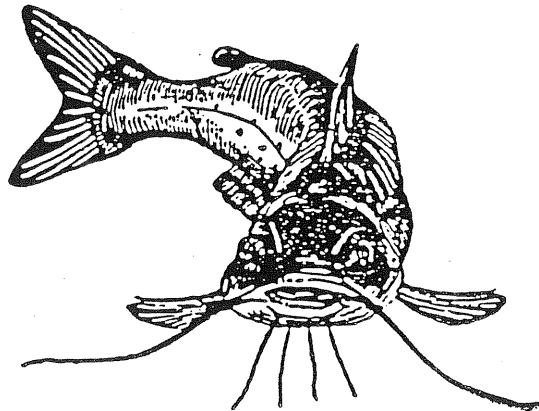
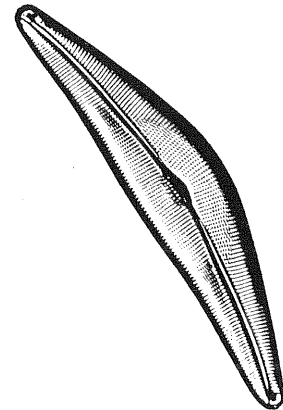
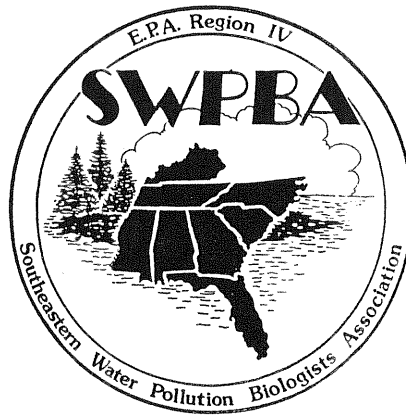
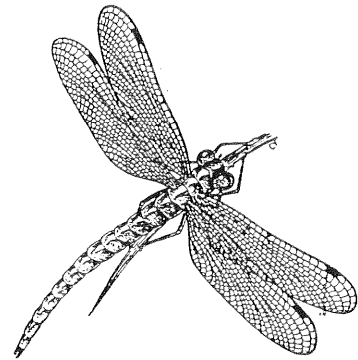
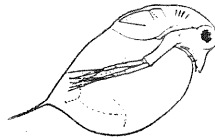
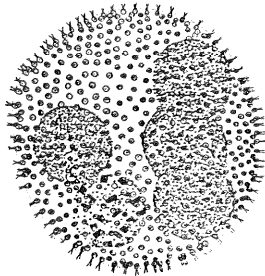


*Transit/STH*  
*Please circulate*

**SOUTHEASTERN WATER POLLUTION  
BIOLOGIST'S ASSOCIATION  
NEWSLETTER**



**SEPTEMBER 1993**



## TABLE OF CONTENTS

LETTER FROM THE PRESIDENT	1
MAP TO THE GALT HOUSE	3
ALABAMA	5
FLORIDA	9
GEORGIA	11
KENTUCKY	13
MISSISSIPPI	15
SOUTH CAROLINA	19
TENNESSEE	23
U.S. EPA REGION IV	29



Dear SWPBA Member:

The SWPBA meeting is at hand. The meeting is being held at the Galt House in downtown Louisville. If you are driving in on I-64, stay on 64 until you get to downtown Louisville and then take the Third Street exit. Turn right at the light, then turn left onto Fourth Street. The Galt House parking garage will be immediately to your right. If you are coming in on I-65, follow 65 to I-64 west, then follow the above instructions.

On Monday, September 27th, the Hospitality room will open at 4:00pm. Preregistration will take place in the Hospitality Room from 5:00 to 9:00pm. The Hospitality Room will be in Room 2100.

The meeting will commence Tuesday morning September 28th, at 8:30am in the Taylor Room. The Taylor Room is located on the third floor of the East Tower of the Galt House.

The Banquet has been moved from Wednesday night to Tuesday night. Bring a large appetite, you will need it for the prime rib, shrimp, crab-legs, chicken, and vegies. There is a cash bar on the boat. The river cruise lasts from 7:00 to 10:00pm. Bring a set of nice clothes because blue jeans are not allowed on the boat.

This should be a great meeting, hope to see you there.

Sincerely,

A handwritten signature in black ink, appearing to read "Skip", written over the printed name.

Sam M. Call, President  
SWPBA  
KY Division of Water

SMC:mw



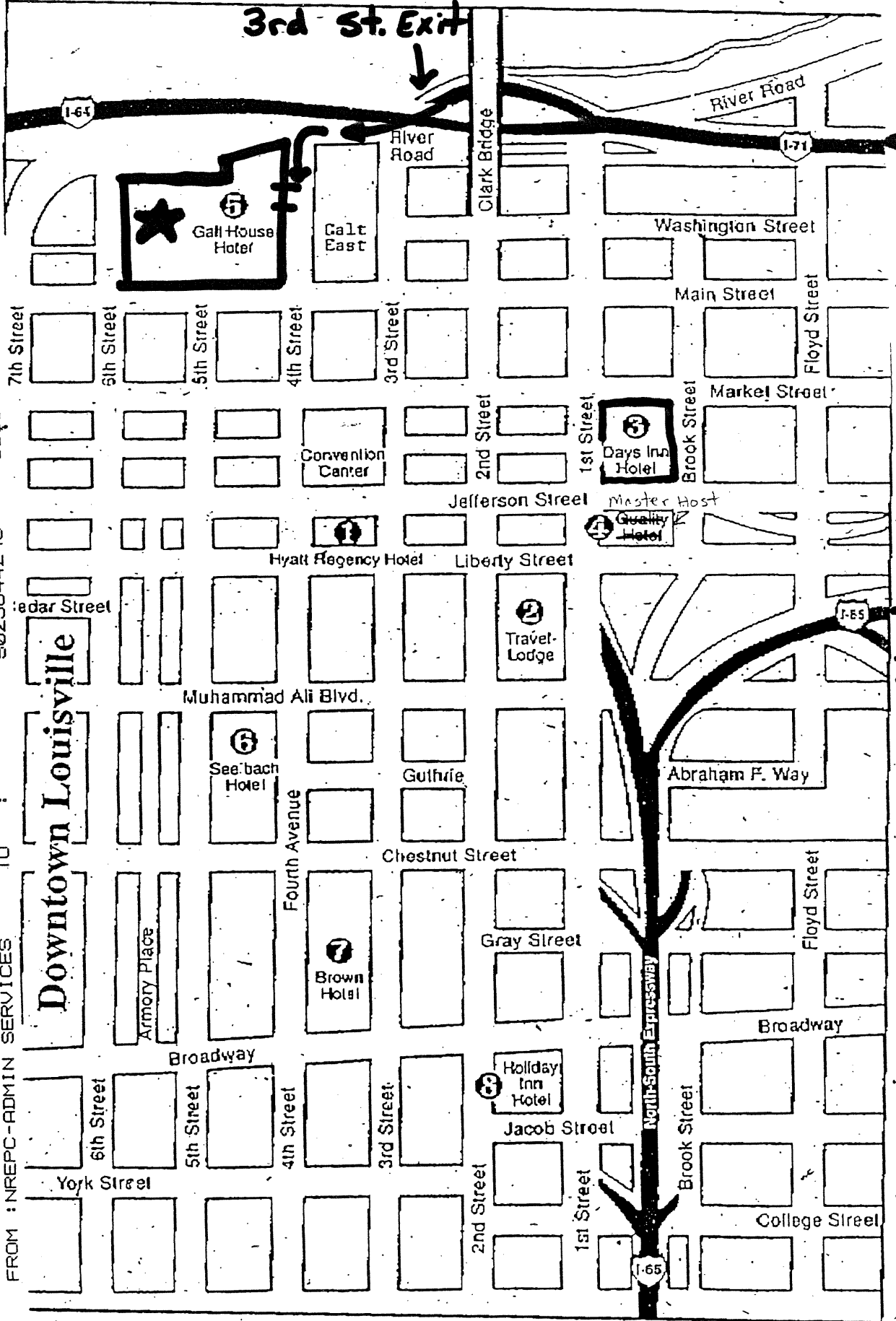
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FROM : NREPC-ADMIN SERVICES TO :

Downtown Louisville







## ALABAMA

Another busy summer is coming to a close only to be followed by an even busier fall fish collection schedule. The field biologists are taking advantage of those infrequent office days to begin their lab work.

