

**Analysis of Polychlorinated Biphenyl (PCB) Residues
in Fish Collected June 4-5, 2002
from the Bayou Creek System**

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FINAL REPORT

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INTRODUCTION

Fish were collected from Big and Little Bayou Creeks on June 4-5, 2002. The new reference station, upstream of BB1 and designated BB1A, and Massac Creek (MC) were sampled. Fillet samples were analyzed for Aroclors 1248, 1254, and 1260 for all fish collected. A total of 94 fish were analyzed from Big and Little Bayou Creeks and the reference station. This included 2 fish from Massac Creek, 64 fish from Big Bayou Creek and 28 fish from Little Bayou Creek. The fish from Big Bayou Creek consisted of 20 longear sunfish (*Lepomis megalotis*) (LS), 9 bluegills (*Lepomis macrochirus*) (BG), 21 green sunfish (*Lepomis cyanellus*) (GS), 1 spotted bass (*Micropterus punctulatus*) (SpB), 2 white suckers (*Catostomus commersoni*) (WS), and 11 yellow bullhead catfish (*Ictalurus natalis*) (YBH). From Little Bayou Creek, the fish consisted of 8 LS, 13 GS, 5 YBH, and 2 creek chubs (*Semotilus atromaculatus*) (CC).

METHODS

Fish collection

Fish were collected by use of back-pack shocker and seining. In addition, runs and pools were collected using a new shocking system mounted on a small barge. This unit has three to four times the wattage of the back-pack unit. Collections were conducted by UK personnel. 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. Chain of Custody was maintained for all samples collected.

RESULTS

A total of 94 fish were analyzed during this survey, which included 2 GS from Massac Creek; 20 LS, 9 BG, 21 GS, 1 SpB, 2 WS, and 11 YBH from Big Bayou Creek; and 8 LS, 13 GS, 5 YBH, and 2 CC from Little Bayou Creek (Tables 1 and 2, respectively). As we have observed in past collections, fish were relatively young. The 47 % of fish (30 out of 64 fish) in Big Bayou Creek were 2 to 2+ years old, and 13 fish (20 %) were 3 to 4 years old. The same trend was observed in Little Bayou Creek, where 10 of 28 fish (36 %) were 1 to 1+ year old; 10 fish were 2 to 2+ years old; and 1 fish was 3 years old. The means \pm standard deviations for length, whole body weight, lipid, and Aroclor concentrations are given in Table 3. Mean lengths for sunfish from Big Bayou Creek were 108, 126, 112 and 171 mm for LS, BG, GS, and YBH, respectively. In Little Bayou Creek, the mean sunfish lengths were 93, 95 and 165 mm for LS, GS, and YBH, respectively (Tables 1 and 3).

In Big Bayou Creek, Aroclor 1248 was quantifiable in 11 of 64 fish collected (17%), Aroclor 1254 was found in 33 out of 64 fish (52%), and Aroclor 1260 was quantifiable in 22 out of 64 fish (34%) (Table 1). A bluegill at station BB3 had the highest concentrations of Aroclor 1248 (0.42 $\mu\text{g/g}$), and Aroclor 1254 (0.35 $\mu\text{g/g}$). The value for total PCB in this specimen was 0.91 $\mu\text{g/g}$. Mean concentrations of Aroclor for selected species from Big Bayou Creek are represented graphically in Figures 1 and 2. Figure 3 compares mean Aroclor 1254 and 1260 in green sunfish with sediment concentrations. Trends observed in tissues correspond to levels found in sediments. A correlation of 0.77 was

obtained when comparing Aroclor 1254 in green sunfish tissues and sediments in the effluent receiving zone of BB4 through BB7.

Concerning Little Bayou Creek, stations LB2 and LB4 were most impacted (Tables 2 and 3; Figures 4 - 6). Of the fish collected from Little Bayou Creek, Aroclor 1248 was quantifiable in 14 of 28 fish (50 %); Aroclor 1254 was found in 17 of 28 fish (61%); and 11 of 28 specimens contained Aroclor 1260 (39 %) (Table 2). The highest total PCB was detected in a yellow bullhead from LB2 (1.71 $\mu\text{g/g}$). This included 0.87, 0.51, 0.33 $\mu\text{g/g}$ for Aroclors 1248, 1254, and 1260, respectively. A longear sunfish and yellow bullhead from LB3 contained total PCB levels above 1.00 $\mu\text{g/g}$ (1.02 and 1.07; Table 2). PCBs were detected in sediments from LB2A at concentrations of 26.23 and 28.80 $\mu\text{g/Kg}$ for 1254 and 1260, respectively. Sediment levels for combined effluent 010 and 011 were 6.31 and 6.00 $\mu\text{g/Kg}$ for Aroclors 1254 and 1260, respectively. The results indicate that PCBs are still present in these upstream sources.

