



President's Letter,

Kentucky is finally having a real winter this year. We had snow on the ground for 3 weeks straight over the holidays and have had more snow since. December was very cold and January was not much warmer. February, however, has seen all the extremes, from freezing to 70° and back again. I keep telling myself this cold is great, that there will be fewer allergens come spring and fewer mosquitoes come summer. We shall see. However, we are still considered to be in a drought throughout most of the state.

Neil Medlin and North Carolina deserve one last final thanks for such a great meeting last fall. Their bills are settled and the leftovers have been passed along to us in Kentucky. Here's hoping we can come up with some meaningful interactions in 2001 as well. Neil is still working on the last update to the SWPBA by-laws and will send them around as his final presidential duty when he is ready.

We want to give you some heads up about our 2001 meeting set for Bowling Green from October 30 through November 1. First of all, room rates will be much higher than last year. Fall in Kentucky is a peak tourism time. The cost is \$79.00 per night. However, that cost will remain the same for 1 – 4 occupants per room. Also, 2 breakfast passes per night will be included in this cost. Breakfast normally runs \$5-6.00 at the hotel. I hope this is worth it to you all. The passes were thrown in for only \$2.00 more per night. We are furiously working on getting vendor support to try and offset some costs of the banquet and the rest of the meeting. The usual support is with us again, thank you YSI and Hydrolab. The Kentucky Division of Water generously has paid for the Convention Center meeting rooms. Sorry if this is too much information for you, but we (local arrangements committee) all thought you should start planning now for the cost of the meeting. Reservation deadline will be 30 days prior to the meeting. Brochures will be available some time in May.

Mark your calendars now, the dates are official.

- October 30 – November 1, 2001
- University Plaza Hotel and Convention Center
- Bowling Green, KY.
- Banquet and **Halloween Costume Party** October 31. Prizes for best costumes to be awarded!

The Mammoth Cave trip is still a strong probability. Depending on some scheduling issues, it may have to be on Monday evening, October 29. (It may be on Tuesday evening, we won't know until closer to meeting time). We are also scheduling a hydropsychid caddisfly workshop, as well as a biostatistics workshop. There, now you are informed of many possibilities and all the expensive news. Panic now, get over it and we'll see you in Bowling Green in October.

A few notable changes occurred here in Kentucky at the end of December. Lythia Metzmeier, long-time SWPBA member defected for Texas. Also, Charlie Roth abandoned the Bioassay Section for the Louisville Regional Office. And Denise Moyer, one of our newer biologists, is leaving for Virginia in March. We are in the process of filling those positions. See the state report for details.

Sincerely,

Susan Cohn, 2001 President

NEWS FROM ALABAMA

The Department's surface water quality monitoring program was given high marks recently by the U.S. Environmental Protection Agency (EPA). "Optimally using resources", and "effectively targeting available resources to high priority monitoring efforts", were some of the comments written in the *ADEM Surface Water Monitoring and 303(d) Listing Evaluation*. The evaluation was prompted by 1998 litigation requiring the EPA to evaluate and make recommendations regarding Alabama's water quality monitoring and assessment program. The ADEM's Water Quality Monitoring Program was also praised for being "responsive to changing needs" and "providing significant geographic coverage of state's waters".

Reservoir Water Quality Monitoring (RWQM) Program

The ADEM recently adopted lake-specific water quality criteria to enhance nutrient management in lakes. The goal of the criteria is to establish lake nutrient targets necessary to maintain and protect existing uses. The targets will be expressed as chlorophyll_a criteria in order to address the biological effect of nutrients to lakes. Initially, criteria have been developed for Weiss, Harris, West Point, and Walter F. George Reservoirs with criteria for the remaining eutrophic reservoirs to follow. Criteria will eventually be developed for all publicly owned lakes in the state.

An intensive water quality survey of Coosa, Tallapoosa, and Alabama River reservoirs was completed during October 2000. Fifty-one tributary embayments of these reservoirs were monitored during April, June, and August. Thirty-three mainstem reservoir locations were monitored monthly April-October to collect additional data needed for development of lake-specific water quality standards. Algal growth potential tests were conducted on samples collected during August from thirty-nine stations on these reservoirs.

Seventeen mainstem reservoir and tributary embayment locations in the Black Warrior River basin were monitored once during August in accordance with the two-year monitoring rotation of all lakes in the state.