### IN THE NEWS

ADEM Field Operations and Laboratory staff from Montgomery and Birmingham logged more than 500 hours in July monitoring and analyzing samples from the Coosa River and Weiss Reservoir in Cherokee County. This was in response to threats to water quality caused by a discharge of polluted wastewater from a paper mill in Rome, Georgia. Officials with the Environmental Protection Division (EPD), Georgia Department of Natural Resources, notified ADEM July 15 that Inland-Rome, a pulp mill located approximately 25 miles from the Alabama-Georgia state line, had experienced a release of black liquor, a byproduct of the pulping process, to its wastewater treatment system several days earlier. As a result, the facility's biological treatment system was rendered ineffective resulting in discharges of approximately 10,000 gallons a minute of minimally treated wastewater. According to Georgia officials, the company did not report the release. EPD discovered the problem several days after-the-fact during an investigation of a major fish kill on the Coosa River in the vicinity of Inland's discharge. Subsequently, EPD issued an emergency order July 16 mandating that Inland-Rome immediately shut down until the company could comply with its' discharge permit. The company ceased operation the following day.

Compounding the problem was a report received by ADEM from EPD that a municipal treatment plant located in Trion, which discharged to the Chattooga River about 25 miles from the Alabama state line, experienced a power failure July 15 resulting in the release of 800,000 gallons of untreated wastewater. The Chattooga flows into Weiss Reservoir (Coosa River) at Cedar Bluff.

A Field Operations crew set up monitoring stations on the reservoir July 15. By late afternoon the Field crew reported dissolved oxygen measurements (5' depth) of 1.5 ppm and 1.6 ppm at two stations on Weiss Reservoir located two and three miles, respectively, from the Alabama-Georgia state line. ADEM continuously monitored the plume for the next two weeks until it had passed through the dam and was dispersing. Fortunately the plume remained mostly confined to the river channel allowing the fish to move into embayment waters with adequate dissolved oxygen levels, thereby avoiding fish kills. The U.S. Corps of Engineers agreed to increase flow releases from Lake Alatoona, upstream of the Inland-Rome plant. This increased flow was passed on through the dam on Weiss Reservoir by the Alabama Power Company and provided additional aeration downstream of the dam.

## SPECIAL STUDIES

Two water quality demonstration studies were scheduled for this sampling year. These studies are used to document water quality of the receiving stream prior to upgrade of a waste water treatment facility (WWTP) and to indicate improvement, if any, after the upgrade is completed.

The Omussee Creek study (post upgrade) has one more trip scheduled. Data already collected include: chemical, toxicity, habitat and macroinvertebrate assessments utilizing four study stations, a control upstream of the wastewater treatment facility discharge, and an ecoregional reference site.

The Pigeon Creek study at Fort Deposit was canceled after the first sampling event due to a lack of water at any of the four stations. The study will be rescheduled next year.

The Sand Mountain NPS Watershed Project macroinvertebrate bioassessment has been completed for this year. About half of the macroinvertebrate samples have already been identified. The study report should be completed by late fall.

One of the two wasteload allocations (WLA) scheduled for this year has been completed. Big Wills Creek WLA was conducted in July under nearly optimal conditions with stream flows remaining constant through out the study. Flint Creek WLA is planned for the middle of September. The study data will also be utilized as part of EPA's Flint Creek Watershed Initiative and it is hoped that it can be used to form the basis of a TMDL for the Watershed.

## MACROINVERTEBRATE BIOLOGICAL MONITORING

Fifty-five macroinvertebrate assessments were completed at 50 stream sites in June and July. Twenty-five reference site assessments from three ecoregions were conducted including two utilized as part of a special study and one quality assurance collection with the Mississippi biologists as part of the AL/MS ecoregion project. Eleven special study assessments, twelve ambient monitoring station assessments and three internal method quality assurance collections were completed. All of the samples have been lab processed and are ready for identification as time allows.

The first years' samples utilizing the draft non-wadeable streams and rivers multihabitat bioassessment protocol have been collected from selected ambient monitoring stations. Data generated will be analyzed over the winter and compared to samples collected utilizing Hester-Dendy multiplates. The final methodology will be included in the Field Operations Division Freshwater Macroinvertebrate Biological Monitoring Standard Operating Procedures Document.

## **ALABAMA, cont.**

### **RESERVOIR WATER QUALITY MONITORING**

The Reservoir Water Quality Monitoring Program Report for 1990 - 1991 was completed April 1992. Monitoring results as well as current and future monitoring/research activities for each reservoir were presented and discussed.

Water quality data were collected at a total of 34 stations from 16 reservoirs during the spring and summer sessions of the Reservoir Water Quality Monitoring (RWQM) program. This year's monitoring completed the three year rotation of the 38 publicly accessible reservoirs in the state. Additional funding received through the Clean Lakes Program for FY '92 enabled the Department to conduct more intensive monitoring of Lay Reservoir and add Coffeerville and Warrior Reservoirs to the monitoring rotation.

Clean Lakes Program Phase I study reports on Weiss and West Point Reservoirs have entered the review process and will be completed during the latter portion of 1993. Phase I studies of Neely Henry and Walter F. George Reservoirs will continue through 1993.

### **FISH TISSUE MONITORING**

Collection of fish for the 1993 Fish Tissue Monitoring Program begins in October and will continue through December. The Department, along with the Alabama Department of Conservation and Natural Resources and TVA, will sample 33 sites on 17 water bodies. The water bodies include: four public fishing lakes, three riverine locations, and one creek, with the remaining made up of lakes and reservoirs. Largemouth bass and catfish will be the primary species collected. The data generated will be entered into ADEM's Fish Tissue Database.

Questions concerning the fish tissue monitoring program should be directed to Bob Cooner or Fred Leslie.

### **TOXICS UNIT**

During the third quarter of 1993, the Toxics Unit performed 8 acute and 5 chronic tests. 198 Facility Reports were submitted and evaluated along with 421 tests reviewed.

Algal Growth Potential Tests were conducted on two reservoirs. Two stations from Lake Purdy and four stations from Smith Lake in conjunction with the Smith Lake SCS NPS demonstration project.

### **MEETINGS**

Bob, Janet, Norm and Vickie plan to attend the upcoming SWPBA meeting. Looking forward to seeing you there!

The midge key was so popular that we are following with an Amphipod (saltwater) key (due out in October 1993) and Caddisfly larvae and Oligochaete (fresh and saltwater) keys due in September 1994.

NABS - Orlando - May 24 - 27, 1994

The first call for papers will be in the next NABS Bulletin. The Plenary Session theme will be "Subtropical Lakes." Other sessions will focus on: Biological Indicators of Stress in Benthic Fauna; Sediment Toxicity and Benthic Fauna; Effects of Coastal Processes on Benthic Invertebrates; Status of Native Freshwater Mussels of North America; Nutrient Enrichment in Large Rivers; Statistics, Metrics and Data Analysis; and Conservation of Biodiversity in Aquatic Systems. Program Chairman is Rob Mattson, Suwannee River Water Management District, Rt. 3, Box 64, Live Oak, Florida 32060 (telephone 904/362-1001).

Submitted by:

James (Jim) Hulbert, Director  
Surface Water Ambient Monitoring Program (SWAMP)  
Division of Surface Water Management

**Water Quality Management Program  
Water Protection Branch  
Environmental Protection Division  
Georgia Department of Natural Resources**

Georgia would like to extend a warm "hello" to all you folks out there in the field this summer. I had planned to say that I came out of the field just long enough to assemble this information for SWPBA, but... it was actually written in the back seat of a truck, and fax'd at the 13th hour. What a summer! All of our staff and crew is stretched to the limit with more field work than we've seen in some time. I really look forward to being able to see the inside of my office once in a while.

A vote was taken amongst EPD personnel and a name for our new water project was decided upon. Georgia has christened this new project, which involves Georgia's citizens in hands-on protection and monitoring of state waters as the "Georgia Adopt A Stream Program". This falls under the new Nonpoint Source Project headed by Ted Mikalsen. One of our new associates, Laurie Hawks, will head up this project.

There seems to be more than bug biology at work within the ranks of our EPD staff this summer. Chip Cutcliff is the proud new father of a 7 lb. 3 oz. baby girl, born August 16. Susan Noakes is the radiant mother of a 10 lb. 2 oz. baby boy, born September 4th. Chip was able to make it from the field to the hospital just in time, and take a few days off to acquaint himself with the new arrival. Susan had a more planned delivery and hopes to stay away from work for a few months.

#### **MAJOR LAKES MONITORING**

The WQMP has completed sampling of the 27 lakes involved in the Major Lakes Monitoring Project for 1993. This project was established in 1983 and designed to sample lakes of 500 acres or more on a yearly basis. The chemical, bacterial and chlorophyll a samples from this years field work have been analyzed , and a draft of the final report is under way.

#### **CHATTAHOOCHEE RIVER MODELING PROJECT**

This project is officially under way with the first field samples collected in July. The stretch of river being studied extends from Buford Dam at Lake Lanier to the headwaters of West Point Lake, about 113 river miles. There are 11 modules that have been assigned for the 1993 season. These modules have been divided amongst the 3 units that make up the Water Quality Management Program.