Table 1. PCB concentrations in fish from Massac Creek and Big Bayou Creek collected June 4-5, 2002.

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	06/04/02	GS1	130	3	53.01	8.00	2.63	<0.025	<0.025	<0.025	<0.025
MC	06/04/02	GS2	100	2	20.25	2.67	3.32	<0.075	<0.075	<0.075	<0.075
BB1A	06/04/02	LS1	100	2+	23.32	2.96	4.79	<0.068	<0.068	<0.068	<0.068
BB1A	06/04/02	LS2	96	2+	19.05	2.38	7.55	<0.084	<0.084	<0.084	<0.084
BB1A	06/04/02	YBH1	164	---	72.47	7.36	3.23	<0.027	<0.027	<0.027	<0.027
BB1	06/04/02	GS1	149	3+	96.84	14.03	3.31	<0.014	<0.014	<0.014	<0.014
BB1	06/04/02	GS2	138	3	70.76	12.26	3.35	<0.016	0.055	0.034	0.088
BB1	06/04/02	GS3	147	2	69.80	12.85	8.17	<0.016	0.057	0.031	0.088
BB1	06/05/02	YBH1	168	---	68.34	6.56	6.21	<0.030	0.073	0.020*	0.093
BB1	06/05/02	YBH2	107	---	15.40	1.35	3.19	<0.149	<0.149	<0.149	<0.149
BB2	06/05/02	GS1	129	3	46.97	6.65	2.98	<0.030	<0.030	<0.030	<0.030
BB2	06/05/02	GS2	125	2+	43.26	5.35	3.13	<0.037	<0.037	<0.037	<0.037
BB2	06/05/02	GS3	103	2+	22.26	2.77	5.79	<0.072	<0.072	<0.072	<0.072
BB2	06/05/02	GS4	84	2	13.39	1.72	6.06	<0.117	<0.117	<0.117	<0.117
BB2	06/05/02	WS1	123	---	26.88	2.85	3.87	<0.070	<0.070	<0.070	<0.070
BB2	06/05/02	WS2	96	---	12.08	1.35	3.74	<0.148	<0.148	<0.148	<0.148
BB3	06/04/02	GS1	100	2	20.97	3.07	4.82	<0.065	<0.065	<0.065	<0.065
BB3	06/04/02	GS2	82	1+	9.87	1.28	5.46	<0.156	<0.156	<0.156	<0.156
BB3	06/04/02	LS1	110	2	30.04	4.77	5.12	0.117	0.070	0.026*	0.212
BB3	06/04/02	LS2	97	2+	22.10	2.70	4.56	<0.074	<0.074	<0.074	<0.074
BB3	06/04/02	LS3	91	1	14.87	2.13	4.85	<0.094	<0.094	<0.094	<0.094
BB3	06/04/02	BG1	82	1+	8.60	1.28	5.60	0.422	0.352	0.133	0.907

* PCBs detected, however the value was below Minimum Quantitation Limit (MQL) and not used in calculations.

Table 1, Continued. PCB concentrations in fish from Massac Creek and Big Bayou Creek collected June 4-5, 2002.