Completion of the draft report for the 1999 Intensive Water Quality Survey of the Chattahoochee and Conecuh River Reservoirs is scheduled for February 2001.

An intensive water quality survey of thirty-three mainstem reservoir and tributary embayment locations in the Tombigbee and Escatawpa Rivers basins is scheduled to begin March 2001 with reconnaissance of sampling locations. Sampling will be conducted monthly April-October at all locations.

For further information on the RWQM Program contact Fred Leslie at (334) 260-2752 or fal@adem.state.al.us

Fish Tissue Monitoring Program

Scheduled fish collection for fall 2000 has been completed and the lab is now analyzing tissue samples. Waterbodies sampled in this most recent effort included: Claiborne, Dannelly and Jones Bluff Reservoirs of the Alabama River; Weiss, Neely Henry and Lay Reservoirs of the Coosa River; Thurlow, Yates, Martin and Harris Reservoirs of the Tallapoosa River; four embayments of Guntersville Reservoir Mud, Short, Town, and Brown's Creeks. Sampling for this fiscal year also included three sites downstream of bleached kraft paper mill discharges as a supplement to required NPDES dioxin monitoring. In all, a total of 28 sites were sampled with approximately 396 fish collected. For further information on the Fish Tissue Monitoring Program contact Chris Harman at (334) 260-2751 or cdh@adem.state.al.us.

Point / Nonpoint Source Assessment Programs

The FY2000 NPS Screening Assessment of selected subwatersheds in the Alabama, Coosa and Tallapoosa basins is complete. Drafting of the final report is in the initial

stages. For more information contact Chris Smith (Tallapoosa Basin), Lisa Houston (Alabama Basin) or Vickie Hulcher (Coosa Basin) at (334) 260-2700

Initial screening efforts are underway for the FY2001 Screening Assessment of the Escatawpa, Upper and Lower Tombigbee, and Mobile River Basins. As in past years, information from the Soil and Water Conservation District's subwatershed assessments was used to rank the subwatersheds based on the estimated potential for NPS impairment. EPA landuse maps will assist biologists with study-site selection within each of the targeted subwatersheds. Reconnaissance will begin in March to select the final list of sites. EPT family-level screening assessments, habitat quality evaluations, and measurements of field parameters will be conducted during May and June at the study and applicable ecoregional reference sites. For more information contact Vickie Hulcher.

Reference Reach Program

Like most of our other programs we are in the planning phase. We will be coordinating our reference site sampling with the subregions included in our NPS and 303(d) sampling efforts. Additional information can be obtained from Vickie Hulcher (vjh@adem.state.al.us).

Staff News

We say good-bye to Chris Harman as he transfers to the Lee County Health Department in Opelika, AL. Chris has been our fish tissue expert, and was instrumental in developing our Section's Fish IBI capabilities. He will be missed!

Florida News

Algal Biology Projects

The Algal Biology Subsection of the FDEP Biology section performs periphyton and phytoplankton analyses on surface waters in support of many different projects. A large portion of our workload since 1994 has been periphyton and phytoplankton identification for the South Florida Water Management District (SFWMD) in support of the Everglades Restoration Project. The areas for which we have performed identifications are Water Conservation Area 1 (Loxahatchee Wildlife Refuge), Water Conservation Area 2A, Water Conservation Area 3A, Taylor Slough and Shark River Slough in the Everglades National Park, Rotenberger Wildlife Management Area, and mesocosm studies in WCA1, WCA2A, WCA3A and Taylor Slough.

We also do phytoplankton analysis for a large number of lakes throughout the state that have been collected by our DEP District offices in support of their Lakes Projects, the DEP Ambient Monitoring Network, and the St Johns River Water Management District's monitoring of Lake Jesup in Seminole County. The Central Biology Laboratory and the DEP Districts have been sampling lakes throughout the state since the summer of 1993. The Ambient lakes sampling was initiated last year. In the last year we have added a separate diatom clearing and identification to our phytoplankton analysis in an effort to take more phytoplankton diatoms to species. We hope to use this information to develop an algal index for lakes.

Some of the other projects we support with our algal identifications are a study of Escambia Bay phytoplankton being conducted by EPA Gulf Breeze, monitoring of the algal community (and algal blooms) in the St. Johns River by the DEP Northeast District, a wetlands study being conducted by the University of Florida, and our Fifth Year Bioassessment Studies for facility permit renewals.