Top priority was given to module 6 - Tributary Sampling. Initially, there are 47 streams, creeks and/or rivers that have

been identified for study. Of these 47, 35 will be chosen for bi-weekly sampling, from June 1st into November, for 3 to 5 years. Field parameters include air temperature, water temperature, D.O., pH, conductivity, tape down measurement and stream flow. Lab parameters include TOC, BOD5, NO2 and NO3N, Ammonia N, TKN, Ortho P, TSS and Turbidity. Time series BOD, chlorophyll a and algal count and analysis will be run on some of the samples later in the program. The second run of samples for the full 47 sites was just completed. A reduction to 35 tributaries should occur by the end of the 3rd run in approximately 3 weeks.

#### OGEECHEE RIVER INVESTIGATION

A joint study of the Ogeechee River by the US EPA and the Georgia EPD was scheduled for 1991 and postponed due to unseasonably high water. The study was rescheduled for 1992. Water was again high in the summer of 1992, but chemical sampling was initiated and completed. Scheduling prevented another postponement. The data gathered is more useful for as nonpoint source information rather than as 7Q10. Scheduled macroinvertebrate collecting which was unfeasible at high water was completed in August of this year. A draft report is ready for review. Max Walker is the Team Leader for this undertaking.

#### EPD-ISU DIVE TEAM

Chip Cutcliff attended the EPA's "Polluted Water and Dive Accident Management" course on Sabine Island, Florida. The training has already been put to the test on the Chattahoochee River Modeling Project. Our SOD tests are done in Viking Dry Suits and AGA masks equipped with Aquacom underwater communication devices. This is the same equipment that was used in the training program with the EPA.

The redesign of our SOD chambers to use flow through cells has made deployment much more efficient and increased the level of equipment safety. The multiparameter water quality sampling device is mounted horizontally on the chamber surface and the battery is permanently attached to the top of the unit. Hoses for the flowthrough cell are connected and the battery turned on. A membrane has been added to the chamber so that samples can be drawn at any time during the SOD testing. A large hypodermic needle and syringe is used to pull the samples out of the chamber. Tim Shirah is responsible for most of the modifications, as has field tested the new designs.

You can thank the busy field season for the shortness of this submission. Only a few of our associates were available for input. Look for a more detailed version in the spring.

# KENTUCKY

## Division of Water

### Water Quality Branch

We've been keeping pretty busy here in Kentucky trying to plan the SWPBA meeting and keep up with all our other programs. No new staff members to report in the Frankfort office, however we have filled a position in the Madisonville district office. Ed Carroll will be doing 401 Water Quality Certifications and wetland delineations in Western Kentucky. We're officially welcoming him aboard next week and then throwing him to the wolves.

The Reference Reach group has completed their first round of sampling on 42 stations. They will be heading out again in October for the Fall sampling and will hopefully get finished before cold weather sets in. Karen Smathers will be presenting some IBI data from her first round of fish collections at the SWPBA meeting.

We've also been working on reference reach wetlands. Jeff Grubbs has reconned and selected 10 reference wetlands, and we sampled four of them the first week of September. We're still working on methods, but we managed to collect fish, macroinvertebrates and algae. As Jeff said recently, it's hard to seine when you're in mud up to your butt! We had some limited success with the backpack shocker as well, although water clarity was a limiting factor.

The Biological Monitoring Program sampling has focused on the Cumberland River Basin this year. Most of the collections are made, but since we haven't been able to replace Allen Robison yet, we aren't going to be able to do fish tissue analyses at those stations this year. Times are tough, a bunch of the fish were collected by botanists and scum-suckers. Speaking of scum-sucking, we've abandoned periphytometers in favor of natural substrate collections. Several factors prompted this action: 1. Most of the periphytometers we set last year were stolen, 2. We wanted to get a handle on natural substrate biomass to determine (at some point in the future) what constitutes "nuisance" biomass levels, and 3. With natural substrate collections, the site only has to be visited once. With our current staff shortage (temporary, we hope!), efficiency is essential. A new development in methodology...Vac-U-Suc is now motorized!!! Stay tuned for more details at the SWPBA meeting, where Lythia Metzmeier (Yeah, I kept my last name) will present benthic chlorophyll a data.

Intensive Surveys have also focused on the Cumberland River Basin (Yes, we planned it that way). We did a biological and water quality survey of the Cumberland River for a state Wild River management plan. Sampling below Cumberland Falls (WAY below the Falls) was quite challenging. The substrate was a mixture of boulders and gravel sized coal chunks. The pools were very deep and the riffles swift. We snorkled to observe freshwater mussel

populations. Two crews seined for about two hours....we got slightly more than two fish, but it wasn't easy.

Another intensive survey was a bacteriological investigation of the Upper Cumberland River drainage. Gary Beck, our premier staff microbiologist spearheaded this survey with the cooperation of our district offices. Gary will present the results from a previous bacteriological survey (North Fork of the Kentucky River) at SWPBA.

Some time around the end of August, several of us went to Western Kentucky for a double shift. We worked in the mobile bioassay lab during the day and (after a small snack), hit Lake Barkley for some night electro-fishing to collect samples for fish tissue analysis. While we caught many lunker large-mouth bass, we didn't catch many zzz's. We did, however, rack up some comp-time in a hurry. I'd like to add, it was my first time helping the bioassay crew in the field. I was quite impressed both by the mobile lab interior and the whole bioassay process. They're on their way out again as I type. Of course, they'll update the membership on their "summer vacation" at SWPBA.



# MISSISSIPPI HAPPENINGS

## OUR NEW LAB

Finally, we have gotten moved into our new Biological Services Section Lab. Please note also that our address and phone numbers have changed. NEW ADDRESS:

Mississippi Office of Pollution Control  
Biological Services Lab  
1542 Old Whitfield Road  
Pearl, MS 39208

Phone (601) 939-8552  
Temporary Fax (601) 939-8731

The following SWPBA members have relocated to the above address: Mike Beiser, Doug Upton, Richard Peets, Chip Bray, and David Loch.

Henry Folmar, Billy Justus and Al Gibson are still at the old address: 121 Fairmont Plaza, Pearl, MS 39208, although Billy and Al will be moving to the Biological Services Lab soon. There are new phone numbers there, also. Phone # (601)939-8460, FAX (601)939-8479.

## ALABAMA/MISSISSIPPI REFERENCE SITE PROJECT

Progress continues to be made in identifying the samples collected last year for this project. All sites, including several additional EPA selections have been sampled this year. We are beginning to see some of the variation among sites within each subregion, and have begun to increase the number of sites sampled in each subregion. We have scheduled many of the sites for fall/early winter sampling.

Since the last newsletter, we have been working mostly in the Jackson Prairie and Southern Pine Plains and Hills subregions. Streams in the Southern Pine Plains and Hills subregion seem to have the best water quality of any of the subregions.

## DIOXIN IN THE MINERAL CREEK BASIN

Personnel collected, processed, and shipped 10 fish samples from three sites in the Mineral Creek watershed in April. Results show that only low levels of dioxins exist in those fish. Data from that sampling was provided to the Hazardous Waste Section of the MS OPC, which manages the existing consumption advisory.

## TOXICITY TESTING

Industrial and municipal toxicity testing for FY 94 has not yet begun because of our move into our new facility although organisms are being cultured and a battery of reference tests are being performed. We have been keeping busy with special projects and fish kills as well as working the "kinks" out of the new facility. This new facility is going to change some of our standard operating procedures so a revision of our current SOP is underway.

This section has also been involved in rewriting current boiler plate language for industrial permits as well as revising the State of Mississippi Industrial Toxicity Screening and Reduction Strategy (this document will probably be called Miss. Toxics Policy). These revisions will require almost every permitted industry to perform some type of toxicity screen on their effluent. This should in turn greatly increase the number of permits with toxicity limits.

A Performance Audit Inspection (PAI) was recently performed on Davis Research Lab, Inc., a contract lab located in Mississippi. Doug Upton acted as an observer for the State of Mississippi with Lisa Spurlin and Ron Weldon from USEPA performing the inspection.

## MISSISSIPPI CLEAN LAKES MONITORING

The Biological Services Section is preparing for the sampling of 15 Mississippi lakes to satisfy this year's Clean Lakes Program. Plans are underway to sample the majority of these in September, using fish tissue as the primary water quality indicator, but will also rely on some intensive water column chemistry for supporting documentation of lake health.

## MISSISSIPPI DELTA REFERENCE SITE PROJECT

A meeting between our office and the LA DEQ and their consultant, Dr. Ed DeWalt, was held in early August for the purpose of assessing progress made by each group thus far, to trade literature lists and references, and to jointly sample some streams. We were able to look at many more sites, and one of the streams we jointly sampled, seemed pristine, and was certainly unlike anything we have in our Delta Region. Hopefully we will be able to use this site, and some of Arkansas' Delta sites as benchmarks to compare with our own sites. Dr. DeWalt uses a very quantitative collection method to gather his data, and it will be interesting to see how our Rapid Bioassessment results compare with his taxa lists and conclusions.