Station	Date	Type	Length (mm)	Age (Years)	Whole Body Wt. (g)	Fillet Wt. (g)	mg fat /g tissue	Aroclor Conc. (µg/g)			
								1248	1254	1260	Total
BB4	06/04/02	GS1E	113	2	29.60	3.66	7.90	<0.055	<0.055	<0.055	<0.055
BB4	06/04/02	LS1	125	2+	50.57	7.74	11.84	<0.026	0.116	0.043	0.159
BB4	06/04/02	LS2	120	2+	44.07	6.46	6.24	<0.031	0.084	0.033	0.116
BB4	06/04/02	LS3	101	2+	30.77	4.53	3.39	<0.044	0.094	0.031*	0.125
BB4	06/04/02	LS1E	138	2+	71.20	9.44	5.72	0.033	0.031	0.027	0.091
BB4	06/04/02	LS2E	117	2	52.60	7.78	3.54	0.056	0.032	0.022	0.110
BB4	06/04/02	LS3E	114	2	40.60	5.77	3.70	0.055	0.035	<0.035	0.090
BB4	06/04/02	LS4E	113	2	34.20	4.54	5.72	0.072	0.041	0.029	0.142
BB4	06/04/02	LS5E	102	1+	33.90	4.19	3.45	0.066	0.038	0.027*	0.131
BB5	06/04/02	GS1	124	3	40.46	6.57	4.55	<0.030	<0.030	<0.030	<0.030
BB5	06/04/02	GS2	113	3	33.83	4.59	2.98	<0.044	<0.044	<0.044	<0.044
BB5	06/04/02	GS3	103	3	27.24	3.97	3.90	<0.050	<0.050	<0.050	<0.050
BB5	06/04/02	GS4	98	2+	32.59	5.03	3.63	0.109	0.070	0.021*	0.200
BB5	06/04/02	BG4	129	3	45.83	7.57	4.85	<0.026	<0.026	<0.026	<0.026
BB5	06/04/02	BG1	163	4	112.24	17.44	6.36	<0.011	0.032	0.012	0.044
BB5	06/04/02	BG2	140	3+	70.75	9.12	3.45	<0.022	<0.022	<0.022	<0.022
BB5	06/04/02	BG3	142	2+	55.11	8.48	4.38	<0.024	<0.024	<0.024	<0.024
BB5	06/04/02	LS1E	101	1	28.30	3.68	6.92	<0.054	0.042	0.030*	0.072
BB5	06/04/02	LS2E	79	>1	10.90	1.37	4.66	<0.146	<0.146	<0.146	<0.146
BB6	06/05/02	GS1	123	2+	42.48	7.32	4.65	0.079	0.050	0.012*	0.141
BB6	06/05/02	GS2	119	2	30.32	4.90	3.55	0.138	0.084	0.034*	0.256
BB6	06/05/02	YBH1	207	---	151.50	16.08	1.47	<0.012	0.200	0.338	0.538
BB6	06/05/02	YBH2	190	---	96.29	11.50	2.18	<0.017	0.072	0.055	0.127

* PCBs detected, however the value was below Minimum Quantitation Limit (MQL) and not used in calculations.

Table 1, Continued. PCB concentrations in fish from Massac Creek and Big Bayou Creek collected June 4-5, 2002.

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	06/05/02	GS1	113	2+	32.60	4.93	5.48	<0.041	0.065	0.015*	0.080
BB7	06/05/02	GS2	126	2	44.32	6.19	7.82	<0.032	0.081	0.040	0.121
BB7	06/05/02	GS3	89	3	15.24	2.30	6.87	<0.087	0.141	0.047	0.187
BB7	06/05/02	GS4	86	3	15.14	1.73	4.54	<0.116	<0.116	<0.116	<0.116
BB7	06/05/02	LS1	105	4	25.29	3.53	4.54	<0.057	<0.057	<0.057	<0.057
BB7	06/05/02	LS1E	138	2	68.00	8.62	4.15	<0.023	0.084	0.036	0.120
BB7	06/05/02	SpB1E	185	1	117.00	16.97	6.67	<0.012	0.118	0.083	0.201
BB7	06/05/02	YBH1	209	---	133.09	12.36	2.21	<0.016	0.080	0.061	0.141
BB7	06/05/02	YBH2	143	---	56.01	4.93	3.51	<0.041	0.106	0.066	0.173
BB8	06/05/02	GS1	87	2+	12.94	1.70	6.39	<0.118	0.297	0.139	0.436
BB8	06/05/02	BG1	85	1	12.97	1.74	8.96	<0.115	0.150	0.062*	0.212
BB8	06/05/02	YBH1	177	---	7.84	8.41	1.97	<0.024	0.021*	0.016*	0.036
BB8	06/05/02	YBH2	203	---	135.54	14.01	5.64	<0.014	0.057	0.044	0.102
BB9	06/05/02	BG1	135	2	66.56	9.16	6.43	<0.022	0.163	0.040	0.203
BB9	06/05/02	BG2	98	2	19.76	2.61	6.43	<0.077	<0.077	<0.077	<0.077
BB9	06/05/02	BG3	159	3+	123.85	17.47	15.57	0.037	0.030	0.009*	0.076
BB9	06/05/02	LS1	93	2	24.08	3.57	13.07	<0.056	0.026*	<0.056	0.026*
BB9	06/05/02	LS2	100	2	24.45	2.41	14.27	<0.083	<0.083	<0.083	<0.083
BB9	06/05/02	LS3	120	2+	48.88	6.15	7.74	<0.033	0.027*	0.010*	0.038
BB9	06/05/02	YBH1	106	---	16.70	1.22	7.88	<0.164	<0.164	<0.164	<0.164
BB9	06/05/02	YBH2	210	---	163.51	14.02	6.07	<0.014	0.042	0.028	0.071

* PCBs detected, however the value was below Minimum Quantitation Limit (MQL) and not used in calculations.