Liz Miller of the Algal Biology subsection can be contacted via email or phone.

Email: Elizabeth.B.Miller@dep.state.fl.us Phone: 850-921-9826

Toxicology Subsection

The FDEP Toxicology sub-section of the Biology section routinely performs acute toxicity bioassays with both freshwater and saltwater fish and invertebrates. Less frequently, chronic bioassays are performed with freshwater fish, invertebrates, and algae. The toxicology section cultures all of the test species used in the acute and chronic bioassays.

The toxicology section was inspected for NELAC certification in January 2000, and will be NELAC certified when the overall-laboratory certification process is finalized. During the spring, summer, and fall of 2000, the toxicology section performed a number of tests utilizing the USEPA's Water-Effect-Ratio guidelines. These tests are being used as an aid in developing State of Florida WER guidelines. Should any SWPBA members/states have WER experience or guidelines in place, we would appreciate hearing from you.

Marshall Faircloth of the toxicology section can be contacted via email or phone.

Email: joseph.faircloth@dep.state.fl.us Phone: 850-921-9820

Central District

- **Basin management cycle** – In the Ocklawaha basin, many lake bioassessments in watershed are planned; a list of target water bodies is being formulated, with TMDL waterbodies given high priority; and the governor has made the removal of Rodman Dam a priority.
- Recent water chemistry sampling at Daisy Creek (a tributary of the Ocklawaha River) showed very elevated nutrient (TP > 1.9 mg/L and ortho-P > 1.3 mg/L) and coliform bacteria levels. This TMDL water body is one of the worst in the upper Ocklawaha

River drainage in terms of water quality. In August, Central District personnel plan to carry out a biological and water chemistry survey at five sites in the watershed.

- BAWWG (Biological Assessment of Wetlands Workgroup) meeting will be held in Orlando, May 14-16. It will include tours of several area wetlands, including the one Dana Denson reported on at last year's meeting in Atlantic Beach. For information on BAWWG, see

<http://www.epa.gov/owow/wetlands/bawwg/>

Information on the meeting can be accessed at

<http://www.epa.gov/owow/wetlands/bawwg/agenda2001.html>.

- Water quality reports prepared by FDEP Orlando staff are available via the Central District homepage at:

<http://www.dep.state.fl.us/cd/>

Included are brief *ecosummary* reports, as well as longer basin study reports.

- Concern is rising about elevated nitrate levels in many of Florida's springs. Central District surface water monitoring personnel are involved in a study of water quality at and near one of the state's most famous, Silver Springs near Ocala. Sampling will take place four times, two during the dry season and two during the wet season (*whenever that is going to be!*). It is hoped that the results will show what effect local land use is having on this first-magnitude spring, as well as the inputs from tributaries to the Silver River (spring run).

- The following paper was recently published regarding a disjunct, probably relict population of *Pycnopsyche indiana* in the Florida peninsula. Contact Dana Denson if you would like a reprint:

Rasmussen, A. and D. Denson. 2000. Range extension, ecological notes, and new records of *Pycnopsyche indiana* (Trichoptera: Limnephilidae) from Florida.

Entomological News 111(5): 359-366.

- The phytoplankton species *Cylindrospermopsis* has become a very high profile issue. Newspaper articles in Central Florida have resulted in numerous inquiries from the public regarding the presence of this algae in area water bodies. Central District personnel have been searching FDEP's biological database for records of the toxic organism in area lakes in order to answer public concerns more readily.

Statewide

- preliminary LCI report done; modifications on trophic LCI needed
- biocriteria meeting habitat assessment and biorecon QA tests in recent months; biocriteria committee website:
<http://www.dep.state.fl.us/water/Slerp/bio/bcmeet.htm#mtgsums>
- wetland biocriteria development ongoing with help from UF
- basin rotation cycle

FDEP Southwest District, Watershed Management and Assessment Section

Watershed studies

1. Little Manatee River. In March 2000, WMAS staff, with assistance from other FDEP sections and local governmental agencies, completed the field collections for a seasonal water quality study and biological survey of the North and South Forks of the Little Manatee River. The forks are located in Polk and Hillsborough counties, southeast of Tampa. Land use varies from phosphate mining in the headwaters to row crops and citrus and cattle ranching in the lower reaches. A preliminary study in 1996 revealed the presence of two pesticides in a few sediment samples. The current study was designed to reflect the possible effects of land use practices on water and sediment

quality and the biological community in both forks. Data are currently being processed and analyzed.