### FISH TISSUE MONITORING

Personnel have collected and filleted 27 fish samples from various sites for the ambient fish tissue program this quarter. Also collected and processed were 18 samples for "Special Studies" or studies targeting specific contaminants in samples, rather than our routine ambient screen.

### DIOXIN IN THE LEAF RIVER BASIN

Fifty-one fish tissue samples were collected, processed, and shipped from seven sites on the Leaf and Pascagoula Rivers in June. We anticipate receiving results for these samples from the analytical lab performing the analysis in the near future. Personnel continue to collect effluent samples on a monthly basis to monitor levels of 2,3,7,8 TCDD and TCDF in the industry's discharge. A second fish sampling is scheduled for this fall and is to be conducted in October.

### DIOXIN IN THE ESCATAWPA RIVER BASIN

Thirty-two fish tissue samples were collected, processed, and shipped from five sites on the Escatawpa and Pascagoula Rivers in May. Results for these samples indicate a decline in levels of dioxins in fish when compared to results of samples from previous collections. Personnel continue to collect effluent samples on a monthly basis to monitor levels of 2,3,7,8 TCDD and TCDF in the industry's discharge. The second fish sampling effort is presently underway.



## South Carolina

### Meetings

Kathy Stecker represented DHEC at the EPA conference *Enhancing the States' Lake Management Programs* in Chicago, May 5-7. The conference theme was "Strengthening Local Lake and Watershed Protection Efforts". Agency representatives from around the country participated in interactive workshops on state information and education initiatives, and citizen volunteer monitoring programs. Training workshops on lake management curricula and communication techniques were also provided.

Twenty people from around Region IV attended the first planning meeting for the *3rd Annual Southeastern Lakes Management Conference* on June 18. The conference, to be held in Columbia next March 3-5, will focus on "Watershed Management: From Concept to Implementation". The program will also feature technical papers, posters, lake advocacy issues, and student presentations. Deadline for submission of abstracts is November 1. For more information, contact Kathy Stecker at (803)734-5402.

### Lake Studies

The Lake Bowen Clean Lakes Phase I diagnostic/feasibility study final report is just about completed. Lake Bowen's watershed has been targeted for implementation of agricultural BMP's through the USDA Hydrologic Unit Area program. The Phase I report will include recommendations for further action to protect lake water quality.

The Clean Lakes Phase I diagnostic/feasibility study on Goose Creek Reservoir is also nearing conclusion. A determination will be made of the degree to which recreational uses can be restored through control of the lake's extensive aquatic macrophyte community.

Wateree Lake, a 14,000-acre impoundment on the Catawba River, is also the subject of a Clean Lakes Phase I diagnostic/feasibility study. Objectives include determination of the sources of sediment and phosphorus loading to the lake.

In addition to the lake sampling stations established as part of the routine monitoring network, 17 special lake monitoring stations in nine lakes statewide are being sampled for chlorophyll a, nutrients,

DO, and transparency. The data will be used to update the statewide Lake Water Quality Assessment.

### Macroinvertebrates

Watershed Water Quality Monitoring Strategy (WWQMS) sampling is nearly complete in the Catawba-Santee watershed. A total of 40 stations were designated as least impacted or subject to various point source and nonpoint source impacts. Least impacted (ecoregion reference) station screening and sampling is being conducted statewide in 10 subcoregions.

A study on Fishing Creek was completed in response to a York Co. citizens group concern (6/93). Eight stations were sampled in the drainage area (including two in Wildcat Creek). All stations were apparently impacted by nonpoint sources with slight additional impacts detected downstream from a known point source and an industrial runoff area. These stations were included in the Catawba-Santee (WWQMS) sampling effort.

Macroinvertebrate sampling as part of the Whole Effluent Toxicity Characterization of Stormwater Program (Section 104 (b) (3) has been completed (4/93) at 9 stations.

A study was completed on Golden Ck. (Pickens Co. 6/93). Two stations were sampled around the Town of Easley POTW which had been experiencing operational difficulties resulting from a pretreatment violation. After a period of only partially treated effluent discharges, the macroinvertebrate community showed moderate impact.

### Phytoplankton

The Phycology Department has been busy analyzing phytoplankton samples collected for the Clean Lakes Project on a number of major and minor lakes in South Carolina. Progress in completing these backlogged samples was detected.

Reports of algal blooms were diminished from what has been observed in recent years. Perhaps the very hot, dry, and sunny weather this spring and summer actually prevented conditions that promote problem algal blooms?

A wasteload allocation study was conducted for Charleston Harbor and the associated estuarine system. Extensive chlorophyll a samples were taken as a factor in the wasteload model. This sampling possibly was the most thorough investigation to date concerning chlorophyll a concentrations in the Charleston Harbor estuarine system.

### Toxicity

The recent concern about the negative effects of stormwater runoff into receiving waters prompted new NPDES permitting regulations and required stormwater management programs to be implemented for industrial and municipal facilities. The South Carolina Department of Health and Environmental Control (SCDHEC), Water Quality Monitoring Section, received a two year grant from EPA for toxicity testing of stormwater discharges in South Carolina. Results of this study will be used to modify current stormwater permit regulations in reference to toxicity testing.

The study used seven chemical/petroleum facilities that were carefully selected out of twenty suggested facilities. All seven had stormwater discharges into a receiving stream. Sampling schemes were designed which required two yearly dry weather samples and one quarterly rain event sample to be sent to the toxicity laboratory. Using *Ceriodaphnia dubia* and the rotifer, *Brachionus calyciflorus* definitive acute tests and pass/fail acute toxicity tests were performed. Analyses will be performed using SAS Probit model and Fisher's Exact test. For more information, contact Charmaine Flemming (803) 734-4741.

### Miscellaneous

Recently, an employee of SCDHEC, Craig Dukes, sent out a memo to fellow field personnel warning them to be aware of deer hunters. We appreciated the reminder and thought it would also be useful to fellow SWPBA members. The following is a copy of that memo:

Just a reminder: Hunting season for deer opens next Saturday, August 14, across most of the lower portion of the state (basically from Richland County to the coast). The season across the rest of the state opens up in September and October. Deer season in all areas of the state extends until January 1.

Exercise extreme caution if you are going into woods or fields as part of your job. Wear bright colors, especially orange, and avoid brown and tan. More than one hunter has mistaken a white handkerchief (or even toilet paper) for the tail of a deer and has shot.

Also, be aware that much of the hunting in the low swampy areas of the state is done from backroads. Hunters shoot deer as they are driven out of the woods. Often, the shooting is done as the deer crosses the road. In the excitement of the chase, hunters may not see your approaching vehicle and may shoot in your direction. If you observe several cars along the side of a rural road, assume that hunting is underway. Make sure that the hunters see you before driving into their line-of-fire.



# TENNESSEE

Department of Health

Department of Environment and Conservation

The following is a Tennessee Group Summary. Those groups submitting additional information are noted by "See Article."

## Department of Health

**Aquatic Biology Section, (615) 262-6327:** This group of biologists work state-wide and in close association with various sections in the Department of Environment and Conservation. For news on wetlands, NPS and BMP's - "See Article."

## Department of Environment and Conservation

**D. O. E. Oversight, (615) 481-0995:** For nuclear news and other noteworthy events you must "See Article."

**Natural Resources (615) 532-0712:** This section recently completed a wetlands delineation workshop which provided training and updates to the Federal 1987 manual. Through the Water Quality Act, wetlands are considered waters of the state affording them some protection via regulation, and these folks work hard in the Board Hearings to maximize that protection! Exchange of information on wetland criteria development would be welcome.

**Nonpoint Source, (615) 532-0692:** NPS had two successful workshops on toxicity testing and use of the juvenile freshwater mussel, in-situ, for assessments of water and sediment quality. These were conducted by Ms. Laurie Williams and Dr. Steve Klaine, Dept. of Environmental Toxicology and Aquatics, Clemeson University. Austin Peay University in Clarksville, TN, hosted the workshops. -- Recently, members of the group spent a hot, steamy July week collecting data for a dissolved oxygen study in Big Sandy River/West Sandy Creek, tributaries to the Tennessee River. -- Natural Resources and Nonpoint Source will be joining forces to develop a pamphlet on Stream Erosion and Riparian Zone protection/restoration, along with an expanded technical workbook on that subject. A workshop is in the works for November with several experts on stream bank erosion and restoration.

