

**Analysis of Polychlorinated Biphenyl (PCB) Residues
in Fish Collected March 16-18, 2004
from the Bayou Creek System**

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DRAFT REPORT

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INTRODUCTION

Fish were collected on March 16-18, 2004 from our series of sampling stations on Big and Little Bayou Creeks and the reference station on the west fork of Massac Creek (MC). Fillet samples were analyzed for Aroclors 1248, 1254, and 1260. A total of 83 fish were analyzed from Big and Little Bayou Creeks and Massac Creek. This included 56 fish from Big Bayou Creek, 22 fish from Little Bayou Creek, and 5 fish from Massac Creek. The fish from Big Bayou Creek consisted of 14 green sunfish (*Lepomis cyanellus*) (GS), 25 longear sunfish (*Lepomis megalotis*) (LS), 6 bluegill sunfish (*Lepomis macrochirus*) (BG), 5 largemouth bass (*Micropterus salmoides*) (LMB), and 6 yellow bullhead catfish (*Ictalurus natalis*) (YBH). Fish collected from Little Bayou Creek consisted of 9 green sunfish, 8 longear sunfish, 1 bluegill sunfish, and 4 yellow bullhead catfish. From Massac Creek, fish consisted of 1 green sunfish, 1 bluegill sunfish, 2 longear sunfish, and 1 yellow bullhead catfish.

METHODS

Fish collection

Fish were collected by UK personnel by use of back-pack shocker and seining. Fish that did not meet our requirements were returned to the stream. Collected fish were wrapped in aluminum foil, tagged, bagged in plastic containers by collecting station, and placed on ice (4 °C) for transport to the laboratory. Fish species were identified and stored in the freezer (-15 °C) until extraction.

Tissue extraction

Fish were measured for length and whole body weight, and fillets were taken with solvent-cleaned surgical instruments. The fillets were then weighed and macerated as described below. Otoliths (sagittae) were removed from each specimen for age determinations (Boxrucker, 1986). PCBs in fish tissues were extracted and analyzed as described by Birge and Price (2001), using standard U.S. EPA methods (Watts, 1980; U.S. EPA, 1997; Erickson, 1997).

Analysis by Gas Chromatography

Samples were analyzed for Aroclors 1248, 1254, and 1260 according to SW-846 Method 8082 (U.S. EPA, 1997) and previously described by Birge and Price (2001).

Quality Assurance

Permanent bench records were kept of all assays and annotated as required under Good Laboratory Practices (*Federal Register*, 40 CFR, Part 160, August 17, 1989). All printouts and graphic recordings were filed and are open for inspection. These bench records will be archived within two years after the close of the project but retrievable upon request.

RESULTS

A total of 83 fish were analyzed during this survey, which included 1 GS, 1 BG, 2 LS and 1 YBH from Massac Creek; 14 GS, 25 LS, 6 BG, 5 LMB and 6 YBH from Big Bayou Creek; and 9 GS, 8 LS, 1 BG, and 4 YBH from Little Bayou Creek (Tables 1 and 2). Of the fish that could be aged, 58% of the fish collected from both Big and Little Bayou Creeks were <1 to 1+ years old and 25 of fish were 2 to 2+ years old. In Big

Bayou Creek 64% of fish were <1 to 1+ year old; 20% were 2 to 2+ years old; and 5% were 3+ years old. Three bluegill sunfish from BB5 in Big Bayou Creek were 3 to 3+ years old. In Little Bayou Creek 41% of fish were <1 to 1+ year old; 41% were 2 to 2+ years old; and no fish collected was over 3 years old.

In Big Bayou Creek, Aroclor 1248 was quantifiable in 17 of 56 fish collected (30%), Aroclors 1254 and 1260 were found in 32 out of 56 fish (57%) (Table 1). Mean concentrations of Aroclor for selected species from Big Bayou Creek are represented graphically in Table 1 and Figures 1 through 4. The means \pm standard deviations for length, whole body weight, lipid, and Aroclor concentrations are given in Table 3. Highest Aroclor 1248 concentrations were detected in a longear sunfish from Big Bayou Creek (BB1-LS2) at 0.28 $\mu\text{g/g}$; and highest 1254 and 1260 were found in a green sunfish at station BB7 (GS2) at 0.85 and 0.72 $\mu\text{g/g}$, respectively. The highest total PCBs (pg/g) found in fillet were 1.57 at BB7-GS2 and 0.47 at BB6-GS4. Total PCB concentrations in Big Bayou Creek ranged from 0.02 to 1.57 $\mu\text{g/g}$. Of the 56 fish analyzed from Big Bayou Creek, 33 contained fillet total PCB values at or above the lowest action level in Kentucky (0.05 $\mu\text{g/g}$).

For Little Bayou Creek, Aroclor 1248 was quantifiable in 11 of 22 fish (50%); Aroclor 1254 was found in 18 of 22 fish (82%); and Aroclor 1260 was found in 20 of 22 fish (91%) (Table 2). Mean PCB concentrations from selected species from Little Bayou Creek are represented graphically in Figures 5 through 8. Highest PCB concentrations were found for a longear sunfish (LS2) from LB3, with values of 0.76, 0.41, and 0.38 $\mu\text{g/g}$ for 1248, 1254, and 1260, respectively. Thirteen of 22 fish analyzed from stations

LB2, LB3, and LB4 contained total PCBs in fillet that were at or above 0.5 µg/g, and 4 of the fish tested contained total PCBs above 1.0 µg/g.