2. Horse Creek. In June 2000, WMAS staff with assistance from other DEP sections and local governmental agencies, began field collections for a seasonal water quality study and biological survey of the Horse Creek watershed. Horse Creek is a major tributary of the Peace River. It originates in southwestern Polk County, traverses portions of Manatee, Hillsborough, and Hardee counties, and joins the Peace River in DeSoto County. The study was designed to generate a baseline ecological characterization of the Horse Creek watershed.

Biocriteria Development Studies

1. Lake Condition Index (LCI). WMAS staff monitored thirteen lakes during the 2000 summer-early fall index period. In addition to water and sediment chemistry sampling, they performed a “systematic vegetative survey” at each lake. This process of determining the plant species present in and around the lake is a new assessment tool currently being developed by the FDEP Biocriteria Committee.

Analysis of statewide data has shown that the signal of impairment derived from the benthic macroinvertebrate monitoring is weak for peninsular Florida lakes that are higher than 40 Pt-Co units. The vast majority of lakes located within FDEP's Southwest District are higher than that specific color threshold. It is hoped that the vegetation survey will show a stronger signal of impairment than benthos for highly colored systems. To help refine and calibrate the “systematic vegetative survey” assessment tool, WMAS staff collected accompanying benthic macroinvertebrate data from nine of the thirteen lakes. Additional lake monitoring for method testing will be performed beginning in early spring 2001.

2. Stream Condition Index (SCI). Data are being collected from established fixed reference sites and test sites (sites of unknown impact) to support the continued

development and refinement of the SCI. Seven reference sites and twenty-six test sites will be sampled by the end of June 2001.

Baseline Studies

1. Pithlachascotee River. In February 2000, sediment and benthic invertebrates were sampled at twenty sites in the mouth of the Pithlachascotee River, where it is subject to urban runoff and commercial boating activities. The Pithlachascotee River begins at Crews Lake, in western Pasco County, and flows about thirty miles southwest to Miller's Bayou. In its downstream estuarine reaches, it flows through the cities of New Port Richey and Port Richey and the highly developed coastal communities of southern Pasco County. The primary goals of this project are to characterize sediment, biological, and physicochemical qualities at the mouth of the Pithlachascotee River and to attempt to correlate sediment quality with benthic macroinvertebrate population integrity. Data are currently being analyzed.
2. Bishop's Harbor. In March 2000, sediment, benthic invertebrate, and physicochemical data were collected at eight sites in Bishop Harbor. Bishop's Harbor is in Manatee County on the west coast of Florida, about five miles north of Terra Cia Bay. It is part of the Terra Cia Bay Aquatic Preserve and is an Outstanding Florida Water. The project's primary goals are to create a baseline characterization of the sediment, benthic invertebrate, and physicochemical qualities of Bishop's Harbor before further development occurs in the watershed. Data analysis will begin in 2001.

Georgia Department of Natural Resources
Environmental Protection Division
Water Protection Branch
Watershed Planning and Monitoring Program

Well, no matter which calendar you profess to follow, the New Millennium is here! Welcome to 2001. Those field books and lab notes are going to continue to look a bit strange with "02/02/01" being written in them as entries this year. It doesn't get any better for 9 more years, so get used to it.

Our sincere thanks go out to North Carolina for acting as host state for this past fall meeting. The accommodations were good, the meeting seemed to be well run, and there was ample time to rub elbows and exchange ideas, even with the unusual political events unfolding on the television in the background. The seafood banquet was great. It's always convenient to have so many of the activities located at the hosting location. We finally have a US President, don't we?

We're already laying plans for the summer sampling season here in Georgia. It never really ends any more, with all that we do. There will be lots of lake work to go around this year, with basin lake work focusing on the Coosa-Tallapoosa-Tennessee Basin Group. Lake standards and special projects will keep us afloat, too. TMDL work continues, with new staff on board to help manage the load. Read on to see what's up here in Georgia for 2001.

Significant Activities:

On January 12, 2001, the Director issued the General Permit for Water Treatment Plants filter backwash discharges. On this same date, approximately 75 facilities were also covered under this permit.