**Planning and Standards Section, (615) 532-0701:** PAS sponsored a Human Health and Ecological Risk Assessment Workshop. Participants represented drinking water supply, wastewater permit writers, environmental epidemiologists, chemists and, biologists. Ecological systems are very sensitive to impact. Protecting these systems ultimately protects human health, however uncertainty, limitations, and measuring endpoints were addressed. -- Recently we acquired the new Water Bodies 3 version. We hope to have it installed and running in the near future. We would welcome comments from those of you who have, or are utilizing this version. -- Phase I of the Normandy Clean Lakes project is shaping up in draft form. Many thanks goes to Susan Noakes, Georgia Department of Natural Resources, Environmental Protection Division, for sending a copy of the Jackson Lake Draft Report for ideas and layout. We will strive to meet your example. -- Joy Broach and Debbie Arnwine attended the Ocean Data Evaluation System/National Fish Tissue Data Repository Workshop in Athens, GA. ODES is a sister database to STORET, except it uses user-friendly menus with on-line help and dictionaries. the NFTDR is a sub-directory of ODES. Currently STORET fish tissue data can be "pulled through" the ODES/STORET bridge to create reports and graphs. The NFTDR format will include sampling and analytical information. -- In July and August PAS members worked in the field with the Nashville Environmental Field Office on two TMDLs within middle Tennessee. Many hours were spent roaming up and down the affected streams searching for the elusive DO sag. The majority of the work and credit goes to the NFO. --

**Updates from the Environmental Field Offices:**

**Nashville, (615) 741-7391:** Every Tuesday during August and September, Nashville personnel have been on a TMDL field ready alert. Two creeks in middle Tennessee, each with a single municipal wastewater plant discharge, were chosen for this project. One plant utilized a batch discharge resulting in visible pulsing of the creek flow even a few miles down stream. Each creek was reconned and will have two time-of-travel dye studies with approximately 6-7 sets of samples and flow measurements. Personnel from the Memphis and Chattanooga Field Offices assisted in some of the field work while learning the art of dye-dropping. Many hours were spent locating the DO sag and monitoring diel effects with a hydrolab. As we PAS members drove off toward the sunset to leave the NFO staff to measure dye into the wee hours,...we felt guilty (not). – Three bioassessments have been completed for the Phase I Normandy Clean Lakes project and will be incorporated in the final report. –

**Chattanooga, (615) 634-5745:** - The "No Vacancy" sign may soon appear in Chattanooga. The Biological Monitoring staff consists of Robert Elliot, Tammy Hutchinson, Greg Russell, and Jerry Fritz. Greg performed biological work in Alaska! Big change, the humidity nearly done him in. Survey work will be furious in Chattanooga.

**Knoxville, (615) 494-6035:** Twenty-one miles of the Little Pigeon River, the West Prong of the Little Pigeon River, and tributaries have been posted due to bacteriological contamination. Visitors are still welcome, however, no fishing, no swimming, and no wading in the Gatlinburg-Pigeon Forge-Sevierville region. – Preliminary results for the mussel survey on the West Prong of the Little Pigeon River indicate fewer species left than the 11 found in a 1985-87 survey (down from the historical 45 species recorded). It took 5 people and several hours to fine living specimens.

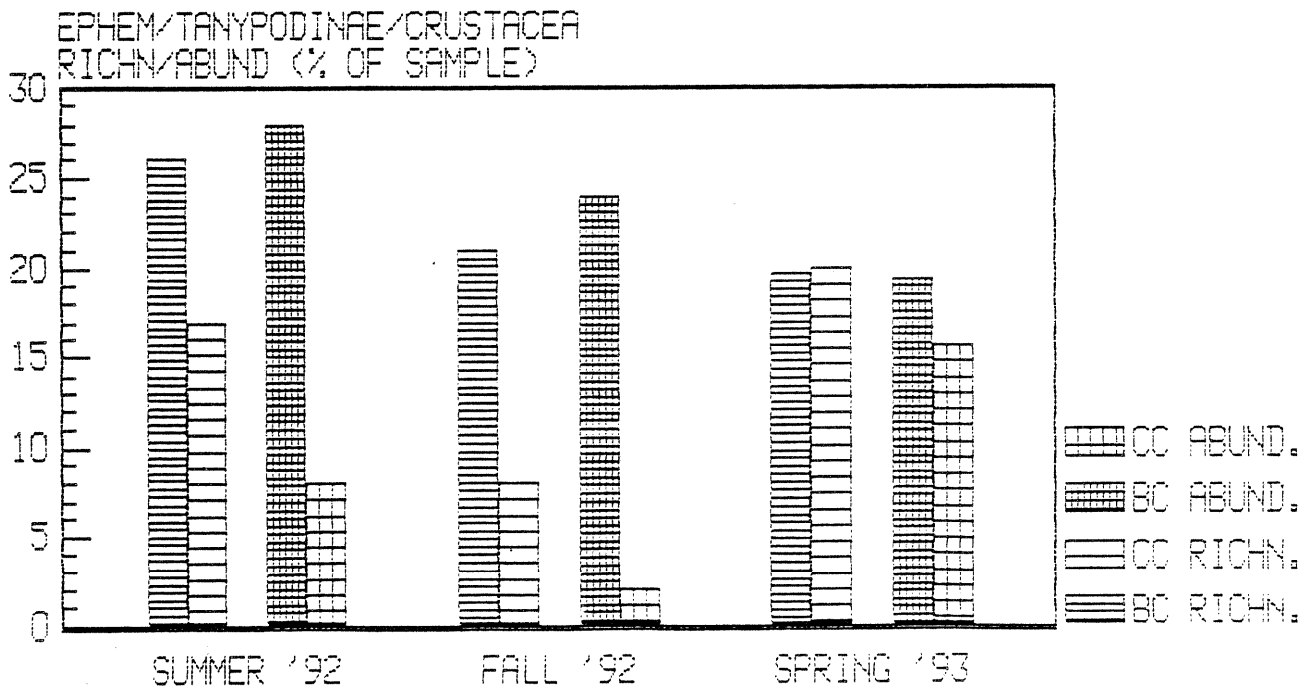
**Johnson City, (615) 928-6487:** Results are in for the Richland Creek survey. Microbiological, chemical, benthic, and fish samples were collected and compared to data collected 10 years earlier. Overall the creek had improved, however, chemical data indicated a problem near a hospital culvert. Soft water (indicative of drinking water) and high levels of fecal coliform bacteria and metals were recovered at this station. Further investigations will determine the source(s).

**Jackson, (901) 423-6600:** At this moment, Jackson personnel are conducting a Reelfoot dissolved oxygen survey, to monitor the DO cycle. Preliminary results indicate a interesting pattern of DO crashes and the oxidation states of metals. In addition, time-of-travel dye studies were completed on 30+ miles of the South Fork Forked Deer River, and several miles on Rutherford Fork near Milan. It appears that West Tennessee streams do not fit the Waste Load Allocation (WLA) model very well. The model seems to predict worse conditions for the slow moving streams than are actually happening. A report on the impact of the spray, Aquasol is near completions. Preliminary results indicate no effect on water quality or the macroinvertebrates living in the affected vegetation. Aquasol appears to break down rapidly, resulting in a slow vegetative die off and minimizing DO crashes.

**Memphis, (901) 543-6695:** A survey is underway to evaluate 12 monitoring stations on similar streams, that run through the same soil type and landuse area. Historical data may reveal an interesting trend since 10 years ago half the roads in the study area had not been built. Findings may result in reduced monitoring stations - all things being equal.

A three-season study of macroinvertebrate communities in two wetland sites near Paris, TN was completed this past spring. The sites were sampled using Hester-Dendy samplers supplemented by qualitative habitat picks in the emergents and sediment. The ten biometrics used showed Beaverdam Creek wetland to be significantly "cleaner" than Clifty Creek wetland. The Shackleford Biometric Scoring System was then applied. Clifty Creek wetland scored in the substantial impairment or the excessive impairment category for all of the six indices utilized, with the Beaverdam Creek wetland site used as a reference. The study suggested that the Beaverdam Creek wetland may be an appropriate wetland reference site for wetlands of other third order streams of similar pH in the ecoregion. Results also indicated a stressed macroinvertebrate community in the Clifty Creek wetland site, especially in the summer and fall seasons. Chemical/physical parameters indicated a likely nutrient overload in the Clifty Creek wetland. Many taxa encountered were not listed in the biotic indices and presented a challenge. Results of the study supported the usefulness of an ETC (Ephemeroptera, Tanypodinae, Crustacea) Index, proposed in "Benthofile", a Carolinas benthic newsletter (7/92), as predictive of unimpacted lentic macroinvertebrate communities. David Stucki, who was the principal biologist on this study, will present his findings at this year's SWEPPA meeting.