DISCUSSION

It is important to note that younger fish (/i.e. <1 to 1+ years) tended to predominate both stream systems (58 %). In Little Bayou Creek, no fish over 3 years old were collected. In Big Bayou Creek, PCBs were detected in 57% of the fish sampled. Aroclor 1248 was found in 17 of 56 fish. The highest total PCB concentrations (µg/g) were 0.45, 0.47, and 1.57 at stations BB4, BB6, and BB7, respectively.

Concerning Little Bayou Creek, Aroclor 1248 occurred in fillets for 11 of 22 fish (50%) and Aroclor 1260 was detected in 91% of fish analyzed. Highest total PCB concentrations (µg/g) were 1.23, 1.56, and 0.61 at stations LB2, LB3, and LB4, respectively.

In summary, total fillet PCB residues were detected in 33 of 56 fish taken from Big Bayou Creek and 13 of 22 fish from Little Bayou Creek that were above the lowest action level (/i.e. 0.05 µg/g) for the Commonwealth of Kentucky. The occurrence of Aroclor 1248 may indicate PCB contamination that has resulted during the past year. This is based on the shorter biological half-life in sunfish of the less chlorinated congeners found in this PCB mixture (/i.e. 1248). Of the 83 fish analyzed in this study, three from Big Bayou Creek and 13 from Little Bayou Creek contained total fillet PCBs in the range of 0.45 to 1.57 µg/g.

REFERENCES

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Table 1. PCB concentrations in fish from Massac Creek and Big Bayou Creek collected March 16-18, 2004.

Station	Date	Type	Length (mm)	Age (Years)	Whole Body Wt. (g)	Fillet Wt. (g)	mg fat /g tissue	Aroclor Conc. ($\mu\text{g/g}$)			
								1248	1254	1260	Total
MC	03/18/04	LS1	103	2+	26.875	3.756	6.47	<0.053	<0.053	<0.053	<0.053
MC	03/18/04	LS2	93	1+	19.887	2.564	8.00	<0.078	<0.078	<0.078	<0.078
MC	03/18/04	BG1	88	1+	14.678	2.020	7.45	<0.099	<0.099	<0.099	<0.099
MC	03/18/04	GS1	82	1+	10.333	1.544	6.83	<0.130	<0.130	<0.130	<0.130
MC	03/18/04	YBH1	178	---	76.930	5.564	6.37	<0.036	<0.036	<0.036	<0.036
BB1A	03/16/04	LS1	93	2+	14.354	2.079	6.85	<0.096	<0.096	<0.096	<0.096
BB1A	03/16/04	LS2	85	1+	14.551	2.367	10.54	<0.084	<0.084	<0.084	<0.084
BB1A	03/16/04	GS1	82	1+	11.433	1.919	15.06	<0.104	<0.104	<0.104	<0.104
BB1A	03/16/04	GS2	87	1+	11.761	1.484	9.91	<0.135	<0.135	<0.135	<0.135
BB1A	03/16/04	YBH1	176	---	76.640	5.703	4.92	<0.035	<0.035	<0.035	<0.035
BB1	03/16/04	LS1	83	1+	14.126	2.122	8.48	<0.094	<0.094	<0.094	<0.094
BB1	03/16/04	LS2	77	1+	9.002	0.987	9.12	0.283	<0.203	<0.203	0.283
BB1	03/16/04	GS1	172	2+	25.591	3.450	3.88	0.089	0.047	0.031	0.166
BB1	03/16/04	GS2	92	2	13.762	1.982	6.36	0.120	0.047*	0.045*	0.213
BB1	03/16/04	GS3	97	1+	13.301	1.959	5.41	<0.102	0.099	0.092	0.191
BB1	03/16/04	YBH1	88	---	8.110	0.380	5.13	<0.526	<0.526	<0.526	<0.526
BB2	03/17/04	GS1	91	2+	16.844	2.474	6.02	<0.081	<0.081	<0.081	<0.081
BB2	03/17/04	GS2	73	1+	7.141	1.141	5.35	<0.175	<0.175	<0.175	<0.175
BB2	03/17/04	GS3	70	>1	6.179	0.784	5.48	<0.255	<0.255	<0.255	<0.255
BB3	03/16/04	LS1	107	1+	29.413	4.045	5.61	0.116	0.053	0.045	0.214
BB3	03/16/04	LS2	96	1+	19.212	2.982	5.78	0.124	0.055	0.031*	0.210
BB3	03/16/04	LS3	91	1+	15.283	2.372	8.49	<0.084	0.116	0.070	0.187
BB3	03/16/04	LS4	80	2+	10.676	1.704	10.12	0.133	0.062*	0.090	0.285
BB3	03/16/04	LMB1	98	>1	11.137	1.612	3.23	<0.124	0.117	0.080	0.196
BB3	03/16/04	LMB2	87	>1	7.559	1.055	4.60	<0.190	0.227	0.164	0.391

Table 1, continued. PCB concentrations in fish from Massac Creek and Big Bayou Creek collected March 16-18, 2004.