During the month of December, nine consent orders were issued and penalties in the amount of \$129,125 were collected for water quality violations.

During the month of January, ten enforcement orders were executed statewide with noncompliant facilities. Also during January, a total of \$12, 150 was collected in negotiated penalties. In addition, the City of Atlanta submitted a check in the amount of \$240, 817 as a stipulated penalty to address noncompliance with the Atlanta Consent Decree.

The first ever Rivers Alive Corporate Sponsorship Recognition Event was held on Tuesday, January 30, 2001 at the Roswell Landing, in Roswell. Among the 56 guests present were speakers Mayor Wood of Roswell and US Representative Johnny Isakson. Fourteen corporate sponsors were recognized for their contribution towards helping to preserve and protect Georgia waterways Representative Isakson and Harold Harbert presented the awards to the corporate sponsors.

Draft River Basin Management Plans for the Savannah and Ogeechee Rivers were presented to and discussed with the local advisory committee members in January.

On January 23rd, the draft NPDES Storm Water Phase II Rule changes were presented to the DNR Board. These Rule changes are necessary to allow consistency with the federal NPDES requirements. The new Phase II regulations address storm water discharges from small municipal storm sewer systems, provide an exemption for certain Phase I industrial activities, and address construction sites that disturb from one to five acres. The Rule changes were announced in a February 2nd Public Notice, and a Public Hearing is scheduled for March 6th.

Bob Ringer made a presentation to representatives from the Army Corp. of Engineers, U.S. Department of Transportation, U.S. Fish and Wildlife Service and Georgia EPD on January 11, 2001. The presentation consisted of changes to the Georgia Erosion and

Sedimentation Control Act (as a result of amendments made in 2000), and included a discussion of changes to the stream buffer variance rules, mandatory fines and definitions. He also provided the attendees with the new checklist for evaluating stream buffer variance requests and the handout of comparison/contrasts between the General Storm Water Permit NPDES GAR100000 and the Georgia Erosion and Sedimentation Control Act.

The WPB participated in an executive briefing on the status of the federal court action on total Maximum Daily Loads. The meeting, for Key State Department Heads, was requested by Governor Barnes and organized and chaired by Commissioner Barrett and Harold Reheis. The information presented was similar to the presentation to the DNR Board in April of 2000 in Kingsland.

Associates of the Storm Water Unit provided training on the General NPDES Permit No. GAR 100000 for Storm Water Discharges from construction activities to the Coastal District Office and the Regional Manager and Supervisors. Approximately twenty associates of the Coastal District Office attended this training session on December 12, 2000. Approximately ten managers and supervisors attended the training session in Atlanta on December 15, 2000. The learning curve for this General Permit is progressing slowly, but the associates, managers and supervisors are becoming more knowledgeable of the General Permit terms and conditions.

A second set of amendments to the Erosion and Sedimentation Control Rules were approved by the DNR Board at their December 6, 2000 meeting. The new rules became effective January 1, 2001. These amendments made minor changes to the Rules that went into effect on November 22, 2000. These changes included the addition of a hardship clause to the stream buffer variance criteria and a revision to the general variance procedure for the piping of trout streams with a flow of less than 25 gallons per minute.

As a point of information, the EPD-WPB WEB site has been updated to include documents of interest to the public. The publications include: the Listed of impaired waters published 2000 (303d list), the status of Water Quality in Georgia 1998-1999. In addition, several River Basin plans are now referenced on the site. Ted Jackson with the program coordination Branch was instrumental in expediting the process to get the information on the WEB site.

Ambient Monitoring Unit

The Ambient Monitoring Unit is continuing bio-assessments of potential TMDL streams and assisting TMDL modelers to incorporate habitat and biological data and other observations into their models. We are preparing to go out in the field with the modelers to provide them with a working knowledge of these data.

We are preparing for sampling in 2001. We will be focusing on the Coosa, Tallapoosa, and Tennessee River Basins and monitoring sites are being selected for the field-sampling year. Special impact studies are also being planned for 2001.

We are continuing to work with Columbus State University in their efforts to locate ecoregional reference sites for the development of biocriteria for Georgia. We are preparing to go out on a small field trip with them in order to coordinate our efforts and verify we are working towards the same goals and ideas.