Table 2. PCB concentrations in fish from Little Bayou Creek collected June 4-5, 2002.

Station	Date	Type	Length (mm)	Age (Years)	Whole Body Wt. (g)	Fillet Wt. (g)	mg fat /g tissue	Aroclor Conc. (µg/g)			
								1248	1254	1260	Total
LB2	06/04/02	GS1	89	2+	12.42	1.50	3.13	<0.133	0.315	0.098*	0.413
LB2	06/04/02	GS2	72	1+	7.33	1.09	3.40	<0.184	<0.184	<0.184	<0.184
LB2	06/04/02	GS3	100	3	15.48	2.14	3.47	0.205	0.117	0.071*	0.394
LB2	06/04/02	GS4	76	1+	9.82	1.26	4.24	<0.158	<0.158	<0.158	<0.158
LB2	06/04/02	GS1E	93	2	19.70	2.38	5.24	<0.084	<0.084	<0.084	<0.084
LB2	06/04/02	LS1	68	1	8.30	1.25	4.73	0.281	0.108*	0.069*	0.458
LB2	06/04/02	YBH1	218	---	194.07	21.10	3.55	0.873	0.508	0.331	1.713
LB3	06/04/02	GS1	86	2+	14.15	1.28	3.48	<0.157	<0.157	<0.157	<0.157
LB3	06/04/02	GS2	80	1	8.92	0.81	3.26	0.198*	0.133*	0.064*	0.395
LB3	06/04/02	GS1E	107	2	19.60	1.95	3.61	0.240	0.211	0.056*	0.507
LB3	06/04/02	LS1	85	2	11.59	1.58	5.54	0.659	0.247	0.109	1.015
LB3	06/04/02	LS2	91	2	13.11	1.80	5.30	<0.111	<0.111	<0.111	<0.111
LB3	06/04/02	LS1E	100	1+	24.30	3.01	4.75	0.288	0.198	0.094	0.580
LB3	06/04/02	LS2E	104	1+	23.80	2.77	3.25	0.153	0.137	0.066	0.356
LB3	06/04/02	LS3E	105	1+	27.80	3.36	6.22	<0.059	0.260	0.115	0.375
LB3	06/04/02	LS4E	102	1+	23.20	2.88	3.22	0.228	0.188	0.049	0.465
LB3	06/04/02	LS5E	86	1	15.80	1.95	3.38	0.399	0.324	0.089	0.812
LB3	06/04/02	CC1E	125	---	23.00	2.50	16.58	0.220	0.187	0.048*	0.455
LB3	06/04/02	CC2E	110	---	16.60	1.83	19.96	0.320	0.264	0.077	0.662
LB3	06/04/02	YBH1	198	---	123.46	12.19	2.54	0.665	0.739	0.468	1.872
LB3	06/04/02	YBH2	160	---	79.53	6.87	2.64	0.167	0.276	0.101	0.545

* PCBs detected, however the value was below Minimum Quantitation Limit (MQL) and not used in calculations.

Table 2, continued. PCB concentrations in fish from Little Bayou Creek collected June 4-5, 2002.

Station	Date	Type	Length (mm)	Age (Years)	Whole Body Wt. (g)	Fillet Wt. (g)	mg fat /g tissue	Aroclor Conc. (µg/g)			
								1248	1254	1260	Total
LB4	06/04/02	GS1	105	2	23.89	3.70	3.67	<0.054	<0.054	<0.054	<0.054
LB4	06/04/02	GS2	90	2	13.98	1.61	3.23	<0.124	<0.124	<0.124	<0.124
LB4	06/04/02	GS3	100	2+	20.67	2.35	2.58	<0.085	<0.085	<0.085	<0.085
LB4	06/04/02	GS4	93	2+	15.57	2.09	4.27	<0.096	0.211	0.101	0.312
LB4	06/04/02	GS1E	96	1+	22.10	2.29	3.61	<0.088	<0.088	<0.088	<0.088
LB4	06/04/02	YBH1	140	---	46.24	4.51	1.87	<0.044	0.078	0.033*	0.110
LB4	06/04/02	YBH2	111	---	18.50	1.60	3.35	0.351	0.225	0.080*	0.656

* PCBs detected, however the value was below Minimum Quantitation Limit (MQL) and not used in calculations.