Station	Date	Type	Length (mm)	Age (Years)	Whole Body Wt. (g)	Fillet Wt. (g)	mg fat /g tissue	Aroclor Conc. ($\mu\text{g/g}$)			
								1248	1254	1260	Total
BB4	03/17/04	LS1	119	1+	39.512	5.815	7.10	0.083	0.045	0.030	0.158
BB4	03/17/04	LS2	109	2	27.264	3.423	3.72	<0.058	0.066	0.050	0.116
BB4	03/17/04	LS3	102	1+	20.962	3.402	6.26	0.135	0.077	0.060	0.272
BB4	03/17/04	LS4	89	1+	15.038	2.377	6.79	<0.084	0.097	0.070	0.167
BB4	03/17/04	BG1	66	>1	4.910	0.844	7.88	<0.237	<0.237	<0.237	<0.237
BB4	03/17/04	YBH1	116	---	19.937	1.605	5.67	0.138	<0.125	0.056*	0.194
BB4	03/17/04	YBH2	100	---	12.904	0.796	5.84	0.248	<0.251	0.201	0.450
BB5	03/17/04	LS1	129	2+	4.903	6.525	4.44	<0.031	0.098	0.093	0.190
BB5	03/17/04	LS2	120	1+	36.053	5.268	5.25	0.076	0.049	0.037	0.162
BB5	03/17/04	BG1	173	3+	90.450	8.721	1.45	<0.023	0.025	0.027	0.051
BB5	03/17/04	BG2	166	3	93.490	10.090	1.37	0.018	<0.020	<0.020	0.018
BB5	03/17/04	BG3	162	3	85.820	9.188	1.43	<0.022	0.017	0.018	0.035
BB6	03/17/04	LS1	101	2	23.262	3.519	7.66	0.151	0.097	0.067	0.315
BB6	03/17/04	LS2	100	1+	16.950	2.160	3.89	0.190	0.101	0.107	0.398
BB6	03/17/04	LS3	83	1+	11.294	1.677	5.81	<0.119	0.098	0.091	0.190
BB6	03/17/04	GS1	105	1+	21.506	3.282	6.05	<0.061	0.117	0.144	0.261
BB6	03/17/04	GS2	112	1+	24.877	3.315	4.04	0.168	0.100	0.064	0.332
BB6	03/17/04	GS3	108	1+	22.626	3.338	6.88	0.126	0.061	0.072	0.260
BB6	03/17/04	GS4	90	1+	13.226	1.956	6.44	0.229	0.106	0.137	0.473
BB6	03/17/04	LMB1	102	1	11.266	1.800	4.72	<0.111	0.170	0.106	0.276
BB6	03/17/04	YBH1	98	---	7.601	0.479	4.38	<0.418	<0.418	0.332	0.332

* PCBs detected but below minimum quantitation limit (MQL).

Table 1, continued. PCB concentrations in fish from Massac Creek and Big Bayou Creek collected March 16-18, 2004.

Station	Date	Type	Length (mm)	Age (Years)	Whole Body Wt. (g)	Fillet Wt. (g)	mg fat /g tissue	Aroclor Conc. ($\mu\text{g/g}$)			
								1248	1254	1260	Total
BB7	03/18/04	LS1	128	2	40.416	4.621	2.92	<0.043	0.198	<0.043	0.198
BB7	03/18/04	LS2	103	1+	22.896	3.076	4.24	<0.065	0.086	0.097	0.183
BB7	03/18/04	LS3	100	2	21.454	2.943	6.10	<0.068	0.033*	<0.068	0.033
BB7	03/18/04	GS1	104	2	19.252	2.820	5.18	<0.071	0.035*	<0.071	0.035
BB7	03/18/04	GS2	80	1	7.048	0.851	7.11	<0.235	0.854	0.720	1.574
BB7	03/18/04	LMB1	67	>1	3.299	0.463	6.05	<0.432	<0.432	<0.432	<0.432
BB7	03/18/04	YBH1	128	---	27.203	1.788	3.80	<0.112	<0.112	<0.112	<0.112
BB8	03/18/04	LS1	114	1+	43.785	5.998	6.68	<0.033	<0.033	<0.033	<0.033
BB8	03/18/04	LS2	110	1+	39.721	4.255	10.25	<0.047	0.025*	0.032*	0.058
BB8	03/18/04	LS3	90	1+	16.065	2.645	16.71	<0.076	0.065	0.076	0.141
BB8	03/18/04	LS4	90	1+	15.195	1.598	5.10	<0.125	<0.125	<0.125	<0.125
BB8	03/18/04	BG1	97	1+	16.993	2.579	8.86	<0.078	<0.078	<0.078	<0.078
BB8	03/18/04	LMB1	80	>1	6.203	0.863	8.05	<0.232	<0.232	<0.232	<0.232
BB9	03/18/04	LS1	81	1+	12.704	1.652	7.60	<0.121	<0.121	<0.121	<0.121
BB9	03/18/04	BG1	78	1	9.953	1.405	8.43	<0.142	<0.142	<0.142	<0.142

* PCBs detected but below minimum quantitation limit (MQL).