The Georgia EPD's 303(d) list for "2000" was approved by the U.S. EPA on August 28, 2000. The U.S. EPA has subsequently required the Georgia EPD to reopen the "2000" 303(d) to update three major river basins (Altamaha, Ocmulgee and Oconee) utilizing data that was not available for use at the time of the generation of the original listing. The amended "2000" 303(d) list will be public noticed shortly for public comment.

The State's 1998-99 305(b) report went to the printer in January 2001 and should be available for distribution very soon. Since the Georgia EPD integrates its 305(b) and 303(d) lists, the 305(b) report could not be completed until the U.S. EPA provided approval of the 2000 303(d) list.

The draft copies of the Savannah and Ogeechee River Basin Plans have been printed and are available for review. Requests for copies of any of the above mentioned documents can be made by contacting the Watershed Planning & Monitoring Program of the Georgia EPD.

And, finally, we would like to welcome the newest members of our staff. Brock Page and Tim Pugh are two new Environmental Specialists that are responsible for the chemical sampling for a large number of Georgia's trend monitoring sites.

Intensive Surveys Unit

The ISU is up to speed with a full compliment of associates to face the 2001 scheduled field season. We welcomed aboard Joe Feivet and Michael Carter this past fall. Joe will be handling Lake Standards sampling this summer on Lakes Lanier, West Point and Jackson. Michael will be working with tributary sampling in the Lanier drainage basin in support of the ongoing lake work. We also have Lakes Allatoona and Walter F George that will be sampled as part of the ongoing Lake Standards monitoring. These lakes are monitored once a month April through October over a wide range of parameters.

Basin Major Lakes Sampling will occur in the Coosa-Tallapoosa-Tennessee Basin Group for 2001. This basin group includes Carters Lake, as well as lakes Nottely, Blue Ridge and Chatuge. Basin lakes are sampled once a quarter, for the same parameters as the Standard Lakes.

Reports for year 2000 are being finalized for the five Standard Lakes: Allatoona, Jackson, Lanier, Walter F George and West Point. They should be available for distribution shortly. The 2000 Basin Lake report is also nearing completion. Study plans are underway for the 2001 sampling on these two projects.

The ISU is currently assisting other Water Protection Branch staff on a project to document GPS coordinates for the more than 1800 permitted water withdraw sites in the Flint River Basin. The Flint River Basin has been one of the hardest hit areas of Georgia by drought over the previous three summers. As part of a developing drought emergency plan, the State will work with agricultural surface water users to have them voluntarily cut back on the area or amount of water that is withdrawn from the Flint River Basin. Appointments are being made with the permit holders to access their sites for coordinate and area size documentation. The State hopes to have the work finalized and a working plan available by March 1. This is the first date that the State may announce another drought emergency for the coming year.

KENTUCKY NEWS

Bioassay Section

The Bioassay Section is getting ready to do toxicity testing in the Green River Watershed. This will be particularly challenging since our supervisor, Charlie Roth, has transferred to the Louisville Regional Field Office. Charlie has been with the Division of Water for 17 years. He has been with the Bioassay Section as the supervisor since its creation in 1990. We will surely miss him. Susan and Betty have decided they don't need a supervisor and are going to split his salary and job share.

Since this obviously is not an option, his position has been posted and interviewing should begin soon. We'll keep you posted.

Besides working on the Web site and the newsletter, we are also in the process of rebuilding our fish culturing recirculating system. This is being done to increase egg production to cover our testing schedule.

Sediment toxicity work was completed in the Upper Cumberland Watershed under a 319 Non-Point Source Grant. Both 10 day and 28 day sediment toxicity tests were run on seven sites with reference streams used as control sediment. Chemical analysis was done on the sediment including AVS-SEM. Macroinvertebrate sampling was done simultaneously. All streams were listed as impacted by sediment due to mining activity.

We are also continuing our sediment monitoring on the Benson Creek in Anderson and Franklin Counties. Integrated single stage samplers are used to measure total suspended solids during storm events.

Ecological Support Section

Bacteriological Program – We have been involved (trapped) in swimming advisories for a long time. Three different regional offices are each monitoring advisories. The Northern Kentucky Regional Office monitors the Licking River from Banklick Creek to the Mouth, Banklick Creek, and Three Mile Creek swimming advisories. The Hazard Regional Office monitors the North Fork Kentucky River swimming advisory. The London Regional Office monitors the Upper Cumberland River swimming advisory. These advisories have been in place because of the presence of high numbers of fecal coliform bacteria. Kevin Ruhl is a TMDL specialist (engineer) that was hired to help in stream loading. Most of the personnel around the monitoring are current personnel trained to be a Swiss army knife (multifunctional).