# ETC RICHNESS/ABUNDANCE BEAVERDAM CR. & CLIFTY CR. WETLANDS



RECEIVED  
AUG 23 1993

AQUATIC BIOLOGY SECTION - LABORATORY SERVICES  
TENNESSEE DEPARTMENT OF HEALTH

Greeting once again fellow rock pickers, fish zappers and Cladoceran killers! We're getting geared up to attend the festivities in Louisville. We're going to give brief talks on some of the nonpoint source and wetland projects we've been working on. We will also have the NPS posters we exhibited in South Carolina year before last as well as updates on what's happened since then. We'll try to have someone hanging around the poster to answer questions, look for us! The following are summaries of three of the projects we'll be hoping to cover at the meeting.

Nolichucky River Basin Project

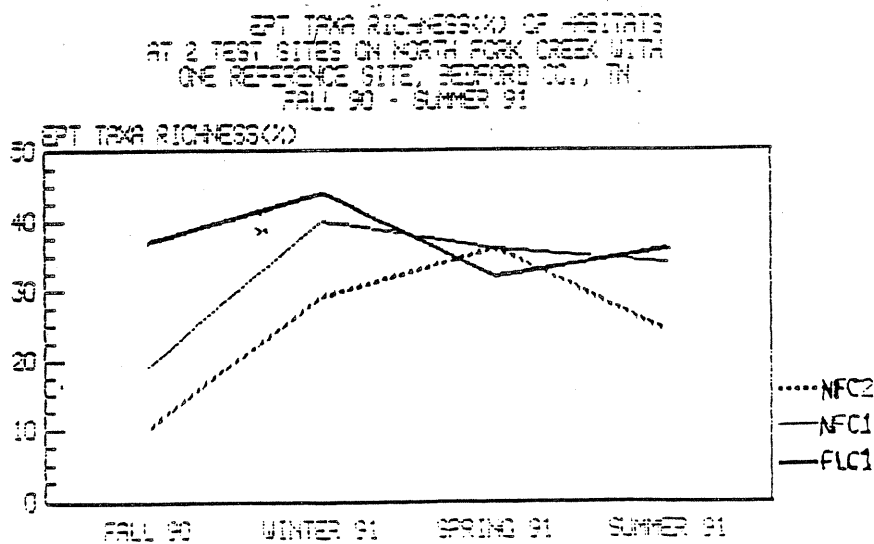
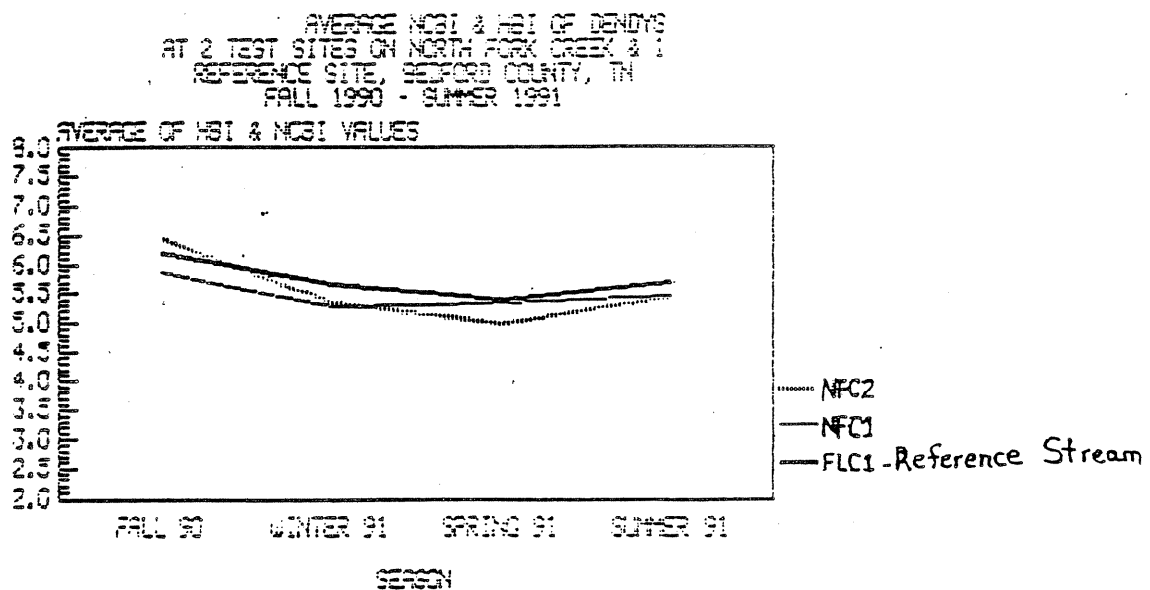
The Nolichucky River basin is located in the Central Appalachian Ridges and Valleys ecoregion of upper east Tennessee. This area has been targeted by state and federal agencies as needing special management practices to alleviate the degradation of water quality due to non-point source pollution. The primary causes of non-point source pollution in the study area are dairy wastes, cropland erosion and pasture erosion. Three sub-watersheds have been selected by the Non-point Source Section in Water Pollution Control (see Don Green ) in conjunction with the Soil Conservation Service to be monitored for water quality after voluntary implementation of best management practices (BMP's) by area dairies. A three season, 5 year monitoring plan consisting of 6 test sites, 1 watershed reference and 1 ecoregion reference was implemented in the Fall of 1990. The Aquatic Biology Section of Laboratory Services has monitored the integrity of the biological community at each of these sites throughout the project's duration to determine the effect of these practices.

All of the test sites exhibited evidence of organic pollution during the first year of biological monitoring. The amount varied per site with the smaller tributaries being the most severely impacted (as expected). Two of the smaller creeks exhibited slight improvement by Summer 1991 possibly due to implementation of BMP's at 3 dairies during the winter. It is hoped that by the end of the project, all the test sites will match or exceed the curves of the watershed reference (which is somewhat impacted). The test streams would not be expected to achieve the standards of the ecoregion reference, however, the basic seasonal trends should be comparable. These types of streams have remarkable recuperative powers due to their fast flow and abundant habitat (when it's not impacted). Once impact from non-point source pollution is lessened, the habitats should recover and once more support a rich diversity of aquatic life. Debbie Arnwine who is the principal biologist in this study will be presenting a paper at this year's meeting.

The Duck River basin is part of the Interior Plateau ecoregion and located in Middle Tennessee. The watershed area is composed of sedimentary limestone with the ground water occurring in solution channels and caves. The Karst terrain provides a vehicle for contamination of water by pollutants. These facts along with improperly installed or malfunctioning human septic systems, confined animal operations and improperly applied fertilizers and pesticides account for increased levels of nitrates and bacteria.

Macroinvertebrate and fish community sampling has been completed for the first two years of a five year project. Analysis of the first year's collection indicate there may be more habitat degradation than water quality impairment. Sedimentation due to erosion and run-off of nutrient laden solids from livestock have seriously impaired the habitats in the streams in this project. Due to the topographical nature of the streams in this area they are able to effect some recovery in winter and spring when water levels are up. However as the seasons progress there is a marked downhill decline in all habitats.

Donna Wingfield is the primary biologist on this project. She will be presenting her findings from this project in more detail at the upcoming meeting.



**MEMORANDUM**

**SUBJECT:** April Monthly Activity Report for the Ecological Support Branch

**FROM:** Delbert Hicks, Chief  
Ecological Support Branch

**TO:** Jim Finger

**Marine Wetland/Water Quality Section**

1. Hoke Howard met with monitoring group for Savannah REMAP project. Accomplishments of the meeting were the selection of target/non-target water bodies, indicator selections, field sampling methods and analytical methods.
2. David Smith conducted an evaluation of the State of Kentucky's biological field and laboratory procedures and facilities. With minor exceptions, the program was viewed as being very professional and the data generated as high quality. The current ESD biological overview of state laboratories is on a 3 year rotation cycle.
3. During the week of April 18 members of the Ecological support Branch conducted a preliminary investigation of timber harvesting activities at a Weyerhaeuser tract near Plymouth, NC. The on-going ESB investigation will attempt to determine if the activities are within silvaculture exemptions as defined by section 404 and have not converted wetlands to uplands.
4. REMAP subcommittee of the Savannah River Basin Project met on April 7th in Athens, GA. A successful meeting was held with Georgia, South Carolina and EPA personnel. This was the first of many meetings to carry out a demonstration monitoring plan utilizing the EMAP strategy of periodically assessing the condition of ecological resources related to use and protection. Accomplishments include: (1) selection of target and non-target waterbodies, (2) definitions, (3) selection of indicators, (4) agreement on field sampling methods, and (5) agreement on analytical methods. Facilitation of other objectives await the arrival of a contractor familiar with the EMAP design.

5. Ron Raschke met with federal and state attorneys and Dean Foods, Inc. representatives in Louisville, Kentucky on April 13th. Ron Raschke served as the federal expert during the plea negotiations related to an ammonia spill and resulting 4-5 mile biotic stream kill.

