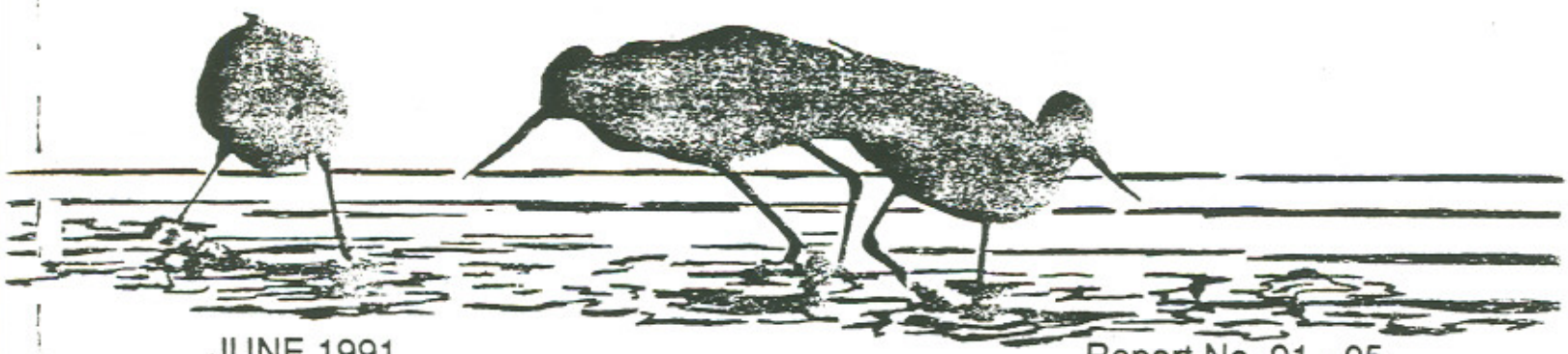
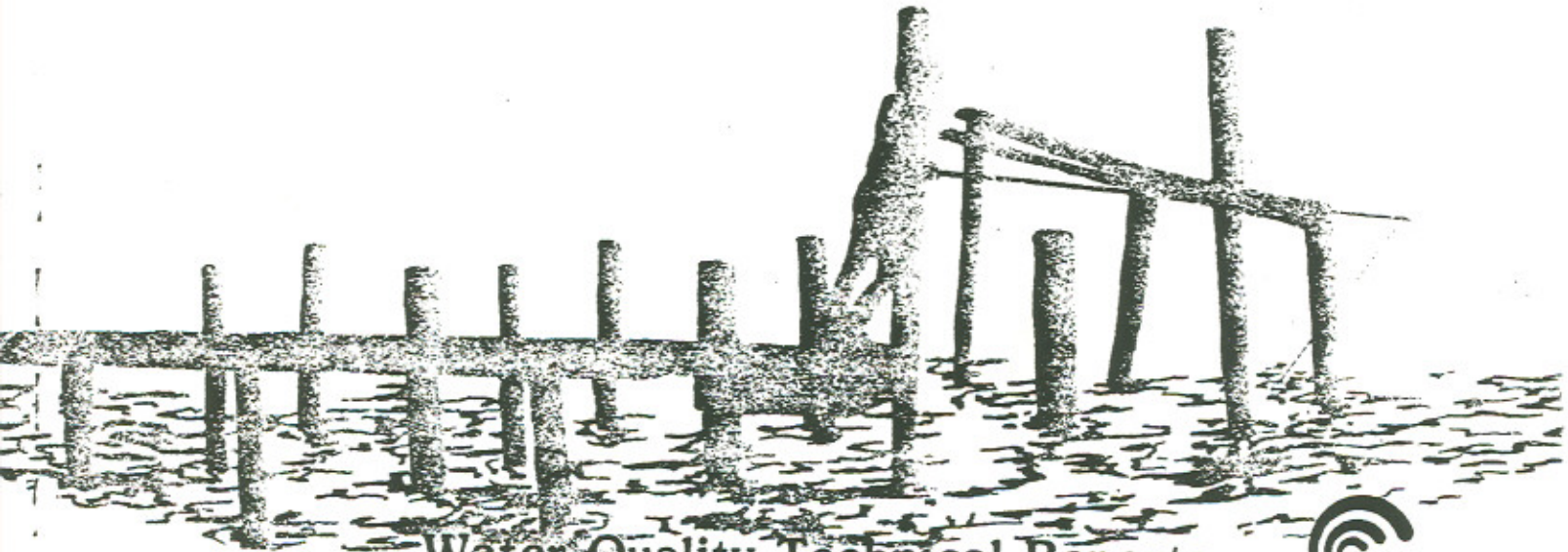


JUNE 1991

Report No. 91 - 05

ALBEMARLE - PAMLICO ESTUARINE STUDY

FISH TISSUE BASELINE STUDY 1989



Water Quality Technical Reports

WATER QUALITY

N.C. Department of Environment, Health, and Natural Resources
Division of Environmental Management • Water Quality Section

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Summary

This report is a compilation of fish tissue data from 41 locations in the Albemarle Pamlico Estuarine Study area. It includes the results of 743 samples analyzed for metals and 98 samples analyzed for synthetic organic chemicals.

A few general remarks are presented here:

- Only 6 of the 420 fish fillet samples (1.4%) analyzed for mercury contained concentrations at or above the FDA action level of 1.0 mg/kg. However, four of the six came from one site, Chowan River at Riddicksville. Further sampling for mercury at this site is recommended.

- High percentages (greater than 70%) of detectable lead concentrations were found in the whole fish samples from Kendricks, Bath, Pungo, and Pantego Creeks. Further sampling for lead at these sites is recommended.

- Concentrations of metals, particularly mercury, in the fillet portions of edible fish are lower in the estuarine portions of the A/P study area than in the freshwater portions.

- No pesticides were detected at or above the FDA action levels.

- The level of DDT metabolites in fish tissue appears to have decreased by approximately 70 percent between 1980 to 1989.

Introduction

The purpose of the Albemarle-Pamlico (A/P) fish tissue baseline study is to determine the levels of selected metals and synthetic organic chemicals in the A/P study area by measuring the concentrations contained in the tissues of the fish and shellfish populations. Fish and shellfish are known to bioaccumulate (concentrations are able to increase above abiotic environmental levels), bioconcentrate (concentrations increase within a species, ie. with an increase of size or age of the fish), and biomagnify (concentrations increase progressively through the food chain) various metals and synthetic organics. Thus, fish and shellfish are good indicators of both the presence of these chemicals in the waters of the A/P study area and the availability of these substances to the biota.

This report incorporates fish tissue data from various stations located throughout the A/P study area. Historical data from 22 sites in the A/P area were compiled along with new data from 29 sites which were sampled during 1989-1990 (Table 1). Of these 29 sites, 10 were previously sampled and 19 sites were sampled for the first time. Because a large number of the sites are new, and limited data exists on a number of the historical sites, very limited statistical analyses were performed. Instead, the data from each station (which forms the bulk of this report) are presented in a station by station format. Individual stations have been grouped according to one of the four main hydrological sections of the A/P study area; Chowan/Roanoke/Albemarle Sound (page 11), Pamlico Sound (page 47), Pamlico River (page 57), and Neuse River (page 91).

Fish samples were analyzed for 8 metals and 20 synthetic organic chemicals (Table 2). The completed database includes fish tissue data from 41 stations throughout the A/P study area. This database contains the results of 743 individual samples analyzed for metals and 98 samples analyzed for synthetic organic chemicals. These analyses have been performed over a period of ten years and by several different laboratories. During that time analytical procedures have changed and thus detection levels have varied.

The criteria used to characterize contaminant concentrations in this report are "action levels" developed by the Food and Drug Administration (FDA). The FDA "action levels" criteria (Table 2) are designed to protect human health and therefore are based upon the edible portions of fish.

Some discussion of trends in over all DDT concentrations, and metal concentrations in the A/P freshwater area versus estuarine portions is presented in the results section. The results of analyses for dioxins and dibenzofurans of the A/P study area are contained in a separate report (EHNR, 1991).

Figure 1. Albemarle/Pamlico Estuary Study - Fish Tissue Baseline Study Sampling Stations
Location Numbers refer to Table 1 descriptions.

Table 1 Stations sampled during both the Albemarle/Pamlico Estuary Fish Tissue Baseline Study and Historically in the Albemarle/Pamlico Study Area

	Station	Historical	A/P Study
1.	Chowan River at Riddicksville	X	X
2.	Chowan River at Colerain	X	
3.	Chowan River at Edenhouse	X	X
4.	Roanoke River at Plymouth	X	X
5.	Albemarle Sound at N&S RR		X
6.	Kendricks Creek at Mackeys	X	
7.	Scuppernong River near Columbia	X	
8.	Ablemarle Sound near Harvey Point		X
9.	Pasquotank River at Elizabeth City		X
10.	Alligator River at Gum Neck	X	
11.	Albemarle Sound near Frog Island	X	X
12.	Currituck Sound near Coinjock		X
13.	Currituck Sound near Point Harbor		X
14.	Croatan Sound at Manns Harbor		X
15.	Stumpy Point Bay at Stumpy Point		X
16.	Far Creek at Englehard	X	
17.	Pamlico Sound at Ocracoke Island		X
18.	Tar River at Greenville	X	X
19.	Tar River near Grimesland	X	
20.	Pamlico River at Washington		X
21.	Kennedy Creek at Washington		X
22.	Pamlico River at Blounts Bay		X
23.	Broad Creek near Washington		X
24.	Bath Creek at Bath	X	
25.	Pamlico River at Garrison Point		X
26.	Pungo River at US-264 near Ponzer	X	
27.	Pungo River off Durants Point near Belhaven		X
28.	Pantego Creek near Belhaven	X	
29.	Pungo Creek near Belhaven	X	
30.	Rose Bay	X	
31.	Pamlico River at Great Island		X
32.	Neuse River at Kinston	X	X
33.	Neuse River at Streets Ferry	X	
34.	Neuse River at New Bern	X	X
35.	Southwest Prong Slocum Creek near Havelock	X	X
36.	East Prong Slocum Creek near Havelock	X	X
37.	Slocum Creek off Cherry Point WWTP	X	X
38.	Slocum Creek off Mill Creek		X
39.	Neuse River at Minnesott Beach		X
40.	South River at South River		X
41.	Neuse River off Maw Point near Pamlico		X

The A/P Study was initiated in 1987 under the administration of the United States Environmental Protection Agency (EPA), with funding through the National Estuarine Program (NEP). The goals of the A/P Study include determining the environmental problems facing North Carolina's estuarine areas and the protection and management of those estuaries to provide for recreational, industrial, and commercial uses (EHNR, 1989a). Among the projects which were identified as essential to the success of the A/P Study was a fish tissue baseline study. A previous fish tissue study had concentrated on only the riverine sections of the Tar and Neuse Rivers (NRCD, 1987).

A list of all species discussed in this report, providing common and scientific names and consumption information, is presented in Table 3.

Fish collections were accomplished with the assistance of the North Carolina Division of Marine Fisheries (DMF) and the North Carolina Division of Inland Fisheries (DIF).

Table 2. Parameters sampled during the Albemarle/Pamlico Estuary Fish Tissue Baseline Study with FDA "Action Levels"

Metals			
	FDA		FDA
Cadmium	None	Chromium	None
Nickel	None	Lead	None
Copper	None	Arsenic	None
Mercury	1.0 ppm	Selenium	None

Synthetic Organics			
	FDA		FDA
Aldrin	0.3 ppm	o,p DDD	5.0 ppm
Dieldrin	0.3 ppm	p,p DDD	
Endrin	0.3 ppm	o,p DDE	
Methoxychlor	None	p,p DDE	
Alpha BHC	None	o,p DDT	
Gamma BHC	None	p,p DDT	
PCB-1254	2.0 ppm	cis-Chlordane	0.3 ppm
Endosulfan I	None	trans-Chlordane	
Endosulfan II	None	trans-Nonachlor	
Endosulfan Sulfate	None	Hexachlorbenzene	None

Albemarle - Pamlico Estuarine Study
Fish Tissue Baseline Study
1989

NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT, HEALTH
AND NATURAL RESOURCES
Division of Environmental Management
Water Quality Section

This report has been approved for release Steve W. Tedder
Steve W. Tedder, Chief

Date May 31st, 1991

James G. Martin, Governor
William W. Cobey, Jr., Secretary

Albemarle - Pamlico Estuarine Study
Fish Tissue Baseline Study
1989

Table 3. Scientific and Common names of Fish and Shellfish species contained in this report.

Scientific Name	Common Name	Commonly Eaten *
Alosa mediocris	Hickory shad	No
Alosa pseudoharengus	Alewife	Yes
Alosa sapidissima	American shad	Yes
Amia calva	Bowfin	No
Anguilla rostrata	American eel	Yes
Bairdiella chrysura	Silver perch	Yes
Brevoortia tyrannus	Atlantic menhaden	No
Callinectes sapidus	Blue crab	Yes
Crassostrea virginica	Oyster	Yes
Cynoscion nebulosus	Speckled trout	Yes
Cynoscion regalis	Gray trout	Yes
Cyprinus carpio	Carp	No
Dorosoma cepedianum	Gizzard shad	No
Elliptio complanata	Freshwater mussel	No
Erimyzon oblongus	Creek chubsucker	No
Erimyzon sucetta	Lake chubsucker	No
Esox niger	Chain pickerel	No
Ictalurus brunneus	Snail bullhead	Yes
Ictalurus catus	White catfish	Yes
Ictalurus nebulosus	Brown bullhead	Yes
Ictalurus punctatus	Channel catfish	Yes
Ischadium recurvum	Hooked mussel	No
Lagodon rhomboides	Pinfish	No
Leiostomus xanthurus	Spot	Yes
Lepisosteus osseus	Longnose gar	No
Lepomis auritus	Redbreast sunfish	Yes
Lepomis gibbosus	Pumpkinseed	Yes
Lepomis gulosus	Warmouth	Yes
Lepomis macrochirus	Bluegill sunfish	Yes
Lepomis microlophus	Redear sunfish	Yes
Micropogon undulatus	Atlantic Croaker	Yes
Micropterus salmoides	Largemouth Bass	Yes
Morone americana	White perch	Yes
Morone chrysops	White bass	Yes
Morone saxatilus	Striped bass	Yes
Moxostoma sp.	Redhorse sucker	No
Moxostoma anisurum	Silver redhorse	No
Mugil cephalus	Striped Mullet	Yes
Mustelus canis	Dogfish shark	No
Notemigonus crysoleucas	Golden shiner	No
Opsanus tau	Oyster toadfish	No
Orthopristis chrysoptera	Pigfish	Yes
Paralichthys lethostigma	Southern flounder	Yes
Perca flavescens	Yellow perch	Yes
Pomatomus saltatrix	Bluefish	Yes
Pomoxis nigromaculatus	Black Crappie	Yes
Sciaenops ocellata	Red drum	Yes
Strongylura marina	Atlantic needlefish	No
Synodus foetens	Inshore lizardfish	No
Trinectes maculatus	Hogchoker	No
Tylosurus crocodilus	Houndfish	No

* The criteria used in the designation of commonly eaten was based upon species write-ups in Manooch (1984). A 'no' designation does not mean that the fish is never eaten, and this report recognized that there is some ambiguity in the selection of some species and not others.

Methods

Fish were collected using a variety of sampling gear including gill nets, trawls, hoop nets, and/or electrofishing (specific collection methods are listed in the individual station summaries). Each fish was weighed to the nearest gram and measured to the nearest millimeter (all lengths are total lengths). Each fish was then wrapped in aluminum foil, and placed in a new plastic bag. Samples were then placed on ice and frozen until sample preparation.

Sample preparation, which followed DEM's standard operating procedures, (EHNR, 1989b) consisted of three separate procedures, cleaning, filleting, and blending. The cleaning procedure involves the washing of all utensils, knives, blenders, and working surfaces in the following order:

1. soap and water wash
2. 15% nitric acid rinse
3. pesticide grade hexane/methylene chloride/acetone rinse
4. distilled water rinse

After scaling, a fillet was removed from each fish. A fillet is defined as all flesh and skin from head to tail and from top of the back to the belly. The skin was removed from all catfish and bullheads. For a single sample the fillet is then homogenized and placed in an aluminum container and sent to the lab for analysis. For composite samples, the individual fillets are combined then homogenized. For very large fish, only a portion of the fillet is processed.

Samples were analyzed for arsenic and selenium by the graphite furnace method which incorporates a nitric/hydrochloric acid digestion. Samples were analyzed for cadmium, chromium, copper, nickel, lead, and zinc by the inductive coupled plasma method which also incorporates a nitric/hydrochloric acid digestion. Mercury was analyzed by the cold vapor method which incorporates an acid permanganate digestion. Organics were analyzed by solvent extraction followed by a florisil cleanup and gas chromatograph analysis.

Analytical Methods

The box and whisker plot is used as an illustration of data throughout this report. This technique is useful for comparing sets of data comprised of a single variable. Box and whisker plots display batches of data by the visualization of selected order statistics. After the the data have been ordered from low to high, the 10th, 25th, 50th, 75th, and 90th percentiles are used to construct the plot (Figure 2). Box and whisker plots are an effective method of presenting the following important information: 1) the interquartile range (IQR) which measures the distribution and variability of the bulk of the data (located between the 25th and 75th percentiles), 2) the desired confidence interval (1-α CL) for measuring the statistical significance of the median (50th percentile), 3) indication of skew from comparing the symmetry of the box above and below the median, 4) the range of the data from the lowest to highest values, and 5) the extreme values below the 10th percentile and above the 90th percentile (depicted as dots).

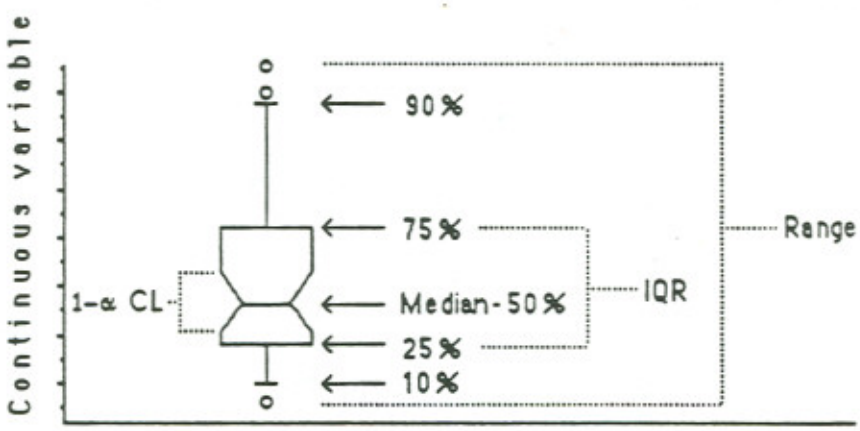


Figure 2. Example of a box plot showing the meaning of the different sections of the plot

Visual comparison of confidence level notches about the medians of two or more boxplots (Figure 3) can be used to roughly perform hypothesis testing. If the notches overlap it can be assumed that there is no significant difference in the samples at the prescribed level of confidence and that they came from independent, identically distributed populations.

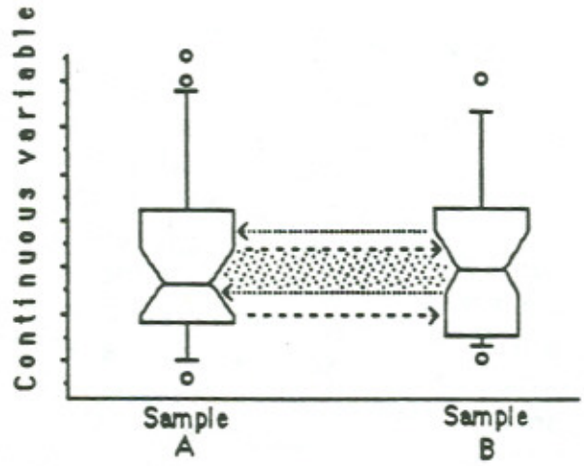


Figure 3. Example of a box plot showing a comparison of two different plots.

Another evaluation method used in this report is a graphic representation of the maximum, minimum, and mean of the fillet data of selected metals (Figure 4). These graphs are presented in the summary sections.

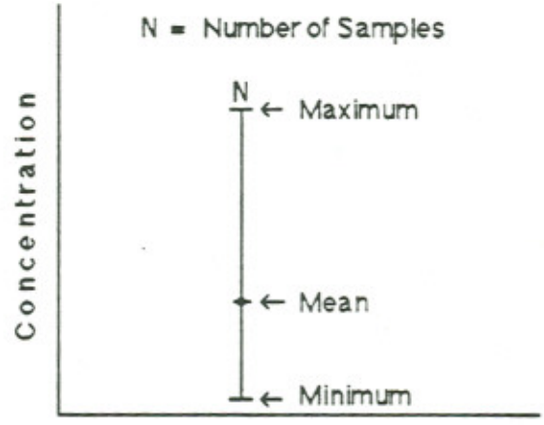


Figure 4. Example of a graph showing the maximum, minimum and mean.

Less than detection values were handled two different ways in this report. Station summaries removed the "less than" values and presented a mean of the results above detection. The results of particular parameters (mercury, copper, or zinc) showed how parameters varied from sample type and/or year. The "less than" values in the latter data sets were given a value one half of the reported value.

Results

As previously stated, the intent of this survey and report is to provide baseline information on the concentrations of chemicals in fish tissue. Although general statements may be made about these chemical levels, the complex ecological interactions involved suggest cautious interpretation of the results. Some of the general temporal and spatial trends in certain parameters are discussed below. Parameters of concern or with action levels are discussed briefly at the beginning of each section, i.e., Pamlico Sound, Pamlico River, etc.

Concentrations of metals, particularly mercury, in the edible portions of edible fish are lower in the estuarine portions of the A/P study area than in the freshwater portions (Figure 5), with the only exception being Slocum Creek. Slocum Creek is located at the Cherry Point Marine Corps Air Station and receives both wastewater and runoff from this facility. Several factors may be contributing to this phenomenon. Metals can become attached to suspended particles in freshwater systems, and as they enter the estuary, precipitate out into the sediments (Dzombak and Mord, 1987; Pierce and Nichols, 1986). This precipitation may be instrumental in decreasing the bioavailability of the metals. Another factor contributing to lower metal levels in estuarine fishes, may be due to the migratory nature of estuarine fish, many species spend part of a year in the estuary and part in the ocean. However, most freshwater species are restricted to a fairly limited range for most of their adult life.

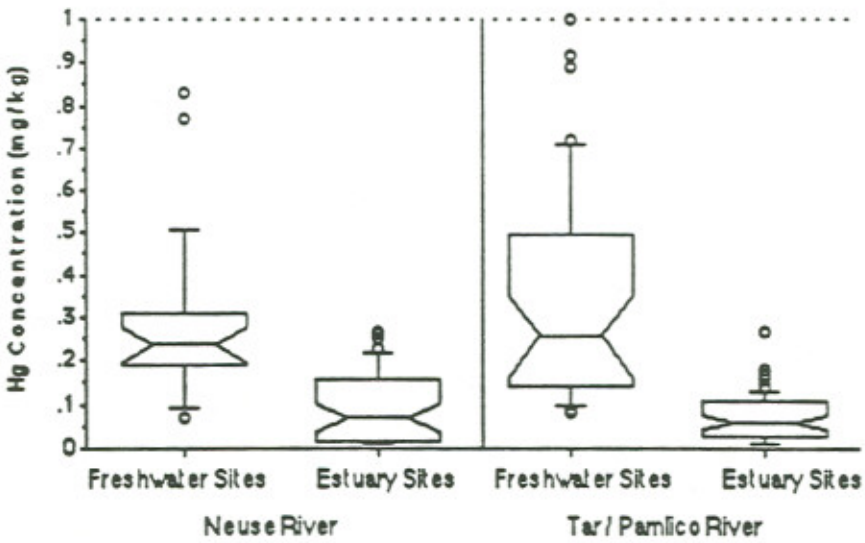


Figure 5. Mercury concentrations in fish tissue fillets from the Neuse and Pamlico Rivers comparing freshwater and estuarine sites.

Comparing historical results from the 1980 to 1983 sampling episodes in the A/P Study area to results obtained for this study, the level of DDT metabolites in fish tissue appears to have decreased by approximately 70 percent. Even though DDT was banned for use on January 1, 1973, the percent of fish which still contain traces of DDT metabolites remains large (83% of the 24 samples taken in 1989).

Chowan / Roanoke / Albemarle Sound Area

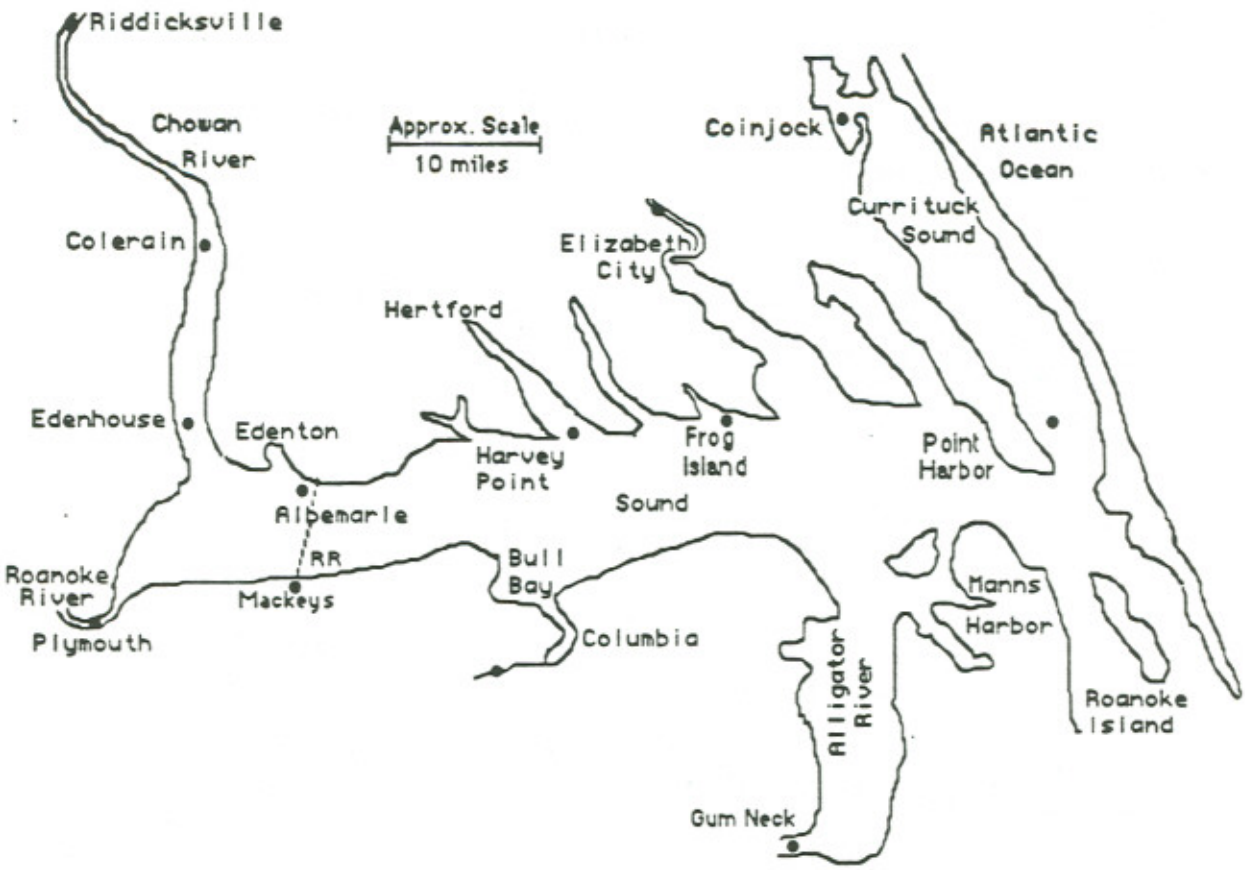


Figure 6. Map of the Chowan/Roanoke/Albemarle Sound area showing the location of sampling stations.

Thirteen stations have been sampled for fish tissue in the Chowan/ Roanoke/Albemarle Sound area (Figure 6). The database from this region contains the results of 244 samples analyzed for metals and 38 samples analyzed for the selected synthetic organic chemicals.

An analysis of all fish tissue fillet data for the Chowan/Roanoke/ Albemarle area (Figure 7) indicates that the highest mean concentrations of mercury were found in the Chowan River at Riddicksville (0.73 mg/kg) and at Kendricks Creek at Mackeys (0.56 mg/kg). Both of these sites had fillet samples above the 1.0 mg/kg FDA action level for mercury (Kendricks Creek - 1 sample, Riddicksville - 2 samples). Only one of the

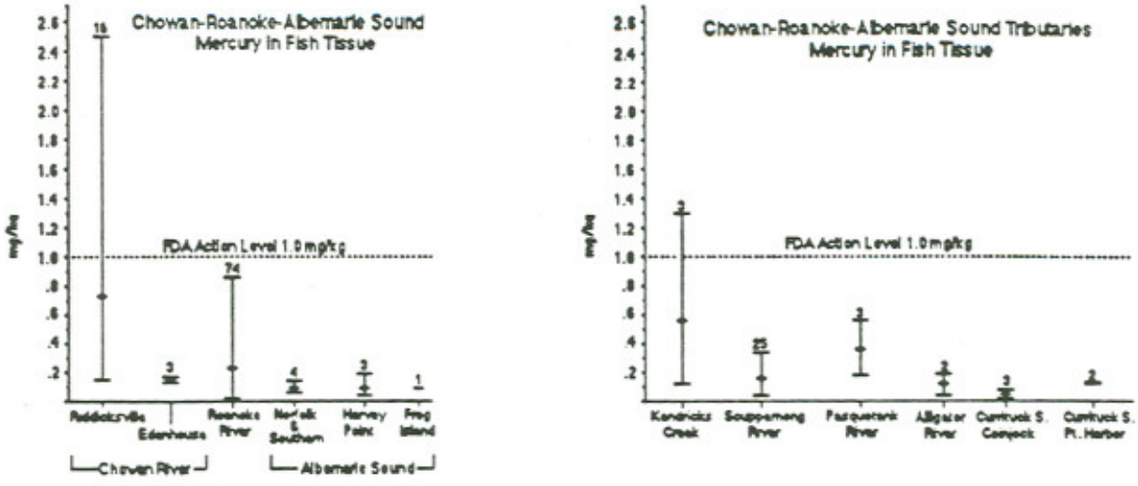


Figure 7. Mercury concentrations in fish tissue fillets by station in the Chowan/Roanoke/Albemarle area.

fillet samples from Chowan River at Riddicksville was from a commonly consumed species, a single largemouth bass of 1850 grams. The only Kendricks Creek sample above the FDA action level was from a bowfin, a species not commonly eaten. Additional sampling of edible species at both of these sites is recommended to enhance the available data and provide for a more comprehensive determination of potential elevated mercury levels. Mercury concentrations in the Albemarle Sound, Currituck Sound, lower Chowan River, and the Alligator River are well below the FDA action level.

An analysis of all fish tissue fillet data for the Chowan Roanoke/ Albemarle area (Figure 8) indicated that the highest mean concentration of copper (0.62 mg/kg) was in the Scuppernong River near Columbia.

No detectable lead concentrations were found in any fillet samples from the Chowan/Roanoke/Albemarle Sound area. However, concentrations of lead were detected in 15% of the 102 tissue samples analyzed as whole fish. The station with the greatest percentage of detectable lead concentrations was Kendricks Creek (page 31), which had a concentration of 2.4 mg/kg in whole fish.

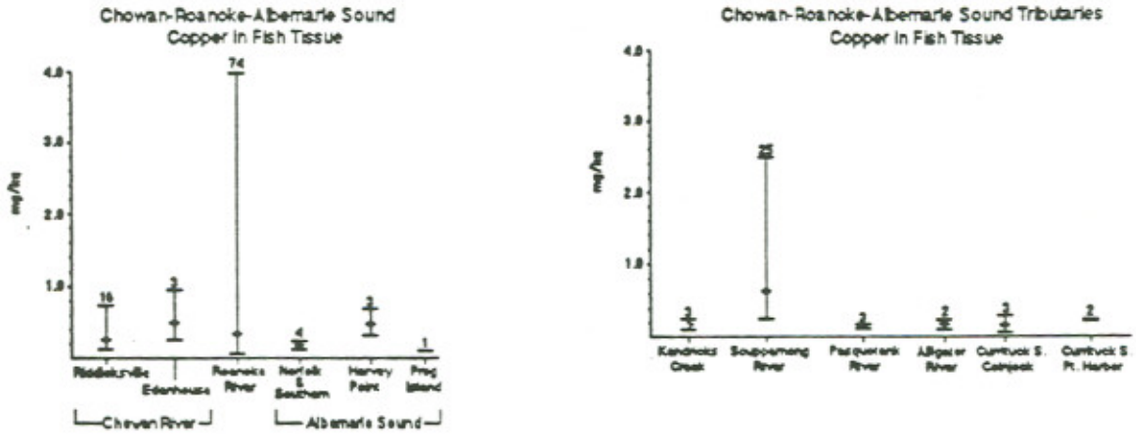


Figure 8. Copper concentrations in fish tissue fillets by station in the Chowan/Roanoke/Albemarle area.

Thirty eight fish samples have been analyzed for pesticides with only three of the thirteen main pesticides being detected. Twenty nine samples (76%) contained low levels of DDT metabolites, four samples (10%) contained low levels of dieldrin, and four samples (10%) contained low levels of chlordane metabolites. The concentrations of pesticides with FDA criteria were all below the FDA criteria presented in Table 2.

STATION NAME: Chowan River at Riddicksville
STATION NUMBER: 02050079

RIVER BASIN: Chowan

SUB BASIN: 03-01-01

COUNTY: Hertford/Gates

STREAM CLASS: B-NSW

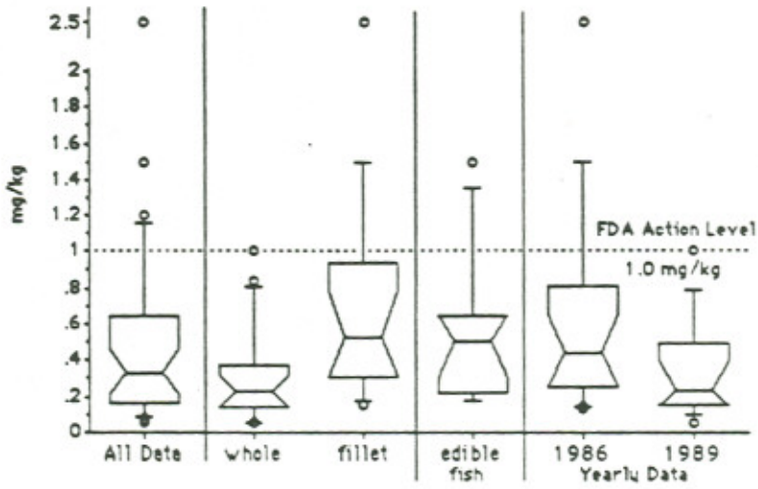
DRAINAGE AREA: 2470 sq. mi.