The Northern Kentucky Regional office has moved into a new office for the second time in two decades. The city of Florence built it for them, and it is very attractive. They have a new laboratory, also. Gretchen Bartley handles the laboratory duties among her other responsibilities. She recently helped host a geology (rocks and gems) show in Cincinnati. The last I heard, there was a suburban war going on whose responsible for the pipes that were bypassing. Combined sewer overflows are a major problem in the Cincinnati / Northern Kentucky area. As dense as the urban population is, we still find evidence of beaver when sampling.

The North Fork Kentucky River swimming advisory was revised for the length of the river (approximately 160 miles) to approximately 80 miles in June of 1993 and remains in effect today. Sampling throughout the primary contact recreation season (May through October) monitors the swimming advisory. Ferris Sexton is the District Office Supervisor. The DOW developed a laboratory to reduce the travel time to Frankfort for sample analysis and trained in-house personnel to perform the testing, on top of their other responsibilities. The sampling run requires the cooperation of about eight people every

month. All samples are run within six hours. Sample analysis is duplicated about ten percent and three laboratory personnel verify fecal coliform colonies once a month.

Fecal coliform levels continue to improve at the headwater sampling points, but remain unacceptable around the city of Hazard. During the summer of 2000, a bypassing lift station was found. Fecal coliform data had indicated high levels at this location for some time. It was not until a visual inspection was made by boat that the bypass was discovered. The city of Hazard officials said they were unaware of the problem. If the lift stations are upgraded in Hazard, it may be possible to reduce the advisory upstream to a point below Whitesburg, as long as the storm sewers, local waterfowl population, and straight pipes don't out-compete each other. Kevin Francis and Darvin Messer have conducted parallel testing of E. coli and fecal coliform bacteria, since there is pressure from USEPA to adopt E. coli as a regulatory parameter. We are adding it to our state regulations as an alternative test procedure. Unfortunately Darvin Messer has moved on to the Corps of Engineers at Carr Fork Lake, but Denver Lee Pigman has volunteered to take his place.

The London Regional Office monitors the Upper Cumberland River Watershed. Frank Hammonds has been recently appointed as supervisor after serving in that capacity for a number of years. The office is in a new facility, the old office having been in a remodeled tuberculosis hospital for a couple of decades. Keith Blair has developed the newest and best laboratory facility in the Division. Joan Garrison of the Wild Rivers Program has been performing fecal coliform analysis on top of all her other responsibilities. She attended training in Denver, Colorado by Hach Corp. It takes about six people collecting samples and performing laboratory analyses on a monthly basis to complete the monitoring.

Fecal coliform data indicate levels are being reduced, with two stretches of six having the possibility of being reduced or eliminated from the swimming advisory. Since the upper Cumberland River watershed is in General Bickford's (our Secretary) and Kaywood

Ledfords (former UK and greatest radio sports announcing voice in history) back yard, we are hoping to see improvement. Representative Hal Rodgers (PRIDE) has secured federal funding in the millions and improved municipal treatment, cleaned up much of Eastern Kentucky, participated in river cleanup operations, using dump trucks to haul off former Dukes of Hazard shine wagons (thought to be good habitat and bank stabilizers), refrigerators, etc. The General put all night surveillance on known illegal garbage dumps; video taped the participants dumping illegally, and then aired the video on local public TV for all to see. It made for good theatre. One thousand-dollar fines for exceeding (KPDES permit) fecal coliform maximum daily loading has significantly reduced levels.

Fish Tissue Monitoring Program – We are currently gearing up for the 2001 fish community and tissue sampling on the Green River and Tradewater River basins. We will also be collecting tissue samples for EPA's national study of chemical residues in lake fish tissue. Fish tissue for the fall 2000 samples from the Cumberland and Tennessee drainages have all been collected and processed and sent to the lab. All of the results from the 1999 samples from streams and all major lakes in KY have been received from our lab. Half of this data has been submitted to the EPA National Fish Tissue Listing via the internet (<http://www.epa.gov/ost/fish>). We made some modifications to our new database (EDAS) so we can enter fish tissue data. Tissue data from streams have been entered and we are currently working on entering tissue data from our lakes. We have issued a state wide Hg advisory for children and women of childbearing age based on the 1999 data.

