551	<0.2
03246400	761	<0.2
392246084340100	622	<0.2
393259085101200	1059	<0.2
393944084120700	1075	<0.2
395433084175300	767	<0.2
395534084091400	568	<0.2
395650083504400	438	<0.2

REFERENCES CITED:

Crawford, J.K., amd Luoma, S.N., 1994, Guidelines for studies of contaminants in biological tissues for the National Water-Quality Assessment Program: U.S. Geological Survey Open-File Report 92-494, 69 p.

Shelton, L.R., and Capel, P.D., 1994, Guidelines for collecting and processing samples of stream bed sediment for analysis of trace elements and organic contaminants for the National Water-Quality Assessment Program: U.S. Geological Survey Open-File Report 94-458, 20 p.