LOCATION: Chowan River at Riddicksville landing near Como
Latitude 36° 31' 54" **Longitude** 76° 55' 17"
REASON FOR SAMPLING : Ambient Site
SAMPLING DATES: July 17, 1980, July 16, 1981, October 16, 1984
January 18, 1989
METHOD OF COLLECTION: Electrofishing boat
PARAMETERS SAMPLED: Heavy Metals & Organics

STATION SUMMARY

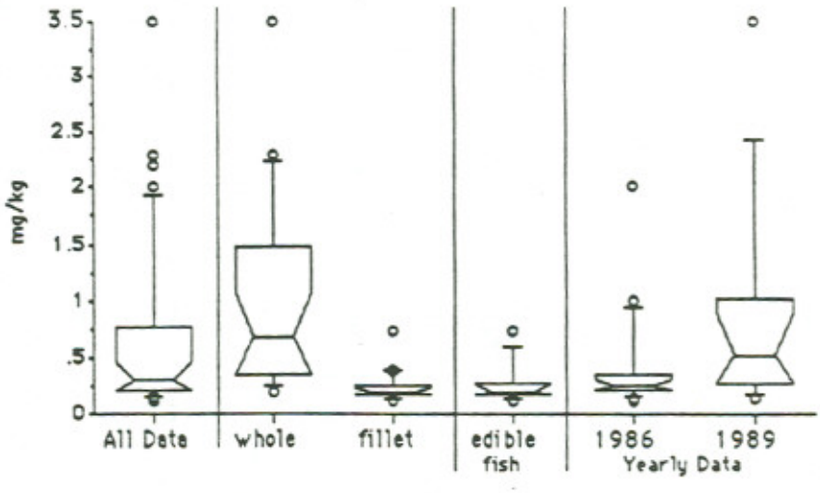
Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	5	100	0	NA	NA
	whole	12	100	0	NA	NA
Cadmium	fillet	16	100	0	NA	NA
	whole	21	100	0	NA	NA
Chromium	fillet	16	94	1	0.27	0.27
	whole	21	86	3	0.27-4.20	1.68
Copper	fillet	16	0	16	0.12-0.73	0.26
	whole	21	5	20	0.19-3.5	1
Mercury	fillet	16	0	16	0.15-2.50	0.73
	whole	21	0	21	0.05-1.00	0.3
Nickel	fillet	16	100	0	NA	NA
	whole	21	95	1	4	4
Lead	fillet	16	100	0	NA	NA
	whole	21	95	1	1.9	1.9
Zinc	fillet	11	0	11	2.4-11.0	5.1
	whole	15	0	15	2.9-30.0	11.1
Selenium	fillet	5	100	0	NA	NA
	whole	6	100	0	NA	NA

Chowan River at Riddicksville
Mercury in Fish Tissue



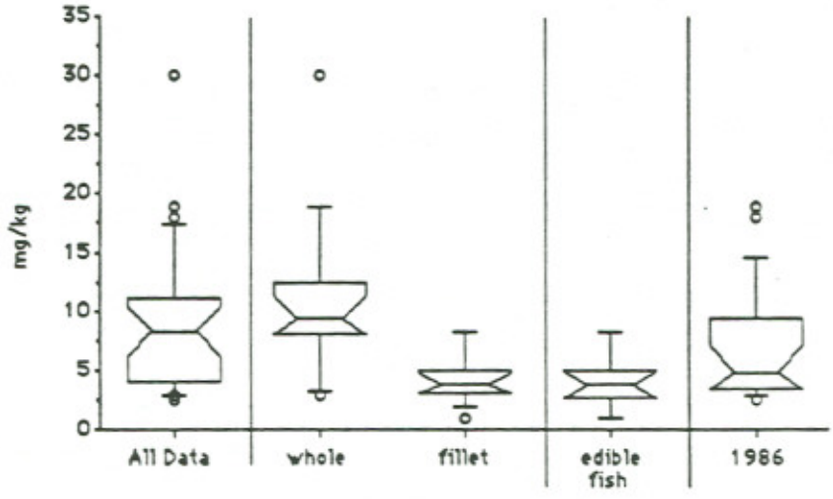
Data Set	Mean mg/kg	Median mg/kg	Std Dev mg/kg	Count	Minimum mg/kg	Maximum mg/kg
All Data	0.48	0.33	0.51	37	0.05	2.50
Whole	0.3	0.23	0.27	21	0.05	1.00
Fillet	0.73	0.53	0.64	16	0.15	2.50
Edible	0.58	0.5	0.44	10	0.17	1.50
1980	0.2	0.24	0.12	3	0.06	0.30
1981	0.09	0.08	0.05	3	0.05	0.15
1986	0.66	0.44	0.60	20	0.13	2.50
1989	0.35	0.23	0.28	11	0.06	1.00

Chowan River at Riddicksville
Copper in Fish Tissue



Data Set	Mean mg/kg	Median mg/kg	Std Dev mg/kg	Count	Minimum mg/kg	Maximum mg/kg
All Data	0.67	0.31	0.77	37	0.12	3.50
Whole	1.00	0.66	0.88	21	0.19	3.50
Fillet	0.24	0.20	0.15	16	0.12	0.73
Edible	0.26	0.20	0.19	9	0.12	0.73
1980	1.97	2.20	0.49	3	1.40	2.30
1981	0.47	0.56	0.24	3	0.20	0.66
1986	0.40	0.25	0.44	20	0.12	2.00
1989	0.87	0.52	0.99	11	0.14	3.50

Chowan River at Riddicksville
Zinc in Fish Tissue



Data Set	Mean mg/kg	Median mg/kg	Std Dev mg/kg	Count	Minimum mg/kg	Maximum mg/kg
All Data	8.58	8.20	6.26	26	2.4	30.0
Whole	11.11	9.40	6.94	15	2.9	30.0
Fillet	4.22	3.90	2.25	11	1.0	8.2
Edible	4.04	3.90	2.62	5	1.0	8.2
1980	18.00	13.00	10.44	3	11.0	30.0
1981	9.27	9.20	0.12	3	9.2	9.4
1986	7.07	4.80	4.85	20	2.4	19.0

Chowan River at Riddicksville - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC= fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg	Se mg/kg
800717	Micropterus salmoides	331	549	WC5	0.30	<0.4	<0.50	<0.50	2.20	<1.0	<1.0	13.0	
800717	Moxostoma sp	353	530	WC5	0.24	<0.4	<0.50	4.20	2.30	4.00	<1.0	11.0	
800717	Lepomis macrochirus	129	41	WC5	0.06	<0.4	<0.50	0.58	1.40	<1.0	1.90	30.0	
810716	Micropterus salmoides	301	488	WC5	0.15	<0.5	<0.50	<0.50	0.56	<1.0	<1.0	9.2	
810716	Moxostoma sp.	330	459	WC4	0.08	<0.4	<0.50	<0.50	<0.40	<1.0	<1.0	9.4	
810716	Ictalurus nebulosus	297	370	W1	0.05	<0.4	<0.50	<0.50	0.66	<1.0	<1.0	9.2	
861016	Erimyzon oblongus	264	240	W1	0.13		<0.10	<0.25	1.00	<0.50	<0.50	10.0	
861016	Lepomis macrochirus	152	55	WC2	0.14		<0.10	<0.25	0.38	<0.50	<0.50	2.9	
861016	Lepomis auritus	176	110	W1	0.16		<0.10	<0.25	0.30	<0.50	<0.50	18.0	
861016	Ictalurus natalis	268	220	W1	0.37		<0.10	<0.25	0.50	<0.50	<0.50	8.9	
861016	Esox niger	379	300	W1	0.39		<0.10	<0.25	0.27	<0.50	<0.50	3.3	
861016	Micropterus salmoides	206	100	W1	0.33		<0.10	<0.25	0.19	<0.50	<0.50	11.0	
861016	Micropterus salmoides	236	140	W1	0.31		<0.10	<0.25	0.31	<0.50	<0.50	19.0	
861016	Amia calva	515	1300	W1	0.78		<0.10	<0.25	0.86	<0.50	<0.50	4.4	
861016	Amia calva	487	1000	W1	0.84		<0.10	<0.25	2.00	<0.50	<0.50	7.4	
890118	Cyprinus carpio	690	4500	W1	0.12	<2.0	<0.10	<0.25	3.50	<0.50	<0.50		<1.0
890118	Moxostoma sp	351	494	WC5	0.23	<2.0	<0.10	0.27	0.72	<0.50	<0.50		<1.0
890118	Erimyzon oblongus	310	475	W1	0.06	<2.0	<0.10	<0.25	0.52	<0.50	<0.50		<1.0
890118	Moxostoma sp.	555	1600	W1	0.14	<2.0	<0.10	<0.25	1.70	<0.50	<0.50		<1.0
890118	Amia calva	480	1000	WC5	1.00	<2.0	<0.10	<0.25	0.33	<0.50	<0.50		<1.0
890118	Amia calva	550	1350	W1	0.37	<2.0	<0.10	<0.25	0.22	<0.50	<0.50		<1.0
861016	Erimyzon oblongus	275	340	F1	0.15		<0.10	<0.25	0.26	<0.50	<0.50	5.1	
861016	Lepomis macrochirus	185	125	FC2	0.17		<0.10	<0.25	0.19	<0.50	<0.50	11.0	
861016	Lepomis gulosus	171	105	FC2	0.49		<0.10	<0.25	0.22	<0.50	<0.50	8.2	
861016	Esox niger	503	1500	F1	0.64		<0.10	<0.25	0.28	<0.50	<0.50	8.2	
861016	Micropterus salmoides	332	440	F1	0.38		<0.10	<0.25	0.20	<0.50	<0.50	4.0	
861016	Micropterus salmoides	328	470	F1	0.54		<0.10	<0.25	0.12	<0.50	<0.50	3.9	
861016	Micropterus salmoides	513	1850	F1	1.50		<0.10	<0.25	0.15	<0.50	<0.50	3.1	
861016	Cyprinus carpio	783	6450	F1	0.69		<0.10	<0.25	0.17	<0.50	<0.50	2.9	
861016	Amia calva	554	1520	F1	1.20		<0.10	<0.25	0.14	<0.50	<0.50	2.4	
861016	Amia calva	530	1230	F1	1.50		<0.10	<0.25	0.20	<0.50	<0.50	3.1	
861016	Amia calva	640	2770	F1	2.50		<0.10	<0.25	0.23	<0.50	<0.50	4.5	
890118	Micropterus salmoides	318	360	FC5	0.52	<2.0	<0.10	<0.25	0.20	<0.50	<0.50		<1.0
890118	Lepomis macrochirus	193	176	FC6	0.21	<2.0	<0.10	0.27	0.72	<0.50	<0.50		<1.0
890118	Perca flavescens	193	91	FC8	0.17	<2.0	<0.10	<0.25	0.73	<0.50	<0.50		<1.0
890118	Micrpterus salmoides	331	544	FC4	0.64	<2.0	<0.10	<0.25	0.14	<0.50	<0.50		<1.0
890118	Esox niger	362	300	FC2	0.39	<2.0	<0.10	<0.25	0.22	<0.50	<0.50		<1.0

Chowan River at Riddicksville - Organics in Fish Tissue Data

(Species: LMB = Micropterus salmoides, BGS = Lepomis macrochirus ; RHS = Moxostoma sp.; BRB = Ictalurus nebulosus; C = Cyprinus carpio) (ND= No Data) (Type-Number: WC= whole composite followed by the number of fish in the composite; FC = fillet composite)

Date	800717	800717	800717	810716	810716	810716	890118	890118	890118
Species	LMB	BGS	RHS	LMB	RHS	BRB	LMB	RHS	C
Avg Wt (gm)	549	41	530	488	459	370	360	494	4500
Avg Ln (mm)	331	129	353	301	330	297	318	351	690
Type-Number	WC5	WC5	WC5	WC5	WC4	W1	FC5	WC5	W1
Aldrin (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0005	<0.0005	<0.0005
Dieldrin (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.0008	0.0004	0.0002
o,p DDD (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.002	<0.002	<0.002
p,p DDD (µg/g)	0.04	0.04	0.04	0.06	0.1	<0.04	<0.002	<0.002	0.002
o,p DDE (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.002	<0.002	<0.002
p,p DDE (µg/g)	0.13	0.04	0.12	0.14	0.19	0.06	0.003	0.015	0.012
Total DDT (µg/g)	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	ND	ND	ND
o,p DDT (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.002	<0.002	<0.002
p,p DDT (µg/g)	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.005	<0.005	<0.005
cis-Chlordane (µg/g)	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.0008	0.003	<0.0008
trans-Chlordane (µg/g)	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.0008	<0.0008	<0.0008
trans-Nchlor (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.0007	<0.0008	0.002
Methoxychlor (µg/kg)	<80	<80	<80	<80	<80	<80	<10	<10	<10
Hxchlbenzene (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0003	<0.0003	<0.0003
PCP (µg/g)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	ND	ND	ND
alpha-BHC (µg/g)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0003	<0.0003	0.001
gamma-BHC (µg/g)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0003	<0.0003	<0.0003
Endrin (mg/kg)	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.002	<0.002	<0.002
PCB (mg/kg)	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.013	<0.013	<0.013
Endosulfan I (mg/kg)	ND	ND	ND	ND	ND	ND	<0.0005	<0.0005	<0.0005
Endosulfan II (mg/kg)	ND	ND	ND	ND	ND	ND	<0.002	<0.002	<0.002
Endosulfan Sulfate (mg/kg)	ND	ND	ND	ND	ND	ND	<0.025	<0.025	<0.025

STATION NAME: Chowan River at Colerain
STATION NUMBER: 02053632

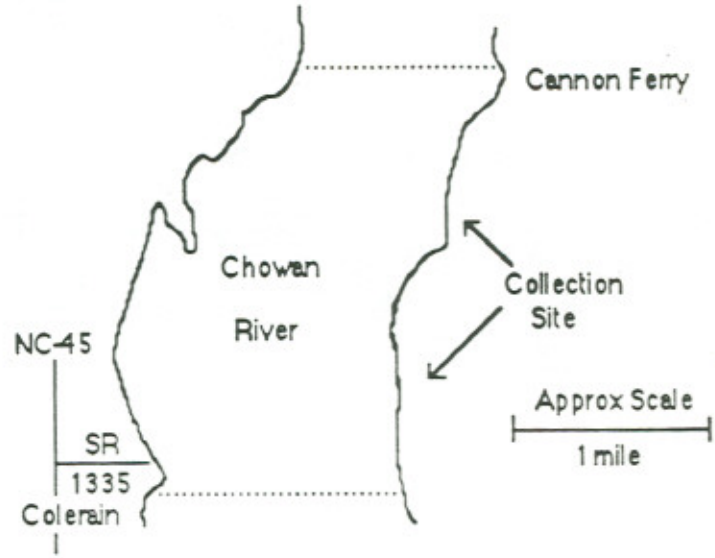
RIVER BASIN: Chowan

SUB BASIN: 03-01-03

COUNTY: Bertie

STREAM CLASS: B-NSW

DRAINAGE AREA: 4822 sq.mi.



LOCATION: Chowan River at Colerain off SR 1335
Latitude 36° 11' 42" **Longitude** 76° 44' 05"
REASON FOR SAMPLING : Ambient Site
SAMPLING DATES: July 9, 1980, July 21, 1981
METHOD OF COLLECTION: Electroshocking
PARAMETERS SAMPLED: Heavy Metals & Organics

STATION SUMMARY:

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	whole	6	100	0	NA	NA
Cadmium	whole	6	100	0	NA	NA
Chromium	whole	6	67	2	0.50-2.90	1.7
Copper	whole	6	0	6	0.52-5.70	3.7
Mercury	whole	6	67	2	0.13-0.19	0.16
Nickel	whole	6	83	1	2.7	2.7
Lead	whole	6	100	0	NA	NA
Zinc	whole	6	0	6	13-22	16.8
Aluminum	whole	2	0	2	2.0-2.9	2.45
Iron	whole	4	0	4	16-290	100
Magnesium	whole	6	0	6	300-520	392

Chowan River at Colerain - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC= fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg
800709	Ictalurus catus	199	84	WC5	<0.05	<0.4	<0.50	2.90	5.70	2.70	<1.0	14.0
800709	Ictalurus nebulosus	238	209	WC5	<0.05	<0.4	<0.50	0.50	3.10	<1.0	<1.0	20.0
800709	Morone americana	185	97	WC5	0.13	<0.4	<0.50	<0.50	4.90	<1.0	<1.0	22.0
800709	Micropterus salmoides	302	401	WC5	0.19	<0.4	<0.50	<0.50	1.80	<1.0	<1.0	15.0
810721	Morone americana	132	32	WC8	<0.02	<0.4	<0.50	<0.50	2.70	<1.0	<1.0	17.0
810721	Ictalurus nebulosus	212	132	WC5	<0.02	<0.4	<0.50	<0.50	0.52	<1.0	<1.0	13.0

Chowan River at Colerain - Organics in Fish Tissue Data

(Species: LMB = Micropterus salmoides, BRB = Ictalurus nebulosus; WHC= Ictalurus catus; WP = Morone americana) (ND= No Data)
(Type-Number: WC= whole composite followed by the number of fish in the composite)

Date	800709	800709	800709	800709	810721
Species	WHC	BRB	WP	LMB	BRB
Avg Wt (gm)	84	209	97	401	132
Avg Ln (mm)	199	238	185	302	212
Type-Number	WC5	WC5	WC5	WC5	WC5
Aldrin (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01
Dieldrin (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02
o,p DDD (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02
p,p DDD (µg/g)	<0.04	<0.04	<0.04	<0.04	<0.04
o,p DDE (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02
p,p DDE (µg/g)	0.08	0.09	0.06	0.1	0.02
Total DDT (µg/g)	<0.09	<0.09	<0.09	<0.09	<0.09
o,p DDT (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02
p,p DDT (µg/g)	<0.07	<0.07	<0.07	<0.07	<0.07
cis-Chlordane (µg/g)	<0.06	<0.06	<0.06	<0.06	<0.06
trans-Chlordane (µg/g)	<0.06	<0.06	<0.06	<0.06	<0.06
trans-Nchlor (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02
Methoxychlor (µg/kg)	<80	<80	<80	<80	<80
Hxchlbenzene (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01
PCP (µg/g)	<2.0	<2.0	<2.0	<2.0	<0.50
alpha-BHC (µg/g)	<0.01	<0.01	<0.01	<0.01	<0.01
gamma-BHC (µg/g)	<0.01	<0.04	<0.04	<0.04	<0.01
Endrin (mg/kg)	<0.04	<0.04	<0.04	<0.04	<0.04
PCB (mg/kg)	<0.40	<0.40	<0.40	<0.40	<0.40

STATION NAME: Chowan River at Edenhouse
STATION NUMBER: 02053652

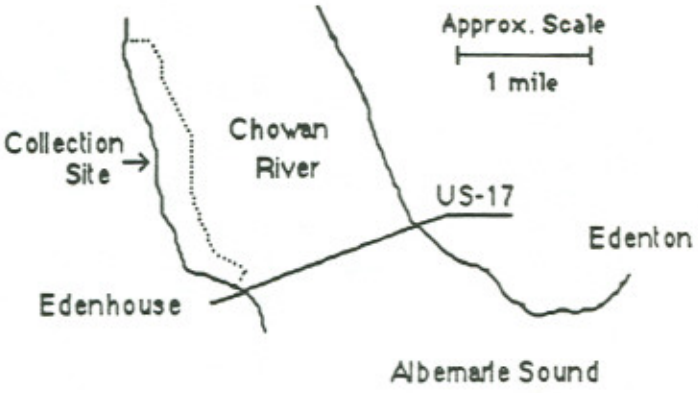
RIVER BASIN: Chowan

SUB BASIN: 03-01-04

COUNTY: Bertie

STREAM CLASS: B-NSW

DRAINAGE AREA: 4943 sq. mi.



LOCATION: Chowan River at Edenhouse at US Hwy 17

Latitude 36° 02' 50" **Longitude** 76° 41' 50"

REASON FOR SAMPLING : Ambient Site, A/P Estuarine Study
SAMPLING DATES: July 15, 1980, July 22, 1981, March 15, 1989
METHOD OF COLLECTION: Nets and electrofishing
PARAMETERS SAMPLED: Heavy Metals & Organics

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	3	100	0	NA	NA
	whole	10	100	0	NA	NA
Cadmium	fillet	3	100	0	NA	NA
	whole	10	90	1	0.1	0.1
Chromium	fillet	3	100	0	NA	NA
	whole	10	60	4	0.29-1.10	0.67
Copper	fillet	3	0	3	0.26-0.94	0.49
	whole	10	0	10	0.43-15.0	2.46
Mercury	fillet	3	0	3	0.13-0.17	0.15
	whole	10	10	9	0.02-0.28	0.09
Nickel	fillet	3	100	0	NA	NA
	whole	10	90	1	7.1	7.1
Lead	fillet	3	100	0	NA	NA
	whole	10	80	2	2.7-2.9	2.8
Zinc	whole	5	0	14	7.7-19	12.5
Selenium	fillet	3	100	0	NA	NA
	whole	5	100	0	NA	NA

Chowan River at Edenhouse - Metals in Fish Tissue Data
(Type-Number: WC=whole composite followed by the number of fish in the composite;
FC= fillet composite) (lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg	Se mg/kg
800715	Micropterus salmoides	465	1990	WC5	0.28	<0.4	<0.50	<0.50	1.00	<1.0	<1.0	12.0	
800715	Morone americana	206	92	WC5	0.09	<0.4	<0.50	0.80	2.80	<1.0	2.70	28.0	
800715	Ictalurus punctatus	294	425	WC5	0.05	<0.4	<0.50	<0.50	1.30	<1.0	<1.0	13.0	
810722	Ictalurus punctatus	285	334	WC5	0.02	<0.4	<0.50	<0.50	0.77	<1.0	<1.0	15.0	
810722	Morone americana	212	180	WC5	0.04	<0.4	<0.50	<0.50	15.00	<1.0	<1.0	15.0	
890315	Cyprinus carpio	610	3964	WC2	0.04	<1.0	<0.10	0.49	0.86	<0.50	<0.50		<0.50
890315	Moxostoma sp	38.2	714	WC2	0.08	<1.0	<0.10	<0.25	0.85	<0.50	<0.50		<0.50
890315	Dorosoma cepedianum	329	383	WC3	<0.02	<1.0	<0.10	0.29	0.74	<0.50	<0.50		<0.50
890315	Ictalurus punctatus	412	714	WC2	0.12	<1.0	<0.10	<0.25	0.43	<0.50	<0.50		<0.50
890315	Morone americana	182	113	WC3	0.12	<1.0	0.10	1.10	0.81	7.10	2.90		<0.50
890315	Micropterus salmoides	372	821	FC4	0.16	<1.0	<0.10	<0.25	0.27	<0.50	<0.50		<0.50
890315	Perca flavescens	212	132	FC2	0.17	<1.0	<0.10	<0.25	0.26	<0.50	<0.50		<0.50
890315	Morone americana	202	181	FC5	0.13	<1.0	<0.10	<0.25	0.94	<0.50	<0.50		<0.50

Chowan River at Edenhouse - Organics in Fish Tissue Data
(Species: LMB = Micropterus salmoides, WP = Morone americana, CHC = Ictalurus punctatus
RHS = Moxostoma sp., C = Carp) (Type-Number: WC=whole composite followed by the number
of fish in the composite; FC= fillet composite) (ND = No Data)

Date	800715	800708	800702	810722	890315	890315	890315
Species	LMB	WP	CHC	CHC	LMB	RHS	C
Avg Wt (gm)	1990	92	425	334	821	714	3964
Avg Ln (mm)	465	206	294	285	372	382	610
Type-Number	WC5	WC5	WC5	WC5	FC4	WC2	WC2
Aldrin (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.0005	<0.0005	<0.0005
Dieldrin (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.0008	0.003	0.002
o,p DDD (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.002	<0.002	<0.002
p,p DDD (µg/g)	0.06	0.07	0.14	<0.04	<0.002	<0.002	0.009
o,p DDE (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.002	<0.002	<0.002
p,p DDE (µg/g)	0.06	0.1	0.27	0.01	0.006	<0.0005	0.02
Total DDT (µg/g)	<0.09	<0.09	<0.09	<0.09	ND	ND	ND
o,p DDT (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.002	<0.002	<0.002
p,p DDT (µg/g)	<0.07	<0.07	<0.07	<0.07	<0.005	<0.005	<0.005
cis-Chlordane (µg/g)	<0.06	<0.06	<0.06	<0.06	<0.0008	<0.0008	<0.0008
trans-Chlordane (µg/g)	<0.06	<0.06	<0.06	<0.06	<0.0008	<0.0008	<0.0008
trans-Nchlor (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.0008	<0.0008	0.003
Methoxychlor (µg/kg)	<80	<80	<80	<80	<10	<10	<10
Hxchlbenzene (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.0003	<0.0003	<0.0003
PCP (µg/g)	<2.0	<2.0	<2.0	<2.0	ND	ND	ND
alpha-BHC (µg/g)	<0.01	<0.01	<0.01	<0.01	<0.0003	<0.0003	0.001
gamma-BHC (µg/g)	<0.01	<0.01	<0.01	<0.01	<0.0003	<0.0003	<0.0003
Endrin (mg/kg)	<0.04	<0.04	<0.04	<0.04	<0.002	<0.002	<0.002
PCB (mg/kg)	<0.40	<0.40	<0.40	<0.40	<0.013	<0.013	<0.013
Endosulfan I (mg/kg)	ND	ND	ND	ND	<0.0005	<0.0005	<0.0005
Endosulfan II (mg/kg)	ND	ND	ND	ND	<0.002	<0.002	<0.002
Endosulfan Sulfate (mg/kg)	ND	ND	ND	ND	<0.025	<0.025	<0.025
Heptachlor (µg/kg)	ND	ND	ND	ND	ND	<0.25	<0.25
Heptachlor Expoxide (µg/kg	ND	ND	ND	ND	ND	<0.50	<0.50

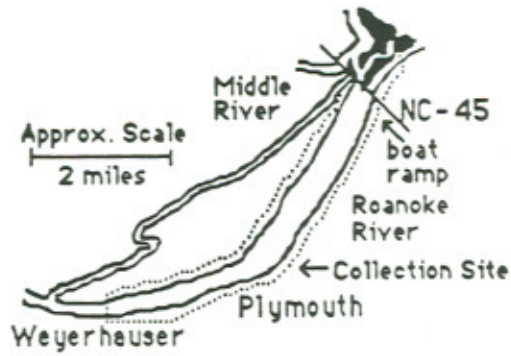
STATION NAME: Roanoke River near Plymouth
STATION NUMBER: 02081141

RIVER BASIN: Roanoke

SUB BASIN: 03-02-09

COUNTY: Washington

STREAM CLASS: C SW



DRAINAGE AREA: 9666 sq. mi.

LOCATION: Roanoke River from the Weyerhauser facility to the mouth of the river below NC-45.

Latitude 35° 53' 51" **Longitude** 76° 43' 49"

REASON FOR SAMPLING : Ambient Station

SAMPLING DATES: September 13, 1980, July 14, 1981, September 5, 1984 July 28, 1986, December 14, 1987, December 20, 1988 May 2, 1989

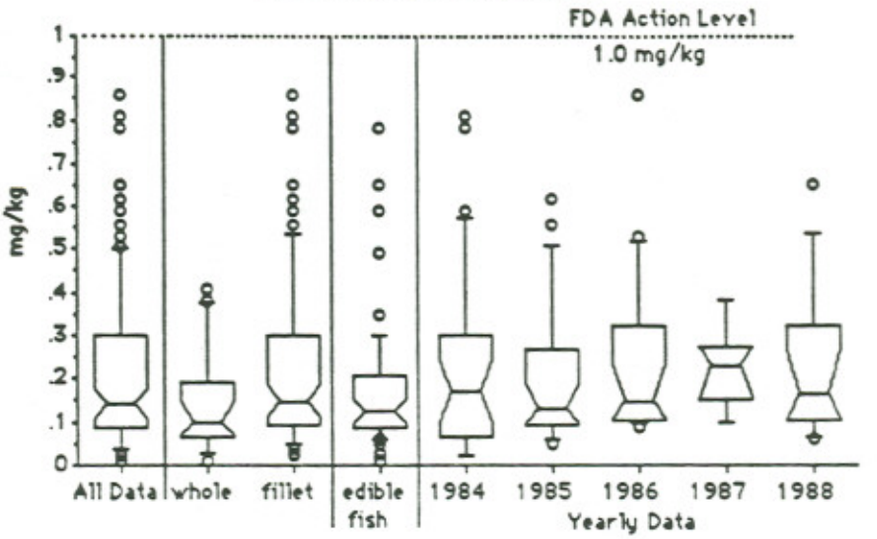
METHOD OF COLLECTION: Electrofishing

PARAMETERS SAMPLED: Heavy Metals and Organics

STATION SUMMARY

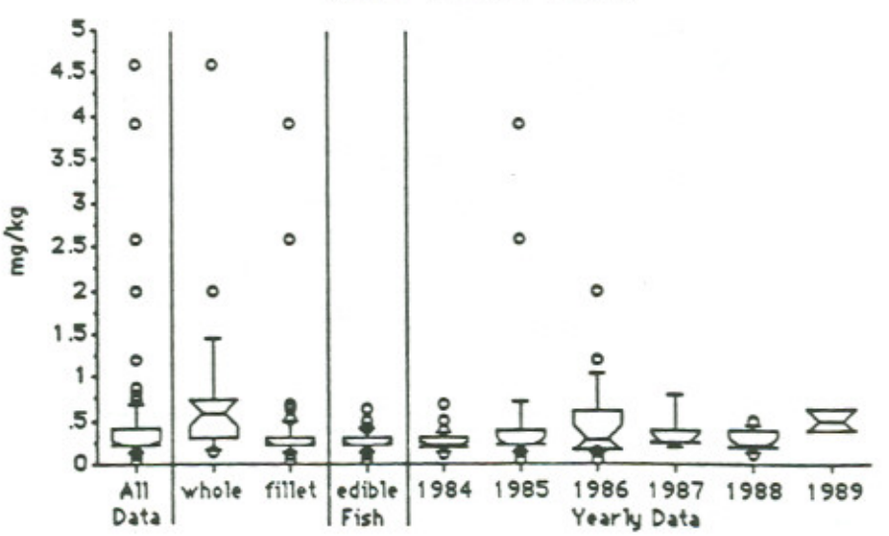
Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	48	100	0	NA	NA
	whole	7	100	0	NA	NA
Cadmium	fillet	74	100	0	NA	NA
	whole	22	100	0	NA	NA
Chromium	fillet	74	100	0	NA	NA
	whole	22	95	1	0.65	0.65
Copper	fillet	74	3	72	0.12-3.90	0.34
	whole	22	0	22	0.14-4.60	1.05
Mercury	fillet	74	0	74	0.02-0.86	0.23
	whole	18	11	16	0.03-0.41	0.16
Nickel	fillet	74	100	0	NA	NA
	whole	22	100	0	NA	NA
Lead	fillet	74	100	0	NA	NA
	whole	22	100	0	NA	NA
Zinc	fillet	58	0	58	1.0-18.0	6.6
	whole	17	0	17	4.1-27	9.2
Selenium	fillet	13	100	0	NA	NA
	whole	3	100	0	NA	NA

Roanoke River at Plymouth
Mercury in Fish Tissue



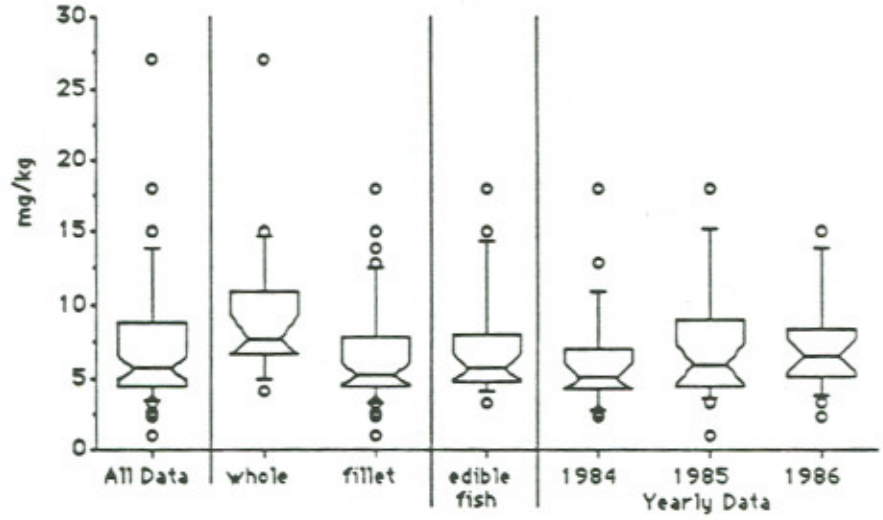
Data Set	Mean mg/kg	Median mg/kg	Std Dev mg/kg	Count	Minimum mg/kg	Maximum mg/kg
All Data	0.21	0.14	0.19	92	0.01	0.86
Whole	0.15	0.10	0.12	18	0.01	0.41
Fillet	0.23	0.14	0.20	74	0.02	0.86
Edible	0.17	0.12	0.15	58	0.01	0.78
1980	0.06	0.06	0.04	2	0.03	0.09
1981	0.06	0.06	0.04	2	0.03	0.08
1984	0.24	0.17	0.22	27	0.02	0.81
1985	0.20	0.13	0.17	24	0.05	0.62
1986	0.24	0.14	0.21	16	0.09	0.86
1987	0.22	0.23	0.10	5	0.10	0.38
1988	0.24	0.16	0.19	12	0.06	0.65
1989	0.03	0.03	0.02	4	0.01	0.06

Roanoke River at Plymouth
Copper in Fish Tissue



Data Set	Mean mg/kg	Median mg/kg	Std Dev mg/kg	Count	Minimum mg/kg	Maximum mg/kg
All Data	0.43	0.23	0.07	97	0.05	4.60
Whole	0.76	0.58	0.95	22	0.14	4.60
Fillet	0.33	0.22	0.52	74	0.05	3.90
Edible	0.24	0.21	0.12	46	0.05	0.63
1980	2.64	2.64	2.77	2	0.68	4.60
1981	0.57	0.57	0.15	2	0.47	0.68
1984	0.25	0.21	0.12	27	0.12	0.67
1985	0.51	0.23	0.87	24	0.05	3.90
1986	0.46	0.28	0.47	20	0.05	2.00
1987	0.34	0.24	0.25	5	0.20	0.78
1988	0.26	0.2	0.12	12	0.12	0.49
1989	0.49	0.5	0.16	4	0.31	0.63

Roanoke River at Plymouth
Zinc in Fish Tissue



Data Set	Mean mg/kg	Median mg/kg	Std Dev mg/kg	Count	Minimum mg/kg	Maximum mg/kg
All Data	7.3	5.8	4.50	77	1.0	27.0
Whole	9.5	7.75	5.48	18	4.1	27.0
Fillet	6.6	5.3	4.00	58	1.0	18.0
Edible	7.2	5.80	3.98	31	3.2	18.0
1980	19.0	19	11.31	2	11.0	27.0
1981	10.0	10	1.41	2	9.0	11.0
1984	6.1	5.1	3.33	27	2.3	18.0
1985	7.5	5.85	4.64	24	1.0	18.0
1986	7.2	6.5	3.52	22	2.3	15.0

Roanoke River at Plymouth - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means) (ND= No Data)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg	Se mg/kg
840905	Cyprinus carpio	546	2870	F1	0.17	<0.4	<0.10	<0.25	0.37	<0.50	<0.50	11.0	ND
840905	Cyprinus carpio	475	1660	F1	0.06	<0.4	<0.10	<0.25	0.49	<0.50	<0.50	18.0	ND
840905	Cyprinus carpio	605	3200	F1	0.30	<0.4	<0.10	<0.25	0.67	<0.50	<0.50	13.0	ND
840905	Lepisosteus osseus	784	1300	F1	0.42	<0.4	<0.10	<0.25	0.36	<0.50	<0.50	4.5	ND
840905	Amia calva	538	1490	F1	0.81	<0.4	<0.10	<0.25	0.21	<0.50	<0.50	7.5	ND
840905	Amia calva	511	1320	F1	0.45	<0.4	<0.10	<0.25	0.21	<0.50	<0.50	3.9	ND
840905	Amia calva	455	990	F1	0.30	<0.4	<0.10	<0.25	0.12	<0.50	<0.50	2.3	ND
840905	Amia calva	411	650	F1	0.51	<0.4	<0.10	<0.25	0.15	<0.50	<0.50	2.4	ND
840905	Amia calva	400	590	F1	0.30	<0.4	<0.10	<0.25	0.16	<0.50	<0.50	2.6	ND
840905	Micropterus salmoides	488	2000	F1	0.59	<0.4	<0.10	<0.25	0.14	<0.50	<0.50	4.1	ND
840905	Micropterus salmoides	330	560	F1	0.22	<0.4	<0.10	<0.25	0.22	<0.50	<0.50	5.9	ND
840905	Micropterus salmoides	330	490	F1	0.28	<0.4	<0.10	<0.25	0.18	<0.50	<0.50	5.3	ND
840905	Micropterus salmoides	220	142	F1	0.20	<0.4	<0.10	<0.25	0.28	<0.50	<0.50	11.0	ND
840905	Micropterus salmoides	319	510	F1	0.17	<0.4	<0.10	<0.25	0.20	<0.50	<0.50	4.9	ND
840905	Ictalurus punctatus	515	1250	F1	0.18	<0.4	<0.10	<0.25	0.17	<0.50	<0.50	5.4	ND
840905	Ictalurus punctatus	478	970	F1	0.17	<0.4	<0.10	<0.25	0.18	<0.50	<0.50	4.1	ND
840905	Ictalurus punctatus	418	590	F1	0.09	<0.4	<0.10	<0.25	0.23	<0.50	<0.50	4.6	ND
840905	Ictalurus punctatus	466	900	F1	0.09	<0.4	<0.10	<0.25	0.18	<0.50	<0.50	5.3	ND
840905	Ictalurus punctatus	361	410	F1	0.06	<0.4	<0.10	<0.25	0.25	<0.50	<0.50	6.0	ND
840905	Ictalurus nebulosus	337	490	F1	0.07	<0.4	<0.10	<0.25	0.35	<0.50	<0.50	4.6	ND
840905	Dorosoma cepedianum	349	471	F1	0.02	<0.4	<0.10	<0.25	0.12	<0.50	<0.50	3.3	ND
840905	Dorosoma cepedianum	363	590	F1	0.02	<0.4	<0.10	<0.25	0.25	<0.50	<0.50	5.1	ND
840905	Dorosoma cepedianum	346	448	F1	0.02	<0.4	<0.10	<0.25	0.24	<0.50	<0.50	4.3	ND
840905	Dorosoma cepedianum	335	420	F1	0.04	<0.4	<0.10	<0.25	0.31	<0.50	<0.50	5.8	ND
840905	Dorosoma cepedianum	339	498	F1	0.02	<0.4	<0.10	<0.25	0.36	<0.50	<0.50	4.7	ND
840905	Lepomis macrochirus	200	171	F1	0.14	<0.4	<0.10	<0.25	0.12	<0.50	<0.50	7.8	ND
840905	Lepomis macrochirus	184	159	F1	0.78	<0.4	<0.10	<0.25	0.21	<0.50	<0.50	8.1	ND
850805	Micropterus salmoides	323	520	F1	0.30	<0.4	<0.10	<0.25	0.49	<0.50	<0.50	15.0	ND
850805	Micropterus salmoides	312	450	F1	0.22	<0.4	<0.10	<0.25	0.14	<0.50	<0.50	8.8	ND
850805	Micropterus salmoides	266	240	F1	0.10	ND	<0.10	<0.25	0.29	<0.50	<0.50	5.3	ND
850805	Micropterus salmoides	251	245	F1	0.06	ND	<0.10	<0.25	0.18	<0.50	<0.50	5.9	ND
850805	Micropterus salmoides	251	230	F1	0.05	ND	<0.10	<0.25	0.13	<0.50	<0.50	5.8	ND
850805	Ictalurus nebulosus	345	510	F1	0.08	ND	<0.10	<0.25	0.42	<0.50	<0.50	7.0	ND
850805	Ictalurus catus	412	920	F1	0.10	<0.4	<0.10	<0.25	0.31	<0.50	<0.50	7.0	ND
850805	Ictalurus catus	331	440	F1	0.08	ND	<0.10	<0.25	0.22	<0.50	<0.50	4.2	ND
850805	Ictalurus catus	334	480	F1	0.05	ND	<0.10	<0.25	0.23	<0.50	<0.50	4.1	ND
850805	Ictalurus catus	338	420	F1	0.13	ND	<0.10	<0.25	0.35	<0.50	<0.50	6.6	ND
850805	Ictalurus catus	287	310	F1	0.13	ND	<0.10	<0.25	0.20	<0.50	<0.50	4.2	ND
850805	Erimyzon sucetta	249	258	F1	0.13	ND	<0.10	<0.25	0.22	<0.50	<0.50	7.9	ND
850805	Lepomis microlophus	243	290	F1	0.10	ND	<0.10	<0.25	0.20	<0.50	<0.50	18.0	ND
850805	Lepomis gibbosus	138	64	F1	0.13	ND	<0.10	<0.25	0.21	<0.50	<0.50	14.0	ND
850805	Lepomis gibbosus	149	75	F1	0.13	ND	<0.10	<0.25	<0.10	<0.50	<0.50	18.0	ND
850805	Amia calva	417	720	F1	0.34	<0.4	<0.10	<0.25	3.90	<0.50	<0.50	4.1	ND
850805	Cyprinus carpio	598	2800	F1	0.24	ND	<0.10	<0.25	0.18	<0.50	<0.50	5.6	ND
850805	Cyprinus carpio	578	2580	F1	0.14	ND	<0.10	<0.25	0.23	<0.50	<0.50	1.0	ND
850805	Cyprinus carpio	666	3900	F1	0.15	<0.4	<0.10	<0.25	0.51	<0.50	<0.50	12.0	ND
850805	Amia calva	482	1000	F1	0.50	ND	<0.10	<0.25	0.23	<0.50	<0.50	5.2	ND
850805	Amia calva	578	1800	F1	0.56	ND	<0.10	<0.25	0.24	<0.50	<0.50	3.2	ND
850805	Amia calva	492	1120	F1	0.41	<0.4	<0.10	<0.25	0.51	<0.50	<0.50	3.7	ND
850805	Amia calva	501	1100	F1	0.62	<0.4	<0.10	<0.25	2.60	<0.50	<0.50	4.2	ND
850805	Moxostoma anisurum	489	1220	F1	0.07	<0.4	<0.10	<0.25	0.19	<0.50	<0.50	9.3	ND
860728	Amia calva	642	2360	F1	0.86	ND	<0.10	<0.25	0.18	<0.50	<0.50	4.3	ND
860728	Amia calva	471	1100	F1	0.53	ND	<0.10	<0.25	0.13	<0.50	<0.50	2.3	ND
860728	Cyprinus carpio	605	2680	F1	0.11	ND	<0.10	<0.25	0.29	<0.50	<0.50	11.0	ND
860728	Micropterus salmoides	402	920	F1	0.28	ND	<0.10	<0.25	<0.10	<0.50	<0.50	3.2	ND
860728	Micropterus salmoides	310	420	F1	0.09	ND	<0.10	<0.25	0.15	<0.50	<0.50	4.8	ND
860728	Micropterus salmoides	325	480	F1	0.21	ND	<0.10	<0.25	0.14	<0.50	<0.50	8.9	ND
860728	Ictalurus catus	336	540	F1	0.10	ND	<0.10	<0.25	0.63	<0.50	<0.50	4.9	ND
871214	Lepomis macrochirus	172	104	FC3	0.16	ND	<0.10	<0.25	0.23	<0.50	<0.50	ND	ND
871214	Perca flavescens	209	132	FC5	0.10	ND	<0.10	<0.25	0.24	<0.50	<0.50	ND	ND
871214	Micropterus salmoides	292	396	FC3	0.24	ND	<0.10	<0.25	0.20	<0.50	<0.50	ND	ND
881220	Micropterus salmoides	340	530	FC5	0.21	<2.0	<0.10	<0.25	0.18	<0.50	<0.50	ND	<1.0
881220	Micropterus salmoides	385	900	F1	0.35	<2.0	<0.10	<0.25	0.21	<0.50	<0.50	ND	<1.0
881220	Micropterus salmoides	260	250	F1	0.07	<2.0	<0.10	<0.25	0.34	<0.50	<0.50	ND	<1.0
881220	Micropterus salmoides	450	1525	F1	0.49	<2.0	<0.10	<0.25	0.49	<0.50	<0.50	ND	<1.0
881220	Perca flavescens	225	171	FC4	0.12	<2.0	<0.10	<0.25	0.42	<0.50	<0.50	ND	<1.0
881220	Lepomis microlophus	265	450	FC2	0.08	<1.0	<0.10	<0.25	0.24	<0.50	<0.50	ND	<0.50
881220	Lepomis macrochirus	18.2	175	FC2	0.06	<1.0	<0.10	<0.25	0.41	<0.50	<0.50	ND	<0.50
881220	Perca flavescens	205	150	FC3	0.12	<2.0	<0.10	<0.25	0.15	<0.50	<0.50	ND	<1.0
881220	Esox niger	350	300	F1	0.12	<2.0	<0.10	<0.25	0.15	<0.50	<0.50	ND	<1.0
881220	Micropterus salmoides	320	416	FC5	0.30	<2.0	<0.10	<0.25	0.19	<0.50	<0.50	ND	<1.0
881220	Micropterus salmoides	357	642	FC3	0.30	<2.0	<0.10	<0.25	0.12	<0.50	<0.50	ND	<1.0
881220	Micropterus salmoides	456	1387	FC5	0.65	<2.0	<0.10	<0.25	0.20	<0.50	<0.50	ND	<1.0
890502	Ictalurus punctatus	438	917	FC3	0.03	<1.0	<0.10	<0.25	0.31	<0.50	<0.50	ND	<0.50