6. Ron Raschke met with Connie Alexander of the WMD and Dr. Jay Shelton of the University of Georgia to advise about a potential lake monitoring program that the University is interested in undertaking.

7. Philip Murphy, Tom Cavinder, and Bruce Pruitt met with personnel of the EIS preparation relative to South Florida Rock Mining activities. The COE will be the lead agency for coordination of the EIS with EPA contributing to the Section 404 Wetlands Impact and the Water Quality section of the EIS. The possibility of ESD conducting a water quality survey on existing rock pits may develop during the course of the effort. Presently, the EIS Unit requested ESD guidance on the use of approximately \$30K to hire a contractor to gather existing published and gray literature/data on rock pits before going forward with any further planning of field activities.

8. Mel Parsons met with the EMAP data manager for the Louisiana Province in Pensacola, FL to design a data management strategy for the Everglades mercury sampling project.

#### Toxics Evaluation Section

9. Bill Peltier was the chairman of the Workshop on Whole Effluent Toxicity Testing at the First SETAC World Congress held in Lisbon, Portugal. A statement of findings is being written by the Chairman and speakers for distribution among the European Countries.

10. Bill Peltier provided technical assistance to The Netherlands Institute for Inland Water Management and Wastewater Treatment in Amsterdam on EPA's Whole Effluent Toxicity Testing Program.

11. Bill Peltier is arranging the logistics to host the Annual EPA Biological Advisory Committee Meeting on May 11-13, 1993. Biologists from all 10 Regional Offices, Headquarters Program Offices, ORD OEPER and OMMSQA laboratories will be in attendance.

12. Bill Peltier reviewed several reports for EPA Regional, Headquarters and USF&W Offices. Reports were as follows: Toxicity Characterization of Groundwater Samples for the Munisport Site in North Miami Beach, Florida; The Determination and Use of Water-Effect Ratios for Metals; and Sediment Toxicity in Savannah Harbor.



13. At the request of the Water Management Division, Ron Weldon and Kay Millar conducted acute toxicity tests on four separate grab effluent samples collected from ISP Chemical Corporation, Calvert City, Kentucky. Tests were conducted on a control and the 21% effluent concentrations with daphnids and fathead minnows. There was no significant lethality (>50%) to either the daphnids or minnows in any of the four samples tested during the 48-hour exposure period.

14. Ron Weldon and Kay Millar conducted a 48-hour acute toxicity test with daphnids using laboratory water and copper. The results will be used to calculate Water Effect Ratios for copper on the Eastanollee Creek near Toccoa, GA.

15. Ron Weldon conducted a Performance Audit Inspection on Guardian Systems laboratory located in Leeds, AL. The audit was conducted with WMD personnel and two state biologists. The laboratory conducts toxicity tests for NPDES permittees.

16. Kay Millar met with two scientists from the Madrid Development Institute, Madrid, Spain. She provided technical assistance to them concerning industrial wastewater toxicity testing.

17. Jerry Stober attended EPRI Peer Review Panel Meeting in Tarpon Springs, FL of the national mercury research studies currently underway. He presented a talk on the Everglades Ecosystem mercury conceptual model and study plan.

18. Jerry Stober presented a talk on the Everglades Ecosystem Mercury conceptual model and study plan emphasizing EMAP to a National Governors Workshop on the use of EMAP by the States.

19. Jerry Stober presented a talk on the mercury risk issues from a global, national and regional perspective to the Eighth Annual Regional Risk Assessment Conference in Atlanta.

20. Jerry Stober developed a protocol with four laboratories for a range finding test of ultra trace mercury analysis with Florida International University, EPA ESD-Athens, EMSL-Cin, and Battelle PNL.

21. Dan Scheidt completed a document titled "A Compendium of Committees and Groups which include Federal Agencies and are involved in Environmental Issues in South Florida". The document was prepared at the request of the Water Division and was distributed for comment to 38 individuals with other agencies or interests that are involved in South Florida environmental issues.

22. Dan Scheidt made a presentation in Atlanta on April 22 regarding the South Florida Mercury Project to the Air Monitoring

Workshop sponsored by Region IV. The workshop was attended by about 70 individuals from various federal, state or local agencies or other entities involved with air monitoring.

23. Dan Scheidt reviewed the study plan "Health Effects of Mercury Among the Miccosukee Tribe: submitted by the Centers for Disease Control to Region IV. Written comments were sent to the Water Division, as requested.

24. Phyllis Meyer, Philip Murphy, Dan Scheidt, Candace Halbrook, Don Lawhorn, David Smith and Mel Parsons attended a Global Positioning System (GPS) training course in Athens April 29.

25. Phyllis Meyer completed the work and safety plan for VA/Hyde Park Neighborhoods, Augusta, GA for preremedial investigation, and later assisted in the fish collection and sample preparation.

**MEMORANDUM**

**SUBJECT:** May Monthly Activities Report for the Ecological Support Branch

**FROM:** Delbert Hicks, Chief  
Ecological Support Branch

**TO:** Jim Finger, Director  
Environmental Services Division

**Marine Wetland/Water Quality Section**

1. Hoke Howard completed taxonomic identification of macroinvertebrates collected from the 4 sites on NC methods study; the study is a joint effort by State, Federal and University staff in evaluating methods comparison, time allotment and biometrics utilized in the data interpretation. Hoke Howard transmitted data tables, time appraisal and habitat evaluation to the state of NC for inclusion into the joint NC methods study.
2. During the week of May 2-7, 1993, Philip Murphy, Delbert Hicks, Mel Parsons, and Don Lawhorn attended the EPA, OSV Anderson Chief Scientist (CS) training session in Baltimore. The session was required training for all OSV Anderson existing, and candidate, chief scientist. It was sponsored by OCPD, Headquarters, and consisted of lectures and practicums on such topics as planning and reporting requirements, health and safety, equipment availability and selection, navigation and position, shipboard communication, and emergency response requirements. Murphy, Hicks, and Parsons received immediate designation as qualified Chief Scientists and Lawhorn enters the program as a candidate CS.
3. On June 24, 1993, Philip Murphy attended at meeting at the South Carolina Wildlife & Marine Resources lab, Charleston, South Carolina, for the purpose of discussing the South Atlantic Marine Research Board's draft research plan with various marine program managers. Attending were sea grant college directors from Georgia, North and South Carolina along with other Federal and State ocean and near coastal program directors which may have input to the plan. The meeting was one of several to be held

from North Carolina to south Florida, Puerto Rico and the Virgin Islands for input to the plan before it is finalized.

4. Mark Koenig, Tom Cavinder and Archie Lee, conducted a reaeration study on a section of the Chattahoochee River below Atlanta on May 26 and 27, 1993. The State of Georgia will utilize the study results in waste load allocation modelling to evaluate potential discharge control strategies for the Chattahoochee River.

5. Don Lawhorn instructed at the EPA Diving Training Course. The course covered variable volume dry suits, diving accident management, diving physiology, oxygen administration, oxygen enriched air, hazardous waste, and in water training with various pieces of equipment under various conditions. There were 26 candidates which attended and only 2 failed to complete the course. There were 6 divemaster candidates and all completed the course. The course was attended by EPA, other federal agencies, state, and county representatives.

6. Algal assays started or completed in May:

Walker Creek, GA  
Taylorsville Reservoir, KY  
Lake Eufaula, AL  
H. Henry Neely Reservoir, AL  
Hearn Pond, DE

7. Sydney Bacchus prepared a memo summarizing reconnaissance of the Weyerhaeuser wetland silviculture property in Plymouth, N.C., April 13 through April 16, 1993. Objectives were to provide a synopsis of the preliminary evaluation of hydrology, vegetation and soil characteristics of portions of the property. Composite soil samples from the reconnaissance of the property were analyzed and plant specimens collected were verified. The objectives were to determine if portions of the property met the 1987 vegetative criteria required for a wetlands determination at the federal level and to evaluate the potential that previous or proposed silvicultural activities have contributed to or may contribute to conversion.

#### Toxics Evaluation Section

8. ESB spent much effort in planning, coordinating, and hosting the Annual EPA Biological Advisory Committee Meeting. Biologist representing 9 of 10 Regional offices, four ORD-ERL laboratories, two ORD-EMSL laboratories and several HQ program offices were in attendance.

9. At the request of the Water Management Division, Ron Weldon and Kay Millar conducted toxicity tests on 24-hour composite

samples of effluent collected from Mulberry WWTP, Mulberry, FL. Acute 96-hour static renewal toxicity tests were conducted on a control and the 100% effluent concentration with daphnids and fathead minnows. The 33% effluent concentration and a control were also used in chronic toxicity tests with the daphnids and fathead minnows. Results of these test will be reported after statistical analyses of the data.

10. Ron Weldon and Kay Millar provided USEPA Headquarters personnel, Jackie Romney and Ruby Cooper, technical assistance on whole effluent toxicity test methods.