Table 2. PCB concentrations in fish from Little Bayou Creek collected March 16-18, 2004.

Station	Date	Type	Length (mm)	Age (Years)	Whole Body Wt. (g)	Fillet Wt. (g)	mg fat /g tissue	Aroclor Conc. ($\mu\text{g/g}$)			
								1248	1254	1260	Total
LB2	03/17/04	LS1	112	2+	31.789	4.594	4.91	<0.087	0.234	0.449	0.684
LB2	03/17/04	LS2	112	2+	22.739	3.015	4.30	<0.133	0.164	0.165	0.330
LB2	03/17/04	LS3	96	1+	19.315	3.387	4.99	<0.118	0.312	0.279	0.591
LB2	03/17/04	GS1	92	1+	13.721	1.867	5.60	0.537	0.398	0.286	1.220
LB2	03/17/04	GS2	85	2+	14.614	2.008	4.98	<0.199	0.455	0.291	0.747
LB2	03/17/04	GS3	75	1+	9.057	1.071	5.60	0.700	<0.373	0.530	1.230
LB2	03/17/04	BG1	81	1+	10.512	1.663	8.15	<0.241	0.292	0.336	0.628
LB2	03/17/04	YBH1	143	---	33.261	2.634	3.51	<0.152	0.369	0.601	0.970
LB2	03/17/04	YBH2	161	---	54.247	4.400	3.52	0.278	0.262	0.422	0.962
LB2	03/17/04	YBH3	160	---	45.364	2.737	3.67	0.326	<0.146	0.157	0.483
LB3	03/17/04	LS1	97	1+	22.012	3.335	9.03	<0.060	0.247	0.185	0.432
LB3	03/17/04	LS2	70	1+	9.068	1.283	9.51	0.762	0.414	0.382	1.558
LB3	03/17/04	GS1	98	2+	18.218	2.484	4.79	<0.161	0.505	0.489	0.994
LB3	03/17/04	GS2	88	1+	13.647	1.845	10.89	0.384	0.196	0.260	0.840
LB3	03/17/04	GS3	79	1+	10.547	1.346	7.39	0.618	0.400	0.306	1.324
LB4	03/18/04	LS1	98	2+	22.414	3.262	12.25	0.188	0.328	0.092	0.607
LB4	03/18/04	LS2	93	1+	19.113	2.785	6.25	<0.072	0.122	0.097	0.218
LB4	03/18/04	LS3	97	2+	18.664	2.826	8.05	0.163	<0.071	<0.071	0.163
LB4	03/18/04	GS1	136	2+	55.247	7.220	1.91	0.105	0.048	0.045	0.199
LB4	03/18/04	GS2	106	2+	21.384	2.897	3.12	<0.069	<0.069	<0.069	<0.069
LB4	03/18/04	GS3	102	2+	26.234	4.268	8.88	0.211	0.120	0.086	0.417
LB4	03/18/04	YBH1	143	---	45.082	2.822	3.65	<0.071	0.080	0.061	0.141

Table 3. Means \pm standard deviations for measured parameters of fish from the Bayou Creek system, collected March 16-18, 2004.

System	Fish Type	Length (mm)	Whole Body Wt. (g)	Lipid (mg/g)	Mean Aroclor Conc. ($\mu\text{g/g}$)			
					1248	1254	1260	Total
MC	GS	133 \pm 7	43.40 \pm 6.29	2.91 \pm 0.16	N.D.	N.D.	N.D.	N.D.
MC	LS	98 \pm 7	23.38 \pm 4.94	7.23 \pm 1.08	N.D.	N.D.	N.D.	N.D.
MC	BG	88	14.68	7.45	N.D.	N.D.	N.D.	N.D.
MC	GS	82	10.33	6.83	N.D.	N.D.	N.D.	N.D.
MC	YBH	178	76.93	6.37	N.D.	N.D.	N.D.	N.D.
BB1A	LS	89 \pm 6	14.45 \pm 0.14	8.70 \pm 2.61	N.D.	N.D.	N.D.	N.D.
BB1A	GS	85 \pm 4	11.60 \pm 0.23	12.48 \pm 3.64	N.D.	N.D.	N.D.	N.D.
BB1A	YBH	176	76.64	4.92	N.D.	N.D.	N.D.	N.D.
BB1	LS	80 \pm 4	11.56 \pm 3.62	8.80 \pm 0.45	0.283	N.D.	N.D.	0.283
BB1	GS	120 \pm 45	17.55 \pm 7.00	5.22 \pm 1.25	0.104 \pm 0.022	0.064 \pm 0.030	0.056 \pm 0.032	0.190 \pm 0.024
BB1	YBH	88	8.11	5.13	N.D.	N.D.	N.D.	N.D.
BB2	GS	78 \pm 11	10.06 \pm 5.90	5.62 \pm 0.36	N.D.	N.D.	N.D.	N.D.
BB3	LS	94 \pm 11	18.65 \pm 7.98	7.50 \pm 2.19	0.124 \pm 0.009	0.072 \pm 0.030	0.059 \pm 0.026	0.224 \pm 0.043
BB3	LMB	93 \pm 8	9.35 \pm 2.53	3.91 \pm 0.97	N.D.	0.172 \pm 0.078	0.122 \pm 0.060	0.294 \pm 0.138
BB4	LS	105 \pm 13	25.69 \pm 10.48	5.97 \pm 1.54	0.109 \pm 0.037	0.071 \pm 0.022	0.052 \pm 0.017	0.178 \pm 0.066
BB4	BG	66	4.91	7.88	N.D.	N.D.	N.D.	N.D.
BB4	YBH	108 \pm 11	16.42 \pm 4.97	5.76 \pm 0.12	0.193 \pm 0.078	N.D.	0.129 \pm 0.103	0.322 \pm 0.181