Table 3. Means \pm standard deviations for measured parameters of fish from the Bayou Creek system, collected June 4-5, 2002.

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	115 \pm 21	36.63 \pm 23.16	2.97 \pm 0.49	N.D.	N.D.	N.D.	N.D.
BB1A	LS	98 \pm 3	21.19 \pm 3.02	6.17 \pm 1.95	N.D.	N.D.	N.D.	N.D.
	YBH	164	72.47	3.23	N.D.	N.D.	N.D.	N.D.
BB1	GS	145 \pm 6	79.13 \pm 15.34	4.94 \pm 2.79	N.D.	0.06 \pm 0.002	0.02 \pm 0.01	0.06 \pm 0.05
	YBH	138 \pm 43	41.87 \pm 37.43	4.70 \pm 2.13	N.D.	0.07	0.02	0.09
BB2	GS	110 \pm 21	31.47 \pm 16.24	4.49 \pm 1.66	N.D.	N.D.	N.D.	N.D.
	WS	110 \pm 19	19.48 \pm 10.46	3.80 \pm 0.09	N.D.	N.D.	N.D.	N.D.
BB3	GS	91 \pm 13	15.42 \pm 7.85	5.14 \pm 0.45	N.D.	N.D.	N.D.	N.D.
	LS	99 \pm 10	22.33 \pm 7.59	4.84 \pm 0.28	0.12	0.07	0.03	0.21
	BG	82	8.60	5.60	0.42	0.35	0.13	0.91
BB4	LS	115 \pm 13	41.80 \pm 10.09	7.16 \pm 4.30	N.D.	0.10 \pm 0.02	0.04 \pm 0.01	0.13 \pm 0.02
BB5	GS	110 \pm 12	33.53 \pm 5.43	3.77 \pm 0.65	0.11	0.07	0.02	0.20
	BG	144 \pm 14	70.98 \pm 29.37	4.76 \pm 1.22	N.D.	0.03	0.01	0.04
BB6	GS	121 \pm 3	36.40 \pm 8.60	4.10 \pm 0.78	0.11 \pm 0.04	0.07 \pm 0.02	0.02 \pm 0.02	0.20 \pm 0.08
	YBH	199 \pm 12	123.90 \pm 39.04	1.82 \pm 0.50	N.D.	0.14 \pm 0.09	0.20 \pm 0.20	0.33 \pm 0.29

Table 3, continued. Means \pm standard deviations for measured parameters of fish from the Bayou Creek system, collected June 4-5, 2002.

System	Fish Type	Length (mm)	Whole Body Wt. (g)	Lipid (mg/g)	Mean Aroclor Conc. ($\mu\text{g/g}$)			
					1248	1254	1260	Total
BB7	GS	104 \pm 19	26.83 \pm 14.26	6.18 \pm 1.45	N.D.	0.10 \pm 0.04	0.03 \pm 0.02	0.13 \pm 0.05
	LS	105	25.29	4.54	N.D.	N.D.	N.D.	N.D.
	YBH	176 \pm 47	94.55 \pm 54.51	2.86 \pm 0.92	N.D.	0.09 \pm 0.02	0.06 \pm 0.004	0.16 \pm 0.02
BB8	GS	87	12.94	6.39	N.D.	0.30	0.14	0.44
	BG	85	12.97	8.96	N.D.	0.15	0.06	0.21
	YBH	190 \pm 18	71.69 \pm 90.30	3.80 \pm 2.60	N.D.	0.04 \pm 0.03	0.03 \pm 0.02	0.07 \pm 0.05
BB9	BG	131 \pm 31	70.06 \pm 52.13	9.48 \pm 5.28	0.04	0.10 \pm 0.09	0.02 \pm 0.02	0.14 \pm 0.09
	LS	104 \pm 14	32.47 \pm 14.21	11.69 \pm 3.48	N.D.	0.03 \pm 0.001	0.01	0.03 \pm 0.01
LB2	GS	84 \pm 13	11.26 \pm 3.50	3.56 \pm 0.47	0.21	0.22 \pm 0.14	0.08 \pm 0.02	0.40 \pm 0.01
	LS	68	8.30	4.73	0.28	0.11	0.07	0.46
	YBH	178 \pm 62	124.76 \pm 94.82	5.83 \pm 2.17	0.87	0.28 \pm 0.33	0.18 \pm 0.21	0.89 \pm 1.16
LB3	GS	83 \pm 4	11.54 \pm 3.70	3.37 \pm 0.16	0.20	0.13	0.06	0.40
	LS	88 \pm 4	12.35 \pm 1.08	5.42 \pm 0.17	0.66	0.25	0.11	1.02
	YBH	179 \pm 27	101.50 \pm 31.06	2.59 \pm 0.07	0.42 \pm 0.35	0.51 \pm 0.33	0.28 \pm 0.26	1.21 \pm 0.94
LB4	GS	97 \pm 7	18.53 \pm 4.57	3.44 \pm 0.71	N.D.	0.21	0.10	0.31
	YBH	126 \pm 21	32.37 \pm 19.62	2.61 \pm 1.04	0.35	0.15 \pm 0.10	0.06 \pm 0.03	0.38 \pm 0.39