Roanoke River at Plymouth - Metals in Fish Tissue Data (Continued)

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means) (ND= No Data)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg	Se mg/kg
800913	Ictalurus punctatus	403	501	WC5	<0.05	<0.4	<0.50	<0.50	0.68	<1.00	<1.00	11.0	ND
800913	Morone americana	176	80	WC5	0.09	<0.4	<0.50	0.65	4.60	<1.00	<1.00	27.0	ND
810714	Ictalurus catus	275	392	WC5	0.03	<0.4	<0.50	<0.50	0.68	<1.00	<1.00	11.0	ND
810714	Micropterus salmoides	281	360	WC5	0.08	<0.4	<0.50	<0.50	0.47	<1.00	<1.00	9.0	ND
860728	Amia calva	585	2000	W1	0.41	ND	<0.10	<0.25	1.20	<0.50	<0.50	6.5	ND
860728	Ictalurus catus	316	398	WC5	ND	ND	<0.10	<0.25	0.35	<0.50	<0.50	5.7	ND
860728	Lepomis macrochirus	176	115	WC4	ND	ND	<0.10	<0.25	0.58	<0.50	<0.50	15.0	ND
860728	Micropterus salmoides	239	183	WC3	ND	ND	<0.10	<0.25	0.14	<0.50	<0.50	7.1	ND
860728	Amia calva	595	2060	W1	ND	ND	<0.10	<0.25	2.00	<0.50	<0.50	4.9	ND
860728	Amia calva	552	1480	W1	0.37	ND	<0.10	<0.25	0.74	<0.50	<0.50	4.9	ND
860728	Micropterus salmoides	295	380	W1	0.10	ND	<0.10	<0.25	0.17	<0.50	<0.50	8.4	ND
860728	Micropterus salmoides	303	400	W1	0.10	ND	<0.10	<0.25	0.15	<0.50	<0.50	8.4	ND
860728	Ictalurus catus	450	1360	W1	0.14	ND	<0.10	<0.25	0.28	<0.50	<0.50	4.1	ND
860728	Ictalurus catus	405	850	W1	0.10	ND	<0.10	<0.25	0.59	<0.50	<0.50	5.3	ND
860728	Ictalurus catus	383	660	W1	0.15	ND	<0.10	<0.25	0.38	<0.50	<0.50	6.5	ND
860728	Ictalurus catus	367	650	W1	0.14	ND	<0.10	<0.25	0.88	<0.50	<0.50	6.8	ND
860728	Lepomis microlophus	281	480	W1	0.19	ND	<0.10	<0.25	0.21	<0.50	<0.50	14.0	ND
871214	Amia calva	673	3013	WC3	0.38	ND	<0.10	<0.25	0.78	<0.50	<0.50	ND	ND
871214	Esox niger	422	452	W1	0.23	ND	<0.10	<0.25	0.24	<0.50	<0.50	ND	ND
890502	Cyprinus carpio	440	850	W1	0.03	<2.0	<0.10	<0.25	0.62	<0.50	<0.50	ND	<1.0
890502	Ictalurus nebulosus	386	950	W1	0.06	<1.0	<0.10	<0.25	0.38	<0.50	<0.50	ND	<0.50
890502	Notemigonus crysoleucas	234	160	W1	<0.02	<1.0	<0.10	<0.25	0.63	<0.50	<0.50	ND	<0.50

Roanoke River at Plymouth - Organics in Fish Tissue Data

(Species: WP= Morone americana; CHC= Ictalurus punctatus) (Type-Number: WC= whole composite followed by the number of fish in the composite) (Lengths and weights of composites are means)

Date	800922	800922
Species	WP	CHC
Avg Wt (gm)	80	501
Avg Ln (mm)	176	403
Type-Number	WC5	WC5
Aldrin (mg/kg)	<0.01	<0.01
Dieldrin (mg/kg)	<0.02	<0.02
o,p DDD (µg/g)	<0.02	<0.02
p,p DDD (µg/g)	0.05	0.8
o,p DDE (µg/g)	<0.02	<0.02
p,p DDE (µg/g)	0.08	0.11
Total DDT (µg/g)	<0.09	<0.09
o,p DDT (µg/g)	<0.02	<0.02
p,p DDT (µg/g)	<0.07	<0.07
cis-Chlordane (µg/g)	<0.06	<0.06
trans-Chlordane (µg/g)	<0.06	<0.06
trans-Nchlor (µg/g)	<0.02	<0.02
Methoxychlor (µg/kg)	<80	<80
Hxchlbenzene (mg/kg)	<0.01	<0.01
PCP (µg/g)	<2.0	<2.0
alpha-BHC (µg/g)	<0.01	<0.01
gamma-BHC (µg/g)	<0.01	<0.01
Endrin (mg/kg)	<0.04	<0.04
PCB (mg/kg)	<0.40	<0.40

STATION NAME: Albemarle Sound at Norfolk & Southern RR Bridge near Edenton

STATION NUMBER: 02081145

RIVER BASIN: Pasquotank

SUB BASIN: 03-01-52

COUNTY: Chowan

STREAM CLASS: SB

DRAINAGE AREA: Indeterminate

LOCATION: North Shore of Albemarle Sound at Norfolk & Southern RR Bridge

Latitude 35° 59' 30" **Longitude** 76° 36' 30"

REASON FOR SAMPLING : Albemarle-Pamlico Estuarine Study

SAMPLING DATES: June 8, 1989

METHOD OF COLLECTION: Nets

PARAMETERS SAMPLED: Heavy Metals

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	4	100	0	NA	NA
	whole	5	100	0	NA	NA
Cadmium	fillet	4	100	0	NA	NA
	whole	5	100	0	NA	NA
Chromium	fillet	4	100	0	NA	NA
	whole	5	80	1	0.26	0.26
Copper	fillet	4	0	4	0.12-0.21	0.18
	whole	5	0	5	0.29-0.95	0.68
Mercury	fillet	4	0	4	0.06-0.14	0.09
	whole	5	20	4	0.02-0.12	0.06
Nickel	fillet	4	100	0	NA	NA
	whole	5	100	0	NA	NA
Lead	fillet	4	100	0	NA	NA
	whole	5	100	0	NA	NA
Selenium	fillet	4	100	0	NA	NA
	whole	5	100	0	NA	NA

Albemarle Sound at Norfolk & Southern RR Bridge near Edenton
Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC= fillet composite: Lengths and weights of composites are means) (ND = No Data)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Se mg/kg
890608	Cyprinus carpio	525	2110	W1	0.02	<2.0	<0.10	<0.25	0.90	<0.50	<0.50	<1.0
890608	Moxostroma sp.	356	738	WC3	0.08	<2.0	<0.10	<0.25	0.29	<0.50	<0.50	<1.0
890608	Lepisosteus osseus	714	1009	WC4	0.12	<2.0	<0.10	0.26	0.67	<0.50	<0.50	<1.0
890608	Mugil cephalus	344	400	WC5	<0.02	<2.0	<0.10	<0.25	0.95	<0.50	<0.50	<1.0
890608	Dorosoma cepedianum	386	561	WC5	0.02	<2.0	<0.10	<0.25	0.57	<0.50	<0.50	<1.0
890608	Ictalurus punctatus	422	749	FC5	0.06	<2.0	<0.10	<0.25	0.21	<0.50	<0.50	<1.0
890608	Morone americana	247	220	FC4	0.14	<2.0	<0.10	<0.25	0.18	<0.50	<0.50	<1.0
890608	Ictalurus catus	292	287	FC4	0.06	<2.0	<0.10	<0.25	0.21	<0.50	<0.50	<1.0
890608	Pomoxis nigromaculatus	215	159	FC5	0.11	<2.0	<0.10	<0.25	0.12	<0.50	<0.50	<1.0

STATION NAME: Kendricks Creek at Mackeys
STATION NUMBER: 02081185

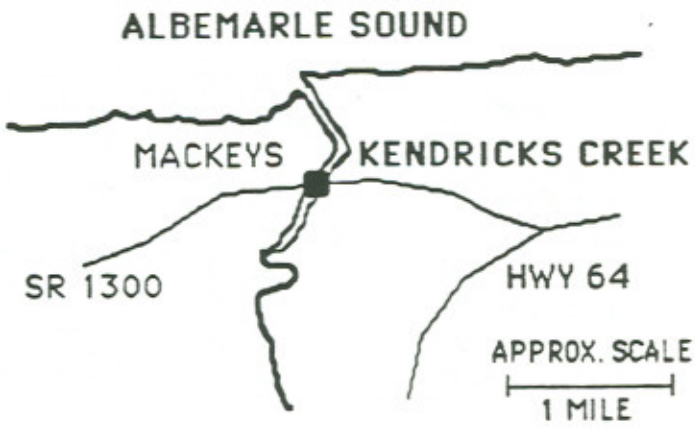
RIVER BASIN: Pasquotank

SUB BASIN: 03-01-53

COUNTY: Washington

STREAM CLASS: SC

DRAINAGE AREA: **61.5** sq. mi.



LOCATION: Kendricks Creek at SR-1300 at Mackeys
Latitude 35° 55' 45" **Longitude** 76° 36' 40"
REASON FOR SAMPLING : Ambient Site, Albemarle-Pamlico Peninsula Study
SAMPLING DATE: June 8, 1983
METHOD OF COLLECTION: Electroshocking
PARAMETERS SAMPLED: Heavy Metals & Organics

AVERAGES:

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	3	100	0	NA	NA
	whole	7	100	0	NA	NA
Cadmium	fillet	3	100	0	NA	NA
	whole	7	100	0	NA	NA
Chromium	fillet	3	100	0	NA	NA
	whole	7	71	2	0.59	0.59
Copper	fillet	3	33	2	0.22-0.26	0.24
	whole	7	0	7	0.51-0.96	0.68
Mercury	fillet	3	0	3	0.12-1.30	0.56
	whole	7	0	7	0.04-0.08	0.06
Nickel	fillet	3	100	0	NA	NA
	whole	7	71	2	1.10-1.70	1.4
Lead	fillet	3	100	0	NA	NA
	whole	7	0	7	1.80-3.10	2.44
Zinc	fillet	3	0	3	2.4-9.6	4.8
	whole	7	0	7	13-35	20.8

Kendricks Creek at Mackeys - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC= fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg
830608	Pomoxis nigromaculatus	274	310	W1	0.08	<0.40	<0.20	<0.50	0.51	<1.0	1.80	15.0
830608	Perca flavescens	177	61	WC2	0.05	<0.42	<0.20	<0.50	0.71	<1.0	2.60	13.0
830608	Lepomis macrochirus	189	116	W1	0.05	<0.40	<0.20	<0.50	0.67	<1.0	2.10	17.0
830608	Lepomis macrochirus	186	112	W1	0.08	<0.38	<0.20	<0.50	0.56	<1.0	2.10	13.0
830608	Lepomis macrochirus	154	82	WC4	0.04	<0.40	<0.20	0.59	0.96	<1.0	3.00	20.0
830608	Lepomis macrochirus	139	49	WC4	0.04	<0.39	<0.20	0.59	0.83	1.70	3.10	33.0
830608	Lepomis gibbosus	167	85	W1	0.05	<0.42	<0.20	<0.50	0.53	1.10	2.40	35.0
830608	Amia calva	580	1985	F1	1.30	<0.39	<0.20	<0.50	0.26	<1.0	<1.0	2.4
830608	Lepisosteus osseus	740	1131	F1	0.12	<0.42	<0.20	<0.50	0.22	<1.0	<1.0	2.5
830608	Esox niger	396	430	F1	0.27	<0.40	<0.20	<0.50	<0.20	<1.0	<1.0	9.6

Kendricks Creek at Mackeys - Organics in Fish Tissue Data

(Species: LG = Lepisosteus osseus, BKS = Pomoxis nigromaculatus, CHP = Esox niger
BGS = Lepomis macrochirus) (Type-Number: W= whole fish sample; F = fillet sample)

Date	830608	830608	830608	830608	830608
Species	LG	BKS	CHP	BGS	BGS
Avg Wt (gm)	1131	310	430	116	112
Avg Ln (mm)	740	274	396	189	186
Type-Number	F1	W1	F1	W1	W1
Aldrin (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01
Dieldrin (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02
o,p DDD (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02
p,p DDD (µg/g)	<0.04	<0.04	<0.04	<0.04	<0.04
o,p DDE (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02
p,p DDE (µg/g)	0.17	<0.02	<0.02	<0.02	<0.02
Total DDT (µg/g)	<0.09	<0.09	<0.09	<0.09	<0.09
o,p DDT (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02
p,p DDT (µg/g)	<0.07	<0.07	<0.07	<0.07	<0.07
cis-Chlordane (µg/g)	<0.06	<0.06	<0.06	<0.06	<0.06
trans-Chlordane (µg/g)	<0.06	<0.06	<0.06	<0.06	<0.06
trans-Nchlor (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02
Methoxychlor (µg/kg)	<80	<80	<80	<80	<80
Hxchlbenzene (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01
PCP (µg/g)	<2.0	<2.0	<2.0	<2.0	<0.50
alpha-BHC (µg/g)	<0.01	<0.01	<0.01	<0.01	<0.01
gamma-BHC (µg/g)	<0.01	<0.04	<0.04	<0.04	<0.01
Endrin (mg/kg)	<0.04	<0.04	<0.04	<0.04	<0.04
PCB (mg/kg)	<0.40	<0.40	<0.40	<0.40	<0.40

STATION NAME: Albemarle Sound near Harvey Point
STATION NUMBER: 02081172

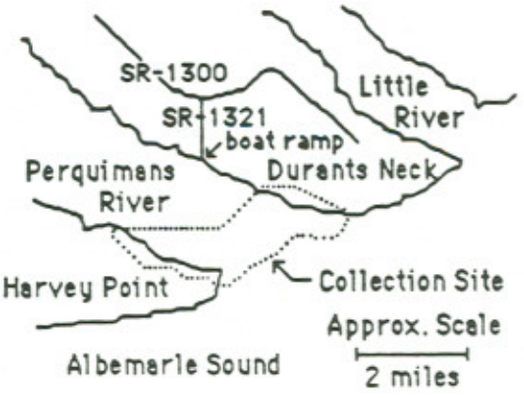
RIVER BASIN: Pasquotank

SUB BASIN: 03-01-52

COUNTY: Perquimans

STREAM CLASS: SB

DRAINAGE AREA: Indeterminate



LOCATION: Albemarle Sound off SR-1321 between Durants Neck and Harvey Point

Latitude 36° 01' 20" **Longitude** 76° 18' 30"

REASON FOR SAMPLING : Albemarle Pamlico Estuary Study

SAMPLING DATES: June 9, 1989

METHOD OF COLLECTION: Nets

PARAMETERS SAMPLED: Heavy Metals

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	3	100	0	NA	NA
	whole	4	100	0	NA	NA
Cadmium	fillet	3	100	0	NA	NA
	whole	4	100	0	NA	NA
Chromium	fillet	3	66	1	0.29	0.29
	whole	4	75	1	0.82	0.82
Copper	fillet	3	0	3	0.31-0.69	0.48
	whole	4	0	4	0.48-0.79	0.57
Mercury	fillet	3	0	3	0.04-0.19	0.09
	whole	4	25	3	0.02-0.08	0.06
Nickel	fillet	3	100	0	NA	NA
	whole	4	100	0	NA	NA
Lead	fillet	3	100	0	NA	NA
	whole	4	100	0	NA	NA
Selenium	fillet	3	100	0	NA	NA
	whole	4	100	0	NA	NA

Albemarle Sound at Harvey Point - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Se mg/kg
890609	Amia calva	592	1975	W1	0.08	<2.0	<0.10	<0.25	0.49	<0.50	<0.50	<1.0
890609	Lepisosteus osseus	676	1550	W1	0.02	<2.0	<0.10	<0.25	0.79	<0.50	<0.50	<1.0
890609	Moxostoma sp.	420	925	WC2	0.08	<2.0	<0.10	0.82	0.48	<0.50	<0.50	<1.0
890609	Dorosoma cepedianum	333	381	WC4	<0.02	<2.0	<0.10	<0.25	0.53	<0.50	<0.50	<1.0
890609	Micropterus salmoides	375	725	F1	0.19	<2.0	<0.10	<0.25	0.43	<0.50	<0.50	<1.0
890609	Morone saxatilis	420	833	FC3	0.04	<2.0	<0.10	0.29	0.69	<0.50	<0.50	<0.5
890609	Ictalurus catus	344	660	FC5	0.06	<2.0	<0.10	<0.25	0.31	<0.50	<0.50	<1.0
890609	Callinectes sapidus	Shellfish			0.02	<2.0	0.11	<0.25	8.60	<0.50	<0.50	<1.0

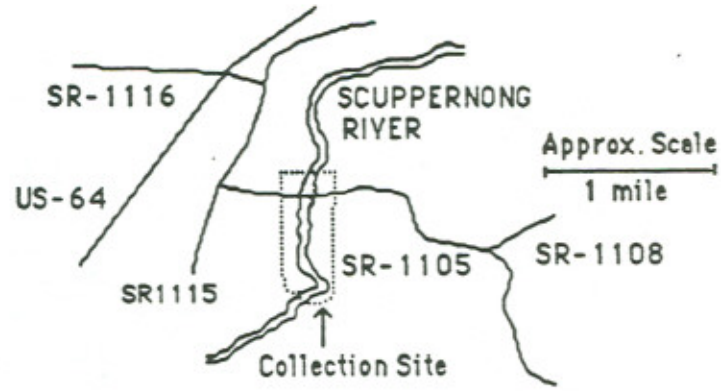
STATION NAME: Scuppernong River near Columbia
STATION NUMBER: 02081166

RIVER BASIN: Pasquotank

SUB BASIN: 03-01-53

COUNTY: Tyrrell

STREAM CLASS: C-SW



DRAINAGE AREA: 130 sq. mi.

LOCATION: Scuppernong River at SR 1105 near Columbia, NC
Latitude 35° 52' 39" **Longitude** 76° 20' 15"
REASON FOR SAMPLING : Ambient Site - Albemarle-Pamlico Peninsula Study
SAMPLING DATE: June 8, 1983, December 8, 1983
METHOD OF COLLECTION: Nets and Electrofishing
PARAMETERS SAMPLED: Heavy Metals & Organics

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	25	100	0	NA	NA
	whole	2	100	0	NA	NA
Cadmium	fillet	25	100	0	NA	NA
	whole	2	100	0	NA	NA
Chromium	fillet	25	100	0	NA	NA
	whole	2	88	3	0.58-1.10	0.87
Copper	fillet	25	4	24	0.25-2.50	0.64
	whole	2	0	2	0.48-1.10	0.79
Mercury	fillet	25	0	25	0.04-0.34	0.16
	whole	2	50	1	0.11	0.11
Nickel	fillet	25	100	0	NA	NA
	whole	2	100	0	NA	NA
Lead	fillet	25	100	0	NA	NA
	whole	2	0	2	1.80-2.10	1.95
Zinc	fillet	25	0	25	2.1-9.5	4.2
	whole	2	0	2	9.1-10.0	9.6

Scuppernong River near Columbia - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC= fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg
830608	Dorosoma cepedianum	321	300	W1	<0.02	<0.39	<0.2	<0.5	1.10	<1.0	1.80	10.0
830608	Pomoxis nigromaculatus	210	160	W1	0.11	<0.39	<0.2	<0.5	0.48	<1.0	2.10	9.1
830608	Lepisosteus osseus	710	895	F1	0.31	<0.39	<0.2	<0.5	<0.20	<1.0	<1.0	2.7
831208	Amia calva	457	813	F1	0.11	<0.4	<0.2	<0.5	0.29	<1.0	<1.0	2.2
831208	Amia calva	592	1885	F1	0.31	<0.4	<0.2	<0.5	0.33	<1.0	<1.0	2.5
831208	Amia calva	442	802	F1	0.14	<0.4	<0.2	<0.5	0.35	<1.0	<1.0	2.4
831208	Amia calva	407	652	F1	0.09	<0.4	<0.2	<0.5	0.31	<1.0	<1.0	2.7
831208	Amia calva	510	1259	F1	0.34	<0.4	<0.2	<0.5	0.25	<1.0	<1.0	2.1
831208	Amia calva	438	776	F1	0.17	<0.4	<0.2	<0.5	0.27	<1.0	<1.0	2.4
831208	Amia calva	427	765	F1	0.17	<0.4	<0.2	<0.5	0.29	<1.0	<1.0	2.4
831208	Cyprinus carpio	585	3075	F1	0.08	<0.4	<0.2	<0.5	0.65	<1.0	<1.0	9.1
831208	Cyprinus carpio	480	1684	F1	0.09	<0.4	<0.2	<0.5	0.98	<1.0	<1.0	9.0
831208	Cyprinus carpio	514	2043	F1	0.06	<0.4	<0.2	<0.5	0.75	<1.0	<1.0	7.8
831208	Cyprinus carpio	498	1625	F1	0.04	<0.4	<0.2	<0.5	1.10	<1.0	<1.0	9.5
831208	Lepisosteus osseus	625	725	F1	0.11	<0.4	<0.2	<0.5	0.52	<1.0	<1.0	3.0
831208	Lepisosteus osseus	687	1053	F1	0.17	<0.4	<0.2	<0.5	0.85	<1.0	<1.0	4.2
831208	Lepisosteus osseus	558	830	F1	0.08	<0.4	<0.2	0.64	0.48	<1.0	<1.0	3.3
831208	Ictalurus nebulosus	363	602	F1	0.04	<0.4	<0.2	<0.5	0.60	<1.0	<1.0	2.8
831208	Ictalurus nebulosus	340	533	F1	0.09	<0.4	<0.2	<0.5	0.52	<1.0	<1.0	2.8
831208	Ictalurus nebulosus	331	483	F1	0.27	<0.4	<0.2	<0.5	0.56	<1.0	<1.0	4.2
831208	Ictalurus nebulosus	315	420	F1	0.06	<0.4	<0.2	1.40	2.50	<1.0	<1.0	3.6
831208	Ictalurus natalis	315	463	F1	0.18	<0.4	<0.2	<0.5	0.94	<1.0	<1.0	2.9
831208	Morone americana	207	170	F1	0.13	<0.4	<0.2	<0.5	0.83	<1.0	<1.0	3.5
831208	Lepomis gulosus	180	160	F1	0.19	<0.4	<0.2	<0.5	0.36	<1.0	<1.0	3.6
831208	Lepomis gulosus	170	144	F1	0.27	<0.4	<0.2	<0.5	0.31	<1.0	<1.0	3.8
831208	Lepomis gulosus	165	130	F1	0.24	<0.5	<0.2	0.58	0.82	<1.0	<1.0	6.3
831208	Lepomis gulosus	170	135	F1	0.14	<0.4	<0.2	<0.5	0.48	<1.0	<1.0	4.8

Scuppernong River near Columbia - Organics in Fish Tissue Data

(Species: LG = Lepisosteus osseus, BKS = Pomoxis nigromaculatus)
(Type-Number: W= whole fish sample; F = fillet sample)

Date	830608	830608
Species	LG	BKS
Avg Wt (gm)	895	160
Avg Ln (mm)	710	210
Type-Number	F1	W1
Aldrin (mg/kg)	<0.01	<0.01
Dieldrin (mg/kg)	<0.02	<0.02
o,p DDD (µg/g)	<0.02	<0.02
p,p DDD (µg/g)	<0.04	<0.04
o,p DDE (µg/g)	<0.02	<0.02
p,p DDE (µg/g)	<0.02	<0.02
Total DDT (µg/g)	<0.09	<0.09
o,p DDT (µg/g)	<0.02	<0.02
p,p DDT (µg/g)	<0.07	<0.07
cis-Chlordane (µg/g)	<0.06	<0.06
trans-Chlordane (µg/g)	<0.06	<0.06
trans-Nchlor (µg/g)	<0.02	<0.02
Methoxychlor (µg/kg)	<80	<80
Hxchlbenzene (mg/kg)	<0.01	<0.01
PCP (µg/g)	<2.0	<2.0
alpha-BHC (µg/g)	<0.01	<0.01
gamma-BHC (µg/g)	<0.01	<0.04
Endrin (mg/kg)	<0.04	<0.04
PCB (mg/kg)	<0.40	<0.40

STATION NAME: Pasquotank River at Elizabeth City
STATION NUMBER: 02043862

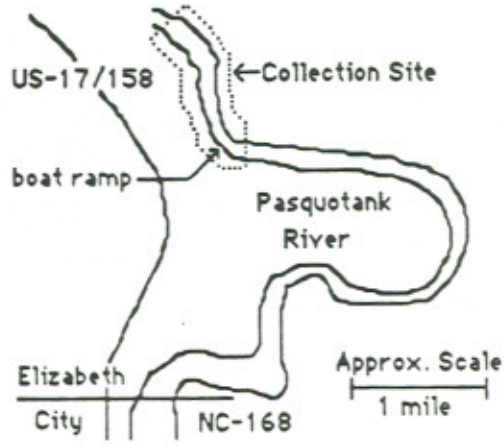
RIVER BASIN: Pasquotank

SUB BASIN: 03-01-50

COUNTY: Pasquotank

STREAM CLASS: C-SW

DRAINAGE AREA: 285 sq. mi.



LOCATION: Pasquotank River off US-17/158 at Elizabeth City
Latitude 36° 20' 00" **Longitude** 76° 13' 07"
REASON FOR SAMPLING : Albemarle-Pamlico Estuary Study
SAMPLING DATE: May 9, 1989
METHOD OF COLLECTION: Electrofishing
PARAMETERS SAMPLED: Heavy Metals

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	3	100	0	NA	NA
	whole	3	100	0	NA	NA
Cadmium	fillet	3	100	0	NA	NA
	whole	3	100	0	NA	NA
Chromium	fillet	3	100	0	NA	NA
	whole	3	100	0	NA	NA
Copper	fillet	3	0	3	0.12-0.17	0.14
	whole	3	33	2	0.59-1.40	1.00
Mercury	fillet	3	0	3	0.18-0.56	0.36
	whole	3	0	3	0.10-1.10	0.69
Nickel	fillet	3	100	0	NA	NA
	whole	3	100	0	NA	NA
Lead	fillet	3	100	0	NA	NA
	whole	3	100	0	NA	NA
Selenium	fillet	3	100	0	NA	NA
	whole	3	100	0	NA	NA

Pasquotank River at Elizabeth City - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC= fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Se mg/kg
890509	Ictalurus catus	450	1550	WC2	0.10	<0.50	<0.10	<0.25	0.59	<0.50	<0.50	<0.50
890509	Lepisosteus osseus	743	1300	WC3	1.10	<0.50	<0.10	<0.25	1.40	<0.50	<0.50	<0.50
890509	Amia calva	399	1950	WC2	0.87	<0.50	<0.10	<0.25	<0.10	<0.50	<0.50	<0.50
890509	Lepomis macrochirus	208	249	FC5	0.18	<0.50	<0.10	<0.25	0.13	<0.50	<0.50	<0.50
890509	Pomoxis nigromaculatus	275	325	F1	0.35	<0.50	<0.10	<0.25	0.12	<0.50	<0.50	<0.50
890509	Micropterus salmoides	367	855	FC5	0.56	<0.50	<0.10	<0.25	0.17	<0.50	<0.50	<0.50

STATION NAME: Alligator River at Gum Neck
STATION NUMBER: 0208117810

RIVER BASIN: Pasquotank

SUB BASIN: 03-01-51

COUNTY: Tyrrell

STREAM CLASS: SC-SW

DRAINAGE AREA: Indeterminate

LOCATION: Alligator River at Gum Neck Landing off SR-1316 near Gum Neck
Latitude 35° 41' 58" **Longitude** 76° 09' 20"
REASON FOR SAMPLING : Ambient Site, Albemarle-Pamlico Peninsula Study
SAMPLING DATES: August 12, 1982, June 16, 1983
METHOD OF COLLECTION: Gill Nets
PARAMETERS SAMPLED: Heavy Metals & Organics

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	2	100	0	NA	NA
	whole	4	100	0	NA	NA
Cadmium	fillet	2	100	0	NA	NA
	whole	5	40	3	0.22-0.25	0.24
Chromium	fillet	2	100	0	NA	NA
	whole	5	80	1	0.57	0.57
Copper	fillet	2	50	1	0.23	0.23
	whole	5	0	5	0.39-4.10	1.5
Mercury	fillet	2	0	2	0.04-0.19	0.12
	whole	5	0	5	0.03-0.10	0.04
Nickel	fillet	2	100	0	NA	NA
	whole	5	100	0	NA	NA
Lead	fillet	2	100	0	NA	NA
	whole	5	40	3	3.10-5.30	4
Zinc	fillet	2	0	2	3.2-3.3	3.3
	whole	5	0	5	9.6-27	15.7

Alligator River near Gum Neck - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC= fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg
820812	Micropterus salmoides	360	728	WC5	0.10	<0.42	<0.20	<0.50	0.40	<1.0	<1.0	9.7
820812	Ictalurus catus	358	852	WC5	0.03		<0.20	<0.50	0.39	<1.0	<1.0	9.6
830616	Ictalurus catus	210	125	W1	0.03	<0.39	0.25	<0.50	0.79	<1.0	3.10	12
830616	Morone americana	174	66	WC3	0.03	<0.41	0.22	0.57	4.10	<1.0	3.60	27
830616	Morone americana	157	42	WC3	0.03	<0.4	0.25	<0.50	1.70	<1.0	5.30	20
830616	Amia calva	575	1996	F1	0.19	<0.39	<0.20	<0.50	<0.20	<1.0	<1.0	3.3
830616	Ictalurus catus	320	554	F1	0.04	<0.40	<0.20	<0.50	0.23	<1.0	<1.0	3.2

Alligator River near Gum Neck - Organics in Fish Tissue Data

(Species: WHC = Ictalurus catus) (Type-Number: W= whole fish sample; F = fillet sample)

Date	830616	830616
Species	WHC	WHC
Avg Wt (gm)	125	554
Avg Ln (mm)	210	320
Type-Number	W1	F1
Aldrin (mg/kg)	<0.01	<0.01
Dieldrin (mg/kg)	<0.02	<0.02
o,p DDD (µg/g)	<0.02	<0.02
p,p DDD (µg/g)	<0.04	<0.04
o,p DDE (µg/g)	<0.02	<0.02
p,p DDE (µg/g)	<0.02	<0.02
Total DDT (µg/g)	<0.09	<0.09
o,p DDT (µg/g)	<0.02	<0.02
p,p DDT (µg/g)	<0.07	<0.07
cis-Chlordane (µg/g)	<0.06	<0.06
trans-Chlordane (µg/g)	<0.06	<0.06
trans-Nchlor (µg/g)	<0.02	<0.02
Methoxychlor (µg/kg)	<80	<80
Hxchlbenzene (mg/kg)	<0.01	<0.01
PCP (µg/g)	<2.0	<2.0
alpha-BHC (µg/g)	<0.01	<0.01
gamma-BHC (µg/g)	<0.01	<0.04
Endrin (mg/kg)	<0.04	<0.04
PCB (mg/kg)	<0.40	<0.40

STATION NAME: Albemarle Sound near Frog Island
STATION NUMBER: 02081179

RIVER BASIN: Pasquotank

SUB BASIN: 03-01-52

COUNTY: Perquimans

STREAM CLASS: SB

DRAINAGE AREA: Indeterminate
LOCATION: In the Albemarle Sound off Frog Island

Latitude 36° 04' 20" **Longitude** 76° 04' 00"

REASON FOR SAMPLING : Ambient Site, Albemarle/Pamlico Estuarine Study
SAMPLING DATES: August 10, 1980, September 29, 1980, June 29, 1981
July 30, 1981, June 9, 1989
METHOD OF COLLECTION: Nets
PARAMETERS SAMPLED: Heavy Metals & Organics

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	1	100	0	NA	NA
	whole	10	100	0	NA	NA
Cadmium	fillet	1	100	0	NA	NA
	whole	10	100	0	NA	NA
Chromium	fillet	1	100	0	NA	NA
	whole	10	80	2	0.31-2.10	1.21
Copper	fillet	1	0	1	0.24	0.24
	whole	10	0	10	0.40-2.30	0.99
Mercury	fillet	1	0	1	0.09	0.09
	whole	10	20	8	0.03-0.32	0.11
Nickel	fillet	1	100	0	NA	NA
	whole	10	100	0	NA	NA
Lead	fillet	1	100	0	NA	NA
	whole	10	100	0	NA	NA
Zinc	whole	6	0	6	9.4-14	11.5
Selenium	fillet	1	100	0	NA	NA
	whole	4	100	0	NA	NA

Albemarle Sound near Frog Island - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC= fillet composite: Lengths and weights of composites are means) (ND = No Data)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg	Se mg/kg
800810	Micropterus salmoides	325	540	WC5	0.32	<0.4	<0.50	<0.50	1.40	<1.0	<1.0	12	ND
800929	Ictalurus nebulosus	264	22	WC5	0.06	<0.4	<0.50	2.10	2.30	<1.0	<1.0	14	ND
800929	Ictalurus catus	343	394	WC5	<0.05	<0.4	<0.50	<0.50	1.40	<1.0	<1.0	11	ND
810629	Micropterus salmoides	341	649	WC4	0.12	<0.4	<0.50	<0.50	0.49	<1.0	<1.0	9.6	ND
810730	Micropterus salmoides	375	728	W1	0.15	<0.4	<0.50	<0.50	0.59	<1.0	<1.0	13	ND
810730	Ictalurus catus	277	402	WC5	0.05	<0.4	<0.50	<0.50	0.59	<1.0	<1.0	9.4	ND
890609	Ictalurus catus	326	841	WC5	0.03	<2.0	<0.10	<0.25	0.40	<0.50	<0.50	ND	<1.0
890609	Moxostroma sp.	397	750	W1	0.07	<2.0	<0.10	<0.25	0.43	<0.50	<0.50	ND	<1.0
890609	Lepisosteus osseus	637	924	WC5	0.09	<2.0	<0.10	<0.25	1.80	<0.50	<0.50	ND	<1.0
890609	Dorosoma cepedianum	314	325	WC5	<0.02	<2.0	<0.10	0.31	0.50	<0.50	<0.50	ND	<1.0
890609	Morone americana	257	330	FC5	0.09	<2.0	<0.10	<0.25	0.24	<0.50	<0.50	ND	<1.0
890609	Callinectes sapidus	Shellfish			0.02	<2.0	<0.10	<0.25	8.70	<0.50	<0.50	ND	<1.0

Albemarle Sound near Frog Island - Organics in Fish Tissue Data

(Species: LMB = Micropterus salmoides, BRB = Ictalurus nebulosus, WHC = Ictalurus catus)
(Type-Number: WC= whole composite followed by the number of fish in the composite)(FC= fillet composite: Lengths and weights of composites are means)

Date	800810	800929	800929	810629	810730	810730
Species	LMB	BRB	WHC	LMB	LMB	WHC
Avg Wt (gm)	540	22	394	649	728	402
Avg Ln (mm)	325	264	343	341	375	277
Type-Number	WC5	WC5	WC5	WC4	W1	WC5
Aldrin (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dieldrin (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
o,p DDD (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
p,p DDD (µg/g)	<0.04	0.15	0.07	0.14	<0.04	0.07
o,p DDE (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
p,p DDE (µg/g)	0.53	0.44	0.13	0.36	0.10	0.10
Total DDT (µg/g)	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09
o,p DDT (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
p,p DDT (µg/g)	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
cis-Chlordane (µg/g)	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
trans-Chlordane (µg/g)	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
trans-Nchlor (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methoxychlor (µg/kg)	<80	<80	<80	<80	<80	<80
Hxchlbenzene (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCP (µg/g)	<2.0	<2.0	<2.0	<2.0	<0.50	<0.50
alpha-BHC (µg/g)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
gamma-BHC (µg/g)	<0.01	<0.04	<0.04	<0.04	<0.01	<0.01
Endrin (mg/kg)	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
PCB (mg/kg)	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40

STATION NAME: Currituck Sound near Coinjock, NC
STATION NUMBER: Currituck-1

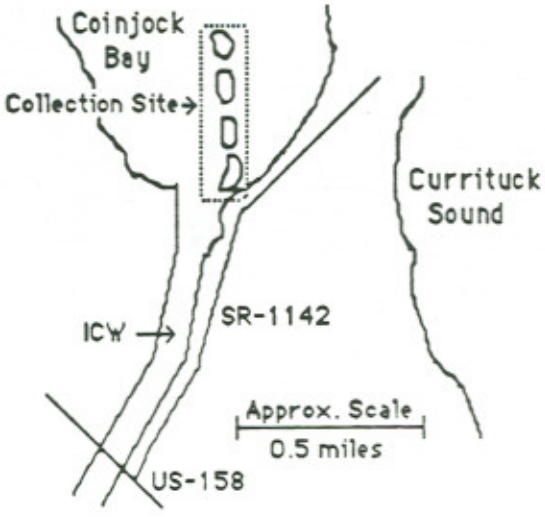
RIVER BASIN: Pasquotank

SUB BASIN: 03-01-54

COUNTY: Currituck

STREAM CLASS: SC

DRAINAGE AREA: Indeterminate



LOCATION: Currituck Sound at SR-1142 at Coinjock Bay and ICW
Latitude 36° 21' 45" **Longitude** 75° 56' 50"
REASON FOR SAMPLING : Albemarle-Pamlico Estuary Study
SAMPLING DATE: May 31, 1989
METHOD OF COLLECTION: Gill Nets
PARAMETERS SAMPLED: Heavy Metals