Table 3, continued. Means \pm standard deviations for measured parameters of fish from the Bayou Creek system, collected March 16-18, 2004.

System	Fish Type	Length (mm)	Whole Body Wt. (g)	Lipid (mg/g)	Mean Aroclor Conc. ($\mu\text{g/g}$)			
					1248	1254	1260	Total
BB5	LS	125 \pm 6	20.48 \pm 22.03	4.85 \pm 0.57	0.076	0.073 \pm 0.034	0.065 \pm 0.040	0.176 \pm 0.020
BB5	BG	167 \pm 6	89.92 \pm 3.86	1.42 \pm 0.04	0.018	0.021 \pm 0.006	0.022 \pm 0.006	0.035 \pm 0.017
BB6	LS	95 \pm 10	17.17 \pm 5.99	5.79 \pm 1.88	0.171 \pm 0.028	0.099 \pm 0.002	0.089 \pm 0.020	0.301 \pm 0.105
BB6	GS	104 \pm 10	20.56 \pm 5.09	5.85 \pm 1.25	0.175 \pm 0.052	0.096 \pm 0.024	0.104 \pm 0.042	0.331 \pm 0.100
BB6	LMB	102	11.27	4.72	N.D.	0.170	0.106	0.276
BB6	YBH	98	7.60	4.38	N.D.	N.D.	0.332	0.332
BB7	LS	110 \pm 15	28.26 \pm 10.56	4.42 \pm 1.60	N.D.	0.106 \pm 0.084	0.097	0.138 \pm 0.092
BB7	GS	92 \pm 17	13.15 \pm 8.63	6.14 \pm 1.37	N.D.	0.445 \pm 0.579	0.720	0.805 \pm 1.088
BB7	LMB	67	3.30	6.05	N.D.	N.D.	N.D.	N.D.
BB7	YBH	128	27.20	3.80	N.D.	N.D.	N.D.	N.D.
BB8	LS	101 \pm 13	28.69 \pm 15.18	9.68 \pm 5.16	N.D.	0.045 \pm 0.028	0.054 \pm 0.031	0.099 \pm 0.059
BB8	BG	97	16.99	8.86	N.D.	N.D.	N.D.	N.D.
BB8	LMB	80	6.20	8.05	N.D.	N.D.	N.D.	N.D.
BB9	LS	81	12.70	7.60	N.D.	N.D.	N.D.	N.D.
BB9	BG	78	9.95	8.43	N.D.	N.D.	N.D.	N.D.

Table 3, continued. Means \pm standard deviations for measured parameters of fish from the Bayou Creek system, collected March 16-18, 2004.

System	Fish Type	Length (mm)	Whole Body Wt. (g)	Lipid (mg/g)	Mean Aroclor Conc. ($\mu\text{g/g}$)			
					1248	1254	1260	Total
LB2	LS	107 \pm 9	24.61 \pm 6.45	4.73 \pm 0.38	N.D.	0.237 \pm 0.074	0.298 \pm 0.143	0.535 \pm 0.184
LB2	GS	84 \pm 9	12.46 \pm 2.98	5.39 \pm 0.36	0.618 \pm 0.115	0.427 \pm 0.041	0.369 \pm 0.140	1.066 \pm 0.276
LB2	BG	81	10.51	8.15	N.D.	0.292	0.336	0.628
LB2	YBH	155 \pm 10	44.29 \pm 10.53	3.57 \pm 0.09	0.302 \pm 0.034	0.315 \pm 0.076	0.393 \pm 0.223	0.805 \pm 0.279
LB3	LS	84 \pm 19	15.54 \pm 9.15	9.27 \pm 0.34	0.762	0.330 \pm 0.118	0.284 \pm 0.139	0.995 \pm 0.796
LB3	GS	88 \pm 10	14.14 \pm 3.86	7.69 \pm 3.06	0.501 \pm 0.166	0.367 \pm 0.157	0.352 \pm 0.121	1.053 \pm 0.247
LB4	LS	96 \pm 3	20.06 \pm 2.05	8.85 \pm 3.08	0.175 \pm 0.018	0.225 \pm 0.146	0.094 \pm 0.004	0.329 \pm 0.242
LB4	GS	115 \pm 19	34.29 \pm 18.31	4.64 \pm 3.72	0.158 \pm 0.075	0.084 \pm 0.051	0.066 \pm 0.029	0.308 \pm 0.155
LB4	YBH	143	45.08	3.65	N.D.	0.080	0.061	0.141

Figure 1. Mean PCB concentrations in longear sunfish from Big Bayou Creek, collected March 16-18, 2004.