Figure 1. Mean PCB concentrations in green sunfish from Big Bayou Creek, collected June 4-5, 2002.

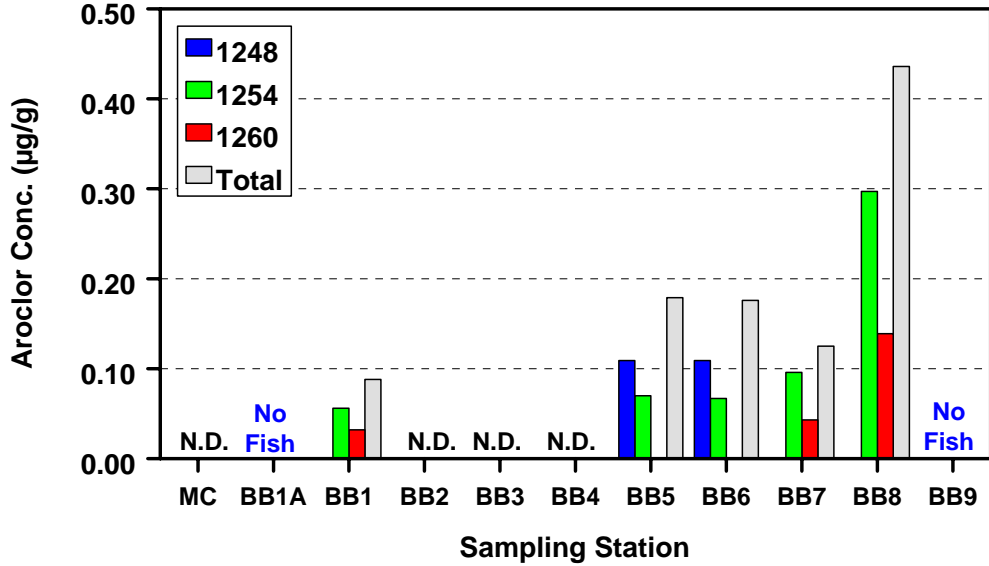


Figure 2. Mean PCB concentrations in longear sunfish from Big Bayou Creek, collected June 4-5, 2002.