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	3	100	0	NA	NA
	whole	3	100	0	NA	NA
Cadmium	fillet	3	100	0	NA	NA
	whole	3	100	0	NA	NA
Chromium	fillet	3	66	1	0.26	0.26
	whole	3	100	0	NA	NA
Copper	fillet	3	33	2	0.14-0.29	0.22
	whole	3	0	3	0.53-2.10	1.34
Mercury	fillet	3	33	2	0.02-0.08	0.05
	whole	3	0	3	0.03-0.09	0.06
Nickel	fillet	3	100	0	NA	NA
	whole	3	66	1	1.8	1.8
Lead	fillet	3	100	0	NA	NA
	whole	3	100	0	NA	NA
Selenium	fillet	3	66	1	0.52	0.52
	whole	3	0	3	0.23-0.31	0.28

Currituck Sound near Coinjock - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC= fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Se mg/kg
890531	Ictalurus catus	354	780	W1	0.03	<0.20	<0.10	<0.25	0.53	<0.50	<0.50	0.3
890531	Lepisosteus osseus	665	995	WC5	0.05	<0.20	<0.10	<0.25	1.40	<0.50	<0.50	0.23
890531	Strongylura marina	420	100	W1	0.09	<0.20	<0.10	<0.25	2.10	1.80	<0.50	0.31
890531	Leiostomus xanthurus	175	95	FC2	<0.02	<0.50	<0.10	<0.25	0.29	<0.50	<0.50	<0.50
890531	Lepomis gibbosus	187	180	F1	0.08	<0.50	<0.10	<0.25	0.14	<0.50	<0.50	0.52
890531	Paralichthys lethostigma	330	440	F1	0.02	<0.50	<0.10	0.26	<0.10	<0.50	<0.50	<0.50
890531	Callinectes sapidus	Shellfish			<0.02	<0.50	<0.10	<0.25	5.40	<0.50	<0.50	<0.50

STATION NAME: Currituck Sound near Point Harbor
STATION NUMBER: PAS02A

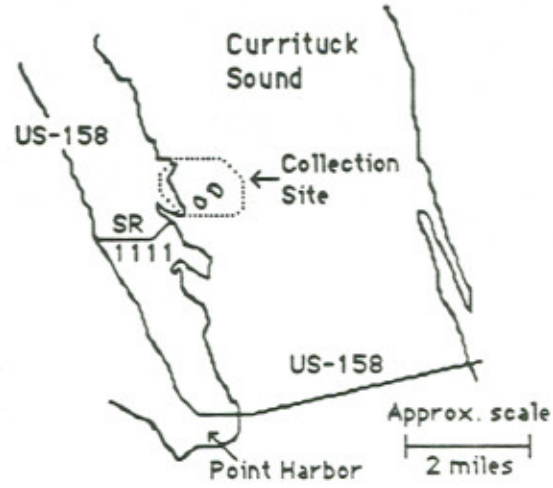
RIVER BASIN: Pasquotank

SUB BASIN: 03-01-54

COUNTY: Currituck

STREAM CLASS: SC

DRAINAGE AREA: Indeterminate



LOCATION: Currituck Sound off SR-1111 near Point Harbor
Latitude 35° 52' 39" **Longitude** 76° 20' 15"
REASON FOR SAMPLING : Albemarle-Pamlico Estuary Study
SAMPLING DATE: May 31, 1989
METHOD OF COLLECTION: Gill Nets
PARAMETERS SAMPLED: Heavy Metals

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	2	100	0	NA	NA
	whole	4	100	0	NA	NA
Cadmium	fillet	2	100	0	NA	NA
	whole	4	100	0	NA	NA
Chromium	fillet	2	100	0	NA	NA
	whole	4	75	1	0.34	0.34
Copper	fillet	2	0	2	0.22-0.24	0.23
	whole	4	0	4	0.46-4.60	1.59
Mercury	fillet	2	0	2	0.12-0.13	0.13
	whole	4	50	2	0.02-0.05	0.04
Nickel	fillet	2	100	0	NA	NA
	whole	4	100	0	NA	NA
Lead	fillet	2	100	0	NA	NA
	whole	4	100	0	NA	NA
Selenium	fillet	2	50	1	0.36	0.36
	whole	4	25	3	0.23-0.35	0.28

Currituck Sound near Point Harbor - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC= fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Se mg/kg
890531	Cyprinus carpio	325	650	W1	<0.02	<0.20	<0.10	<0.25	0.77	<0.50	<0.50	<0.20
890531	Lepisosteus osseus	710	1300	W1	0.05	<0.20	<0.10	<0.25	4.60	<0.50	<0.50	0.23
890531	Dorosoma cepedianum	368	480	W1	0.02	<0.20	<0.10	<0.25	0.54	<0.50	<0.50	0.25
890531	Trinectes maculatus	174	120	WC2	<0.02	<0.20	<0.10	0.34	0.46	<0.50	<0.50	0.35
890531	Morone americana	295	530	F1	0.13	<0.20	<0.10	<0.25	0.22	<0.50	<0.50	0.36
890531	Ictalurus catus	386	860	FC2	0.12	<0.20	<0.10	<0.25	0.24	<0.50	<0.50	<0.20

Pamlico Sound Area

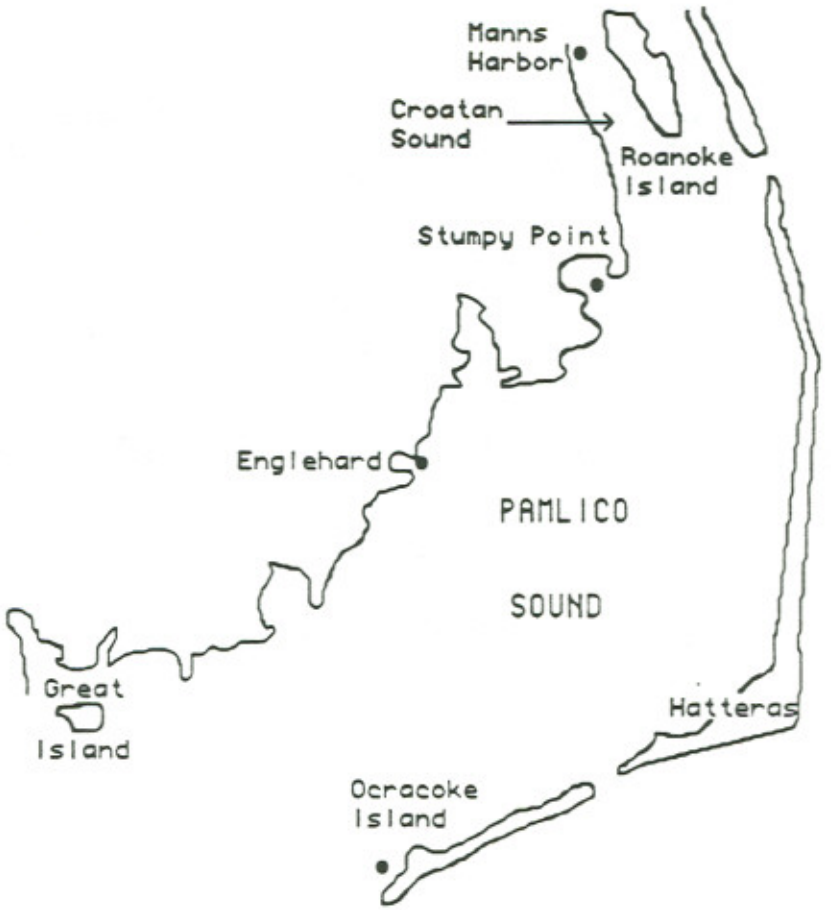


Figure 9. Map of the Pamlico Sound area showing the location of sampling stations.

Four stations have been sampled for fish tissue in the Pamlico Sound area, three new sites and one historical (Figure 9). The database for this region contains the results of 60 samples analyzed for metals and 3 samples analyzed for the selected synthetic organic chemicals.

An analysis of the fish tissue fillet samples from these sites (Figure 10) showed that mercury concentrations were well below the FDA action level of 1.0 mg/kg. Copper concentrations ranged from less than 0.10 mg/kg to 1.80 mg/kg.

Only two samples were analyzed for pesticides from the Pamlico Sound area. There were no pesticides detected in these two samples.

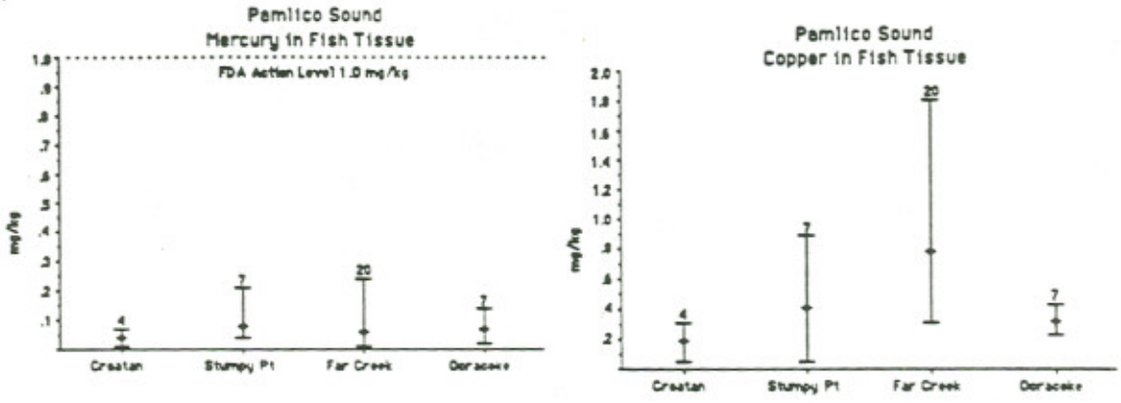


Figure 10. Mercury and copper concentrations in fish tissue fillets by station in the Pamlico Sound area.

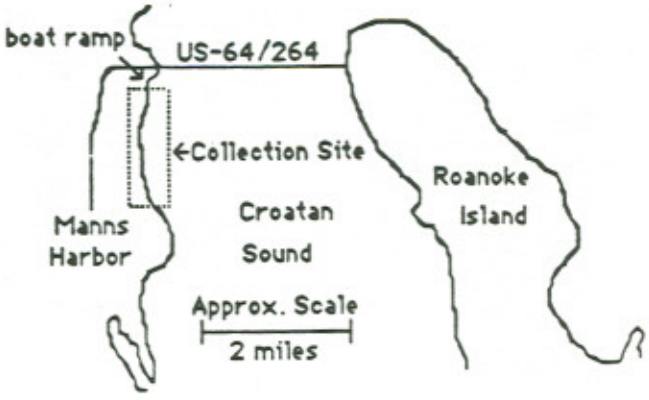
STATION NAME: Croatan Sound at Manns Harbor
STATION NUMBER: 0208117950

RIVER BASIN: Pasquotank

SUB BASIN: 03-01-51

COUNTY: Dare

STREAM CLASS: SA



DRAINAGE AREA: Indeterminate
LOCATION: Croatan Sound at US-64/264 at Manns Harbor
Latitude 35° 55' 18" **Longitude** 75° 44' 36"
REASON FOR SAMPLING : Albemarle-Pamlico Estuarine Study
SAMPLING DATES: May 10, 1989
METHOD OF COLLECTION: Nets
PARAMETERS SAMPLED: Heavy Metals

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	4	50	2	0.83-1.20	1.02
	whole	4	75	1	0.93	0.93
Cadmium	fillet	4	50	2	0.14-0.69	0.42
	whole	4	100	0	NA	NA
Chromium	fillet	4	100	0	NA	NA
	whole	4	25	3	0.38-0.62	0.48
Copper	fillet	4	25	3	0.16-0.31	0.24
	whole	4	0	4	0.39-3.90	1.53
Mercury	fillet	4	25	3	0.04-0.07	0.05
	whole	4	50	2	0.02-0.03	0.03
Nickel	fillet	4	100	0	NA	NA
	whole	4	100	0	NA	NA
Lead	fillet	4	100	0	NA	NA
	whole	4	100	0	NA	NA
Selenium	fillet	4	75	1	0.52	0.52
	whole	4	75	1	0.59	0.59

Croatan Sound at US-64/264 at Manns Harbor - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC= fillet composite: Lengths and weights of composites are means) (ND = No Data)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Se mg/kg
890510	Ictalurus catus	250	275	W1	0.02	<0.5	<0.10	0.62	0.39	<0.50	<0.50	<0.50
890510	Mugil cephalus	311	325	W1	<0.02	<0.5	<0.10	<0.25	3.90	<0.50	<0.50	0.59
890510	Brevoortia tyrannus	195	125	WC5	<0.02	0.93	<0.10	0.43	1.40	<0.50	<0.50	<0.50
890510	Dorosoma cepedianum	340	483	WC2	0.03	<0.50	<0.10	0.38	0.42	<0.50	<0.50	<0.50
890510	Leiostomus xanthurus	182	115	FC5	<0.02	0.83	0.69	<0.25	0.31	<0.50	<0.50	<0.50
890510	Micropogon undulatus	277	325	FC2	0.07	1.20	0.14	<0.25	0.24	<0.50	<0.50	0.52
890510	Paralichthys lethostigma	266	213	FC2	0.05	<0.50	<0.10	<0.25	<0.10	<0.50	<0.50	<0.50
890510	Lepomis macrochirus	232	375	F1	0.04	<0.50	<0.10	<0.25	0.16	<0.50	<0.50	<0.50
890510	Callinectes sapidus	Shellfish			0.02	<0.50	<0.10	<0.25	12.00	<0.50	<0.50	0.55

STATION NAME: Stumpy Point Bay at Stumpy Point
STATION NUMBER: STUMPY-1

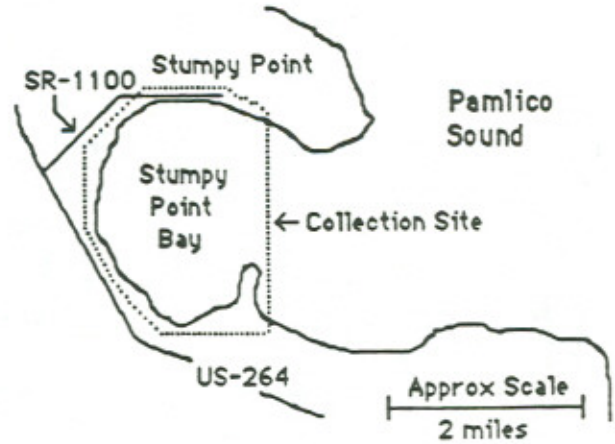
RIVER BASIN: Pasquotank

SUB BASIN: 03-01-51

COUNTY: Dare

STREAM CLASS: SA

DRAINAGE AREA: Indeterminate



LOCATION: Stumpy Point Bay off SR-1100 at Stumpy Point
Latitude 35° 41' 26" **Longitude** 75° 45' 58"
REASON FOR SAMPLING : Albemarle-Pamlico Estuarine Study
SAMPLING DATES: May 10, 1989
METHOD OF COLLECTION: Nets
PARAMETERS SAMPLED: Heavy Metals

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	7	0	7	0.30-1.20	0.71
	whole	3	66	1	1.40	1.40
Cadmium	fillet	7	100	0	NA	NA
	whole	3	100	0	NA	NA
Chromium	fillet	7	100	0	NA	NA
	whole	3	0	3	0.25-0.32	0.29
Copper	fillet	7	14	6	0.15-0.88	0.47
	whole	3	0	3	0.48-2.20	1.26
Mercury	fillet	7	0	7	0.04-0.21	0.08
	whole	3	33	2	0.02-0.14	0.08
Nickel	fillet	7	100	0	NA	NA
	whole	3	100	0	NA	NA
Lead	fillet	7	100	0	NA	NA
	whole	3	100	0	NA	NA
Selenium	fillet	7	0	7	0.28-0.39	0.33
	whole	3	66	1	0.30	0.30

Stumpy Point Bay at Stumpy Point - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC= fillet composite: Lengths and weights of composites are means) (ND = No Data)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Se mg/kg
890510	Bairdiella chrysura	196	125	W1	0.14	<0.20	<0.10	0.25	1.10	<0.50	<0.50	<0.20
890510	Brevoortia tyrannus	214	117	WC3	<0.09	1.40	<0.10	0.32	2.20	<0.50	<0.50	0.30
890510	Dorosoma cepedianum	346	375	W1	0.02	<0.20	<0.10	0.31	0.48	<0.50	<0.50	<0.20
890510	Cynoscion regalis	440	925	FC3	0.05	0.39	<0.10	<0.25	0.65	<0.50	<0.50	0.32
890510	Cynoscion nebulosus	290	325	F1	0.04	0.78	<0.10	<0.25	0.15	<0.50	<0.50	0.33
890510	Pomatomus saltatrix	314	375	FC5	0.21	0.30	<0.10	<0.25	0.52	<0.50	<0.50	0.30
890510	Micropogon undulatus	234	210	FC5	0.06	0.92	<0.10	<0.25	0.40	<0.50	<0.50	0.39
890510	Micropogon undulatus	334	500	FC2	0.10	1.20	<0.10	<0.25	0.88	<0.50	<0.50	0.31
890510	Leiostomus xanthurus	185	130	FC5	0.04	0.65	<0.10	<0.25	0.20	<0.50	<0.50	0.28
890510	Paralichthys lethostigma	332	481	FC4	0.05	0.70	<0.10	<0.25	<0.10	<0.50	<0.50	0.38
890510	Callinectes sapidus	Shellfish			0.03	1.50	<0.10	<0.25	8.30	<0.50	<0.50	0.40

STATION NAME: Far Creek at Englehard
STATION NUMBER: TSTARFC1

RIVER BASIN: Tar-Pamlico

SUB BASIN: 03-03-07

COUNTY: Hyde

STREAM CLASS: SC-SA

DRAINAGE AREA: Indeterminate

LOCATION: Far Creek at Englehard off US-264
Latitude 36° 30' 38" **Longitude** 76° 58' 36"
REASON FOR SAMPLING : Ambient Site
SAMPLING DATES: April 5, 1985
METHOD OF COLLECTION: Nets
PARAMETERS SAMPLED: Heavy Metals & Organics

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	2	100	0	NA	NA
Cadmium	fillet	20	100	0	NA	NA
Chromium	fillet	20	100	0	NA	NA
Copper	fillet	20	0	20	0.31-1.80	0.78
Mercury	fillet	20	35	13	0.02-0.24	0.09
Nickel	fillet	20	100	0	NA	NA
Lead	fillet	20	100	0	NA	NA
Zinc	fillet	20	0	20	3.6-14	7.2

Far Creek at Englehard - Metals in Fish Tissue Data

(Type-Number: FC= fillet composite followed by the number of fish in the composite)
(Lengths and weights of composites are means) (ND = No Data)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg
850405	Micropterus salmoides	327	515	F1	0.24	<0.4	<0.20	<0.50	0.38	<1.0	<1.0	5
850405	Micropterus salmoides	293	320	F1	0.17	ND	<0.20	<0.50	0.31	<1.0	<1.0	6.2
850405	Mugil cephalus	300	391	FC2	<0.02	ND	<0.20	<0.50	1.20	<1.0	<1.0	8.4
850405	Mugil cephalus	324	455	F1	<0.02	ND	<0.20	<0.50	0.84	<1.0	<1.0	9.5
850405	Mugil cephalus	342	518	F1	<0.02	ND	<0.20	<0.50	0.85	<1.0	<1.0	6.6
850405	Cynoscion regalis	312	314	FC3	0.09	<0.4	<0.20	<0.50	0.47	<1.0	<1.0	4
850405	Cynoscion regalis	326	385	F1	0.07	ND	<0.20	<0.50	0.47	<1.0	<1.0	3.6
850405	Pomatomus saltatrix	340	542	F1	0.10	ND	<0.20	<0.50	0.85	<1.0	<1.0	9.3
850405	Pomatomus saltatrix	323	440	F1	0.10	ND	<0.20	<0.50	0.74	<1.0	<1.0	8.3
850405	Pomatomus saltatrix	323	420	F1	0.10	ND	<0.20	<0.50	0.82	<1.0	<1.0	7.1
850405	Leiostomus xanthurus	190	120	F1	<0.02	ND	<0.20	<0.50	0.47	<1.0	<1.0	6.7
850405	Micropogon undulatus	255	213	FC3	0.04	ND	<0.20	<0.50	0.85	<1.0	<1.0	4.2
850405	Micropogan undulatus	242	192	F1	<0.02	ND	<0.20	<0.50	0.50	<1.0	<1.0	4.3
850405	Micropogan undulatus	277	262	F1	0.06	ND	<0.20	<0.50	0.64	<1.0	<1.0	5.1
850405	Paralichthys lethostigma	324	403	F1	0.02	ND	<0.20	<0.50	0.34	<1.0	<1.0	8.8
850405	Morone americana	249	240	FC4	0.06	ND	<0.20	<0.50	1.10	<1.0	<1.0	14
850405	Dorosoma cepedianum	321	657	FC2	<0.02	ND	<0.20	<0.50	0.84	<1.0	<1.0	8.4
850405	Dorosoma cepedianum	321	595	F1	<0.02	ND	<0.20	<0.50	1.10	<1.0	<1.0	6
850405	Brevoortia tyrannus	233	203	FC4	0.02	ND	<0.20	<0.50	1.80	<1.0	<1.0	12
850405	Alosa pseudoharengus	284	261	FC4	0.05	ND	<0.20	<0.50	1.00	<1.0	<1.0	6.4
850405	Crassostrea virginica	Shellfish			<0.02	<0.40	0.45	<0.50	10.00	<1.0	<1.0	460
850405	Crassostrea virginica	Shellfish			<0.02	<0.40	0.42	<0.50	9.60	<1.0	<1.0	380
850405	Crassostrea virginica	Shellfish			<0.02	<0.40	0.46	<0.50	10.00	<1.0	<1.0	400
850405	Crassostrea virginica	Shellfish			<0.02	ND	0.46	<0.50	9.20	1.30	<1.0	480
850405	Ischadium recurvum	Shellfish			<0.02	ND	<0.20	<0.50	0.97	<1.0	<1.0	11

Far Creek at Englehard - Organics in Fish Tissue Data

(Species: LMB = Micropterus salmoides, CRV = Crassostrea virginica) (ND = no data)
(Type-Number: F= fillet, followed by the number of fish in the sample) (UD = undetected)

Date	850405	850405	850405
Species	LMB	CRV	CRV
Avg Wt (gm)	515		
Avg Ln (mm)	327		
Type-Number	F1	shellfish	shellfish
Aldrin (mg/kg)	<0.0005	<0.01	<0.01
Dieldrin (mg/kg)	<0.0008	<0.02	<0.02
o,p DDD (µg/g)	<0.001	<0.02	<0.02
p,p DDD (µg/g)	<0.001	<0.04	<0.04
o,p DDE (µg/g)	<0.001	<0.02	<0.02
p,p DDE (µg/g)	<0.001	<0.02	<0.02
Total DDT (µg/g)	<0.007	<0.09	<0.09
o,p DDT (µg/g)	<0.002	<0.02	<0.02
p,p DDT (µg/g)	<0.005	<0.07	<0.07
cis-Chlordane (µg/g)	<0.001	<0.06	<0.06
trans-Chlordane (µg/g)	<0.001	<0.06	<0.06
trans-Nchlor (µg/g)	<0.0008	<0.02	<0.02
Methoxychlor (µg/kg)	<10	<80	<80
Hxchlbenzene (mg/kg)	<0.0003	<0.01	<0.01
PCP (µg/g)	UD	UD	UD
alpha-BHC (µg/g)	<0.0004	<0.01	<0.01
gamma-BHC (µg/g)	<0.0004	<0.01	<0.01
Endrin (mg/kg)	<0.002	<0.04	<0.04
PCB (mg/kg)	<0.03	<0.40	<0.40
Aroclor 1242 (mg/kg)	ND	<0.05	<0.05

STATION NAME: Pamlico Sound at Ocracoke Island
STATION NUMBER: 02084633

RIVER BASIN: Tar-Pamlico

SUB BASIN: 03-03-07

COUNTY: Hyde

STREAM CLASS: SB

DRAINAGE AREA: Indeterminate
LOCATION: On North Shore of Ocracoke Island
Latitude 35° 09' 30" **Longitude** 75° 52' 10"
REASON FOR SAMPLING : Albemarle-Pamlico Estuarine Study
SAMPLING DATES: June 29, 1989
METHOD OF COLLECTION: Nets
PARAMETERS SAMPLED: Heavy Metals

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	7	100	0	NA	NA
	whole	6	33	4	2.30-18.0	9.18
Cadmium	fillet	7	100	0	NA	NA
	whole	6	66	2	0.33-0.45	0.39
Chromium	fillet	7	0	7	0.34-1.40	0.54
	whole	6	0	6	0.37-0.91	0.57
Copper	fillet	7	0	7	0.23-0.43	0.32
	whole	6	0	6	0.34-1.4	0.62
Mercury	fillet	7	0	7	0.02-0.14	0.07
	whole	6	0	6	0.02-0.13	0.07
Nickel	fillet	7	86	1	0.14	0.14
	whole	6	100	0	NA	NA
Lead	fillet	7	100	0	NA	NA
	whole	6	100	0	NA	NA
Selenium	fillet	7	100	0	NA	NA
	whole	6	100	0	NA	NA

Pamlico Sound at Ocracoke Island - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC= fillet composite: Lengths and weights of composites are means) (ND = No Data)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Se mg/kg
890629	Bairdiella chrysura	190	81	WC4	0.09	<2.0	<0.10	0.45	0.38	<0.50	<0.50	<1.0
890629	Trinectes maculatus	185	150	W1	0.02	2.40	<0.10	0.49	0.34	<0.50	<0.50	<1.0
890629	Brevoortia tyrannus	273	233	WC3	0.02	2.30	<0.10	0.71	1.40	<0.50	<0.50	<1.0
890629	Tylosurus crocodilus	920	1075	W1	0.13	18.00	0.45	0.37	0.36	<0.50	<0.50	<1.0
890629	Opsanus tau	294	525	W1	0.04	<2.0	<0.10	0.47	0.74	<0.50	<0.50	<1.0
890629	Mustelus canis	610	650	W1	0.10	14.00	0.33	0.91	0.47	<0.50	<0.50	<1.0
890629	Micropogon undulatus	240	163	FC4	0.03	<2.0	<0.10	0.52	0.36	<0.50	<0.50	<1.0
890629	Lagodon rhomboides	220	125	FC5	0.05	<2.0	<0.10	1.40	0.23	<0.50	<0.50	<1.0
890629	Paralichthys lethostigma	272	231	FC4	0.02	<2.0	<0.10	0.41	0.24	<0.50	<0.50	<1.0
890629	Leiostomus xanthurus	194	94	FC5	0.02	<2.0	<0.10	0.38	0.32	<0.50	<0.50	<1.0
890629	Pomatomus saltatrix	238	113	FC2	0.14	<2.0	<0.10	0.34	0.43	0.14	<0.50	<1.0
890629	Cynoscion regalis	315	225	F1	0.13	<2.0	<0.10	0.35	0.32	<0.50	<0.50	<1.0
890629	Orthopristis chrysoptera	227	175	FC5	0.10	<2.0	<0.10	0.35	0.36	<0.50	<0.50	<1.0
890629	Callinectes sapidus	Shellfish			0.04	<2.0	0.16	0.37	10.00	<0.50	<0.50	<1.0
890629	Callinectes sapidus	Shellfish (eggs)			<0.02	<2.0	<0.10	0.60	6.10	<0.50	1.10	<1.0

Pamlico River Area

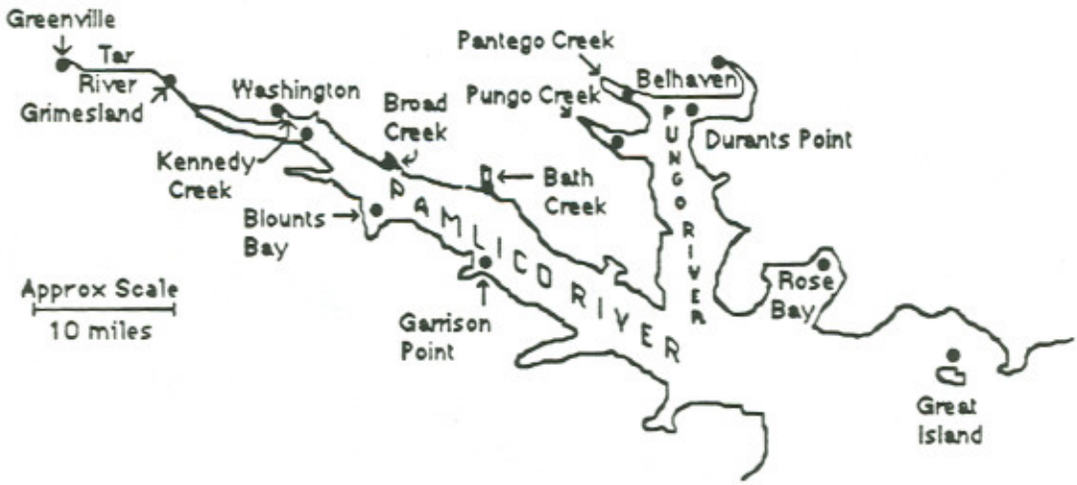


Figure 11 Map of the Pamlico River area showing the location of sampling stations.

Fourteen stations have been sampled for fish tissue in the Pamlico River area (Figure 11). The database from this region contains the results from 227 samples analyzed for metals and 37 samples analyzed for the selected synthetic organic chemicals.

An analysis of all the fish tissue fillet data for the Pamlico River area indicates that the mean mercury concentrations ranged from 0.05 to 0.38 mg/kg (Figure 12). Maximum mercury concentrations were found at Greenville (0.92 mg/kg) and Grimesland (1.0 mg/kg), the two freshwater locations.

Mean copper concentrations from the Pamlico River area fish tissue fillets ranged from 0.23 to 1.07 mg/kg for all sites (Figure 13). Two of the 125 fish tissue fillet samples had detectable concentrations of lead. These were a white catfish from Blounts Bay with a level of 1.0 mg/kg, and a white perch from Rose Bay with a level of 2.0 mg/kg. Lead concentrations were highest in whole fish samples in Pungo Creek (page 85), Pantego Creek (page 83) and Bath Creek (page 75) which had mean lead concentrations of 2.14, 2.11, and 2.00 mg/kg respectively.

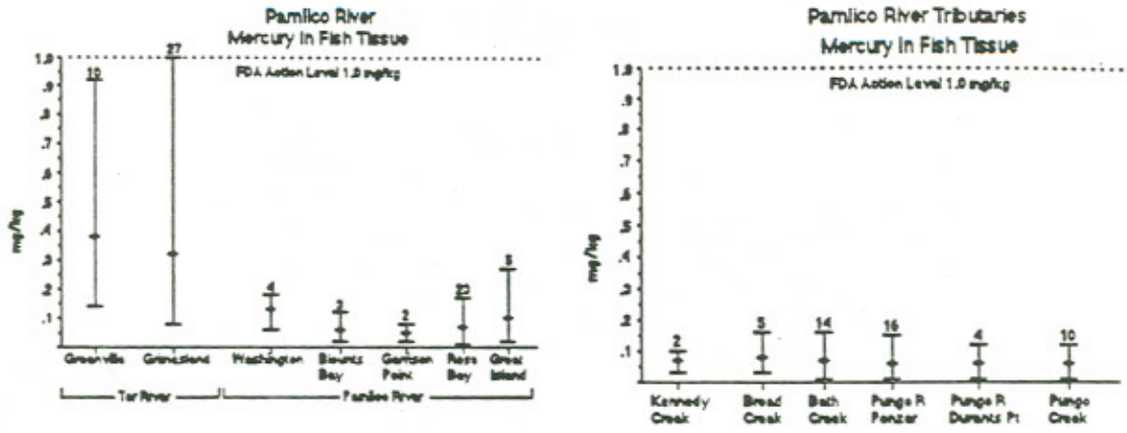


Figure 12. Mercury concentrations in fish tissue fillets by station in the Pamlico River area.

Thirty-seven fish samples have been analyzed for pesticides with only six of the thirteen main pesticides being detected. Thirty-two samples (86%) contained low levels of DDT metabolites, nineteen samples (51%) contained levels of chlordane metabolites, eight samples (19%) contained low levels of dieldrin, five samples (14%) contained gamma BHC (lindane), four samples (11%) contained pentachlorophenol, and two samples (6%) contained heptachlor epoxide. The concentrations of pesticides with FDA criteria were all below the FDA criteria presented in Table 2

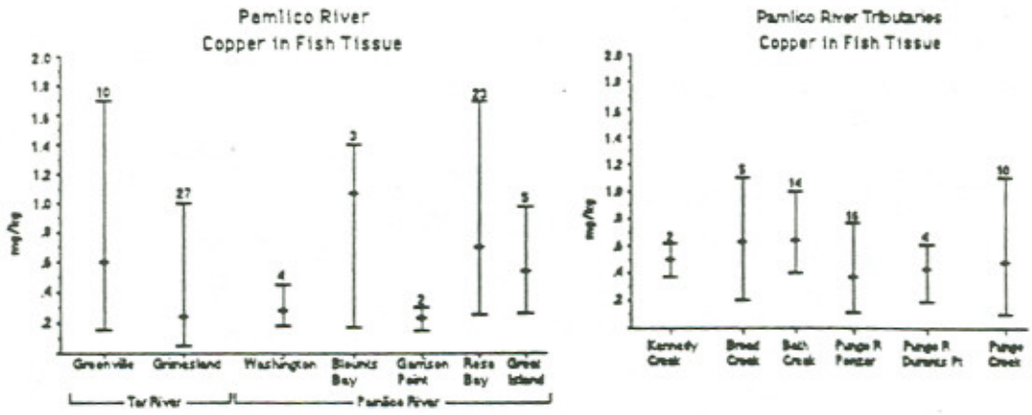


Figure 13. Copper concentrations in the fish tissue fillets by station in the Pamlico River area.

STATION NAME: Tar River at Greenville
STATION NUMBER: TSTAR120

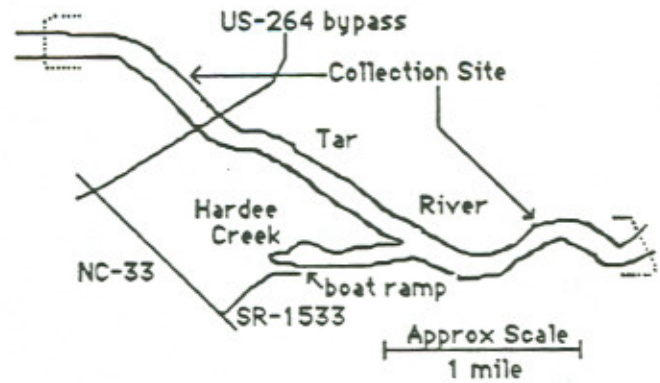
RIVER BASIN: TAR

SUB BASIN: 03-03-05

COUNTY: Pitt

STREAM CLASS: C NSW

DRAINAGE AREA: 2640 sq. mi.