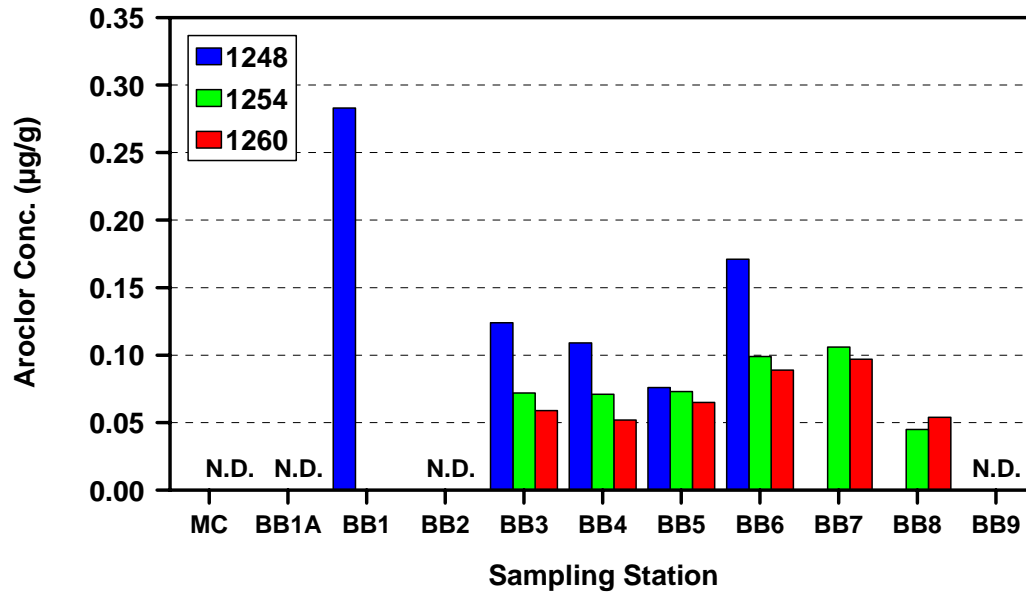


Figure 2. Mean total PCB concentrations in longear sunfish from Big Bayou Creek, collected March 16-18, 2004.

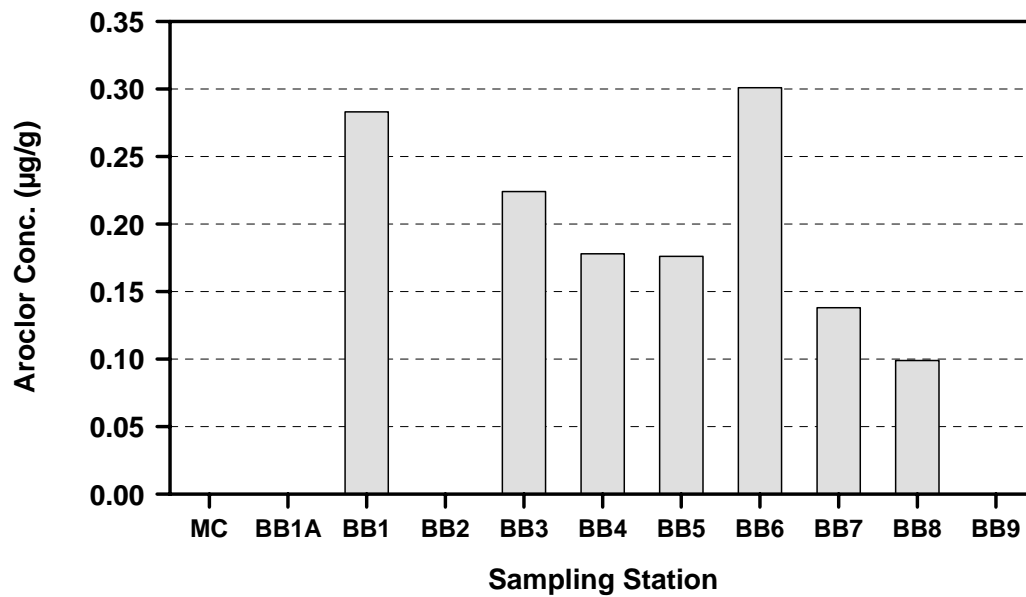


Figure 3. PCB concentrations in green sunfish from Big Bayou Creek, collected March 16-18, 2004.