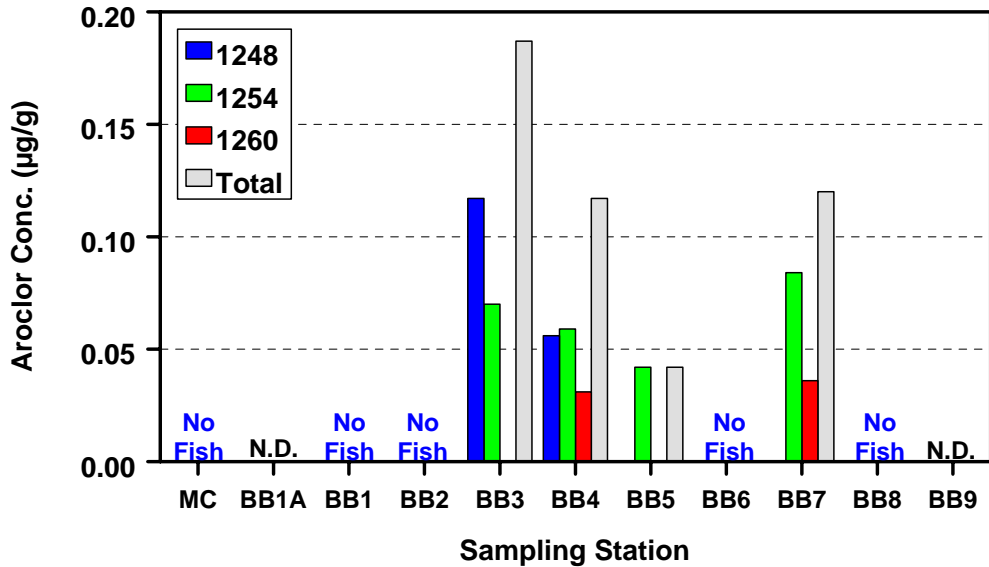


Figure 3. Mean PCB concentrations in green sunfish and sediments from Big Bayou Creek, collected June 4-5, 2002.

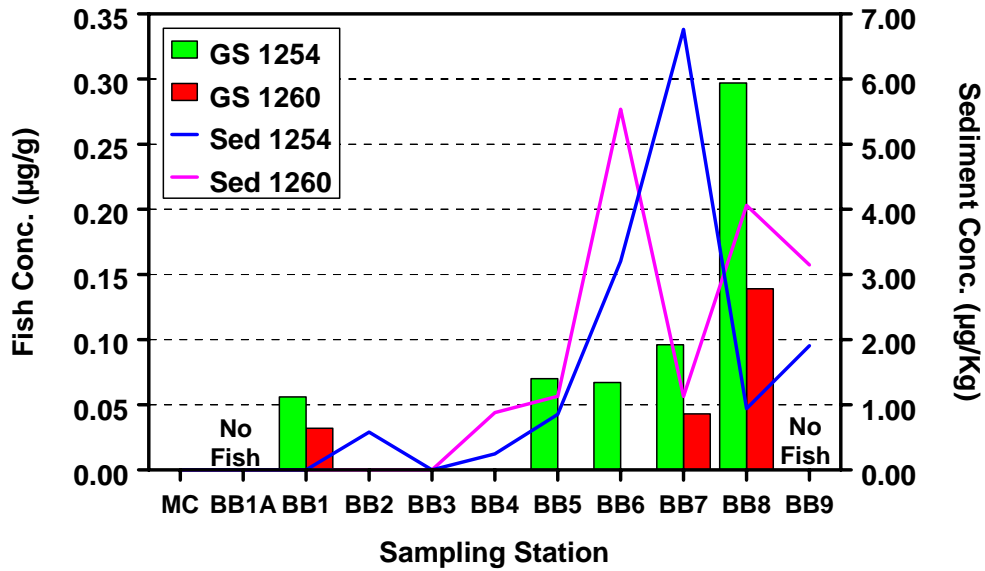


Figure 4. Mean PCB concentrations in green sunfish from Little Bayou Creek, collected June 4-5, 2002.

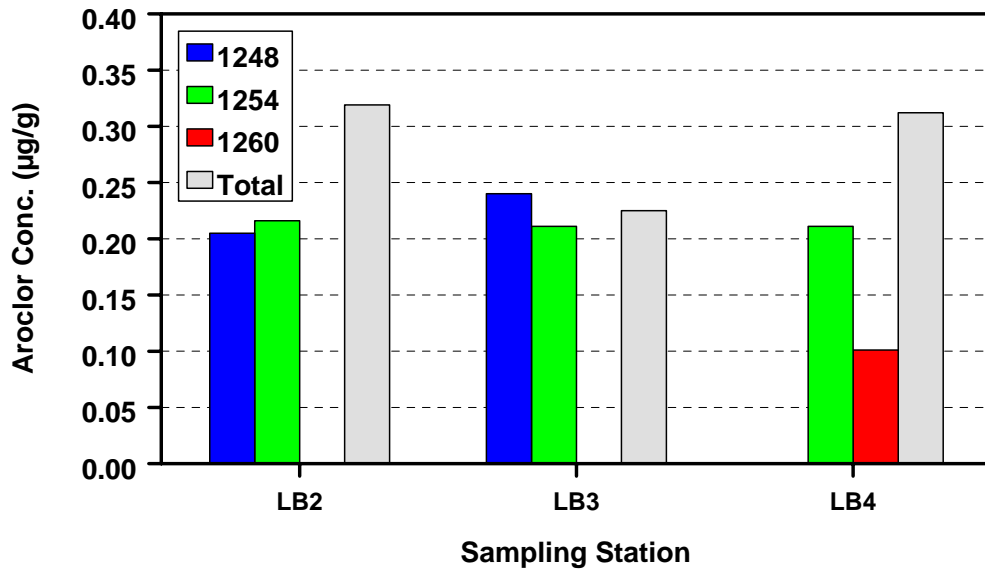


Figure 5. Mean PCB concentrations in longear sunfish from Little Bayou Creek, collected June 4-5, 2002.