LOCATION: Tar River below Greenville off SR-1533

Latitude 35° 36' 26" **Longitude** 77° 19' 49"

REASON FOR SAMPLING : Special Study, Albemarle-Pamlico Estuary Study

SAMPLING DATES: July 24, 1986, September 10, 1987, February 10, 1988
January 19, 1989

METHOD OF COLLECTION: Electrofishing and Nets

PARAMETERS SAMPLED: Heavy Metals and Organics

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	% of Samples of Samples Below Detection	of Samples of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	4	100	0	NA	NA
	whole	3	100	0	NA	NA
Cadmium	fillet	10	100	0	NA	NA
	whole	12	92	1	0.34	0.34
Chromium	fillet	10	100	0	NA	NA
	whole	12	100	0	NA	NA
Copper	fillet	10	0	10	0.16-1.70	0.60
	whole	12	0	12	0.34-3.80	1.13
Mercury	fillet	10	0	10	0.14-0.92	0.38
	whole	12	0	12	0.13-0.53	0.36
Nickel	fillet	10	100	0	NA	NA
	whole	12	100	0	NA	NA
Lead	fillet	10	100	0	NA	NA
	whole	12	75	3	0.50-0.79	0.62
Zinc	fillet	3	0	3	2.0-9.9	5.9
	whole	4	0	4	7.8-40	16.7
Selenium	fillet	4	100	0	NA	NA
	whole	3	67	1	1.1	1.1

Tar River at Greenville- Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means) (ND= No Data)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg	Se mg/kg
860724	Micropterus salmoides	416	1075	WC2	0.14	ND	<0.10	<0.25	0.45	<0.5	<0.5	7.8	ND
860724	Morone saxatilis	470	920	WC3	0.13	ND	<0.10	<0.25	0.77	<0.5	<0.5	8.0	ND
860724	Amia calva	566	1707	WC5	0.32	ND	<0.10	<0.25	3.80	<0.5	<0.5	11	ND
860724	Anguilla rostrata	590	555	WC2	0.12	ND	<0.10	<0.25	0.49	<0.5	<0.5	40	ND
870910	Amia calva	643	2350	W1	0.53	ND	<0.10	<0.25	0.34	<0.5	<0.5	ND	ND
870910	Amia calva	498	1185	WC4	0.42	ND	<0.10	<0.25	1.30	<0.5	0.50	ND	ND
870910	Lepisosteus osseus	770	1125	W1	0.24	ND	<0.10	<0.25	0.39	<0.5	0.57	ND	ND
880210	Amia calva	550	1400	W1	0.42	ND	<0.10	<0.25	0.53	<0.5	<0.5	ND	ND
880210	Amia calva	495	1025	WC2	0.41	ND	<0.10	<0.25	2.00	<0.5	<0.5	ND	ND
890119	Cyprinus carpio	706	4840	WC5	0.17	<2.0	0.34	<0.25	1.20	<0.5	0.79	ND	1.10
890119	Amia calva	556	1750	W1	0.52	<2.0	<0.10	<0.25	1.70	<0.5	<0.5	ND	<1.0
890119	Moxostoma sp	410	775	WC4	0.19	<2.0	<0.10	<0.25	0.56	<0.5	<0.5	ND	<1.0
860724	Esox niger	478	620	FC3	0.20	ND	<0.10	<0.25	0.22	<0.5	<0.5	5.7	ND
860724	Amia calva	465	840	F1	0.72	ND	<0.10	<0.25	0.27	<0.5	<0.5	2.0	ND
860724	Lepomis macrochirus	189	137	FC3	0.09	ND	<0.10	<0.25	0.18	<0.5	<0.5	9.9	ND
870910	Micropterus salmoides	341	525	F1	0.26	ND	<0.10	<0.25	0.31	<0.5	<0.5	ND	ND
880210	Pomoxis nigromaculatus	244	229	FC6	0.14	ND	<0.10	<0.25	0.47	<0.5	<0.5	ND	ND
880210	Micropterus salmoides	432	1025	FC2	0.32	ND	<0.10	<0.25	0.82	<0.5	<0.5	ND	ND
890119	Esox niger	410	475	F1	0.33	<2.0	<0.10	<0.25	1.40	<0.5	<0.5	ND	<1.0
890119	Micropterus salmoides	570	2750	F1	0.92	<2.0	<0.10	<0.25	1.70	<0.5	<0.5	ND	<1.0
890119	Micropterus salmoides	425	1080	FC5	0.51	<2.0	<0.10	<0.25	0.16	<0.5	<0.5	ND	<1.0
890119	Micropterus salmoides	355	550	F1	0.31	<2.0	<0.10	<0.25	0.47	<0.5	<0.5	ND	<1.0

Tar River at Greenville - Organics in Fish Tissue Data

(Species: LMB= Micropterus salmoides; STB= Morone saxatilis; RHS= Moxostoma sp.; LG= Lepisosteus osseus . BF= Amia calva; CHP= Esox niger; C= Cyprinus carpio)

(Type-Number: WC= whole composite followed by the number of fish in the composite; FC= fillet composite)

(Lengths and weights of composites are means) (ND= No Data)

Date	860724	860724	860724	860724	860724	880210	880210	880210	880210	880210	890119	890119	890119
Species	LMB	STB	RHS	LG	BF	LMB	CHP	RHS	RHS	RHS	C	RHS	LMB
Avg Wt (gm)	1076	920	714	1182	1707	1025	860	750	610	1226	4840	775	1080
Avg Ln (mm)	417	470	416	772	566	432	492	430	395	475	706	410	425
Type-Number	WC2	WC3	WC4	WC4	WC5	FC2	W1	WC2	WC3	WC3	WC5	WC4	FC5
Aldrin (mg/kg)	ND	ND	ND	ND	ND	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0005	<0.0005	<0.0005
Dieldrin (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.003	<0.02	<0.02	<0.02	0.002	<0.00015	<0.0008
o,p DDD (µg/g)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.002	<0.002	<0.002
p,p DDD (µg/g)	0.27	0.11	0.31	0.085	0.15	<0.04	0.03	0.1	<0.04	<0.04	0.026	<0.0008	<0.002
o,p DDE (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.002	<0.002	<0.002
p,p DDE (µg/g)	0.59	0.2	0.46	0.33	0.39	0.005	0.13	0.18	0.31	0.05	0.031	0.019	0.007
Total DDT (µg/g)	ND	ND	ND	ND	ND	<0.09	ND	<0.09	<0.09	ND	ND	ND	ND
o,p DDT (µg/g)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.002	<0.002	<0.002
p,p DDT (µg/g)	0.17	<0.10	0.14	0.11	<0.05	<0.07	<0.07	<0.07	<0.07	<0.07	<0.005	<0.005	<0.005
cis-Chlordane (µg/g)	0.094	0.042	0.18	<0.04	<0.04	0.06	0.007	<0.06	0.07	0.008	<0.0008	0.008	<0.0008
trans-Chlordane (µg/g)	0.079	0.028	0.14	<0.02	<0.04	<0.06	0.02	<0.06	0.12	0.02	<0.0008	<0.0008	<0.0008
cis-Nchlor (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	ND	ND	ND	<0.06	ND	ND	ND	ND
trans-Nchlor (µg/g)	0.16	0.037	0.20	<0.04	<0.10	<0.02	<0.02	<0.02	<0.06	<0.02	0.006	0.009	<0.0008
Methoxychlor (µg/kg)	ND	ND	ND	ND	ND	<80	<80	<80	<80	<80	<10	<10	<10
Hxchlbenzene (mg/kg)	ND	ND	ND	ND	ND	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0003	<0.0003	<0.0003
PCP (µg/g)	0.026	0.024	0.092	<0.02	<0.04	ND	ND	ND	ND	ND	ND	ND	ND
alpha-BHC (µg/g)	<0.01	<0.01	<0.01	<0.01	<0.04	<0.01	<0.01	0.02	<0.01	<0.01	<0.0003	<0.0003	<0.0003
beta-BHC (µg/g)	<0.01	<0.01	<0.01	<0.01	<0.04	ND	ND	ND	ND	ND	ND	ND	ND
gamma-BHC (µg/g)	<0.04	<0.01	<0.01	<0.01	<0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0003	0.009	<0.0003
Endrin (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.04	<0.04	<0.04	<0.002	<0.002	<0.002
PCB (mg/kg)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	<0.04	<0.40	<0.40	<0.40	<0.013	<0.013	<0.013
Toxaphene (mg/kg)	<1.0	<1.0	<1.0	<1.0	<1.0	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor (µg/kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.0003	<0.0003	ND
Heptachlor epoxide (µg/kg)	<0.02	<0.01	<0.05	<0.01	<0.01	ND	ND	ND	ND	ND	<0.0005	<0.0005	ND
Endosulfan I (mg/kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005	<0.0005	<0.0005
Endosulfan II (mg/kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.002	<0.002	<0.002
Endosulfan Sulfate (mg/kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.025	<0.025	<0.025
Oxychlordane (µg/g)	ND	ND	ND	ND	ND	ND	ND	0.007	ND	ND	ND	ND	ND

STATION NAME: Tar River near Grimesland, N.C.
STATION NUMBER: 02084171

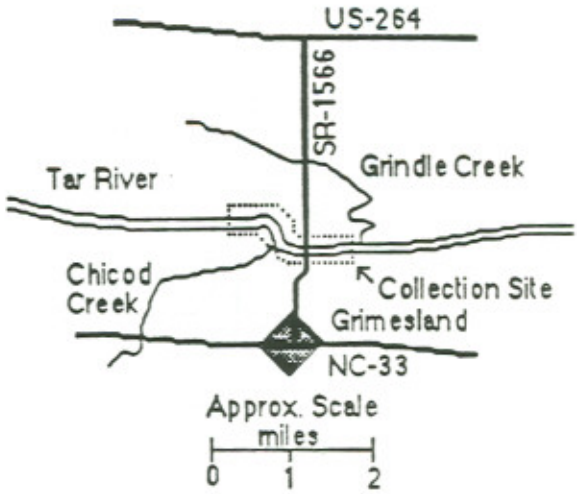
RIVER BASIN: Tar-Pamlico

SUB BASIN: 03-03-05

COUNTY: Pitt

STREAM CLASS: B-NSW

DRAINAGE AREA: 2740 sq. mi.

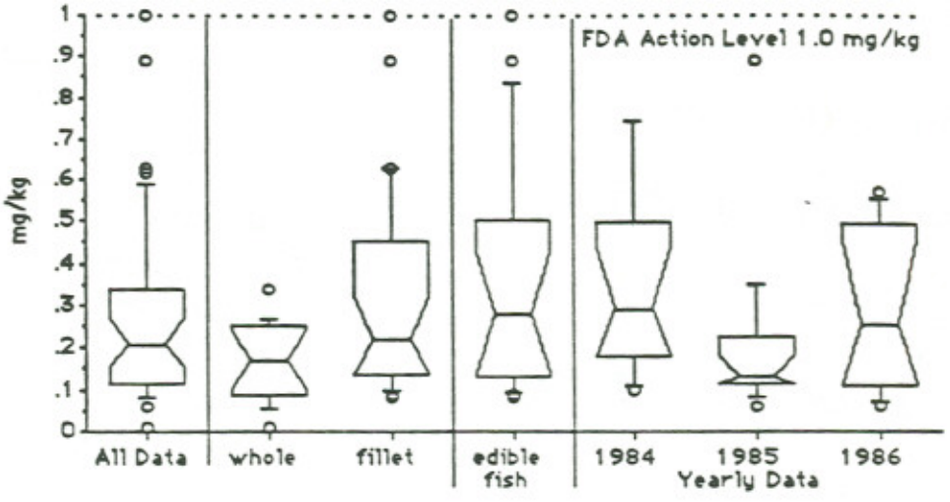


LOCATION: Tar River at SR-1566 near Grimesland
Latitude 35° 55' 47 **Longitude** 76° 36' 36"
REASON FOR SAMPLING : Ambient Site
SAMPLING DATES: June 12, 1980, July 2, 1981, August 8, 1984, July 1, 1985 August 5, 1986
METHOD OF COLLECTION: Electrofishing boat
PARAMETERS SAMPLED: Heavy Metals & Organics

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	15	100	0	NA	NA
	whole	8	100	0	NA	NA
Cadmium	fillet	27	89	3	0.1	0.1
	whole	14	79	3	0.1	0.1
Chromium	fillet	27	100	0	NA	NA
	whole	14	79	3	1.50-2.50	1.83
Copper	fillet	27	11	24	0.12-1.00	0.26
	whole	14	0	14	0.24-12.0	1.81
Mercury	fillet	27	0	27	0.08-1.00	0.32
	whole	14	7	13	0.06-0.34	0.18
Nickel	fillet	27	100	0	NA	NA
	whole	11	100	0	NA	NA
Lead	fillet	27	100	0	NA	NA
	whole	14	93	1	2.5	2.5
Zinc	fillet	27	0	27	3.5-18.0	7.53
	whole	14	0	14	7.7-19	12.5

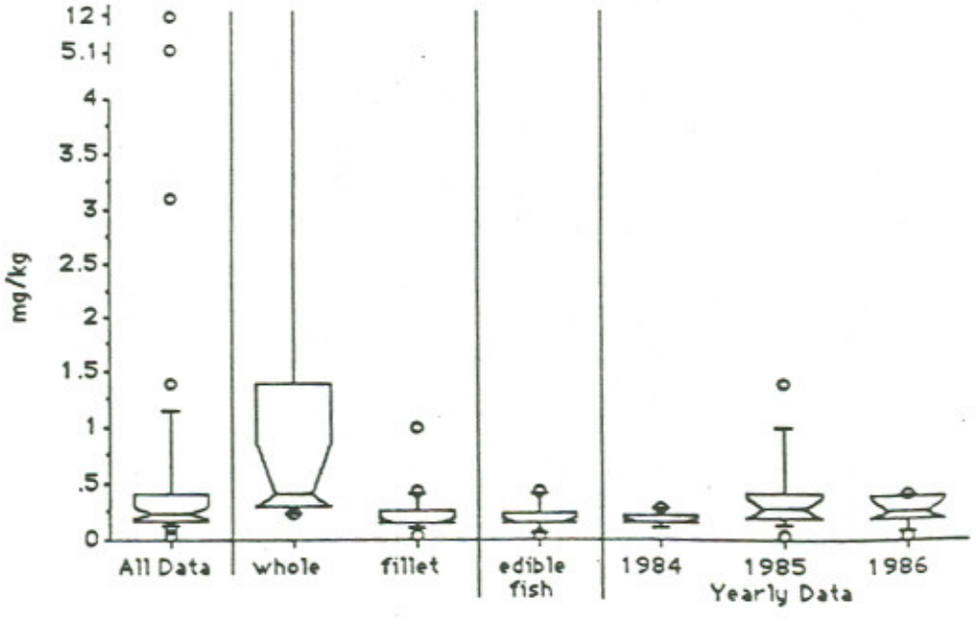
Tar River at Grimesland
Mercury in Fish Tissue



Grimesland - Mercury in Fish Tissue Statistics

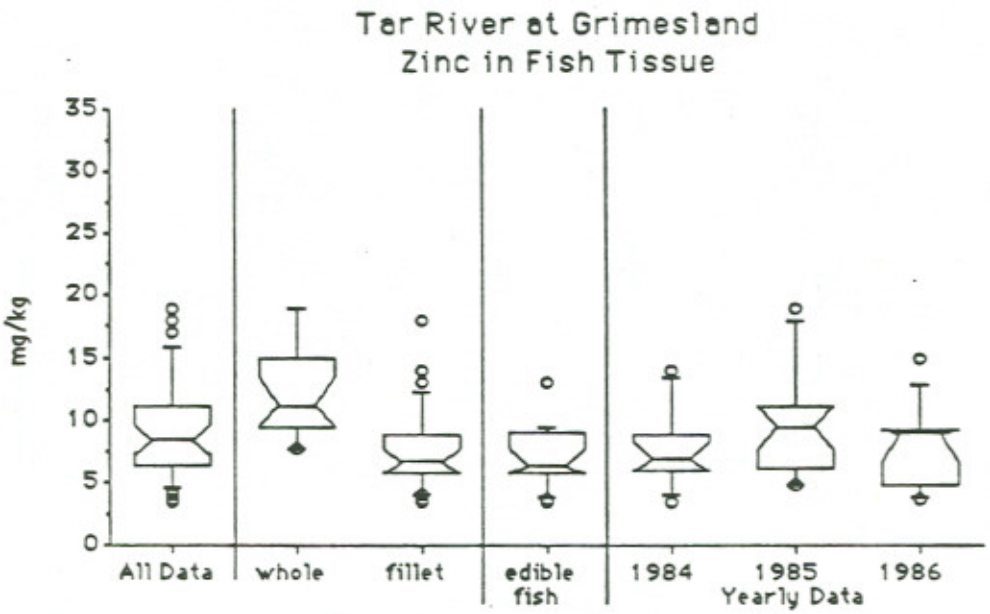
Data Set	Mean mg/kg	Median mg/kg	Std Dev mg/kg	Count	Minimum mg/kg	Maximum mg/kg
All Data	0.27	0.21	0.22	41	0.01	1.00
Whole	0.17	0.17	0.10	14	0.01	0.34
Fillet	0.32	0.22	0.25	27	0.08	1.00
Edible	0.35	0.28	0.28	17	0.08	1.00
1980	0.23	0.25	0.12	3	0.11	0.34
1981	0.11	0.11	0.14	2	0.01	0.21
1984	0.36	0.29	0.27	12	0.10	1.00
1985	0.21	0.13	0.20	15	0.06	0.89
1986	0.28	0.25	0.20	9	0.06	0.57

Tar River at Grimesland
Copper in Fish Tissue



Grimesland - Copper in Fish Tissue Statistics

Data Set	Mean mg/kg	Median mg/kg	Std Dev mg/kg	Count	Minimum mg/kg	Maximum mg/kg
All Data	0.67	0.31	0.77	37	0.12	3.50
Whole	1.00	0.66	0.88	21	0.19	3.50
Fillet	0.24	0.20	0.15	16	0.12	0.73
Edible	0.26	0.20	0.19	9	0.12	0.73
1980	1.97	2.20	0.49	3	1.40	2.30
1981	0.47	0.56	0.24	3	0.20	0.66
1986	0.40	0.25	0.44	20	0.12	2.00
1989	0.87	0.52	0.99	11	0.14	3.50



Grimesland - Zinc in Fish Tissue Statistics

Data Set	Mean mg/kg	Median mg/kg	Std Dev mg/kg	Count	Minimum mg/kg	Maximum mg/kg
All Data	9.22	8.4	4.22	41	3.5	19.0
Whole	12.47	11.0	3.98	14	7.7	19.0
Fillet	7.54	6.6	3.30	27	3.5	18.0
Edible	7.02	6.4	2.47	17	3.5	13.0
1980	17.00	17.0	2.00	3	15.0	19.0
1981	7.70	7.7	0.00	2	7.7	7.7
1984	7.70	7.0	3.17	12	3.5	14.0
1985	9.58	9.4	4.51	15	4.7	19.0
1986	8.03	9.0	3.55	9	3.6	15.0

Grimesland - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC= fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg
800612	Micropterus salmoides	347	540	WC5	0.34	<0.4	<0.50	1.50	5.10		<1.0	15.0
800612	Moxostoma sp	429	940	WC5	0.25	<0.4	<0.50	1.50	12.00		<1.0	17.0
800702	Ictalurus catus	305	353	WC5	0.11	<0.4	<0.50	2.50	3.10		2.50	19.0
811006	Micropterus salmoides	302	420	WC5	0.21	<0.4	<0.50	<0.50	0.50	<1.0	<1.0	7.7
811006	Ictalurus catus	290	326	WC5	<0.02	<0.4	<0.50	<0.50	0.89	<1.0	<1.0	7.7
860805	Lepomis macrochirus	255	209	WC3	0.26		<0.10	<0.25	0.39	<0.50	<0.50	9.2
860805	Lepomis macrochirus	174	113	WC2	0.06		<0.10	<0.25	0.25	<0.50	<0.50	15.0
850701	Moxostoma anisurum	388	920	W1	0.06	<0.4	<0.10	<0.25	0.43	<0.50	<0.50	10.0
850701	Moxostoma anisurum	459	990	W1	0.23		<0.10	<0.25	1.40	<0.50	<0.50	19.0
850701	Ictalurus catus	342	500	W1	0.13		0.10	<0.25	0.28	<0.50	<0.50	11.0
850701	Micropterus salmoides	258	290	W1	0.13		0.10	<0.25	0.28	<0.50	<0.50	10.0
850701	Ictalurus catus	330	520	W1	0.08	<0.4	<0.10	<0.25	0.24	<0.50	<0.50	14.0
850701	Micropterus salmoides	258	230	W1	0.21	<0.4	0.10	<0.25	0.25	<0.50	<0.50	11.0
860805	Moxostoma anisurum	410	900	W1	0.25		<0.10	<0.25	0.40	<0.50	<0.50	9.0
860805	Lepomis macrochirus	182	130	FC2	0.09		<0.10	<0.25	0.41	<0.50	<0.50	9.0
860805	Lepomis macrochirus	185	127	FC2	0.11		<0.10	<0.25	0.26	<0.50	<0.50	9.4
840808	Moxostoma anisurum	463	1200	F1	0.63	<0.4	<0.10	<0.25	0.27	<0.50	<0.50	7.3
840808	Moxostoma anisurum	503	1500	F1	0.22	<0.4	<0.10	<0.25	0.13	<0.50	<0.50	6.4
840808	Moxostoma anisurum	455	1200	F1	0.18	<0.4	<0.10	<0.25	0.29	<0.50	<0.50	14.0
840808	Moxostoma anisurum	413	900	F1	0.34	<0.4	<0.10	<0.25	0.13	<0.50	<0.50	4.3
840808	Moxostoma anisurum	396	700	F1	0.10	<0.4	<0.10	<0.25	0.16	<0.50	<0.50	8.3
840808	Micropterus salmoides	405	1000	F1	0.62	<0.4	<0.10	<0.25	0.16	<0.50	<0.50	9.0
840808	Micropterus salmoides	408	935	F1	1.00	<0.4	<0.10	<0.25	0.16	<0.50	<0.50	5.8
840808	Micropterus salmoides	344	568	F1	0.37	<0.4	<0.10	<0.25	0.12	<0.50	<0.50	3.5
840808	Micropterus salmoides	268	238	F1	0.33	<0.4	<0.10	<0.25	0.24	<0.50	<0.50	5.7
840808	Lepomis macrochirus	180	120	F1	0.25	<0.4	<0.10	<0.25	0.20	<0.50	<0.50	13.0
840808	Lepomis macrochirus	203	164	F1	0.17	<0.4	<0.10	<0.25	0.12	<0.50	<0.50	6.6
840808	Lepomis macrochirus	175	114	F1	0.11	<0.4	<0.10	<0.25	0.15	<0.50	<0.50	8.5
850701	Moxostoma anisurum	391	700	F1	0.16		<0.10	<0.25	1.00	<0.50	<0.50	8.0
850701	Moxostoma anisurum	401	780	F1	0.10	<0.4	<0.10	<0.25	0.36	<0.50	<0.50	18.0
850701	Moxostoma anisurum	382	700	F1	0.17		<0.10	<0.25	0.21	<0.50	<0.50	5.5
850701	Ictalurus catus	350	680	F1	0.08		<0.10	<0.25	0.41	<0.50	<0.50	4.8
850701	Ictalurus catus	310	390	F1	0.13		<0.10	<0.25	<0.27	<0.50	<0.50	7.7
850701	Micropterus salmoides	234	200	F1	0.28		0.10	<0.25	0.16	<0.50	<0.50	9.4
850701	Ictalurus catus	412	910	F1	0.13	<0.4	<0.10	<0.25	0.44	<0.50	<0.50	5.9
850701	Micropterus salmoides	297	400	F1	0.35	<0.4	0.10	<0.25	0.14	<0.50	<0.50	6.3
850701	Micropterus salmoides	297	380	F1	0.89		0.10	<0.25	<0.1	<0.50	<0.50	6.4
860805	Micropterus salmoides	382	800	F1	0.48		<0.10	<0.25	0.14	<0.50	<0.50	4.7
860805	Micropterus salmoides	361	700	F1	0.57		<0.10	<0.25	<0.1	<0.50	<0.50	3.6
860805	Moxostoma anisurum	434	900	F1	0.19		<0.10	<0.25	0.26	<0.50	<0.50	8.4
860805	Moxostoma anisurum	460	1000	F1	0.52		<0.10	<0.25	0.20	<0.50	<0.50	4.0

Grimesland - Organics in Fish Tissue Data

(Species: LMB = Micropterus salmoides, RHS= Moxostoma sp.; WHC= Ictalurus catus; SRH= Silver Redhorse) (ND= No Data)
(Type-Number: WC= whole composite followed by the number of fish in the composite)

Date	800612	800612	800702	811006	811006	860805	860805
Species	LMB	RHS	WHC	LMB	WHC	LMB	SRH
Avg Wt (gm)	540	940	353	420	326	426	840
Avg Ln (mm)	347	429	305	302	290	302	413
Type-Number	WC5	WC5	WC5	WC5	WC5	WC5	WC5
Aldrin (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND
Dieldrin (mg/kg)	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02
o,p DDD (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05
p,p DDD (µg/g)	0.05	0.45	0.13	0.09	0.15	<0.05	0.084
o,p DDE (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
p,p DDE (µg/g)	0.12	0.93	0.3	0.26	0.16	0.11	0.16
Total DDT (µg/g)	<0.09	0.19	<0.09	<0.09	<0.09	ND	ND
o,p DDT (µg/g)	<0.02	0.19	<0.02	<0.02	<0.02	<0.05	<0.05
p,p DDT (µg/g)	<0.07	<0.07	<0.07	<0.07	<0.07	<0.05	<0.05
cis-Chlordane (µg/g)	<0.06	0.16	<0.06	<0.06	<0.06	<0.02	0.043
trans-Chlordane (µg/g)	<0.06	0.26	<0.06	<0.06	<0.06	<0.02	0.026
cis-Nchlor (µg/g)	ND	ND	ND	ND	ND	<0.02	<0.02
trans-Nchlor (µg/g)	<0.02	<0.02	<0.02	0.11	0.08	<0.02	0.029
Methoxychlor (µg/kg)	<80	<80	<80	<80	<80	ND	ND
Hxchlbenzene (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND
PCP (µg/g)	<2.0	<2.0	<2.0	<2.0	<2.0	<0.02	0.033
alpha-BHC (µg/g)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
beta-BHC (µg/g)	ND	ND	ND	ND	ND	<0.01	<0.01
gamma-BHC (µg/g)	<0.01	0.03	0.01	<0.01	0.02	<0.02	0.033
Endrin (mg/kg)	<0.04	<0.04	<0.04	<0.04	<0.04	<0.02	<0.02
PCB (mg/kg)	<0.40	<0.40	<0.40	<0.40	<0.40	<0.50	<0.50
Toxaphene (mg/kg)	ND	ND	ND	ND	ND	<1.0	<1.0
Heptachlor epoxide (mg/kg)	ND	ND	ND	ND	ND	<0.01	<0.01

STATION NAME: Pamlico River at Washington
STATION NUMBER: 02084472

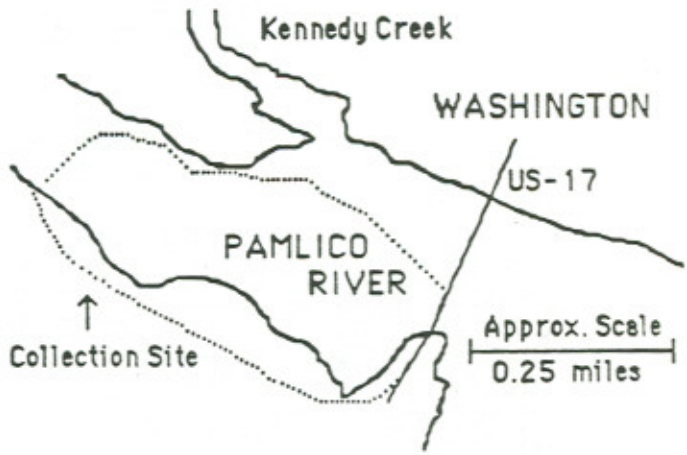
RIVER BASIN: Tar-Pamlico

SUB BASIN: 03-03-07

COUNTY: Beaufort

STREAM CLASS: C NSW

DRAINAGE AREA: 3080 sq. mi.



LOCATION: Pamlico River just upstream of US-17

Latitude 35° 32' 35" **Longitude** 77° 03' 44"

REASON FOR SAMPLING : Albemarle Pamlico Estuary Study

SAMPLING DATES: January 27, 1989

METHOD OF COLLECTION: Nets

PARAMETERS SAMPLED: Heavy Metals and Organics

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	4	100	0	NA	NA
	whole	3	100	0	NA	NA
Cadmium	fillet	4	100	0	NA	NA
	whole	3	100	0	NA	NA
Chromium	fillet	4	100	0	NA	NA
	whole	3	33	2	0.29-0.32	0.31
Copper	fillet	4	0	4	0.18-0.45	0.28
	whole	3	0	3	0.45-0.58	0.53
Mercury	fillet	4	0	4	0.06-0.18	0.13
	whole	3	33	2	0.12	0.12
Nickel	fillet	4	100	0	NA	NA
	whole	3	100	0	NA	NA
Lead	fillet	4	100	0	NA	NA
	whole	3	100	0	NA	NA
Selenium	fillet	4	100	0	NA	NA
	whole	3	100	0	NA	NA

Pamlico River at Washington - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Se mg/kg
890127	Alosa sapidissima	360	528	WC4	<0.02	<2.0	<0.10	<0.25	0.45	<0.50	<0.50	<1.0
890127	Moxostoma sp	442	994	WC5	0.12	<2.0	<0.10	0.32	0.58	<0.50	<0.50	<1.0
890127	Moxostoma sp.	408	758	WC5	0.12	<2.0	<0.10	0.29	0.56	<0.50	<0.50	<1.0
890127	Morone saxatilis	382	750	FC5	0.06	<2.0	<0.10	<0.25	0.45	<0.50	<0.50	<1.0
890127	Micropterus salmoides	398	1067	FC3	0.14	<2.0	<0.10	<0.25	0.21	<0.50	<0.50	<1.0
890127	Ictalurus catus	414	1009	FC5	0.18	<2.0	<0.10	<0.25	0.29	<0.50	<0.50	<1.0
890127	Perca flavescens	320	499	FC6	0.14	<2.0	<0.10	<0.25	0.18	<0.50	<0.50	<1.0

Pamlico River at Washington - Organics in Fish Tissue Data

(Species: RHS= Moxostoma sp.; STB= Morone saxatilis)
(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means)

Date	890127	890127	890127
Species	RHS	RHS	STB
Avg Wt (gm)	758	994	750
Avg Ln (mm)	408	442	382
Type-Number	WC5	WC5	FC5
Aldrin (mg/kg)	<0.0005	<0.0005	<0.0005
Dieldrin (mg/kg)	0.004	<0.0008	0.007
o,p DDD (µg/g)	<0.002	<0.002	<0.002
p,p DDD (µg/g)	0.072	0.028	0.029
o,p DDE (µg/g)	<0.002	<0.002	<0.002
p,p DDE (µg/g)	0.067	0.0629	0.022
o,p DDT (µg/g)	<0.002	<0.002	<0.002
p,p DDT (µg/g)	<0.005	<0.005	<0.005
cis-Chlordane (µg/g)	0.008	0.004	0.006
trans-Chlordane (µg/g)	<0.0008	<0.0008	<0.0008
trans-Nchlor (µg/g)	0.013	0.005	0.006
Methoxychlor (µg/kg)	<10	<10	<10
Hxchlbenzene (mg/kg)	<0.0003	<0.0003	<0.0003
alpha-BHC (µg/g)	<0.0003	<0.0003	<0.0003
gamma-BHC (µg/g)	<0.0003	<0.0003	<0.0003
Endrin (mg/kg)	<0.002	<0.002	<0.002
PCB (mg/kg)	<0.013	<0.013	<0.013
Endosulfan I (mg/kg)	<0.0005	<0.0005	<0.0005
Endosulfan II (mg/kg)	<0.002	<0.002	<0.002
Endosulfan Sulfate (mg/kg)	<0.025	<0.025	<0.025
Heptachlor (mg/kg)	<0.0003	<0.0003	<0.0003
Heptachlor Epoxide (mg/kg)	0.0006	<0.0005	0.001

STATION NAME: Kennedy Creek at Washington
STATION NUMBER: TSTARKDY

RIVER BASIN: Tar-Pamlico

SUB BASIN: 03-03-07

COUNTY: Beaufort

STREAM CLASS: C NSW

DRAINAGE AREA: 0.5 sq. mi.

LOCATION: Kennedy Creek just above mouth

Latitude 35° 33' 01" **Longitude** 77° 04' 36"

REASON FOR SAMPLING : Albemarle Pamlico Estuary Study

SAMPLING DATES: January 27, 1989

METHOD OF COLLECTION: Nets

PARAMETERS SAMPLED: Heavy Metals and Organics

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	2	100	0	NA	NA
	whole	4	100	0	NA	NA
Cadmium	fillet	2	100	0	NA	NA
	whole	4	100	0	NA	NA
Chromium	fillet	2	100	0	NA	NA
	whole	4	100	0	NA	NA
Copper	fillet	2	0	2	0.37-0.62	0.50
	whole	4	0	4	0.70-1.10	0.86
Mercury	fillet	2	0	2	0.03-0.10	0.07
	whole	4	25	3	0.12-0.22	0.19
Nickel	fillet	2	100	0	NA	NA
	whole	4	100	0	NA	NA
Lead	fillet	2	100	0	NA	NA
	whole	4	100	0	NA	NA
Selenium	fillet	2	100	0	NA	NA
	whole	4	100	0	NA	NA

Kennedy Creek at Washington - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Se mg/kg
890127	Alosa sapidissima	423	775	W1	<0.02	<2.0	<0.10	<0.25	0.76	<0.50	<0.50	<1.0
890127	Amia calva	585	1575	W1	0.22	<2.0	<0.10	<0.25	1.10	<0.50	<0.50	<1.0
890127	Amia calva	560	1450	W1	0.22	<2.0	<0.10	<0.25	0.70	<0.50	<0.50	<1.0
890127	Moxostoma sp	469	1180	WC4	0.12	<2.0	<0.10	<0.25	0.86	<0.50	<0.50	<1.0
890127	Micropterus salmoides	292	475	F1	0.10	<2.0	<0.10	<0.25	0.62	<0.50	<0.50	<1.0
890127	Ictalurus nebulosus	365	525	F1	0.03	<2.0	<0.10	<0.25	0.37	<0.50	<0.50	<1.0

Kennedy Creek at Washington - Organics in Fish Tissue Data

(Species: RHS= Moxostoma sp.)
(Type-Number: WC= whole composite followed by the number of fish in the composite)
(Lengths and weights of composites are means)

Date	890127
Species	RHS
Avg Wt (gm)	1180
Avg Ln (mm)	469
Type-Number	WC4
Aldrin (mg/kg)	<0.0005
Dieldrin (mg/kg)	0.001
o,p DDD (µg/g)	<0.002
p,p DDD (µg/g)	0.014
o,p DDE (µg/g)	<0.002
p,p DDE (µg/g)	0.017
o,p DDT (µg/g)	<0.002
p,p DDT (µg/g)	<0.005
cis-Chlordane (µg/g)	<0.0008
trans-Chlordane (µg/g)	<0.0008
trans-Nchlor (µg/g)	0.003
Methoxychlor (µg/kg)	<10
Hxchlbenzene (mg/kg)	<0.0003
alpha-BHC (µg/g)	<0.0003
gamma-BHC (µg/g)	<0.0003
Endrin (mg/kg)	<0.002
PCB (mg/kg)	<0.013
Endosulfan I (mg/kg)	<0.0005
Endosulfan II (mg/kg)	<0.002
Endosulfan Sulfate (mg/kg)	<0.025
Heptachlor (mg/kg)	<0.0003
Heptachlor Epoxide (mg/kg)	<0.0005

STATION NAME: Pamlico River at Blounts Bay
STATION NUMBER: TAR56B

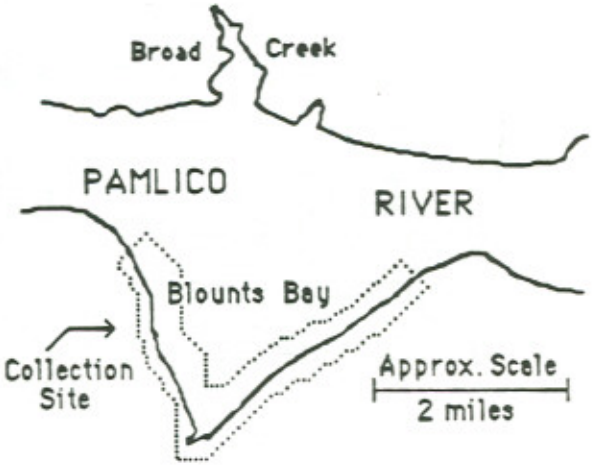
RIVER BASIN: Tar-Pamlico

SUB BASIN: 03-03-07

COUNTY: Beaufort

STREAM CLASS: SB NSW

DRAINAGE AREA: indeterminate



LOCATION: Pamlico River in Blounts Bay

Latitude 35° 26' 57" **Longitude** 76° 57' 30"

REASON FOR SAMPLING : Albemarle Pamlico Estuary Study

SAMPLING DATES: April 26, 1989

METHOD OF COLLECTION: Nets

PARAMETERS SAMPLED: Heavy Metals

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	3	100	0	NA	NA
	whole	3	66	1	1.1	1.1
Cadmium	fillet	3	100	0	NA	NA
	whole	3	100	0	NA	NA
Chromium	fillet	3	100	0	NA	NA
	whole	3	33	2	0.28-0.62	0.45
Copper	fillet	3	0	3	0.17-1.40	1.07
	whole	3	0	3	0.68-3.10	1.76
Mercury	fillet	3	0	3	0.02-0.12	0.06
	whole	3	66	1	0.08	0.08
Nickel	fillet	3	0	3	0.81-9.2	5.07
	whole	3	100	0	NA	NA
Lead	fillet	3	66	1	1.8	1.8
	whole	3	100	0	NA	NA
Selenium	fillet	3	100	0	NA	NA
	whole	3	100	0	NA	NA

Pamlico River at Blounts Bay - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Se mg/kg
890426	Cyprinus carpio	672	5000	W1	0.08	<1.0	<0.10	0.62	1.50	<0.50	<0.50	<0.5
890426	Mugil cephalus	309	350	W3	<0.02	1.1	<0.10	0.28	3.10	<0.50	<0.50	<0.5
890426	Dorosoma cepedianum	325	406	WC5	<0.02	<1.0	<0.10	<0.25	0.68	<0.50	<0.50	<0.5
890426	Leiostomus xanthurus	186	148	FC5	0.02	<1.0	<0.10	<0.25	0.71	0.81	<0.50	<0.5
890426	Ictalurus catus	334	675	F1	0.05	<1.0	<0.10	<0.25	1.40	9.20	1.80	<0.5
890426	Lepisosteus osseus	800	1800	F1	0.12	<1.0	<0.10	<0.25	1.10	5.20	<0.50	<0.5

STATION NAME: Broad Creek near Washington
STATION NUMBER: TSTARBC-5

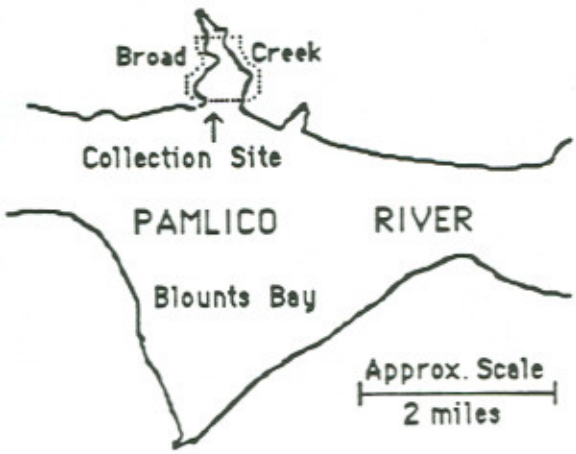
RIVER BASIN: Tar-Pamlico

SUB BASIN: 03-03-07

COUNTY: Beaufort

STREAM CLASS: SB NSW

DRAINAGE AREA: ≈10 sq. mi



LOCATION: Broad Creek above mouth near Washington

Latitude 35° 29' 07" **Longitude** 76° 57' 18"

REASON FOR SAMPLING : Albemarle Pamlico Estuary Study

SAMPLING DATES: April 6, 1989

METHOD OF COLLECTION: Nets

PARAMETERS SAMPLED: Heavy Metals and Organics

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	5	100	0	NA	NA
	whole	5	60	2	1.3	1.3
Cadmium	fillet	5	100	0	NA	NA
	whole	5	100	0	NA	NA
Chromium	fillet	5	100	0	NA	NA
	whole	5	100	0	NA	NA
Copper	fillet	5	0	5	0.20-1.10	0.51
	whole	5	0	5	0.34-3.30	1.11
Mercury	fillet	5	0	5	0.03-0.16	0.08
	whole	5	60	2	0.05-0.16	0.11
Nickel	fillet	5	80	1	0.5	0.5
	whole	5	100	0	NA	NA
Lead	fillet	5	100	0	NA	NA
	whole	5	100	0	NA	NA
Selenium	fillet	5	100	0	NA	NA
	whole	5	60	2	0.60-0.70	0.65

Broad Creek near Washington - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Se mg/kg
890406	Mugil cephalus	291	240	Wt	<0.02	1.30	<0.10	<0.25	3.30	<0.50	<0.50	0.70
890406	Micropogon undulatus	304	310	Wt	0.05	1.30	<0.10	<0.25	0.49	<0.50	<0.50	0.60
890406	Moxostoma sp.	413	940	WC2	0.12	<1.0	<0.10	<0.25	0.34	<0.50	<0.50	<0.5
890406	Dorosoma cepedianum	280	229	WC5	<0.02	<1.0	<0.10	<0.25	0.44	<0.50	<0.50	<0.5
890406	Alosa mediocris	280	210	Wt	<0.02	<1.0	<0.10	<0.25	1.00	<0.50	<0.50	<0.5
890406	Micropterus salmoides	317	460	FC2	0.09	<1.0	<0.10	<0.25	0.23	<0.50	<0.50	<0.5
890406	Morone saxatilis	330	500	FC2	0.04	<1.0	<0.10	<0.25	0.20	<0.50	<0.50	<0.5
890406	Ictalurus catus	367	750	F1	0.03	<1.0	<0.10	<0.25	0.20	<0.50	<0.50	<0.5
890406	Perca flavescens	304	315	FC2	0.16	<1.0	<0.10	<0.25	0.83	0.50	<0.50	<0.5
890406	Lepomis gibbosus	206	220	FC2	0.06	<1.0	<0.10	<0.25	1.10	<0.50	<0.50	<0.5
890406	Callinectes sapidus	Shellfish			<0.02	<1.0	<0.10	<0.25	13.00	<0.50	<0.50	<0.5

Broad Creek near Washington - Organics in Fish Tissue Data

(Species: LMB= Micropterus salmoides; RHS= Moxostoma sp.)
(Type-Number: WC= whole composite followed by the number of fish in the composite)
(Lengths and weights of composites are means)

Date	890406	890406
Species	LMB	RHS
Avg Wt (gm)	460	940
Avg Ln (mm)	317	413
Type-Number	FC2	WC2
Aldrin (mg/kg)	<0.0005	<0.0005
Dieldrin (mg/kg)	<0.0008	0.003
o,p DDD (µg/g)	<0.002	<0.002
p,p DDD (µg/g)	0.002	0.023
o,p DDE (µg/g)	<0.002	<0.002
p,p DDE (µg/g)	0.004	0.059
o,p DDT (µg/g)	<0.002	<0.002
p,p DDT (µg/g)	<0.005	<0.005
cis-Chlordane (µg/g)	<0.0008	<0.0008
trans-Chlordane (µg/g)	<0.0008	<0.0008
trans-Nchlor (µg/g)	<0.0008	0.005
Methoxychlor (µg/kg)	<10	<10
Hxchlbenzene (mg/kg)	<0.0003	0.003
alpha-BHC (µg/g)	<0.0003	<0.0003
gamma-BHC (µg/g)	<0.0003	<0.0003
Endrin (mg/kg)	<0.002	<0.002
PCB (mg/kg)	<0.013	<0.013
Endosulfan I (mg/kg)	<0.0005	<0.0005
Endosulfan II (mg/kg)	<0.002	<0.002
Endosulfan Sulfate (mg/kg)	<0.025	<0.025