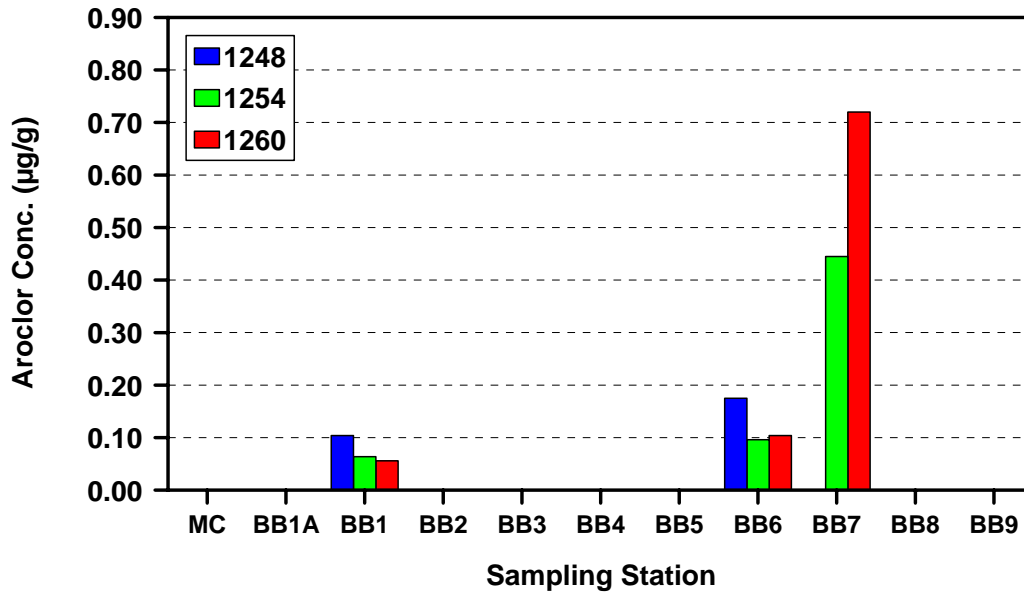


Figure 4. Mean total PCB concentrations in green sunfish from Big Bayou Creek, collected March 16-18, 2004.

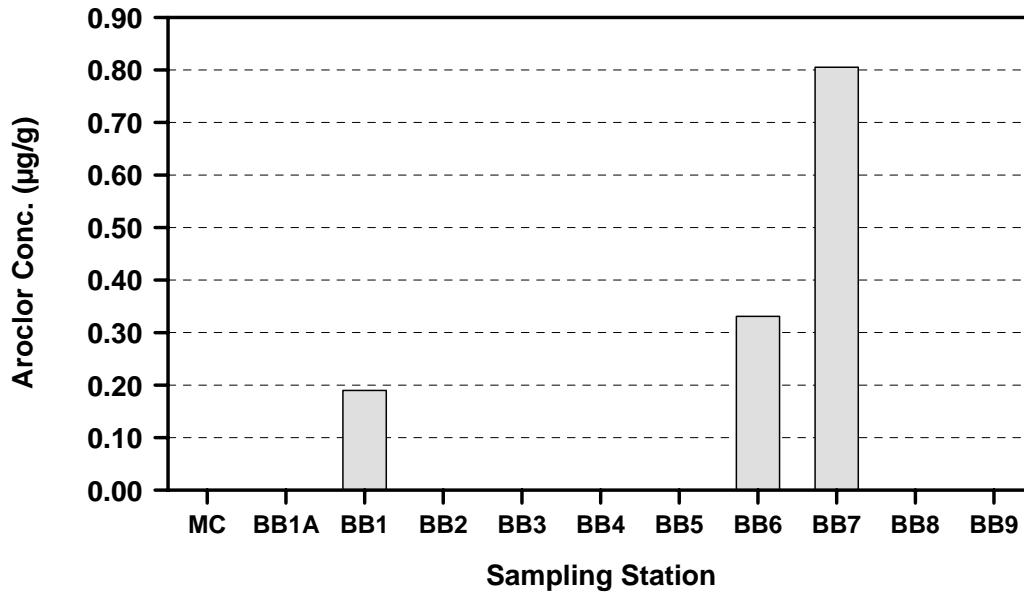


Figure 5. Mean PCB concentrations in longear sunfish from Little Bayou Creek, collected March 16-18, 2004.