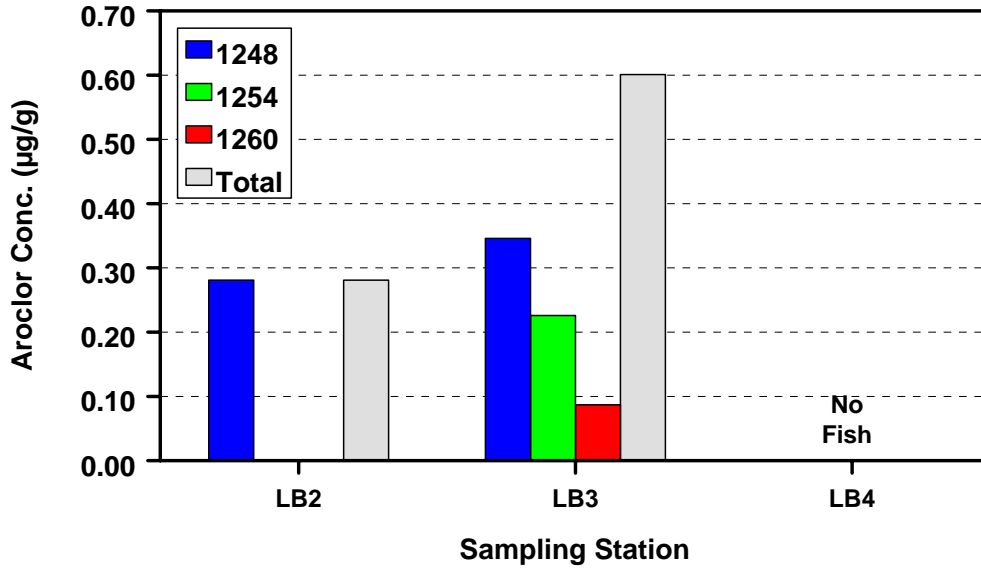
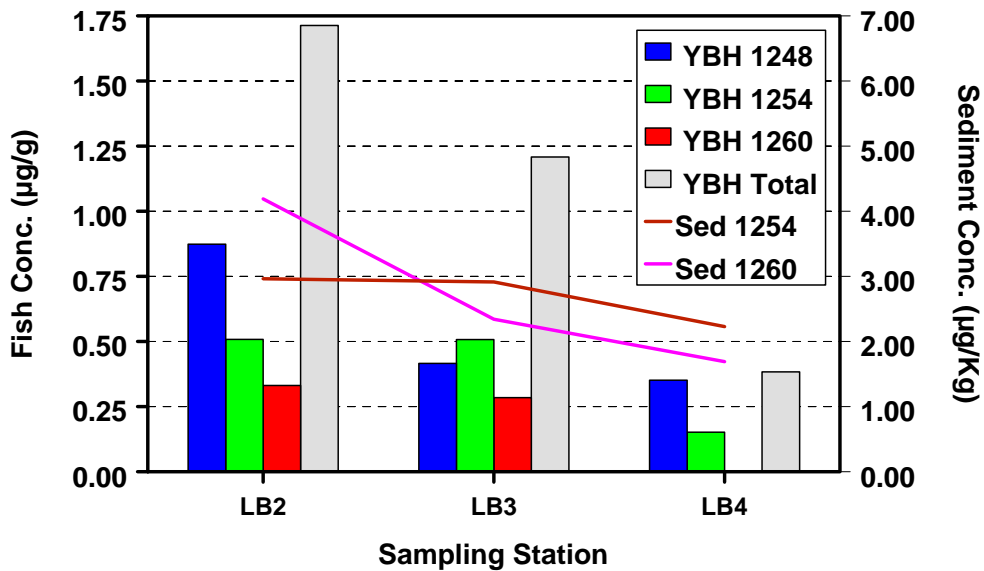


Figure 6. Mean PCB concentrations in yellow bullheads and sediments from Little Bayou Creek, collected June 4-5, 2002.



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