STATION NAME: Bath Creek at Bath
STATION NUMBER: 02084534

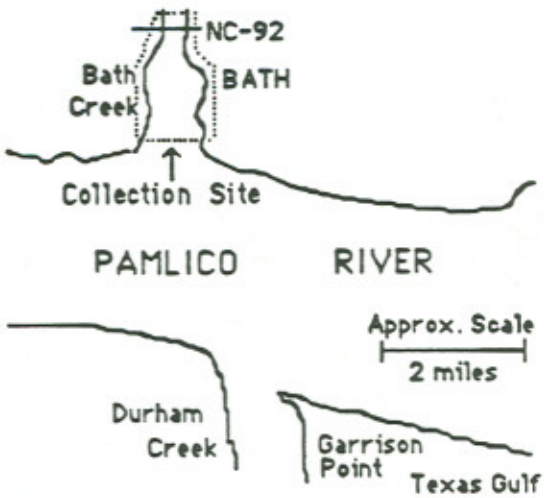
RIVER BASIN: Tar-Pamlico

SUB BASIN: 03-03-07

COUNTY: Beaufort

STREAM CLASS: SC NSW

DRAINAGE AREA: 31 sq. mi



LOCATION: Bath Creek at NC-92 at Bath

Latitude 35° 28' 30" **Longitude** 76° 49' 05"

REASON FOR SAMPLING : Albemarle Pamlico Peninsula Study

SAMPLING DATES: January 10, 1984

METHOD OF COLLECTION: Nets

PARAMETERS SAMPLED: Heavy Metals and Organics

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	14	100	0	NA	NA
	whole	10	100	0	NA	NA
Cadmium	fillet	14	93	1	0.29	0.29
	whole	10	70	3	0.28-0.30	0.29
Chromium	fillet	14	100	0	NA	NA
	whole	10	100	0	NA	NA
Copper	fillet	14	0	14	0.40-1.00	0.64
	whole	10	0	10	0.43-4.20	1.23
Mercury	fillet	14	21	11	0.03-0.16	0.09
	whole	10	50	5	0.03-0.09	0.05
Nickel	fillet	14	100	0	NA	NA
	whole	10	100	0	NA	NA
Lead	fillet	14	100	0	NA	NA
	whole	10	30	7	1.60-2.80	2
Zinc	fillet	14	100	14	2.9-19	4.9
	whole	10	60	10	8.2-18	12.4

Bath Creek at Bath - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg
840110	Micropterus salmoides	286	298	W1	0.09	<0.40	0.30	<0.50	0.74	<1.00	<1.00	9.1
840110	Morone americana	238	267	W1	0.03	<0.40	<0.20	<0.50	4.20	<1.00	<1.00	10.0
840110	Morone americana	221	220	W1	0.04	<0.40	<0.20	<0.50	2.10	<1.00	1.90	9.4
840110	Ictalurus nebulosus	292	296	W1	<0.02	<0.40	<0.20	<0.50	0.78	<1.00	1.80	12.0
840110	Ictalurus nebulosus	263	232	W1	<0.02	<0.40	<0.20	<0.50	0.79	<1.00	<1.00	8.2
840110	Lepomis macrochirus	165	115	W1	0.03	<0.40	<0.20	<0.50	0.61	<1.00	1.90	12.0
840110	Lepomis macrochirus	173	126	W1	0.04	<0.40	0.30	<0.50	1.20	<1.00	2.00	15.0
840110	Lepomis macrochirus	166	98	W1	<0.02	<0.40	<0.20	<0.50	0.59	<1.00	1.60	13.0
840110	Lepomis gibbosus	157	126	W1	<0.02	<0.40	0.28	<0.50	0.88	<1.00	2.80	18.0
840110	Lepomis gibbosus	163	129	W1	<0.02	<0.40	<0.20	<0.50	0.43	<1.00	2.20	17.0
840110	Micropterus salmoides	326	515	F1	0.11	<0.40	<0.20	<0.50	0.45	<1.00	<1.00	3.5
840110	Micropterus salmoides	286	434	F1	0.16	<0.40	<0.20	<0.50	0.53	<1.00	<1.00	3.4
840110	Micropterus salmoides	271	333	F1	0.09	<0.40	<0.20	<0.50	0.42	<1.00	<1.00	3.2
840110	Esox niger	488	984	F1	0.13	<0.40	<0.20	<0.50	0.64	<1.00	<1.00	3.3
840110	Esox niger	463	853	F1	0.13	<0.40	<0.20	<0.50	0.40	<1.00	<1.00	3.6
840110	Esox niger	460	759	F1	0.08	<0.40	<0.20	<0.50	0.42	<1.00	<1.00	3.6
840110	Esox niger	416	497	F1	0.11	<0.40	<0.20	<0.50	0.52	<1.00	<1.00	3.0
840110	Esox niger	363	426	F1	<0.02	<0.40	<0.20	<0.50	0.89	<1.00	<1.00	19.0
840110	Erimyzon oblongus	264	320	F1	0.08	<0.40	<0.20	<0.50	1.00	<1.00	<1.00	4.3
840110	Perca flavescens	234	198	F1	0.04	<0.40	<0.20	<0.50	0.81	<1.00	<1.00	4.2
840110	Mugil cephalus	319	378	F1	<0.02	<0.40	<0.20	<0.50	0.69	<1.00	<1.00	2.9
840110	Ictalurus nebulosus	287	327	F1	0.03	<0.40	0.29	<0.50	0.52	<1.00	<1.00	6.0
840110	Ictalurus nebulosus	290	295	F1	<0.02	<0.40	<0.20	<0.50	1.00	<1.00	<1.00	4.0
840110	Ictalurus nebulosus	304	401	F1	0.05	<0.40	<0.20	<0.50	0.60	<1.00	<1.00	4.2

Bath Creek at Bath - Organics in Fish Tissue Data

(Species: CHP= Esox niger)
(Type-Number: FC= Fillet composite followed by the number of fish in the composite)

Date	840111
Species	CHP
Avg Wt (gm)	984
Avg Ln (mm)	488
Type-Number	WC1
Aldrin (mg/kg)	<0.01
Dieldrin (mg/kg)	<0.02
o,p DDD (µg/g)	<0.02
p,p DDD (µg/g)	<0.04
o,p DDE (µg/g)	<0.02
p,p DDE (µg/g)	<0.02
Total DDT (µg/g)	<0.09
o,p DDT (µg/g)	<0.02
p,p DDT (µg/g)	<0.07
cis-Chlordane (µg/g)	<0.06
trans-Chlordane (µg/g)	<0.06
trans-Nchlor (µg/g)	<0.02
Methoxychlor (µg/kg)	<80
Hxchlbenzene (mg/kg)	<0.01
PCP (µg/g)	<0.02
alpha-BHC (µg/g)	<0.01
gamma-BHC (µg/g)	<0.01
Endrin (mg/kg)	<0.04
PCB (mg/kg)	<0.40

STATION NAME: Pamlico River at Garrison Point
STATION NUMBER: TAR 58

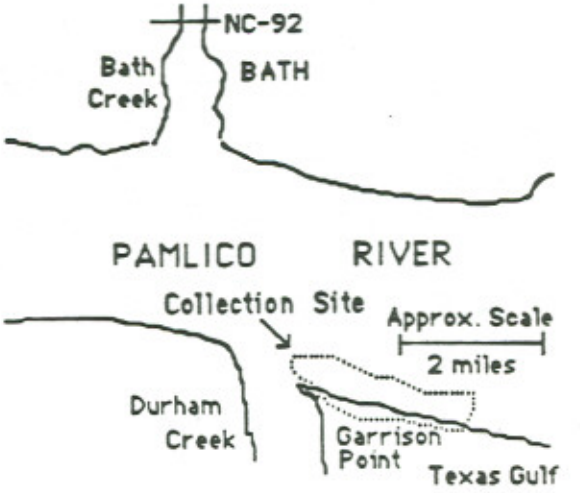
RIVER BASIN: Tar-Pamlico

SUB BASIN: 03-03-07

COUNTY: Beaufort

STREAM CLASS: SB NSW

DRAINAGE AREA: Indeterminate



LOCATION: Pamlico River off Garrison Point

Latitude 35° 24' 05" **Longitude** 76° 48' 48"

REASON FOR SAMPLING : Albemarle Pamlico Estuary Study

SAMPLING DATES: April 26, 1989

METHOD OF COLLECTION: Nets

PARAMETERS SAMPLED: Heavy Metals

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	2	50	1	0.75	0.75
	whole	1	100	0	NA	NA
Cadmium	fillet	2	100	0	NA	NA
	whole	1	100	0	NA	NA
Chromium	fillet	2	50	1	0.31	0.31
	whole	1	0	1	0.3	0.3
Copper	fillet	2	0	2	0.15-0.30	0.23
	whole	1	0	1	0.42	0.42
Mercury	fillet	2	0	2	0.02-0.08	0.05
	whole	1	100	0	NA	NA
Nickel	fillet	2	100	0	NA	NA
	whole	1	100	0	NA	NA
Lead	fillet	2	100	0	NA	NA
	whole	1	100	0	NA	NA
Selenium	fillet	2	50	1	0.56	0.56
	whole	1	100	0	NA	NA

Pamlico River at Garrison Point - Metals in Fish Tissue Data

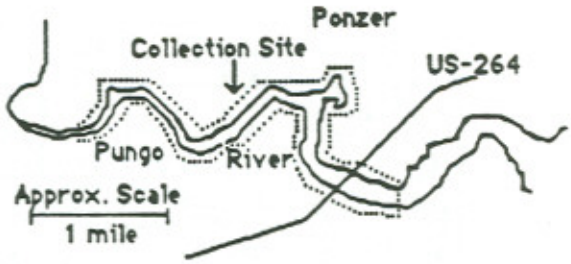
(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Se mg/kg
890426	Dorosoma cepedianum	355	516	WC5	<0.02	<0.50	<0.10	0.30	0.42	<0.50	<0.50	<0.5
890426	Leiostomus xanthurus	187	202	FC5	0.02	0.75	<0.10	0.31	0.30	<0.50	<0.50	0.56
890426	Paralichthys lethostigma	320	497	F1	0.08	<0.50	<0.10	<0.25	0.15	<0.50	<0.50	<0.5
890426	Callinectes sapidus	Shellfish			0.02	0.75	<0.10	<0.25	5.00	<0.50	<0.50	<0.5

STATION NAME: Pungo River at US-264 near Ponzer
STATION NUMBER: 0208455650

RIVER BASIN: Tar-Pamlico

SUB BASIN: 03-03-07



COUNTY: Beaufort/Hyde

STREAM CLASS: SC - SB
DRAINAGE AREA: 145 sq. mi

LOCATION: Pungo River at US-264 near Ponzer

Latitude 35° 34' 25" **Longitude** 76° 30' 00"

REASON FOR SAMPLING : Albemarle Pamlico Peninsula Study

SAMPLING DATES: August 30, 1982, September 14, 1982, June 15, 1983 October 15, 1985

METHOD OF COLLECTION: Electrofishing and Nets

PARAMETERS SAMPLED: Heavy Metals and Organics

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	3	100	0	NA	NA
	whole	7	100	0	NA	NA
Cadmium	fillet	16	100	0	NA	NA
	whole	18	94	1	0.21	0.21
Chromium	fillet	16	100	0	NA	NA
	whole	18	94	1	0.53	0.53
Copper	fillet	16	0	16	0.11-0.76	0.37
	whole	18	0	18	0.30-3.5	0.7
Mercury	fillet	16	25	12	0.02-0.15	0.08
	whole	18	28	13	0.02-0.16	0.07
Nickel	fillet	11	100	0	NA	NA
	whole	14	100	0	NA	NA
Lead	fillet	16	100	0	NA	NA
	whole	18	89	2	1.10-1.90	1.5
Zinc	fillet	16	0	16	3.7-9.9	5.9
	whole	18	0	18	3.6-17	9.9

Pungo River at US-264 near Ponzer - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg
820830	Ictalurus catus	315	420	W1	<0.02	ND	<0.20	<0.50	0.69	ND	<1.00	12.0
820830	Ictalurus catus	385	760	W1	<0.02	ND	<0.20	<0.50	0.49	ND	<1.00	5.6
820830	Ictalurus catus	336	520	W1	<0.02	ND	<0.20	<0.50	0.30	ND	<1.00	3.6
820830	Ictalurus catus	326	500	W1	<0.02	ND	<0.20	<0.50	0.50	ND	<1.00	7.8
820914	Perca flavescens	290	400	W1	0.16	<0.40	<0.20	<0.50	0.43	<1.00	<1.00	6.5
820914	Lepomis macrochirus	197	150	W1	0.04	<0.34	<0.20	<0.50	0.39	<1.00	1.90	9.2
820914	Pomoxis nigromaculatus	239	275	WC2	0.04	<0.39	<0.20	<0.50	0.49	<1.00	<1.00	9.3
820914	Micropterus salmoides	380	840	WC5	0.06	<0.33	0.21	<0.50	0.62	<1.00	<1.00	12.0
830615	Ictalurus catus	282	285	W1	0.02	<0.39	<0.20	<0.50	0.52	<1.00	<1.00	7.5
830615	Ictalurus catus	319	480	W1	<0.02	<0.41	<0.20	<0.50	0.47	<1.00	<1.00	6.2
830615	Lepisosteus osseus	490	350	W1	0.08	<0.43	<0.20	0.53	3.50	<1.00	1.10	8.1
851015	Lepisosteus osseus	647	920	W1	0.04	ND	<0.10	<0.25	0.70	<0.50	<0.50	12.0
851015	Lepisosteus osseus	720	1050	W1	0.11	ND	<0.10	<0.25	0.44	<0.50	<0.50	11.0
851015	Lepisosteus osseus	880	1890	W1	0.11	ND	<0.10	<0.25	0.72	<0.50	<0.50	13.0
851015	Morone americana	231	240	W1	0.06	ND	<0.10	<0.25	0.82	<0.50	<0.50	16.0
851015	Morone americana	235	200	W1	0.06	ND	<0.10	<0.25	0.51	<0.50	<0.50	17.0
851015	Ictalurus catus	388	780	W1	0.06	ND	<0.10	<0.25	0.59	<0.50	<0.50	11.0
851015	Ictalurus catus	420	1040	W1	0.07	ND	<0.10	<0.25	0.35	<0.50	<0.50	11.0
820830	Ictalurus catus	335	420	F1	<0.02	ND	<0.20	<0.50	0.76	ND	<1.00	9.9
820830	Ictalurus catus	347	600	F1	<0.02	ND	<0.20	<0.50	0.58	ND	<1.00	7.5
820830	Ictalurus catus	375	740	F1	0.02	ND	<0.20	<0.50	0.70	ND	<1.00	5.7
820830	Ictalurus catus	376	660	F1	<0.02	ND	<0.20	<0.50	0.57	ND	<1.00	7.3
820830	Ictalurus catus	315	400	F1	0.05	ND	<0.20	<0.50	0.65	ND	<1.00	6.3
830615	Ictalurus catus	380	832	F1	0.03	<0.38	<0.20	<0.50	0.38	<1.00	<1.00	6.3
830615	Ictalurus catus	375	703	F1	0.03	<0.41	<0.20	<0.50	0.42	<1.00	<1.00	6.4
830615	Ictalurus catus	338	598	F1	<0.02	<0.39	<0.20	<0.50	0.33	<1.00	<1.00	4.7
851015	Lepisosteus osseus	895	2100	F1	0.12	ND	<0.10	<0.25	0.16	<0.50	<0.50	3.7
851015	Lepisosteus osseus	942	2740	F1	0.15	ND	<0.10	<0.25	0.19	<0.50	<0.50	3.7
851015	Ictalurus catus	392	780	F1	0.07	ND	<0.10	<0.25	0.14	<0.50	<0.50	5.0
851015	Ictalurus catus	365	580	F1	0.09	ND	<0.10	<0.25	0.32	<0.50	<0.50	5.0
851015	Ictalurus catus	422	1060	F1	0.08	ND	<0.10	<0.25	0.16	<0.50	<0.50	5.1
851015	Morone americana	267	310	F1	0.11	ND	<0.10	<0.25	0.31	<0.50	<0.50	7.5
851015	Morone americana	246	240	F1	0.08	ND	<0.10	<0.25	0.11	<0.50	<0.50	5.1
851015	Morone americana	271	320	F1	0.15	ND	<0.10	<0.25	0.13	<0.50	<0.50	5.7

Pungo River at US-264 near Ponzer - Organics in Fish Tissue Data

(Species: WHC= Ictalurus catus)
(Type-Number: FC= Fillet composite followed by the number of fish in the composite)

Date	830615	830615
Species	WHC	WHC
Avg Wt (gm)	832	703
Avg Ln (mm)	380	375
Type-Number	FC1	FC1
Aldrin (mg/kg)	<0.01	<0.01
Dieldrin (mg/kg)	<0.02	<0.02
o,p DDD (µg/g)	<0.02	<0.02
p,p DDD (µg/g)	<0.04	<0.04
o,p DDE (µg/g)	<0.02	<0.02
p,p DDE (µg/g)	<0.02	<0.02
Total DDT (µg/g)	<0.09	<0.09
o,p DDT (µg/g)	<0.02	<0.02
p,p DDT (µg/g)	<0.07	<0.07
cis-Chlordane (µg/g)	<0.06	<0.06
trans-Chlordane (µg/g)	<0.06	<0.06
trans-Nchlor (µg/g)	<0.02	<0.02
Methoxychlor (µg/kg)	<80	<80
Hxchlbenzene (mg/kg)	<0.01	<0.01
PCP (µg/g)	<0.02	<0.02
alpha-BHC (µg/g)	<0.01	<0.01
gamma-BHC (µg/g)	<0.01	<0.01
Endrin (mg/kg)	<0.04	<0.04
PCB (mg/kg)	<0.40	<0.40

STATION NAME: Pungo River off Durants Point near Belhaven
STATION NUMBER: P-17

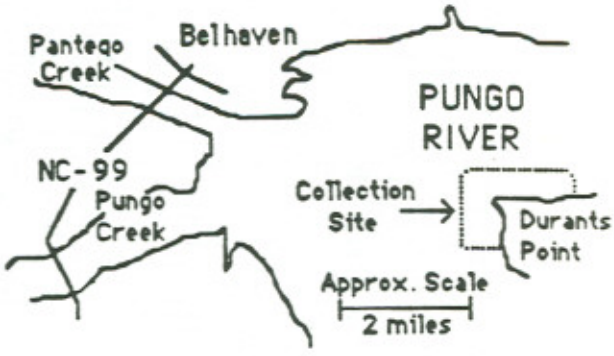
RIVER BASIN: Tar-Pamlico

SUB BASIN: 03-03-07

COUNTY: Beaufort

STREAM CLASS: SB NSW

DRAINAGE AREA: Indeterminate



LOCATION: Pungo River off Durants Point near Belhaven

Latitude 35° 30' 35" **Longitude** 76° 35' 08"

REASON FOR SAMPLING : Albemarle Pamlico Estuary Study

SAMPLING DATES: March 28, 1989

METHOD OF COLLECTION: Nets

PARAMETERS SAMPLED: Heavy Metals and Organics

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	4	75	1	1.8	1.8
	whole	7	86	1	1.8	1.8
Cadmium	fillet	4	100	0	NA	NA
	whole	7	100	0	NA	NA
Chromium	fillet	4	100	0	NA	NA
	whole	7	100	0	NA	NA
Copper	fillet	4	0	4	0.19-0.61	0.43
	whole	7	0	7	0.43-4.20	1.0
Mercury	fillet	4	25	3	0.05-0.12	0.08
	whole	7	28	5	0.02-0.19	0.07
Nickel	fillet	4	100	0	NA	NA
	whole	7	100	0	NA	NA
Lead	fillet	4	100	0	NA	NA
	whole	7	100	0	NA	NA
Selenium	fillet	4	75	1	0.6	0.6
	whole	7	71	5	0.50-1.30	0.9

Pungo River off Durants Point- Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Se mg/kg
890328	Ictalurus catus	388	753	WC6	0.06	<1.0	<0.10	<0.25	0.29	<0.5	<0.5	<0.50
890328	Morone americana	245	344	WC3	0.03	<1.0	<0.10	<0.25	3.10	<0.5	<0.5	1.30
890328	Sciaenops ocellata	407	761	WC5	0.04	<1.0	<0.10	<0.25	0.35	<0.5	<0.5	<0.50
890328	Lepisosteus osseus	770	1750	W1	0.19	<1.0	<0.10	<0.25	0.44	<0.5	<0.5	0.50
890328	Mugil cephalus	295	353	WC2	<0.02	<1.0	<0.10	<0.25	1.60	<0.5	<0.5	<0.50
890328	Dorosoma cepedianum	299	449	WC2	<0.02	<1.0	<0.10	<0.25	0.42	<0.5	<0.5	<0.50
890328	Brevoortia tyrannus	245	221	W1	0.02	1.80	<0.10	<0.25	0.79	<0.5	<0.5	<0.50
890328	Sciaenops ocellata	355	534	FC6	0.05	<1.0	<0.10	<0.25	0.19	<0.5	<0.5	<0.50
890328	Cynoscion nebulosus	400	641	F1	0.06	<1.0	<0.10	<0.25	0.49	<0.5	<0.5	<0.50
890328	Micropterus salmoides	360	672	F1	0.12	<1.0	<0.10	<0.25	0.44	<0.5	<0.5	<0.50
890328	Leiostomus xanthurus	187	99	FC5	<0.02	1.80	<0.10	<0.25	0.61	<0.5	<0.5	0.60
890328	Callinectes sapidus	Shellfish			<0.02	<1.0	<0.10	<0.25	12.00	<0.5	<0.5	<0.5

Pungo River off Durants Point - Organics in Fish Tissue Data

(Species: LMB= Micropterus salmoides; RDR= Sciaenops ocellata)
(Type-Number: FC= Fillet composite followed by the number of fish in the composite)

Date	890328	890328	890328
Species	LMB	RDR	RDR
Avg Wt (gm)	672	761	534
Avg Ln (mm)	360	407	355
Type-Number	FC1	FC5	FC6
Aldrin (mg/kg)	<0.0005	<0.0005	<0.0005
Dieldrin (mg/kg)	<0.0008	<0.0008	<0.0008
o,p DDD (µg/g)	<0.002	<0.002	<0.002
p,p DDD (µg/g)	<0.002	0.005	<0.002
o,p DDE (µg/g)	<0.002	<0.002	<0.002
p,p DDE (µg/g)	<0.0005	0.006	<0.0005
o,p DDT (µg/g)	<0.002	<0.002	<0.002
p,p DDT (µg/g)	<0.005	<0.005	<0.005
cis-Chlordane (µg/g)	<0.0008	<0.0008	<0.0008
trans-Chlordane (µg/g)	<0.0008	<0.0008	<0.0008
trans-Nchlor (µg/g)	<0.0008	<0.0008	<0.0008
Methoxychlor (µg/kg)	<10	<10	<10
Hxchlbenzene (mg/kg)	<0.0003	<0.0003	<0.0003
alpha-BHC (µg/g)	<0.0003	<0.0003	<0.0003
gamma-BHC (µg/g)	<0.0003	<0.0003	<0.0003
Endrin (mg/kg)	<0.002	<0.002	<0.002
PCB (mg/kg)	<0.013	<0.013	<0.013
Endosulfan I (mg/kg)	<0.0005	<0.0005	<0.0005
Endosulfan II (mg/kg)	<0.002	<0.002	0.001
Endosulfan Sulfate (mg/kg)	<0.025	<0.025	<0.025

STATION NAME: Pantego Creek near Belhaven
STATION NUMBER: 0208455850

RIVER BASIN: Tar-Pamlico

SUB BASIN: 03-03-07

COUNTY: Beaufort

STREAM CLASS: SC NSW

DRAINAGE AREA: 140 sq. mi.

LOCATION: Pantego Creek at NC-99 near Belhaven

Latitude 35° 32' 30" **Longitude** 76° 38' 15"

REASON FOR SAMPLING : Albemarle Pamlico Peninsula Study

SAMPLING DATES: June 15, 1983

METHOD OF COLLECTION: Nets

PARAMETERS SAMPLED: Heavy Metals and Organics

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	whole	9	89	1	0.62	0.62
Cadmium	whole	9	11	8	0.20-0.28	0.24
Chromium	whole	9	100	0	NA	NA
Copper	whole	9	0	9	2.10-11.0	4.70
Mercury	whole	9	89	1	0.04	0.04
Nickel	whole	9	100	0	NA	NA
Lead	whole	9	0	9	1.30-3.10	2.14
Zinc	whole	9	0	9	9.9-26	15.6

Pantego Creek near Belhaven - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg
830615	Mugil cephalus	260	268	W1	<0.02	<0.41	0.20	<0.50	2.10	<1.0	2.80	12
830615	Mugil cephalus	300	286	W1	<0.02	0.62	<0.20	<0.50	2.20	<1.0	1.40	12
830615	Morone americana	228	201	W1	<0.02	<0.41	0.21	<0.50	2.30	<1.0	1.30	11
830615	Morone americana	221	174	W1	<0.02	<0.40	0.28	<0.50	7.30	<1.0	2.70	17
830615	Morone americana	233	209	W1	<0.02	<0.40	0.23	<0.50	11.00	<1.0	1.90	26
830615	Morone americana	223	176	W1	<0.02	<0.40	0.26	<0.50	3.70	<1.0	1.40	18
830615	Morone americana	216	164	W1	0.04	<0.39	0.26	<0.50	6.20	<1.0	2.10	17
830615	Morone americana	231	203	W1	<0.02	<0.38	0.28	<0.50	5.20	<1.0	3.10	18
830615	Morone americana	238	125	W1	<0.02	<0.39	0.23	<0.50	2.70	<1.0	2.60	9.9

Pantego Creek near Belhaven - Organics in Fish Tissue Data

(Species: WP= Morone americana;)
(Type-Number: WC= whole composite followed by the number of fish in the composite)

Date	830615	830615
Species	WP	WP
Avg Wt (gm)	203	125
Avg Ln (mm)	231	238
Type-Number	FC1	FC1
Aldrin (mg/kg)	<0.01	<0.01
Dieldrin (mg/kg)	<0.02	<0.02
o,p DDD (µg/g)	<0.02	<0.02
p,p DDD (µg/g)	<0.04	<0.04
o,p DDE (µg/g)	<0.02	<0.02
p,p DDE (µg/g)	0.05	0.04
Total DDT (µg/g)	<0.09	<0.09
o,p DDT (µg/g)	<0.02	<0.02
p,p DDT (µg/g)	<0.07	<0.07
cis-Chlordane (µg/g)	<0.06	<0.06
trans-Chlordane (µg/g)	<0.06	<0.06
trans-Nchlor (µg/g)	<0.02	<0.02
Methoxychlor (µg/kg)	<80	<80
Hxchlbenzene (mg/kg)	<0.01	<0.01
PCP (µg/g)	<0.02	<0.02
alpha-BHC (µg/g)	<0.01	<0.01
gamma-BHC (µg/g)	<0.01	<0.01
Endrin (mg/kg)	<0.04	<0.04
PCB (mg/kg)	<0.40	<0.40

STATION NAME: Pungo Creek near Belhaven
STATION NUMBER: 0208457020

RIVER BASIN: Tar-Pamlico

SUB BASIN: 03-03-07

COUNTY: Beaufort

STREAM CLASS: SC NSW

DRAINAGE AREA: 73 sq. mi.

LOCATION: Pungo Creek at NC-99 near Belhaven

Latitude 35° 29' 50" **Longitude** 76° 40' 20"

REASON FOR SAMPLING : Albemarle Pamlico Peninsula Study

SAMPLING DATES: June 16, 1983, January 11, 1984

METHOD OF COLLECTION: Nets

PARAMETERS SAMPLED: Heavy Metals and Organics

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	10	100	0	NA	NA
	whole	8	100	0	NA	NA
Cadmium	fillet	10	50	5	0.23-0.33	0.27
	whole	8	88	1	0.3	0.3
Chromium	fillet	10	100	0	NA	NA
	whole	8	100	0	NA	NA
Copper	fillet	10	20	8	0.28-1.10	0.58
	whole	8	13	7	0.30-0.88	0.51
Mercury	fillet	10	40	6	0.05-0.12	0.09
	whole	8	50	4	0.02-0.07	0.03
Nickel	fillet	10	100	0	NA	NA
	whole	8	100	0	NA	NA
Lead	fillet	10	100	0	NA	NA
	whole	8	13	7	1.80-2.80	2.11
Zinc	fillet	10	0	10	3.6-15	6.7
	whole	8	0	8	6.3-16	12

Pungo Creek near Belhaven - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg
830616	Morone saxatilis	275	247	W1	<0.02	<0.40	<0.20	<0.50	0.55	<1.0	1.80	12
830616	Morone americana	206	138	W1	<0.02	<0.39	<0.20	<0.50	0.88	<1.0	1.90	13
840111	Lepomis gibbosus	161	89	W1	0.02	<0.40	<0.20	<0.50	0.30	<1.0	2.00	11
840111	Lepomis gibbosus	151	67	W1	0.02	<0.40	<0.20	<0.50	<0.20	<1.0	1.90	13
840111	Lepomis gibbosus	156	87	W1	<0.02	<0.40	<0.20	<0.50	0.36	<1.0	2.50	15
840111	Lepomis macrochirus	147	72	W1	<0.02	<0.40	<0.20	<0.50	0.37	<1.0	2.80	16
840111	Ictalurus nebulosus	257	229	W1	0.02	<0.40	<0.20	<0.50	0.40	<1.0	1.90	10
840111	Ictalurus catus	386	930	W1	0.07	<0.40	0.30	<0.50	0.69	<1.0	<1.0	6.3
840111	Ictalurus catus	408	1270	FC1	0.05	<0.40	0.23	<0.50	0.28	<1.0	<1.0	4.4
840111	Ictalurus catus	396	980	FC1	0.06	<0.40	0.24	<0.50	1.10	<1.0	<1.0	3.8
840111	Ictalurus nebulosus	402	982	FC1	0.05	<0.40	0.31	<0.50	0.35	<1.0	<1.0	4.0
840111	Esox niger	431	553	FC1	0.12	<0.40	0.33	<0.50	<0.20	<1.0	<1.0	4.2
840111	Esox niger	406	513	FC1	0.12	<0.40	0.25	<0.50	0.30	<1.0	<1.0	7.2
840111	Esox niger	377	467	FC1	0.11	<0.40	<0.20	<0.50	<0.20	<1.0	<1.0	3.6
840111	Cyprinus carpio	334	657	FC1	<0.02	<0.40	<0.20	<0.50	0.29	<1.0	<1.0	9.9
840111	Cyprinus carpio	442	1285	FC1	<0.02	<0.40	<0.20	<0.50	0.81	<1.0	<1.0	15.0
840111	Cyprinus carpio	364	707	FC1	<0.02	<0.40	<0.20	<0.50	0.76	<1.0	<1.0	7.4
840111	Cyprinus carpio	312	578	FC1	<0.02	<0.40	<0.20	<0.50	0.75	<1.0	<1.0	7.3

Pungo Creek near Belhaven - Organics in Fish Tissue Data

(Species: STB= Morone saxatilis; WP= Morone americana;)
(Type-Number: WC= whole composite followed by the number of fish in the composite)

Date	830616	830616
Species	STB	WP
Avg Wt (gm)	247	138
Avg Ln (mm)	275	206
Type-Number	WC1	WC1
Aldrin (mg/kg)	<0.01	<0.01
Dieldrin (mg/kg)	<0.02	<0.02
o,p DDD (µg/g)	<0.02	<0.02
p,p DDD (µg/g)	<0.04	<0.04
o,p DDE (µg/g)	<0.02	<0.02
p,p DDE (µg/g)	0.05	0.57
Total DDT (µg/g)	<0.09	<0.09
o,p DDT (µg/g)	<0.02	<0.02
p,p DDT (µg/g)	<0.07	<0.07
cis-Chlordane (µg/g)	<0.06	<0.06
trans-Chlordane (µg/g)	<0.06	<0.06
trans-Nchlor (µg/g)	<0.02	<0.02
Methoxychlor (µg/kg)	<80	<80
Hxchlbenzene (mg/kg)	<0.01	<0.01
PCP (µg/g)	<0.02	<0.02
alpha-BHC (µg/g)	<0.01	<0.01
gamma-BHC (µg/g)	<0.01	<0.01
Endrin (mg/kg)	<0.04	<0.04
PCB (mg/kg)	<0.40	<0.40

STATION NAME: Rose Bay
STATION NUMBER: TSTARR3

RIVER BASIN: Tar-Pamlico

SUB BASIN: 03-03-07

COUNTY: Hyde

STREAM CLASS: SA

DRAINAGE AREA: Indeterminate

LOCATION: In Rose Bay off US-264

Latitude 36° 01' 20" **Longitude** 76° 18' 30"

REASON FOR SAMPLING : Ambient Site

SAMPLING DATES: April 3, 1985

METHOD OF COLLECTION: Nets

PARAMETERS SAMPLED: Heavy Metals

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	3	100	0	NA	NA
Cadmium	fillet	23	100	0	NA	NA
Chromium	fillet	23	100	0	NA	NA
Copper	fillet	23	0	23	0.25-1.70	0.7
Mercury	fillet	23	30	16	0.02-0.17	0.08
Nickel	fillet	23	100	0	NA	NA
Lead	fillet	23	96	1	2	2
Zinc	fillet	23	0	23	3.1-23	8

Pamlico River at Great Island - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Se mg/kg
890505	Mugil cephalus	311	390	W1	<0.02	<0.50	<0.10	0.35	5.70	<0.50	<0.50	<0.5
890505	Sciaenops ocellata	335	430	W1	0.05	<0.50	<0.10	0.31	0.37	<0.50	<0.50	<0.5
890505	Trinectes maculatus	139	59	WC2	<0.02	1.40	<0.10	0.41	1.00	0.79	<0.50	0.57
890505	Dorosoma cepedianum	313	404	W1	<0.02	<0.50	<0.10	0.29	0.48	<0.50	<0.50	<0.5
890505	Brevoortia tyrannus	208	145	W1	<0.02	0.96	<0.10	1.10	0.95	0.51	<0.50	0.75
890505	Cynoscion regalis	339	415	FC4	0.10	<0.50	<0.10	<0.25	0.26	<0.50	<0.50	<0.5
890505	Micropogon undulatus	248	167	FC6	0.06	1.90	<0.10	<0.25	0.51	<0.50	<0.50	0.51
890505	Leiostomus xanthurus	201	135	FC5	0.02	1.20	<0.10	<0.25	0.63	<0.50	<0.50	<0.5
890505	Pomatomus saltatrix	329	634	FC4	0.27	<0.50	<0.10	<0.25	0.98	0.50	<0.50	0.52
890505	Paralichthys lethostigma	285	211	FC2	0.04	<0.50	0.14	<0.25	0.31	<0.50	<0.50	<0.5
890505	Crassostrea virginica	Shellfish			<0.02	0.61	0.51	0.74	4.00	<0.50	<0.50	<0.5

Neuse River Area

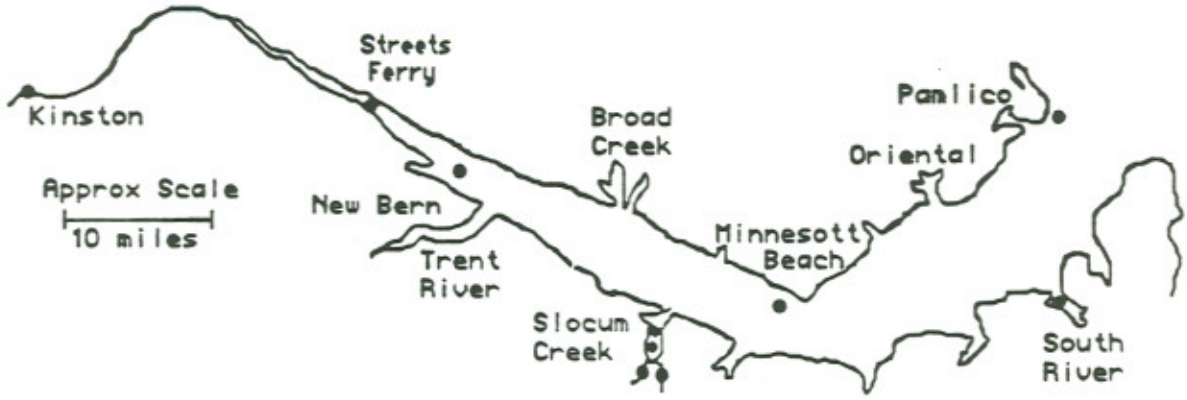


Figure 14 Map of the Neuse River area showing the location of sampling stations.

Ten stations have been sampled for fish tissue in the Neuse River area (Figure 14). The database from this region contains the results of 221 samples analyzed for metals and 21 samples analyzed for the selected synthetic organic chemicals.

An analysis of all the fish tissue fillet data for the Neuse River area indicates that the mean mercury concentrations were all below the FDA action level. There is a gradual decrease in mercury concentrations (Figure 15) from the freshwater sites to the estuarine sites.

Mean copper concentrations were all less than 1.0 mg/kg (Figure 16), with the exception of the Slocum Creek off Mill Creek (page 111). Slocum Creek off Mill Creek had a mean copper concentration in fillets of 31 mg/kg with a range of 0.19 to 160 mg/kg.

Slocum Creek off Mill Creek also had detectable concentrations of lead in 6 of the 16 samples analyzed. Two fillet samples contained lead concentrations ranging from 3.1 to 6.2 mg/kg. Four of the whole fish samples contained lead concentrations ranging from 0.26 to 3.4 mg/kg.

A special study to investigate the elevated levels of metals in Slocum Creek was conducted in the fall of 1990.

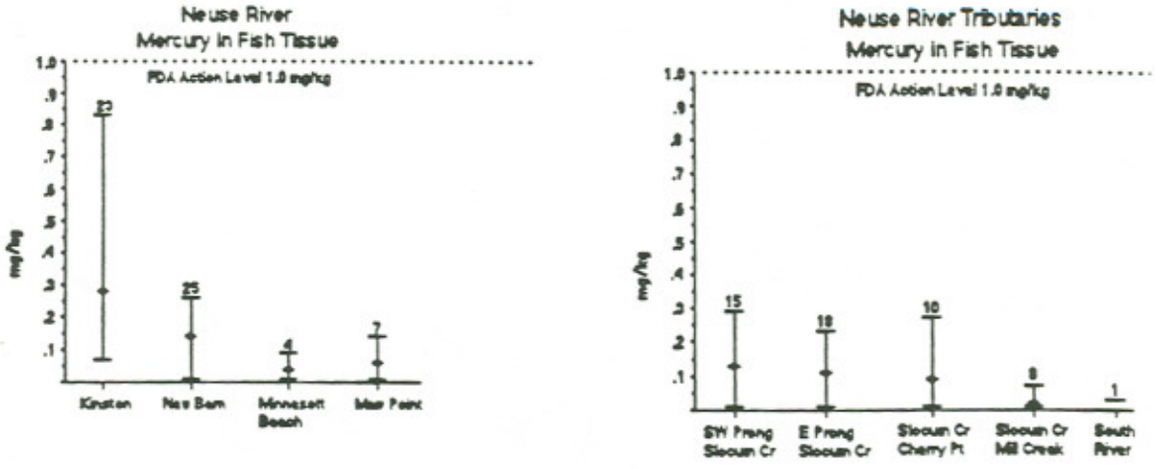


Figure 15. Mercury concentrations in fish tissue fillets by station in the Neuse River area.