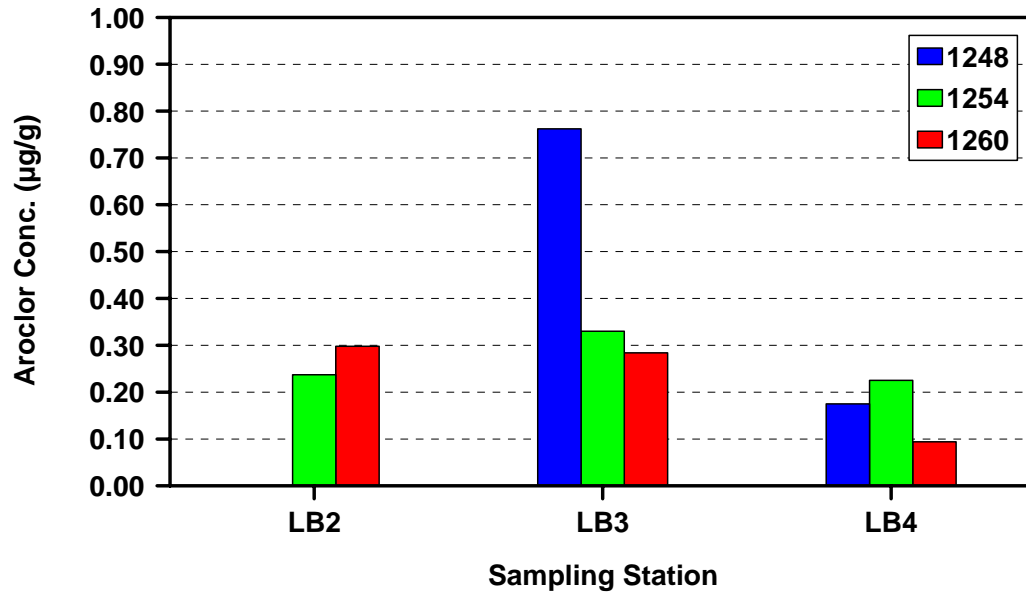


Figure 6. Mean total PCB concentrations in longear sunfish from Little Bayou Creek, collected March 16-18, 2004.

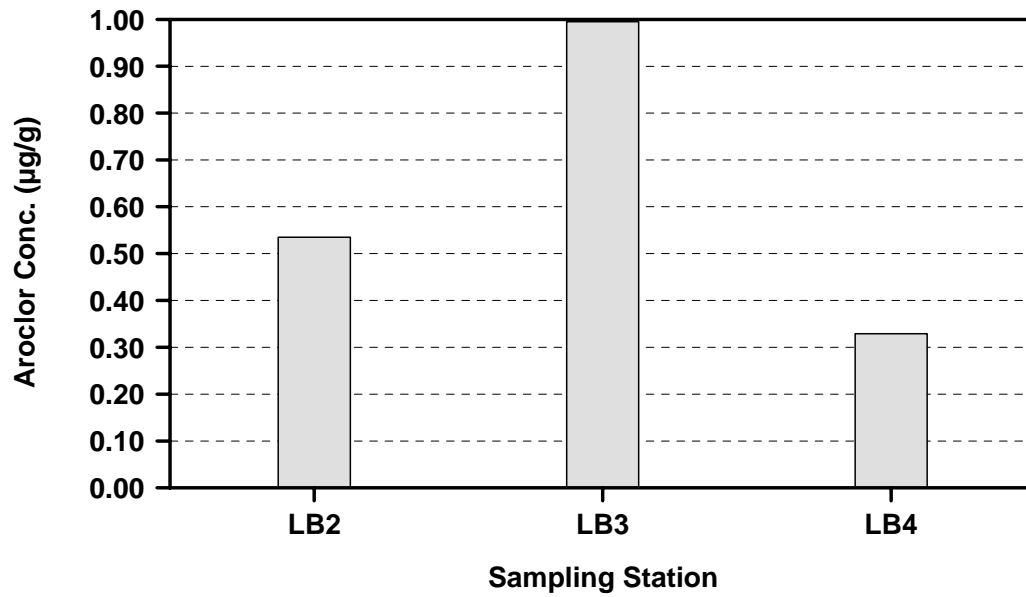


Figure 7. PCB concentrations in green sunfish from Little Bayou Creek, collected March 16-18, 2004.

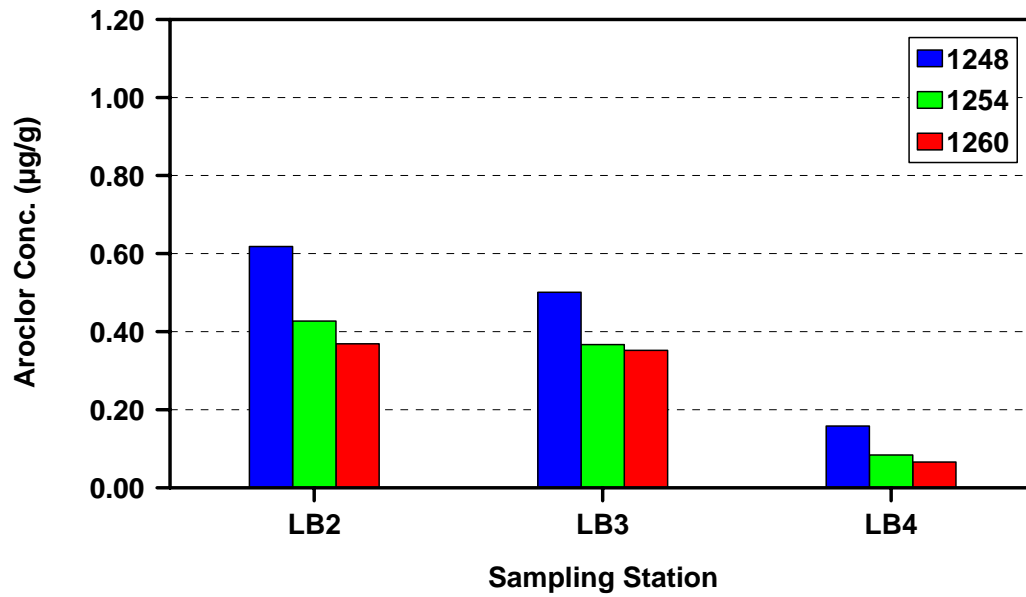


Figure 8. Mean total PCB concentrations in green sunfish from Little Bayou Creek, collected March 16-18, 2004.