11. Dan Scheidt met with USFWS personnel May 3-4 in Daphne, Alabama concerning the proposed Mobile River/Tombigbee River Study and USFWS concerns. A field recon was conducted along with representatives from CIBA-GEIGY Corp. and Olin Corp.

12. Dan Scheidt represented the Agency's ecological concerns at a public hearing May 25 at Aberdeen, North Carolina. The hearing was about the Agency's proposed groundwater remediation for the Aberdeen Pesticide Dumps Site.

13. Dan Scheidt gave a presentation May 19 on the Everglades/South Florida system and the mercury issue to the ESD mercury focus group.

## **MEMORANDUM**

**SUBJECT:** June Monthly Activities Report for the Ecological Support Branch

**FROM:** Delbert Hicks, Chief  
Ecological Support Branch

**TO:** Jim Finger

### **Marine/Wetland & Water Quality Section**

1. Hoke Howard assisted in replanting aquatic plant species at the Campbell Project. The plantings are for a newly-constructed wetland system which is part of a non-point source waste management plan for this swine operation. ESB staff will also be conducting the monitoring phase to evaluate the success of BMP's on this site.
2. Hoke Howard prepared a synopsis of findings for the Key project; Oconee RC&D requested this to assist them in compiling a station report on this demonstration project. ESB staff conducted all monitoring on this project (Dec '89 - July '92) which evaluated the use of a BMP constructed wetlands in assimilating dairy wastewater.
3. Hoke Howard and Tom Cavinder conducted a reconnaissance survey of Black Creek (Gadsen, AL). The study requested by Water Management Division in Atlanta will be conducted this summer with the purpose of determining the status of environmental health effects from a individual discharge, Gulf States Steel.
4. The Savannah River Initiative is progressing slowly. The region and states have completed their tasks and are awaiting for approval of the planning contract. Hopefully, a contractor will be assigned by the first or second week in July. Ron Raschke, Region 4's Project Leader, developed an algal assay indicator rationale and justification paper for review by Dr. Craig Barber of AERL. He awaits review comments by Dr. Barber.
5. Ron Raschke has been working with Connie Alexander of Region 4 and Dr. Jay Shelton of the University of Georgia on a state-wide lake volunteer monitoring strategy utilizing other state university/college cooperators.

6. A draft of Duke Power Company's 316 (a) Lee Steam Station was reviewed by Ron Raschke. Comments were sent to the WMD. The company wanted to include periphyton. Raschke concurred with their proposition, but we have reservations believing they will adversely impact 1.5 miles of stream from bank to bank.

7. Archie Lee and Tom Cavinder met with representatives of Water Management Division to discuss accomplishments on the FY93 workplan. Several projects have been completed, while many more trips are scheduled for July and August. Preliminary discussion on the format of the FY94 workplan were also conducted. Water Division has computerized the workplan which will make reporting progress and activities easier in the future.

8. Mark Koenig, Archie Lee and Tom Cavinder travelled to Augusta, GA June 14-17, 1993 to conduct a reaeration study on the Savannah River. Personnel from SC DHEC and Water Management Division also assisted in the study. Results of the reaeration study will be used in waste load allocation modelling for the Savannah River.

9. The Region 3 dive unit requested the assistance of Region 4 in the collection of samples, photograph and diver observation of the artificial reef complex located in Delaware Bay, Delaware. These tasks were accomplished by Don Lawhorn, Mel Parsons, Candace Halbrook, and Gary Collins. This is the fourth year Region 4 has participated. They requested assistance in August, but due to scheduling conflicts we will not be able to assist. We have already been requested to assist in next year's study in June and August of which will be the last and final year of a five year study.

### Toxics Evaluation Section

10. Alan Auwarter delivered final reports of biological treatability studies conducted by ESAT personnel to the Munisport remedial project manager. This phase of work needed to be finalized in order that feasibility work leading to selection of remedy progress.

11. Alan Auwarter commented on study plans for ecological work planned for the Townsend (Homelite) Saw Chain site. Also met with Jim Maudsley, ESAT, company and consultant representatives as well as the site RPM and concerned natural resource trustees to discuss finalization of a mutually agreeable plan of study. The Toxics Evaluation Section will provide oversight of Aquaterra and Sheely Environmental, Townsend consultants, while this study is being conducted.

12. Alan Auwarter delivered study plan comments to Shawn Leuchens, Sherwood Medical Site RPM. Later this summer, the Toxics Evaluation Section will provide oversight of the PRPs contractor, Weston, during sampling activities on sight.

13. Alan Auwarter and Phyllis Meyer joined the Caldwell Leather Lace Site RPM, Beth Brown, oversight consultants from Weston, and Kentucky Department of Environmental

Protection staff on site in Auburn, KY to conduct a reconnaissance to lay the groundwork for a brief ecological study to determine possible effects from landfilled leather scrap and related materials. This study may take place within the month.

14. Phyllis Meyer participated in the planting of aquatic plant species in the wetland on the Campbell Farm as part of a non-point project to evaluate BMP's for waste management on a swine operation.



MEMORANDUM

**SUBJECT:** July Monthly Activities Report for the Ecological Support Branch

**FROM:** Delbert Hicks, Chief  
Ecological Support Branch

**TO:** Jim Finger

Marine/Wetland and Water Quality Unit

1. Hoke Howard represented ESD on an environmental panel at the Georgia Pork Congress, Savannah, GA. Hoke gave a presentation on ESD monitoring activities and technical assistance related to non-point source projects.
2. Hoke Howard collected aniotic clams, *Corbicula*, at the Hudson River for organic/metals analysis; bioconcentration studies are planned for Black Creek (Gadsen, AL) study and the clams will be used as test organisms. Samples from the Hudson River were tested to validate using this population for bioconcentration studies at Black Creek.
3. The Savannah River EMAP contract was approved. The contractors workplan was accepted upon the condition of two changes concerning travel and total budget. The contractor agreed to the changes and will begin task 2 the first of August. Information on the R-EMAP subcommittee decisions regarding target sites, methodology, etc. was sent to the contractor before their first scheduled meeting with the subcommittee.
4. Ron Raschke analyzed and produced graphics for algal assay laboratory concerned with shortening algal assay from 14-day to 7-day incubation time. The data indicates it can be done with a small predictive error.
5. Don Schultz completed the following algal assays.

North Carolina Lakes  
West Point Reservior, GA  
Hearn Pond, Delaware  
Lake Eufaula, AL  
H. Henry Neely Reservior, AL

## Toxics Evaluation Section

6. Bill Peltier gave a presentation to the EPA Science Advisory Board (SAB) in Washington DC on the rationale for the selection of test organisms, test summary conditions and test acceptability for the EPA/COE draft publication "Evaluation of Dredged Material Proposed for Discharge in Inland and Near Coastal Waters - Testing Manual". The SAB is to submit their review comments and recommended changes to the EPA/COE workgroup for possible incorporation into the final publication.

7. Much time was spent editing the EPA acute and short-term chronic toxicity test manuals. Edited portions of each manual were sent to EMSL-Cincinnati and ERL-Duluth for their review. Computer diskettes were also sent to the EPA's contractor, Dynamac Corp., Washington DC, who is responsible for preparing camera ready copies for publication. Funds for publication have been committed for an August 27th completion date.

8. Bill Peltier completed the "Statement of Findings" for the March 28, 1993 workshop on "Whole Effluent Toxicity" (WET) held in Lisbon, Portugal. Speakers, representing four European countries, one South American country and the U. S. were involved in the workshop which was chaired by Bill Peltier. The "Statement of Findings" is to be used as a guide in the development of international WET programs.

9. Bill Peltier reviewed and recommended changes in the draft EPA ECO Updates: "Using Toxicity Tests in Ecological Assessment" and "Catalogue of Standard Toxicity Tests for Ecological Assessment". Recommended changes are to be made by the EPA contractor, the Cadmus Group, Inc., Peterborough, NH.

10. Bill Peltier coordinated the metal toxicity testing with fathead minnows, conducted by the Ecological Support Branch staff, with ORD staff at the ERL-Duluth and ERL-Narragansett laboratories. Arranged for metal analysis, through EPA OST staff in Washington DC, to be contracted to the University of Wisconsin-Superior. Results of the toxicity tests are to be used by OST Standards and Applied Science Division for establishing new aquatic life criteria for fathead minnows.

11. At the request of USEPA Headquarters Office of Water, Ron Weldon and Kay Millar conducted 96-hour static renewal acute toxicity tests with fathead minnows on six different metals. Six separate acute sets were conducted on 50 mg/L hardness laboratory water spiked with copper, zinc, lead, nickel, cadmium and silver. Results will be calculated when actual metal concentrations are determined by a contract laboratory. The information will be used by Headquarters to reevaluate water quality criteria for metals.