Twenty-one fish samples were analyzed for pesticides with seven of the thirteen main pesticides being detected. Eighteen samples (86%) contained low levels of DDT metabolites, 5 samples (23%) contained levels of chlordane metabolites, two samples (9.5%) contained levels of hexachlorobenzene and dieldrin, and the pesticides pentachlorophenol, PCB's, and endosulfan were detected in only one sample. The concentrations of pesticides with FDA criteria were all below the FDA criteria presented in Table 2.

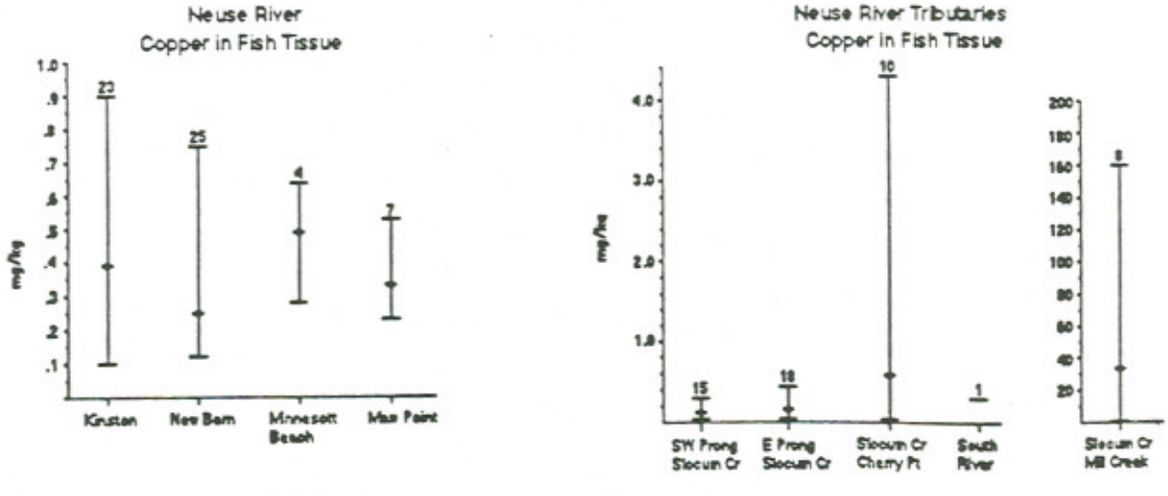


Figure 16. Copper concentrations in fish tissue fillets by station in the Neuse River area

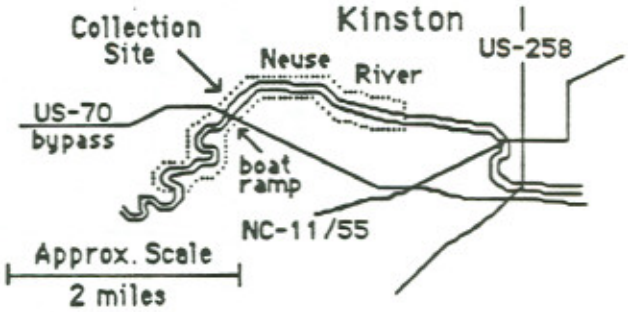
STATION NAME: Neuse River at Kinston
STATION NUMBER: 02089500

RIVER BASIN: Neuse

SUB BASIN: 03-04-05

COUNTY: Lenoir

STREAM CLASS: C NSW



DRAINAGE AREA: 2690 sq. mi.

LOCATION: Neuse River at US-70 bypass in Kinston

Latitude 35° 15' 29" **Longitude** 77° 35' 09"

REASON FOR SAMPLING : Ambient Station

SAMPLING DATES: July 3, 1980, September 25, 1981, July 7, 1982
October 23, 1984, July 10, 1986, November 5, 1987

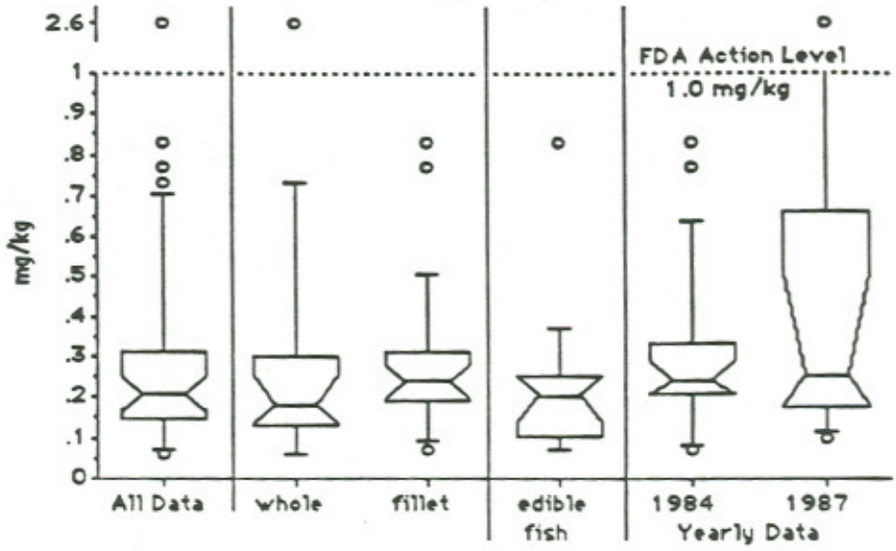
METHOD OF COLLECTION: Electrofishing

PARAMETERS SAMPLED: Heavy Metals and Organics

STATION SUMMARY

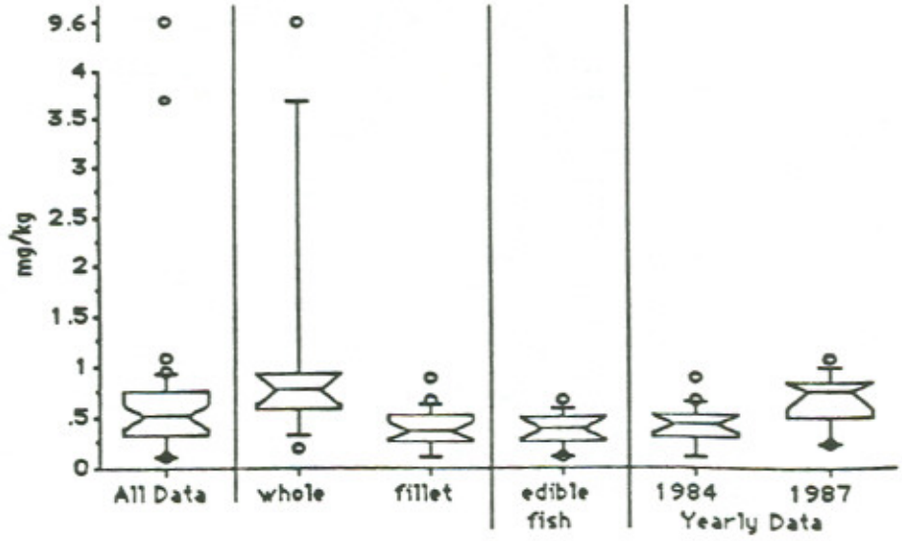
Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	22	100	0	NA	NA
	whole	7	100	0	NA	NA
Cadmium	fillet	23	100	0	NA	NA
	whole	15	80	3	0.12-0.49	0.26
Chromium	fillet	23	100	0	NA	NA
	whole	15	87	2	1.90-3.10	2.5
Copper	fillet	23	17	19	0.11-0.90	0.45
	whole	15	7	14	0.32-9.60	1.59
Mercury	fillet	23	0	23	0.07-0.83	0.28
	whole	15	0	15	0.06-2.60	0.4
Nickel	fillet	23	100	0	NA	NA
	whole	12	100	0	NA	NA
Lead	fillet	23	100	0	NA	NA
	whole	15	93	1	1	1
Zinc	fillet	20	0	20	1.9-19	5.7
	whole	9	0	9	5.0-25	12

Neuse River at Kinston
Mercury in Fish Tissue

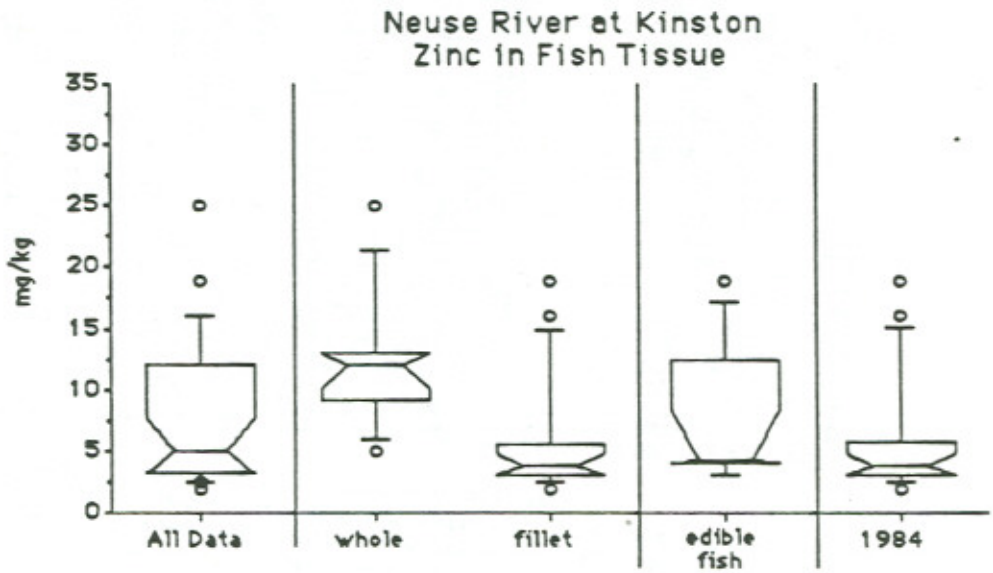


Data Set	Mean mg/kg	Median mg/kg	Std Dev mg/kg	Count	Minimum mg/kg	Maximum mg/kg
All Data	0.32	0.21	0.43	38	0.06	2.60
Whole	0.40	0.18	0.64	15	0.06	2.60
Fillet	0.28	0.24	0.19	23	0.07	0.83
Edible	0.23	0.20	0.19	14	0.07	0.83
1980	0.28	0.28	0.04	3	0.24	0.31
1981	0.09	0.09	0.04	2	0.06	0.12
1982	0.12	0.12	0.08	2	0.06	0.17
1984	0.29	0.24	0.21	19	0.07	0.83
1986	0.13	0.14	0.06	3	0.07	0.18
1987	0.57	0.25	0.79	9	0.10	2.60
Shellfish	0.04	0.04	0.01	2	0.03	0.04

Neuse River at Kinston
Copper in Fish Tissue



Data Set	Mean mg/kg	Median mg/kg	Std Dev mg/kg	Count	Minimum mg/kg	Maximum mg/kg
All Data	0.82	0.51	1.57	38	0.10	9.60
Whole	1.50	0.79	2.38	15	0.20	9.60
Fillet	0.39	0.37	0.04	23	0.10	0.90
Edible	0.38	0.40	0.17	14	0.10	0.68
1980	4.73	3.7	4.44	3	0.90	9.60
1981	0.44	0.44	0.33	2	0.20	0.67
1982	0.58	0.58	0.03	2	0.56	0.60
1984	0.41	0.43	0.22	19	0.10	0.90
1986	0.46	0.32	0.44	3	0.11	0.96
1987	0.67	0.77	0.10	9	0.23	1.10
Shellfish	0.81	0.81	0.01	2	0.81	0.82



Data Set	Mean mg/kg	Median mg/kg	Std Dev mg/kg	Count	Minimum mg/kg	Maximum mg/kg
All Data	7.6	5	5.88	29	1.9	25.0
Whole	12.0	12	5.79	9	5.0	25.0
Fillet	5.7	3.85	4.86	20	1.9	19.0
Edible	7.6	4.20	5.84	11	3.0	19.0
1980	9.7	12	4.04	3	5.0	12.0
1981	8.5	8.45	1.34	2	7.5	9.4
1982	10.7	10.7	1.84	2	9.4	12.0
1984	5.8	3.8	4.98	19	1.9	19.0
1986	15.0	16	10.59	3	3.9	25.0
Shellfish	29.0	29	5.66	2	25.0	33.0

Neuse River at Kinston - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means) (ND= No Data)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg
800703	Micropterus salmoides	339	340	WC5	0.31	<0.4	<0.50	<0.50	9.60	ND	<1.00	12.0
800703	Ictalurus catus	322	450	WC5	0.28	<0.4	<0.50	3.10	3.70	ND	<1.00	12.0
800703	Moxostoma sp.	490	1200	WC5	0.24	<0.4	<0.50	1.90	0.90	ND	<1.00	5.0
810925	Moxostoma sp.	293	399	WC5	0.06	<0.4	<0.50	<0.50	0.67	<1.00	<1.00	9.4
810925	Micropterus salmoides	292	424	WC5	0.12	<0.4	<0.50	<0.50	<0.40	<1.00	<1.00	7.5
820707	Micropterus salmoides	342	600	WC5	0.17	<0.39	<0.20	<0.50	0.60	<1.00	1.00	12.0
820707	Ictalurus catus	333	508	WC5	0.06	<0.35	<0.20	<0.50	0.56	<1.00	<1.00	9.4
860710	Lepomis auritus	144	70	WC3	0.07	ND	<0.10	<0.25	0.32	<0.50	<0.50	16.0
860710	Anguilla rostrata	517	200	WC3	0.14	ND	0.49	<0.25	0.96	<0.50	<0.50	25.0
871105	Lepisosteus osseus	618	640	WC2	2.60	ND	0.18	<0.25	0.84	<0.50	<0.50	ND
871105	Lepisosteus osseus	580	520	WC2	0.64	ND	<0.10	<0.25	0.79	<0.50	<0.50	ND
871105	Ictalurus punctatus	497	1217	WC3	0.20	ND	<0.10	<0.25	0.88	<0.50	<0.50	ND
871105	Ictalurus punctatus	400	665	WC2	0.18	ND	<0.10	<0.25	0.55	<0.50	<0.50	ND
871105	Anguilla rostrata	490	250	WC2	0.14	ND	0.12	<0.25	1.10	<0.50	<0.50	ND
871105	Amia calva	550	1480	W1	0.73	ND	<0.10	<0.25	0.77	<0.50	<0.50	ND
841023	Moxostoma anisurum	416	1077	F1	0.21	<0.4	<0.20	<0.50	0.90	<1.00	<1.00	2.8
841023	Micropterus salmoides	552	2835	F1	0.83	<0.4	<0.20	<0.50	0.43	<1.00	<1.00	3.0
841023	Micropterus salmoides	350	7.6	F1	0.27	<0.4	<0.20	<0.50	0.54	<1.00	<1.00	7.7
841023	Micropterus salmoides	265	289	F1	0.16	<0.4	<0.20	<0.50	<0.20	<1.00	<1.00	3.0
841023	Micropterus salmoides	227	194	F1	0.20	<0.4	<0.20	<0.50	0.37	<1.00	<1.00	4.2
841023	Lepomis auritus	196	212	F1	0.07	<0.4	<0.20	<0.50	0.43	<1.00	<1.00	5.2
841023	Lepisosteus osseus	629	646	F1	0.44	<0.4	<0.20	<0.50	<0.20	<1.00	<1.00	4.0
841023	Ictalurus catus	414	929	F1	0.20	<0.4	<0.20	<0.50	0.50	<1.00	<1.00	4.2
841023	Ictalurus catus	347	580	F1	0.21	<0.4	<0.20	<0.50	0.37	<1.00	<1.00	3.8
841023	Anguilla rostrata	577	481	F1	0.24	<0.4	<0.20	<0.50	0.48	<1.00	<1.00	16.0
841023	Anguilla rostrata	539	391	F1	0.10	<0.4	<0.20	<0.50	0.27	<1.00	<1.00	19.0
841023	Anguilla rostrata	520	298	F1	0.07	<0.4	<0.20	<0.50	0.68	<1.00	<1.00	14.0
841023	Amia calva	478	1109	F1	0.28	<0.4	<0.20	<0.50	<0.20	<1.00	<1.00	2.5
841023	Amia calva	483	1209	F1	0.24	<0.4	<0.20	<0.50	<0.20	<1.00	<1.00	6.0
841023	Amia calva	489	1237	F1	0.20	<0.4	<0.20	<0.50	0.50	<1.00	<1.00	2.5
841023	Amia calva	491	1374	F1	0.25	<0.4	<0.20	<0.50	0.31	<1.00	<1.00	3.8
841023	Amia calva	539	1560	F1	0.35	<0.4	<0.20	<0.50	0.37	<1.00	<1.00	2.9
841023	Amia calva	558	1662	F1	0.43	<0.4	<0.20	<0.50	0.63	<1.00	<1.00	1.9
841023	Amia calva	620	2432	F1	0.77	<0.4	<0.20	<0.50	0.53	<1.00	<1.00	2.7
860710	Micropterus salmoides	230	180	F1	0.18	ND	<0.10	<0.25	0.11	<0.50	<0.50	3.9
871105	Pomoxis nigromaculatus	230	224	FC5	0.25	<0.4	<0.20	<0.50	0.23	<0.50	<0.50	ND
871105	Morone chrysops	240	230	F1	0.10	<0.4	<0.20	<0.50	0.59	<0.50	<0.50	ND
871105	Micropterus salmoides	302	400	FC6	0.32	<1.0	<0.10	<0.25	0.24	<0.50	<0.50	ND
860624	Elliptio complanata	Shellfish			0.04	ND	<0.10	0.25	0.82	<0.50	<0.50	33.0
860624	Elliptio complanata	Shellfish			0.03	ND	<0.10	<0.25	0.81	<0.50	<0.50	25.0

Neuse River at Kinston - Organics in Fish Tissue Data

(Species: LMB= Micropterus salmoides; LG= Lepisosteus osseus; WHC= Ictalurus catus; CHC= Ictalurus punctatus; RHS= Moxostoma sp.) (Type-Number: WC= whole composite followed by the number of fish in the composite) (Lengths and weights of composites are means) (ND= No Data)

Date	800703	800703	800703	810925	810925	860710	860710	860710
Species	LMB	RHS	WHC	LMB	RHS	LG	RHS	CHC
Avg Wt (gm)	340	1200	450	424	399	440	978	315
Avg Ln (mm)	339	490	322	292	293	594	465	333
Type-Number	WC5	WC5	WC5	WC5	WC5	WC2	WC5	WC2
Aldrin (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	ND
Dieldrin (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
o,p DDD (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
p,p DDD (µg/g)	0.06	0.13	<0.04	<0.04	<0.04	<0.05	<0.05	<0.05
o,p DDE (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
p,p DDE (µg/g)	0.12	0.21	0.1	0.06	0.32	0.068	0.16	0.34
Total DDT (µg/g)	<0.09	0.13	<0.09	<0.09	<0.09	ND	ND	ND
o,p DDT (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05
p,p DDT (µg/g)	<0.07	0.13	<0.07	<0.07	<0.07	<0.05	<0.05	<0.05
cis-Chlordane (µg/g)	0.3	0.07	<0.06	<0.06	<0.06	<0.02	0.082	<0.02
trans-Chlordane (µg/g)	0.34	0.11	<0.06	<0.06	<0.06	<0.02	0.053	<0.02
cis-Nchlor (µg/g)	ND	ND	ND	ND	ND	<0.02	<0.02	<0.02
trans-Nchlor (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.02
Methoxychlor (µg/kg)	<80	<80	<80	<80	<80	ND	ND	ND
Hxchlbenzene (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	ND
PCP (µg/g)	<2.0	<2.0	<2.0	<2.0	<2.0	<0.02	<0.02	<0.02
alpha-BHC (µg/g)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
beta-BHC (µg/g)	ND	ND	ND	ND	ND	<0.01	<0.01	<0.01
gamma-BHC (µg/g)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02
Endrin (mg/kg)	<0.04	<0.04	<0.04	<0.04	<0.04	<0.02	<0.02	<0.02
PCB (mg/kg)	<0.40	<0.40	<0.40	<0.40	<0.40	<0.50	<0.50	<0.50
Toxaphene (mg/kg)	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0
Heptachlor epoxide (mg/kg)	ND	ND	ND	ND	ND	<0.01	<0.01	<0.01

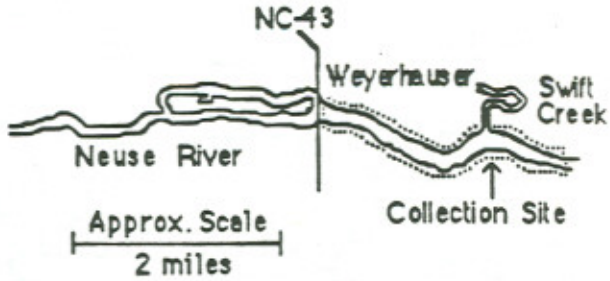
STATION NAME: Neuse River at Streets Ferry
STATION NUMBER: 02091836

RIVER BASIN: Neuse

SUB BASIN: 03-04-08

COUNTY: Craven

STREAM CLASS: SC Sw NSW



DRAINAGE AREA: 4040 sq. mi.

LOCATION: Neuse River below NC-43 at Streets Ferry

Latitude 35° 12' 30" **Longitude** 77° 07' 20"

REASON FOR SAMPLING : Special Study

SAMPLING DATES: November 20, 1987

METHOD OF COLLECTION: Electrofishing and gill nets

PARAMETERS SAMPLED: Heavy Metals

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	whole	14	100	0	NA	NA
Cadmium	whole	14	100	0	NA	NA
Chromium	whole	14	100	0	NA	NA
Copper	whole	14	0	14	0.29-2.50	0.86
Mercury	whole	14	14	12	0.05-0.43	0.1
Nickel	whole	14	100	0	NA	NA
Lead	whole	14	7	13	0.93-1.80	1.4

Neuse River at Streets Ferry - Metals in Fish Tissue Data
(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means) (ND= No Data)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg
871120	Micropterus salmoides	350	770	W1	0.09	<5.0	<0.10	<0.25	0.33	<0.50	1.30
871120	Micropterus salmoides	305	510	W1	0.09	<5.0	<0.10	<0.25	0.44	<0.50	1.40
871120	Micropterus salmoides	308	550	W1	0.08	<5.0	<0.10	<0.25	0.49	<0.50	1.80
871120	Micropterus salmoides	260	530	W1	0.05	<5.0	<0.10	<0.25	0.29	<0.50	0.98
871120	Micropterus salmoides	227	510	W1	0.08	<5.0	<0.10	<0.25	0.29	<0.50	1.20
871120	Micropterus salmoides	227	250	W1	0.09	<5.0	<0.10	<0.25	1.10	<0.50	1.60
871120	Pomoxis nigromaculatus	235	310	W1	0.05	<5.0	<0.10	<0.25	1.10	<0.50	0.93
871120	Pomoxis nigromaculatus	300	600	W1	<0.02	<5.0	<0.10	<0.25	0.82	<0.50	1.80
871120	Pomoxis nigromaculatus	192	211	W1	0.05	<5.0	<0.10	<0.25	2.50	<0.50	0.96
871120	Lepisosteus osseus	740	1170	W1	0.43	<5.0	<0.10	<0.25	1.10	<0.50	<0.50
871120	Notemigonus crysoleucas	246	300	W1	<0.02	<5.0	<0.10	<0.25	1.30	<0.50	1.50
871120	Lepomis macrochirus	177	200	W1	0.05	<5.0	<0.10	<0.25	0.75	<0.50	1.60
871120	Lepomis gibbosus	130	40	W1	0.05	<5.0	<0.10	<0.25	0.60	<0.50	1.60
871120	Lepomis microlophus	205	240	W1	0.05	<5.0	<0.10	<0.25	0.86	<0.50	1.50

STATION NAME: Neuse River at New Bern
STATION NUMBER: 02092162

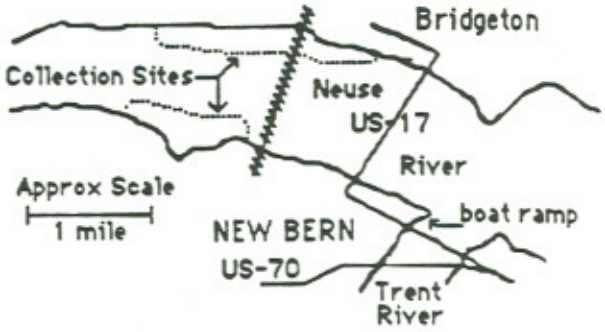
RIVER BASIN: Neuse

SUB BASIN: 03-04-10

COUNTY: Craven

STREAM CLASS: SC Sw NSW

DRAINAGE AREA: 4467 sq. mi.



LOCATION: Neuse River at US-17 at New Bern

Latitude 35° 06' 42" **Longitude** 77° 01' 37"

REASON FOR SAMPLING : Ambient Station

SAMPLING DATES: July 9, 1980, August 26, 1981, July 20, 1982, July 23, 1984 July 9, 1985, August 22, 1985, October 17, 1985, September 17, 1986, February 15, 1989

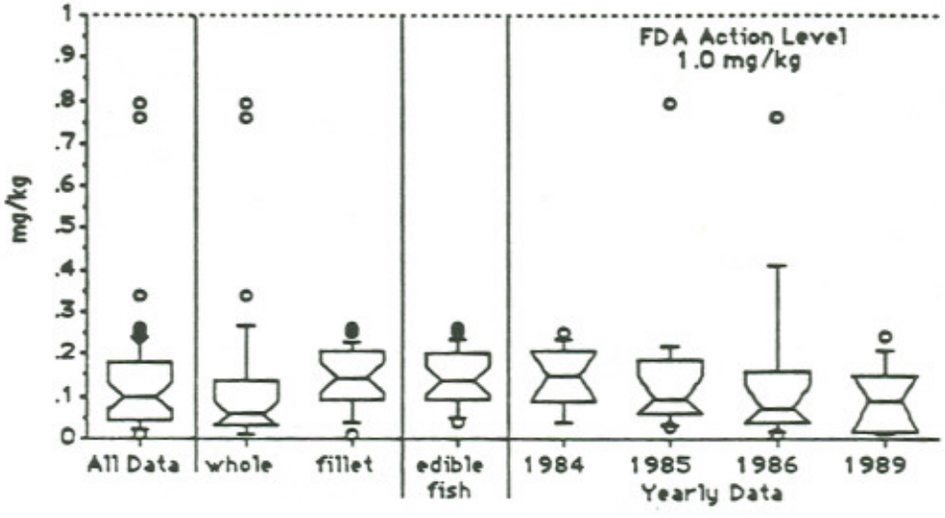
METHOD OF COLLECTION: Nets

PARAMETERS SAMPLED: Heavy Metals and Organics

STATION SUMMARY

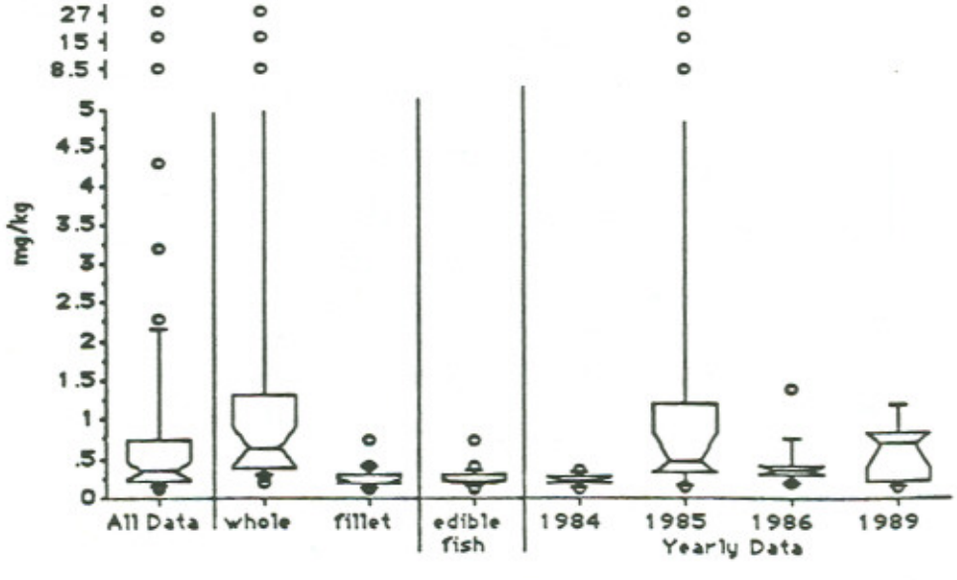
Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	16	100	0	NA	NA
	whole	13	100	0	NA	NA
Cadmium	fillet	25	100	0	NA	NA
	whole	32	97	1	0.21	0.21
Chromium	fillet	25	100	0	NA	NA
	whole	32	78	7	0.25-4.3	1.17
Copper	fillet	25	0	25	0.12-0.75	0.25
	whole	32	6	30	0.26-27	2.53
Mercury	fillet	25	4	24	0.04-0.26	0.15
	whole	32	12.5	28	0.02-0.76	0.14
Nickel	fillet	25	100	0	NA	NA
	whole	29	100	0	NA	NA
Lead	fillet	25	100	0	NA	NA
	whole	32	94	2	1.0-1.8	1.4
Zinc	fillet	21	0	21	3.9-17	7.4
	whole	26	0	26	6.2-34	15.3
Selenium	fillet	4	100	0	NA	NA
	whole	6	100	0	NA	NA

Neuse River at New Bern
Mercury in Fish Tissue

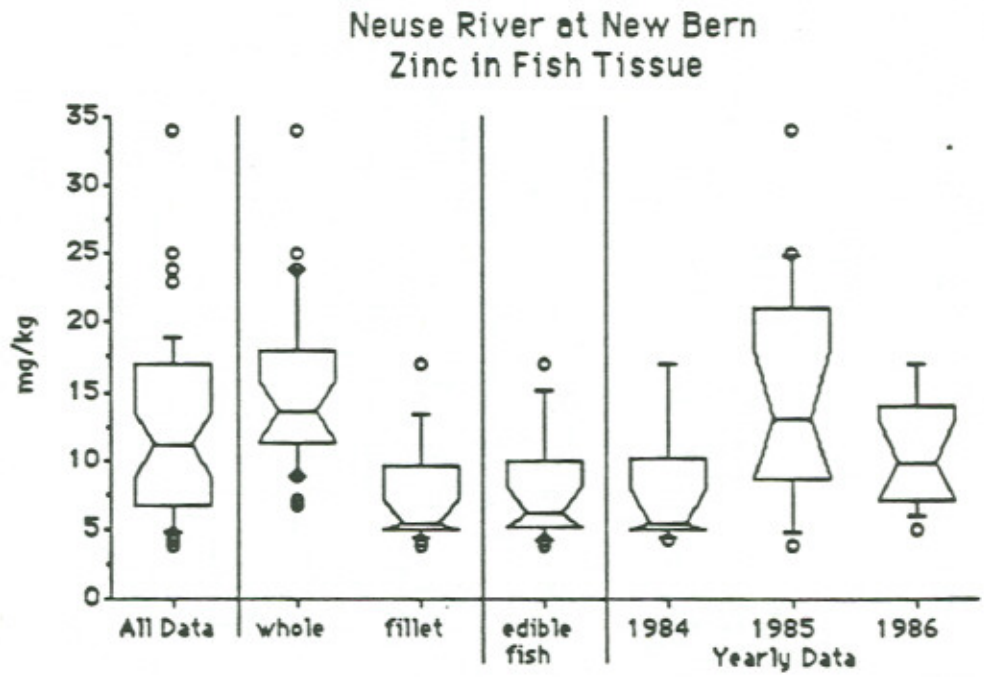


Data Set	Mean mg/kg	Median mg/kg	Std Dev mg/kg	Count	Minimum mg/kg	Maximum mg/kg
All Data	0.13	0.10	0.15	57	0.01	0.79
Whole	0.13	0.06	0.19	32	0.01	0.79
Fillet	0.14	0.14	0.07	25	0.01	0.26
Edible	0.14	0.14	0.07	22	0.04	0.26
1980	0.23	0.22	0.11	3	0.12	0.34
1981	0.03	0.03	0.01	2	0.02	0.03
1982	0.02	0.02	0.01	2	0.01	0.03
1984	0.14	0.15	0.07	12	0.04	0.25
1985	0.15	0.09	0.18	16	0.03	0.79
1986	0.15	0.07	0.21	12	0.01	0.76
1989	0.09	0.09	0.08	10	0.01	0.24

Neuse River at New Bern
Copper in Fish Tissue



Data Set	Mean mg/kg	Median mg/kg	Std Dev mg/kg	Count	Minimum mg/kg	Maximum mg/kg
All Data	1.45	0.35	4.13	57	0.12	27
Whole	2.39	0.64	5.36	32	0.20	27
Fillet	0.25	0.20	0.13	25	0.12	0.75
Edible	0.25	0.20	0.13	22	0.12	0.75
1980	3.27	3.2	1.00	3	2.30	4.30
1981	0.20	0.20	0.00	2	0.20	0.20
1982	0.69	0.69	0.06	2	0.65	0.73
1984	0.23	0.21	0.07	12	0.12	0.35
1985	3.55	0.47	7.44	16	0.14	27
1986	0.42	0.35	0.32	12	0.19	1.40
1989	0.65	0.70	0.39	10	0.15	1.20



Data Set	Mean mg/kg	Median mg/kg	Std Dev mg/kg	Count	Minimum mg/kg	Maximum mg/kg
All Data	11.8	11	6.59	47	3.9	34.0
Whole	15.3	13.5	6.25	26	6.7	34.0
Fillet	7.4	5.4	3.86	21	3.9	17.0
Edible	7.8	6.10	4.07	18	3.9	17.0
1980	18.3	18	0.58	3	18.0	19.0
1981	18.9	11.85	7.28	2	6.7	17.0
1982	11.5	11.5	0.71	2	11.0	12.0
1984	8.0	5.4	4.69	12	4.2	17.0
1985	14.3	13	8.53	16	3.9	34.0
1986	10.5	9.7	4.13	12	5.0	17.0

Neuse River at New Bern - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means) (ND= No Data)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg	Se mg/kg
800709	Morone saxatilis	479	1020	WC5	0.22	<0.4	<0.50	1.10	2.30	ND	<1.00	18.0	ND
800709	Ictalurus catus	304	350	WC5	0.34	<0.4	<0.50	1.20	3.20	ND	<1.00	18.0	ND
800709	Dorosoma cepedianum	348	396	WC5	0.12	<0.4	<0.50	4.30	4.30	ND	<1.00	19.0	ND
810826	Ictalurus catus	298	463	WC4	0.02	<0.4	<0.50	<0.50	<0.40	<1.00	<1.00	17.0	ND
810826	Micropterus salmoides	283	429	WC5	0.03	<0.4	<0.50	0.70	<0.40	<1.00	<1.00	6.7	ND
820720	Leiostomus xanthurus	232	181	WC5	<0.02	<0.39	<0.20	<0.50	0.65	<1.00	1.00	11.0	ND
820720	Morone saxatilus	303	307	WC5	0.03	<0.41	<0.20	<0.50	0.73	<1.00	1.80	12.0	ND
850709	Ictalurus punctatus	395	470	W1	0.07	ND	<0.10	<0.25	0.30	<0.50	<0.50	11.0	ND
850709	Lepomis gibbosus	175	117	WC2	0.06	ND	<0.10	<0.25	0.30	<0.50	<0.50	24.0	ND
850709	Perca flavescens	257	220	W1	0.12	ND	<0.10	<0.25	0.33	<0.50	<0.50	19.0	ND
850822	Lepisosteus osseus	740	1100	W1	0.11	ND	<0.10	<0.25	0.62	<0.50	<0.50	13.0	ND
850822	Lepisosteus osseus	664	800	W1	0.05	ND	<0.10	<0.25	1.60	<0.50	<0.50	13.0	ND
850822	Lepisosteus osseus	718	850	W1	0.79	ND	<0.10	<0.25	0.63	<0.50	<0.50	9.7	ND
850822	Dorosoma cepedianum	298	236	W1	0.03	ND	<0.10	<0.25	0.53	<0.50	<0.50	13.0	ND
851017	Morone americana	265	282	W1	0.03	ND	<0.10	<0.25	8.50	<0.50	<0.50	34.0	ND
851017	Morone americana	243	206	W1	0.10	ND	<0.10	<0.25	15.00	<0.50	<0.50	23.0	ND
851017	Morone americana	259	283	WC3	0.16	ND	<0.10	0.33	27.00	<0.50	<0.50	25.0	ND
851017	Ictalurus nebulosus	326	404	W1	0.04	ND	<0.10	<0.25	0.82	<0.50	<0.50	14.0	ND
860917	Lepisosteus osseus	869	1960	WC5	0.76	ND	<0.10	<0.25	1.40	<0.50	<0.50	13.0	ND
860917	Dorosoma cepedianum	377	432	WC2	0.02	ND	<0.10	<0.25	0.38	<0.50	<0.50	7.1	ND
860917	Dorosoma cepedianum	378	500	W1	0.02	ND	<0.10	<0.25	0.49	<0.50	<0.50	9.6	ND
860917	Lepomis macrochirus	144	606	WC5	0.06	ND	<0.10	<0.25	0.26	<0.50	<0.50	9.8	ND
860917	Lepomis macrochirus	151	65	WC2	0.05	ND	<0.10	<0.25	0.35	<0.50	<0.50	17.0	ND
860917	Lepomis gibbosus	168	85	WC2	0.08	ND	<0.10	<0.25	0.32	<0.50	<0.50	17.0	ND
860917	Lepomis gibbosus	164	86	WC2	0.06	ND	<0.10	<0.25	0.42	<0.50	<0.50	15.0	ND
860917	Ictalurus punctatus	566	2000	W1	0.18	ND	<0.10	<0.25	0.35	<0.50	<0.50	8.8	ND
890215	Leiostomus xanthurus	178	88	WC2	<0.02	<1.0	<0.10	0.25	0.85	<0.50	<0.50	ND	<0.50
890215	Moxostoma sp.	419	967	WC3	0.15	<1.0	<0.10	0.28	1.20	<0.50	<0.50	ND	<0.50
890215	Ictalurus catus	367	642	WC6	0.03	<1.0	<0.10	<0.25	0.53	<0.50	<0.50	ND	<0.50
890215	Cyprinus carpio	768	7700	W1	0.24	<1.0	0.21	<0.25	1.20	<0.50	<0.50	ND	<0.50
890215	Mugil cephalus	351	445	WC5	<0.02	<1.0	<0.10	<0.25	0.78	<0.50	<0.50	ND	<0.50
890215	Dorosoma cepedianum	377	575	WC5	<0.02	<1.0	<0.10	<0.25	0.65	<0.50	<0.50	ND	<0.50
840723	Micropterus salmoides	348	560	F1	0.23	<0.4	<0.10	<0.25	0.20	<0.50	<0.50	4.2	ND
840723	Micropterus salmoides	296	385	F1	0.18	<0.4	<0.10	<0.25	0.18	<0.50	<0.50	5.4	ND
840723	Micropterus salmoides	375	306	F1	0.25	<0.4	<0.10	<0.25	0.12	<0.50	<0.50	4.5	ND
840723	Micropterus salmoides	263	206	F1	0.21	<0.4	<0.10	<0.25	0.16	<0.50	<0.50	5.4	ND
840723	Micropterus salmoides	255	225	F1	0.13	<0.4	<0.10	<0.25	0.22	<0.50	<0.50	11.0	ND
840723	Lepomis macrochirus	210	211	F1	0.10	<0.4	<0.10	<0.25	0.18	<0.50	<0.50	9.4	ND
840723	Lepomis macrochirus	208	185	F1	0.11	<0.4	<0.10	<0.25	0.17	<0.50	<0.50	6.8	ND
840723	Lepomis macrochirus	215	185	F1	0.16	<0.4	<0.10	<0.25	0.28	<0.50	<0.50	17.0	ND
840723	Lepomis macrochirus	210	118	F1	0.20	<0.4	<0.10	<0.25	0.32	<0.50	<0.50	17.0	ND
840723	Ictalurus brunneus	234	170	F1	0.06	<0.4	<0.10	<0.25	0.26	<0.50	<0.50	5.4	ND
840723	Ictalurus brunneus	242	184	F1	0.04	<0.4	<0.10	<0.25	0.29	<0.50	<0.50	5.2	ND
840723	Ictalurus brunneus	248	184	F1	0.04	<0.4	<0.10	<0.25	0.35	<0.50	<0.50	4.5	ND
850709	Lepisosteus osseus	820	1500	F1	0.21	ND	<0.10	<0.25	0.14	<0.50	<0.50	4.8	ND
850709	Lepisosteus osseus	775	1300	F1	0.22	ND	<0.10	<0.25	0.15	<0.50	<0.50	4.8	ND
850709	Morone americana	225	194	F1	0.09	ND	<0.10	<0.25	0.41	<0.50	<0.50	10.0	ND
850822	Morone americana	290	350	F1	0.22	ND	<0.10	<0.25	0.18	<0.50	<0.50	3.9	ND
851017	Ictalurus catus	660	4300	F1	0.08	ND	<0.10	<0.25	0.32	<0.50	<0.50	7.0	ND
860917	Ictalurus punctatus	495	900	F1	0.14	ND	<0.10	<0.25	0.27	<0.50	<0.50	5.0	ND
860917	Lepomis macrochirus	208	187	FC2	0.14	ND	<0.10	<0.25	0.20	<0.50	<0.50	11.0	ND
860917	Lepomis gibbosus	178	97	FC2	0.26	ND	<0.10	<0.25	0.19	<0.50	<0.50	6.8	ND
860917	Dorosoma cepedianum	375	480	FC2	<0.02	ND	<0.10	<0.25	0.40	<0.50	<0.50	6.4	ND
890215	Micropterus salmoides	354	692	FC3	0.12	<1.0	<0.10	<0.25	0.20	<0.50	<0.50	ND	<0.50
890215	Paralichthys lethostigma	300	300	FC6	0.05	<1.0	<0.10	<0.25	0.19	<0.50	<0.50	ND	<0.50
890215	Perca flavescens	312	475	FC5	0.18	<1.0	<0.10	<0.25	0.15	<0.50	<0.50	ND	<0.50
890215	Alosa mediocris	373	535	FC5	0.12	<1.0	<0.10	<0.25	0.75	<0.50	<0.50	ND	<0.50

Neuse River at New Bern - Organics in Fish Tissue Data

(Species: STB= Morone saxatilus; LMB= Micropterus salmoides; LG= Lepisosteus osseus; WHC= Ictalurus catus
CHC= Ictalurus punctatus; RHS= Moxostoma sp.; C= Cyprinus carpio; GSH= Dorosoma cepedianum)
(Type-Number: WC= whole composite followed by the number of fish in the composite, FC=fillet composite)
(Lengths and weights of composites are means) (ND= No Data)

Date	800709	800709	800709	810826	810826	860916	860916	890215	890215	890215	890215
Species	STB	WHC	GSH	LMB	WHC	LG	CHC	RHS	C	WHC	LMB
Avg Wt (gm)	1020	350	396	429	463	1960	2000	967	768	642	692
Avg Ln (mm)	479	304	348	283	298	869	566	419	7700	367	354
Type-Number	WC5	WC5	WC5	WC5	WC4	WC5	W1	WC5	W1	WC6	FC3
Aldrin (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	<0.0005	<0.0005	<0.0005	<0.0005
Dieldrin (mg/kg)	0.03	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.0008	<0.0008	<0.0008	<0.0008
o,p DDD (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.002	<0.002	<0.002	<0.002
p,p DDD (µg/g)	0.18	0.12	0.14	<0.04	<0.04	<0.10	<0.05	<0.002	<0.002	<0.002	<0.002
o,p DDE (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.002	<0.002	<0.002	<0.002
p,p DDE (µg/g)	0.17	0.21	0.17	0.06	<0.02	0.31	<0.02	0.034	0.15	0.086	<0.0005
Total DDT (µg/g)	<0.09	<0.09	<0.09	<0.09	<0.09	ND	ND	ND	ND	ND	ND
o,p DDT (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.10	<0.002	<0.002	<0.002	<0.002
p,p DDT (µg/g)	<0.07	<0.07	<0.07	<0.07	<0.07	<0.05	<0.05	<0.005	<0.005	<0.005	<0.005
cis-Chlordane (µg/g)	<0.06	<0.06	<0.06	<0.06	<0.06	<0.02	<0.05	0.048	<0.0008	0.018	<0.0008
trans-Chlordane (µg/g)	<0.06	<0.06	<0.06	<0.06	<0.06	<0.02	<0.05	<0.0008	<0.0008	<0.0008	<0.0008
cis-Nchlor (µg/g)	ND	ND	ND	ND	ND	<0.02	<0.05	ND	ND	ND	ND
trans-Nchlor (µg/g)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.016	<0.0008	<0.0008	<0.0008
Methoxychlor (µg/kg)	<80	<80	<80	<80	<80	ND	ND	<10	<10	<10	<10
Hxchlbenzene (mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	0.008	<0.0003	0.006	<0.0003
PCP (µg/g)	<2.0	<2.0	<2.0	<2.0	<2.0	0.026	<0.05	ND	ND	ND	ND
alpha-BHC (µg/g)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0003	<0.0003	<0.0003	<0.0003
beta-BHC (µg/g)	ND	ND	ND	ND	ND	<0.01	<0.01	ND	ND	ND	ND
gamma-BHC (µg/g)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0003	<0.0003	<0.0003	<0.0003
Endrin (mg/kg)	<0.04	<0.04	<0.04	<0.04	<0.04	<0.02	<0.02	<0.002	<0.002	<0.002	<0.002
PCB (mg/kg)	0.4	<0.40	<0.40	<0.40	<0.40	<1.6	<0.50	<0.013	<0.013	<0.013	<0.013
Toxaphene (mg/kg)	ND	ND	ND	ND	ND	<3.0	<1.0	ND	ND	ND	ND
Heptachlor (µg/kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.25
Heptachlor epoxide (µg/kg)	ND	ND	ND	ND	ND	<0.01	<0.01	ND	ND	ND	<0.50
Endosulfan I (mg/kg)	ND	ND	ND	ND	ND	ND	ND	<0.0005	<0.0005	0.004	<0.0005
Endosulfan II (mg/kg)	ND	ND	ND	ND	ND	ND	ND	<0.002	<0.002	<0.002	<0.002
Endosulfan Sulfate (mg/kg)	ND	ND	ND	ND	ND	ND	ND	<0.025	<0.025	<0.025	<0.025

STATION NAME: Southwest Prong Slocum Creek near Havelock
STATION NUMBER: NEUSC-1

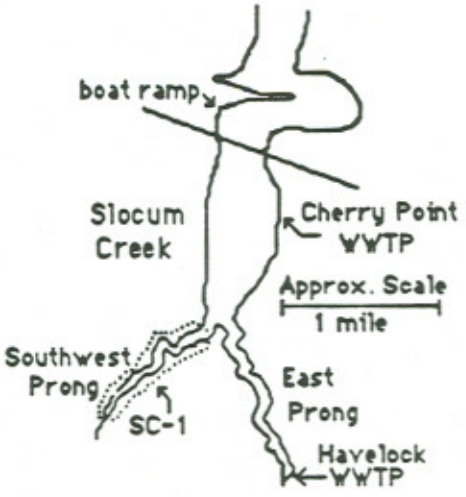
RIVER BASIN: Neuse

SUB BASIN: 03-04-10

COUNTY: Craven

STREAM CLASS: C sw NSW

DRAINAGE AREA: 21 sq. mi.



LOCATION: Southwest Prong of Slocum Creek

Latitude 34° 53' 57" **Longitude** 76° 55' 04"

REASON FOR SAMPLING : Special Study

SAMPLING DATES: May 5, 1990

METHOD OF COLLECTION: Electrofishing and Nets

PARAMETERS SAMPLED: Heavy Metals

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	15	93	1	1	1
	whole	6	100	0	NA	NA
Cadmium	fillet	15	100	0	NA	NA
	whole	6	67	2	0.21-0.30	0.26
Chromium	fillet	15	93	1	0.3	0.3
	whole	6	100	0	NA	NA
Copper	fillet	15	47	8	0.10-0.39	0.22
	whole	6	0	6	0.20-25	4.70
Mercury	fillet	15	27	11	0.02-0.29	0.17
	whole	6	17	5	0.02-0.08	0.05
Nickel	fillet	15	100	0	NA	NA
	whole	6	100	0	NA	NA
Lead	fillet	15	100	0	NA	NA
	whole	6	83	1	0.91	0.91
Zinc	fillet	15	0	15	3.1-14	6.2
	whole	6	0	6	6.6-45	18.1
Selenium	fillet	15	100	0	NA	NA
	whole	6	100	0	NA	NA

Southwest Prong of Slocum Creek- Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg	Se mg/kg
900522	Lepisosteus osseus	770	1450	W1	0.07	<1.0	0.30	<0.25	1.10	<0.5	<0.5	9.3	<1.0
900522	Cyprinus carpio	702	5250	W1	0.08	<1.0	0.21	<0.25	1.00	<0.5	<0.5	45.0	<1.0
900522	Erimyzon oblongus	250	275	W1	0.03	<1.0	<0.10	<0.25	0.20	<0.5	<0.5	6.6	<1.0
900522	Notemigonus crysoleucas	195	68	W1	0.03	<1.0	<0.10	<0.25	25.0	<0.5	0.91	28.0	<1.0
900522	Dorosoma cepedianum	340	500	W1	0.02	<1.0	<0.10	<0.25	0.43	<0.5	<0.5	11.0	<1.0
900522	Dorosoma cepedianum	370	500	W1	<0.02	<1.0	<0.10	<0.25	0.50	<0.5	<0.5	8.7	<1.0
900522	Micropterus salmoides	360	800	F1	0.25	<1.0	<0.10	<0.25	0.14	<0.5	<0.5	4.5	<1.0
900522	Micropterus salmoides	320	550	F1	0.29	<1.0	<0.10	0.30	<0.10	<0.5	<0.5	5.4	<1.0
900522	Micropterus salmoides	330	500	F1	0.23	<1.0	<0.10	<0.25	0.12	<0.5	<0.5	7.4	<1.0
900522	Micropterus salmoides	190	90	F1	0.11	<1.0	<0.10	<0.25	0.10	<0.5	<0.5	7.7	<1.0
900522	Pomoxis nigromaculatus	270	400	F1	0.12	<1.0	<0.10	<0.25	<0.10	<0.5	<0.5	4.5	<1.0
900522	Esox niger	530	1100	F1	0.10	<1.0	<0.10	<0.25	<0.10	<0.5	<0.5	3.4	<1.0
900522	Esox niger	430	500	F1	0.27	<1.0	<0.10	<0.25	<0.10	<0.5	<0.5	7.8	<1.0
900522	Esox niger	300	150	F1	0.26	<1.0	<0.10	<0.25	<0.10	<0.5	<0.5	3.1	<1.0
900522	Perca flavescens	250	200	F1	0.22	<1.0	<0.10	<0.25	<0.10	<0.5	<0.5	7.8	<1.0
900522	Mugil cephalus	330	450	F1	<0.02	1.00	<0.10	<0.25	0.12	<0.5	<0.5	7.1	<1.0
900522	Mugil cephalus	300	300	F1	<0.02	<1.0	<0.10	<0.25	0.19	<0.5	<0.5	14.0	<1.0
900522	Lepomis gibbosus	150	100	F1	0.02	<1.0	<0.10	<0.25	<0.10	<0.5	<0.5	5.5	<1.0
900522	Dorosoma cepedianum	320	350	F1	<0.02	<1.0	<0.10	<0.25	0.39	<0.5	<0.5	6.0	<1.0
900522	Dorosoma cepedianum	350	400	F1	0.03	<1.0	<0.10	<0.25	0.37	<0.5	<0.5	5.6	<1.0
900522	Dorosoma cepedianum	335	400	FC3	<0.02	<1.0	<0.10	<0.25	0.30	<0.5	<0.5	3.8	<1.0

STATION NAME: East Prong Slocum Creek near Havelock
STATION NUMBER: NEUSC-2

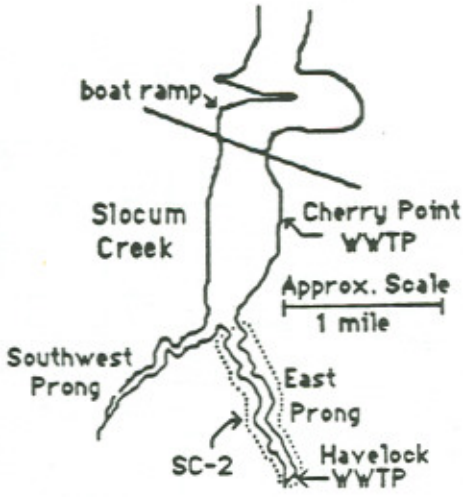
RIVER BASIN: Neuse

SUB BASIN: 03-04-10

COUNTY: Craven

STREAM CLASS: C sw NSW

DRAINAGE AREA: 12 sq. mi.



LOCATION: East Prong of Slocum Creek

Latitude 34° 53' 56" **Longitude** 76° 54' 55"

REASON FOR SAMPLING : Special Study

SAMPLING DATES: August 8, 1985, May 5, 1990

METHOD OF COLLECTION: Electrofishing and Nets

PARAMETERS SAMPLED: Heavy Metals

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	10	100	0	NA	NA
	whole	3	100	0	NA	NA
Cadmium	fillet	18	94	1	0.12	0.12
	whole	9	89	1	0.15	0.15
Chromium	fillet	18	50	9	0.29-1.3	0.82
	whole	9	67	3	0.29-0.95	0.65
Copper	fillet	18	50	9	0.10-0.43	0.27
	whole	9	11	8	0.22-2.2	0.81
Mercury	fillet	18	22	14	0.03-0.23	0.14
	whole	9	11	8	0.05-0.51	0.18
Nickel	fillet	18	100	0	NA	NA
	whole	9	100	0	NA	NA
Lead	fillet	18	100	0	NA	NA
	whole	9	100	0	NA	NA
Zinc	fillet	18	0	18	1.1-10	4.6
	whole	9	0	9	3.6-18	8.2
Selenium	fillet	10	100	0	NA	NA
	whole	3	100	0	NA	NA

East Prong of Slocum Creek- Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means) (ND = No Data)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg	Se mg/kg
850808	Ictalurus catus	344	455	W1	0.06	ND	<0.10	<0.25	0.22	<0.5	<0.5	7.5	ND
850808	Ictalurus catus	322	1130	W1	0.06	ND	<0.10	<0.25	0.31	<0.5	<0.5	7.7	ND
850808	Ictalurus catus	311	313	W1	0.05	ND	<0.10	<0.25	0.55	<0.5	<0.5	7.3	ND
850808	Ictalurus catus	318	369	W1	0.08	ND	<0.10	<0.25	0.42	<0.5	<0.5	5.9	ND
850808	Lepisosteus osseus	598	445	W1	0.50	ND	<0.10	<0.25	0.90	<0.5	<0.5	18.0	ND
850808	Lepisosteus osseus	605	453	W1	0.51	ND	0.15	<0.25	1.40	<0.5	<0.5	11.0	ND
900522	Micropterus salmoides	170	55	W1	0.07	<1.0	<0.10	0.70	0.47	<0.5	<0.5	7.0	<1.0
900522	Amia calva	500	1250	W1	0.11	<1.0	<0.10	0.95	2.20	<0.5	<0.5	5.6	<1.0
900522	Dorosoma cepedianum	320	325	W1	<0.02	<1.0	<0.10	0.29	<0.10	<0.5	<0.5	3.6	<1.0
850808	Lepisosteus osseus	585	433	F1	0.10	ND	<0.10	<0.25	0.21	<0.5	<0.5	3.8	ND
850808	Lepisosteus osseus	570	364	F1	0.20	ND	<0.10	<0.25	0.43	<0.5	<0.5	4.6	ND
850808	Lepisosteus osseus	684	734	F1	0.21	ND	0.12	<0.25	0.25	<0.5	<0.5	6.6	ND
850808	Lepisosteus osseus	633	572	F1	0.13	ND	<0.10	<0.25	0.39	<0.5	<0.5	5.5	ND
850808	Lepisosteus osseus	555	361	F1	0.16	ND	<0.10	<0.25	0.16	<0.5	<0.5	6.6	ND
850808	Lepisosteus osseus	593	450	F1	0.20	ND	<0.10	<0.25	0.36	<0.5	<0.5	8.6	ND
850808	Lepisosteus osseus	654	670	F1	0.07	ND	<0.10	<0.25	0.16	<0.5	<0.5	3.3	ND
850808	Ictalurus catus	317	380	F1	0.07	ND	<0.10	<0.25	0.38	<0.5	<0.5	10.0	ND
900522	Micropterus salmoides	300	460	F1	0.23	<1.0	<0.10	1.30	<0.10	<0.5	<0.5	3.1	<1.0
900522	Micropterus salmoides	290	375	F1	0.18	<1.0	<0.10	1.10	<0.10	<0.5	<0.5	8.9	<1.0
900522	Micropterus salmoides	290	375	F1	0.14	<1.0	<0.10	1.10	<0.10	<0.5	<0.5	4.8	<1.0
900522	Lepomis gibbosus	200	200	F1	0.12	<1.0	<0.10	0.58	0.10	<0.5	<0.5	6.6	<1.0
900522	Amia calva	460	1000	F1	0.17	<1.0	<0.10	1.20	<0.10	<0.5	<0.5	2.2	<1.0
900522	Mugil cephalus	390	650	F1	0.03	<1.0	<0.10	0.43	<0.10	<0.5	<0.5	2.6	<1.0
900522	Mugil cephalus	360	600	F1	<0.02	<1.0	<0.10	<0.25	<0.10	<0.5	<0.5	1.1	<1.0
900522	Mugil cephalus	360	550	F1	<0.02	<1.0	<0.10	0.67	<0.10	<0.5	<0.5	2.3	<1.0
900522	Mugil cephalus	380	700	F1	<0.02	<1.0	<0.10	0.73	<0.10	<0.5	<0.5	2.1	<1.0
900522	Mugil cephalus	320	400	F1	<0.02	<1.0	<0.10	0.29	<0.10	<0.5	<0.5	1.4	<1.0

STATION NAME: Slocum Creek off Cherry Point WWTP
STATION NUMBER: NEUSC-4

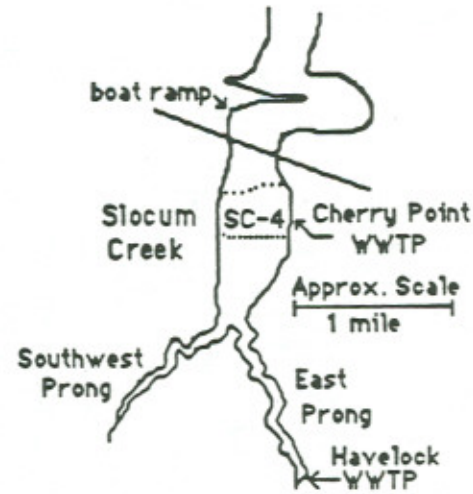
RIVER BASIN: Neuse

SUB BASIN: 03-04-10

COUNTY: Craven

STREAM CLASS: SC sw NSW

DRAINAGE AREA: 35 sq. mi.



LOCATION: Slocum Creek off Cherry Point WWTP

Latitude 34° 54' 52" **Longitude** 76° 54' 47"

REASON FOR SAMPLING : Special Study

SAMPLING DATES: August 8, 1985, May 5, 1990

METHOD OF COLLECTION: Nets

PARAMETERS SAMPLED: Heavy Metals

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	7	86	1	1.2	1.2
	whole	5	100	0	NA	NA
Cadmium	fillet	10	90	1	0.47	0.47
	whole	13	100	0	NA	NA
Chromium	fillet	10	30	7	0.27-1.2	0.77
	whole	13	62	5	0.75-4.0	1.63
Copper	fillet	10	40	6	0.12-4.3	0.94
	whole	13	8	12	0.13-0.60	0.31
Mercury	fillet	10	50	5	0.08-0.27	0.16
	whole	13	15	11	0.02-0.37	0.12
Nickel	fillet	10	100	0	NA	NA
	whole	13	100	0	NA	NA
Lead	fillet	10	100	0	NA	NA
	whole	13	100	0	NA	NA
Zinc	fillet	10	0	10	1.7-57	8.2
	whole	13	0	13	2.6-14	8.3
Selenium	fillet	7	100	0	NA	NA
	whole	5	100	0	NA	NA

Slocum Creek off Cherry Point WWTP - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means) (ND = No Data)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg	Se mg/kg
850808	Ictalurus catus	174	204	W1	0.06	ND	<0.10	<0.25	0.37	<0.5	<0.5	7.4	ND
850808	Ictalurus catus	306	328	W1	0.05	ND	<0.10	<0.25	0.43	<0.5	<0.5	6.9	ND
850808	Ictalurus catus	333	409	W1	0.09	ND	<0.10	<0.25	0.40	<0.5	<0.5	10.0	ND
850808	Lepisosteus osseus	705	1018	W1	0.37	ND	<0.10	<0.25	0.21	<0.5	<0.5	4.0	ND
850808	Lepisosteus osseus	788	1083	W1	0.29	ND	<0.10	<0.25	0.16	<0.5	<0.5	11.0	ND
850808	Paralichthys lethostigma	331	403	W1	0.07	ND	<0.10	<0.25	0.20	<0.5	<0.5	12.0	ND
850808	Paralichthys lethostigma	275	231	W1	0.06	ND	<0.10	<0.25	0.27	<0.5	<0.5	11.0	ND
850808	Synodus foetens	311	182	W1	0.02	ND	<0.10	<0.25	0.13	<0.5	<0.5	14.0	ND
900522	Lepisosteus osseus	750	1500	W1	0.12	<1.0	<0.10	4.00	<0.10	<0.5	<0.5	7.8	<1.0
900522	Lepisosteus osseus	755	1250	W1	0.13	<1.0	<0.10	1.10	0.14	<0.5	<0.5	2.6	<1.0
900522	Dorosoma cepedianum	350	500	W1	<0.02	<1.0	<0.10	0.75	0.48	<0.5	<0.5	6.6	<1.0
900522	Dorosoma cepedianum	380	750	W1	0.02	<1.0	<0.10	1.10	0.60	<0.5	<0.5	7.4	<1.0
900522	Dorosoma cepedianum	335	450	WC6	<0.02	<1.0	<0.10	1.20	0.31	<0.5	<0.5	7.7	<1.0
850808	Lepisosteus osseus	595	522	F1	0.08	ND	<0.10	<0.25	0.15	<0.5	<0.5	3.1	ND
850808	Lepisosteus osseus	727	1049	F1	0.19	ND	0.47	<0.25	4.30	<0.5	<0.5	57.0	ND
850808	Lepisosteus osseus	661	820	F1	0.11	ND	<0.10	<0.25	0.12	<0.5	<0.5	2.5	ND
900522	Lepisosteus osseus	740	1200	F1	0.16	<1.0	<0.10	0.96	0.25	<0.5	<0.5	5.1	<1.0
900522	Morone americana	285	475	F1	0.27	1.20	<0.10	1.10	0.18	<0.5	<0.5	3.6	<1.0
900522	Ictalurus nebulosus	360	800	F1	<0.02	<1.0	<0.10	1.20	<0.10	<0.5	<0.5	2.8	<1.0
900522	Ictalurus nebulosus	360	800	F1	<0.02	<1.0	<0.10	1.10	<0.10	<0.5	<0.5	2.0	<1.0
900522	Dorosoma cepedianum	400	850	F1	<0.02	<1.0	<0.10	0.39	<0.10	<0.5	<0.5	1.9	<1.0
900522	Dorosoma cepedianum	390	750	F1	<0.02	<1.0	<0.10	0.36	0.66	<0.5	<0.5	2.6	<1.0
900522	Dorosoma cepedianum	348	460	F1	<0.02	<1.0	<0.10	0.27	<0.10	<0.5	<0.5	1.7	<1.0

STATION NAME: Slocum Creek off Mill Creek near Cherry Point
STATION NUMBER: NEUSC-5

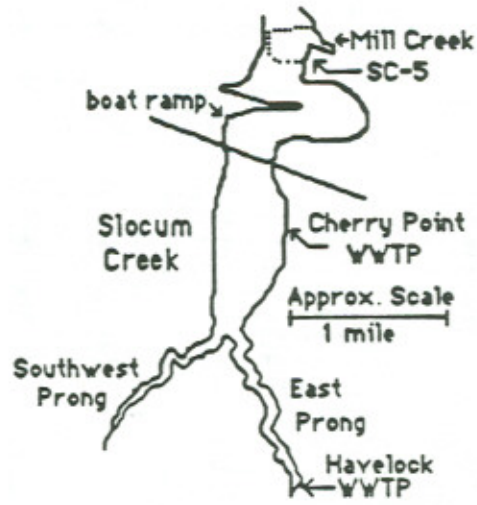
RIVER BASIN: Neuse

SUB BASIN: 03-04-10

COUNTY: Craven

STREAM CLASS: SC sw NSW

DRAINAGE AREA: 36 sq. mi.



LOCATION: Slocum Creek off Mill Creek

Latitude 34° 55' 30" **Longitude** 76° 54' 32"

REASON FOR SAMPLING : Special Study

SAMPLING DATES: May 5, 1990

METHOD OF COLLECTION: Nets

PARAMETERS SAMPLED: Heavy Metals

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	8	75	2	1.0-1.3	1.15
	whole	8	88	1	1	1
Cadmium	fillet	8	100	0	NA	NA
	whole	8	88	1	0.25	0.25
Chromium	fillet	8	0	8	3.3-4.5	4.1
	whole	8	0	8	3.2-4.4	3.8
Copper	fillet	8	0	8	.19-160	31
	whole	8	0	8	.30-97	16.6
Mercury	fillet	8	88	1	0.07	0.07
	whole	8	38	5	0.04-1.3	0.1
Nickel	fillet	8	75	2	1.3-1.9	1.6
	whole	8	63	3	0.50-2.1	1.47
Lead	fillet	8	75	2	3.1-6.2	4.65
	whole	8	50	4	0.26-3.4	1.18
Zinc	fillet	8	0	8	3.4-91	21
	whole	8	0	8	6.4-56	15.4
Selenium	fillet	8	100	0	NA	NA
	whole	8	100	0	NA	NA

Slocum Creek off Mill Creek - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Zn mg/kg	Se mg/kg
900522	Lepisosteus osseus	720	1250	W1	0.12	<1.0	<0.10	3.40	97	1.80	3.40	56.0	<1.0
900522	Lepisosteus osseus	790	1600	W1	0.11	<1.0	<0.10	3.30	19	<0.5	0.82	12.0	<1.0
900522	Lepisosteus osseus	765	1850	W1	0.13	1.00	<0.10	3.90	1.00	<0.5	<0.5	8.0	<1.0
900522	Lepisosteus osseus	765	1850	W1	0.04	<1.0	<0.10	4.40	1.10	<0.5	<0.5	6.4	<1.0
900522	Lepisosteus osseus	795	1575	W1	0.11	<1.0	0.25	4.10	13.1	2.10	0.70	14.0	<1.0
900522	Dorosoma cepedianum	333	425	WC3	<0.02	<1.0	<0.10	3.90	0.59	<0.5	<0.5	9.8	<1.0
900522	Dorosoma cepedianum	320	350	W1	<0.02	<1.0	<0.10	3.20	0.30	<0.5	<0.5	7.7	<1.0
900522	Dorosoma cepedianum	310	350	W1	<0.02	<1.0	<0.10	4.10	0.61	0.50	0.26	9.6	<1.0
900522	Morone saxatilis	445	1125	F1	0.07	<1.0	<0.10	4.30	0.25	<0.5	<0.5	4.3	<1.0
900522	Mugil cephalus	340	400	F1	<0.02	1.30	<0.10	4.20	0.69	<0.5	<0.5	5.7	<1.0
900522	Mugil cephalus	330	375	F1	<0.02	1.00	<0.10	4.30	0.31	<0.5	<0.5	4.7	<1.0
900522	Mugil cephalus	320	325	F1	<0.02	<1.0	<0.10	4.10	0.19	<0.5	<0.5	3.4	<1.0
900522	Mugil cephalus	290	275	F1	<0.02	<1.0	<0.10	3.90	0.20	<0.5	<0.5	3.8	<1.0
900522	Dorosoma cepedianum	320	400	F1	<0.02	<1.0	<0.10	3.30	160	1.90	6.20	91	<1.0
900522	Dorosoma cepedianum	320	350	F1	<0.02	<1.0	<0.10	4.10	85	1.30	3.10	50	<1.0
900522	Dorosoma cepedianum	315	325	FC3	<0.02	<1.0	<0.10	4.50	0.27	<0.5	<0.5	4.6	<1.0

STATION NAME: Neuse River at Minnesott Beach
STATION NUMBER: NEU 139

RIVER BASIN: Neuse

SUB BASIN: 03-04-10

COUNTY: Pamlico

STREAM CLASS: SB Sw NSW

DRAINAGE AREA: ≈ 5300 sq mi.

LOCATION: Neuse River at Minnesott Beach

Latitude 34° 57' 57" **Longitude** 76° 48' 28"

REASON FOR SAMPLING : Albemarle Pamlico Estuary Study

SAMPLING DATES: April 27, 1989

METHOD OF COLLECTION: Nets

PARAMETERS SAMPLED: Heavy Metals

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	4	75	1	1.8	1.8
	whole	3	100	0	NA	NA
Cadmium	fillet	4	100	0	NA	NA
	whole	3	100	0	NA	NA
Chromium	fillet	4	100	0	NA	NA
	whole	3	33	2	0.57-0.88	0.73
Copper	fillet	4	0	4	0.28-0.64	0.49
	whole	3	0	3	0.65-2.40	1.65
Mercury	fillet	4	50	2	0.06-0.09	0.08
	whole	3	66	1	0.16	0.16
Nickel	fillet	4	100	0	NA	NA
	whole	3	100	0	NA	NA
Lead	fillet	4	100	0	NA	NA
	whole	3	100	0	NA	NA
Selenium	fillet	4	100	0	NA	NA
	whole	3	66	1	0.55	0.55

Neuse River at Minnesott Beach - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Se mg/kg
890427	Mugil cephalus	263	225	W1	<0.02	<1.0	<0.10	0.88	2.40	<0.50	<0.50	<0.5
890427	Lepisosteus osseus	827	2141	WC6	0.16	<1.0	<0.10	<0.25	1.90	<0.50	<0.50	0.55
890427	Dorosoma cepedianum	357	492	WC3	<0.02	<1.0	<0.10	0.57	0.65	<0.50	<0.50	<0.5
890427	Cynoscion nebulosus	434	944	FC4	0.06	<1.0	<0.10	<0.25	0.28	<0.50	<0.50	<0.5
890427	Micropogon undulatus	172	101	FC5	<0.02	<1.0	<0.10	<0.25	0.57	<0.50	<0.50	<0.5
890427	Leiostomus xanthurus	193	124	FC5	<0.02	1.80	<0.10	<0.25	0.64	<0.50	<0.50	<0.5
890427	Morone americana	205	148	FC2	0.09	<1.0	<0.10	<0.25	0.47	<0.50	<0.50	<0.5
890427	Callinectes sapidus	Shellfish			<0.02	1.40	<0.10	<0.25	1.80	<0.50	<0.50	<0.5

STATION NAME: South River near South River
STATION NUMBER: SOUTHRIVER-1

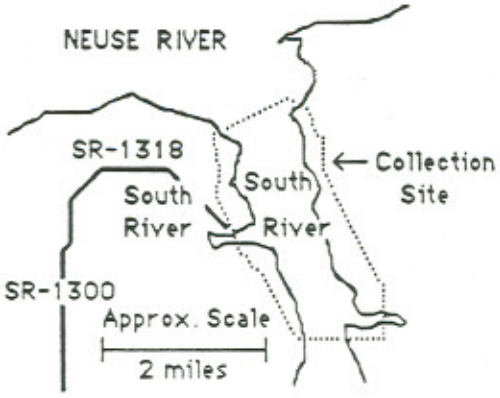
RIVER BASIN: Neuse

SUB BASIN: 03-04-10

COUNTY: Carteret

STREAM CLASS: SB

DRAINAGE AREA: Indeterminate



LOCATION: South River off SR-1318 at South River
Latitude 36° 01' 20" **Longitude** 76° 18' 30"

REASON FOR SAMPLING : Albemarle Pamlico Estuary Study

SAMPLING DATES: March 2, 1989

METHOD OF COLLECTION: Nets

PARAMETERS SAMPLED: Heavy Metals and Organics

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	1	100	0	NA	NA
	whole	3	66	1	1	1
Cadmium	fillet	1	100	0	NA	NA
	whole	3	100	0	NA	NA
Chromium	fillet	1	100	0	NA	NA
	whole	3	100	0	NA	NA
Copper	fillet	1	0	1	0.29	0.29
	whole	3	0	3	0.30-1.10	0.63
Mercury	fillet	1	0	1	0.03	0.03
	whole	3	33	2	0.03-0.18	0.11
Nickel	fillet	1	100	0	NA	NA
	whole	3	100	0	NA	NA
Lead	fillet	1	100	0	NA	NA
	whole	3	100	0	NA	NA
Selenium	fillet	1	100	0	NA	NA
	whole	3	100	0	NA	NA

South River near South River - Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Se mg/kg
890302	Cynoscion nebulosus	460	995	WC4	0.03	<1.0	<0.10	<0.25	0.30	<0.50	<0.50	<0.50
890302	Mugil cephalus	255	223	WC3	<0.02	<1.0	<0.10	<0.25	1.10	<0.50	<0.50	<0.50
890302	Alosa mediocris	404	646	WC3	0.18	1.00	<0.10	<0.25	0.51	<0.50	<0.50	<0.50
890302	Paralichthys lethostigma	262	206	F1	0.03	<1.0	<0.10	<0.25	0.29	<0.50	<0.50	<0.50

South River near South River - Organics in Fish Tissue Data

(Species: SST= Cynoscion nebulosus) (Type-Number: WC= whole composite followed by the number of fish in the composite; FC= Fillet Composite) (Lengths and weights of composites are means)

Date	890406	890406
Species	SST	SST
Avg Wt (gm)	995	995
Avg Ln (mm)	460	460
Type-Number	FC4	WC4
Aldrin (mg/kg)	<0.0005	<0.0005
Dieldrin (mg/kg)	<0.0008	<0.0008
o,p DDD (µg/g)	<0.002	<0.002
p,p DDD (µg/g)	0.008	<0.002
o,p DDE (µg/g)	<0.002	<0.0005
p,p DDE (µg/g)	0.03	0.04
o,p DDT (µg/g)	<0.002	<0.002
p,p DDT (µg/g)	<0.005	<0.005
cis-Chlordane (µg/g)	<0.0008	<0.0008
trans-Chlordane (µg/g)	<0.0008	<0.0008
trans-Nchlor (µg/g)	<0.0008	<0.0008
Methoxychlor (µg/kg)	<10	<10
Hxchlbenzene (mg/kg)	<0.0003	<0.0003
alpha-BHC (µg/g)	<0.0003	<0.0003
gamma-BHC (µg/g)	<0.0003	<0.0003
Endrin (mg/kg)	<0.002	<0.002
PCB (mg/kg)	<0.013	<0.013
Endosulfan I (mg/kg)	<0.0005	<0.0005
Endosulfan II (mg/kg)	<0.002	<0.002
Endosulfan Sulfate (mg/kg)	<0.025	<0.025

STATION NAME: Neuse River off Maw Point near Pamlico
STATION NUMBER: 02092682

RIVER BASIN: Neuse

SUB BASIN: 03-04-10

COUNTY: Pamlico

STREAM CLASS: SA NSW

DRAINAGE AREA: 5,600 sq. mi.

LOCATION: Neuse River off Maw Point near Pamlico

Latitude 35° 30' 35" **Longitude** 76° 35' 08"

REASON FOR SAMPLING : Albemarle Pamlico Estuary Study

SAMPLING DATES: March 21, 1989

METHOD OF COLLECTION: Nets

PARAMETERS SAMPLED: Heavy Metals

STATION SUMMARY

Metal	Whole or Fillet	Number of Samples	Percent of Samples Below Detection	Number of Samples Above Detection	Range of Samples Above Detection mg/kg	Mean of Samples Above Detection mg/kg
Arsenic	fillet	7	86	1	1.5	1.5
	whole	2	50	1	1.3	1.3
Cadmium	fillet	7	100	0	NA	NA
	whole	2	100	0	NA	NA
Chromium	fillet	7	86	1	0.32	0.32
	whole	2	50	1	0.42	0.42
Copper	fillet	7	0	7	0.23-0.53	0.33
	whole	2	0	2	0.80-1.70	1.25
Mercury	fillet	7	14	6	0.02-0.16	0.06
	whole	2	50	1	0.07	0.07
Nickel	fillet	7	100	0	NA	NA
	whole	2	100	0	NA	NA
Lead	fillet	7	100	0	NA	NA
	whole	2	100	0	NA	NA
Selenium	fillet	7	86	1	0.64	0.64
	whole	2	100	0	NA	NA

Neuse River off Maw Point- Metals in Fish Tissue Data

(Type-Number: WC= whole composite followed by the number of fish in the composite)
(FC=fillet composite: Lengths and weights of composites are means)

Date	Species	Length (mm)	Weight (gm)	#	Hg mg/kg	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Ni mg/kg	Pb mg/kg	Se mg/kg
890321	Mugil cephalus	281	287	WC5	0.07	1.30	<0.10	0.42	1.70	<0.5	<0.5	<0.50
890321	Dorosoma cepedianum	336	683	WC2	<0.02	<1.0	<0.10	<0.25	0.80	<0.5	<0.5	<0.50
890321	Sciaenops ocellata	314	368	F1	0.05	<2.0	<0.10	<0.25	0.31	<0.5	<0.5	<1.0
890321	Cynoscion regalis	350	472	F1	0.06	<2.0	<0.10	<0.25	0.33	<0.5	<0.5	<1.0
890321	Cynoscion nebulosus	470	1170	F1	0.04	<2.0	<0.10	<0.25	0.23	<0.5	<0.5	<1.0
890321	Cynoscion nebulosus	457	1025	FC2	0.05	<1.0	<0.10	<0.25	0.53	<0.5	<0.5	0.64
890321	Paralichthys lethostigma	410	790	F1	0.02	<2.0	<0.10	<0.25	0.23	<0.5	<0.5	<1.0
890321	Paralichthys lethostigma	331	454	F6	<0.02	1.50	<0.10	0.32	0.42	<0.5	<0.5	<0.50
890321	Morone americana	265	400	F1	0.16	<2.0	<0.10	<0.25	0.29	<0.5	<0.5	<1.0
890321	Callinectes sapidus	Shellfish			<0.02	1.90	<0.10	<0.25	11	<0.5	<0.5	<0.5
890321	Crassostrea virginica	Shellfish			<0.02	1.00	0.30	<0.25	4	<0.5	<0.5	<0.5

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