Reference Reach Program – The identification of samples from last year's reference sites (60) is winding down and data crunching is going full-steam ahead. In addition to the Cumberland, Tennessee, and Mississippi Basin sampling, John, Greg and Mike were involved with the Martin County Coal ‘release’, whether it was collecting water, bugs, and fish; or measuring the depth of the slurry in the stream. With the help of Jim Omernik and his colleagues, we are also in the process of identifying Level 4 ecoregion boundaries as we are the last state east of the Mississippi to delineate these Level 4 regions. As you may know, Lythia has left the section for Texas (rumor has it she wants to be Governor

since “W” left), so John has doubled his work duties until a new phycologist is hired. He is also refining the Diatom Bioassessment Index (DBI) for the state. Greg is working on a Macroinvertebrate Bioassessment Index (MBI) for the low gradient streams of the Jackson Purchase Region in KY, giving talks at watershed meetings, and planning a Bluegrass macroinvertebrate headwater study (similar to his Eastern KY Coalfield headwater study). Over 80 reference macroinvertebrate samples have been identified since April 2000. Mike has completed an IBI for the Jackson Purchase Region and an IBI for the Kentucky River Basin headwaters. He is currently working on an IBI for the Upper Cumberland Basin. Aside from all of our other duties we are involved in updating the SOP manual and preparing for the upcoming Green River Basin sampling season (50 reference sites anticipated). After next season, we will have over 200 reference sites scattered among our seven Level 3 ecoregions. We’re busy but we’re having fun. Almost forgot, since our job takes us to every corner of the state, we’re working on a book, “Reference BBQ Joints of Kentucky” – you gotta have lunch somewhere!

Nonpoint Source Section

319 Stuff – We have a lot of new things going on for the upcoming year. We are finishing up with the development of a new Nonpoint Source Data Base which will be Access based and should make tracking our 319 grants much easier for us. We are also developing our own web page. We are currently working on a new procedure that will enable 319(h) contractors to fill out an application when applying for a grant which should streamline our current system which involves contractors writing up a (sometimes lengthy) proposal. In addition to the application we are also refining our Final Report Guidelines, which should provide our contractors with better direction and allow them to report their results in a clear, concise, scientific format.

Biology – As far as biology goes, we have taken on a lot of new responsibilities for 2001. We are jumping into the River Basin Cycle by sampling stream segments that are listed in our Nonpoint Source Impacted Streams Report. The stream segments we are interested

in are listed in the 303(d) report, are first priority nonpoint source impacted streams that do not meet the “support aquatic life standard”, and are priority streams for TMDL development. We will be sampling <4th order streams from these segments and hopefully we will be able to pinpoint where some of the more nonpoint source impacted streams are entering the larger stream segment. We will be collecting macroinvertebrates, p-chem data and fish (at selected sites) to complete our analysis. We have helped the Ecological Support Section develop a new Macroinvertebrate Biotic Index for the Eastern Coal Field Physiographic Region of Kentucky and we have redefined Tolerance Values for crayfish (some even on a species level!) for Kentucky. Both of these projects will be presented at the 2001 North American Benthological Society Annual Meeting.

Staff Changes – We have lost our Grant Contract Administrator positions, (Joel Murphy and Mike Reed) to the Program Planning section. Joel and Mike get to keep their jobs and their job duties have remained basically unchanged, they just have a new boss. Upper Management decided that their positions fell under Program Planning more neatly than they did under NPS. We have gained a new employee, Monica Kope, (formally our interim Secretary) now our new Administrative Assistant. We are also hoping to hire an interim employee whose job duty will be to enter data into our new database.

NPS and Agriculture – The status of Kentucky TMDL development is now available on the web at <http://water.nr.state.ky.us/dow/tmdl.htm>. Several TMDLs have been developed and approved by EPA Region-4 for KY waterbodies with impairments related directly to nutrient loads. One lake, Taylorsville Lake has an approved TMDL for phosphorus with the source identified as “Agricultural operations; high phosphorus in the soils” and six streams have approved TMDLs for organic enrichment. The sources identified on the website are municipal or package waste treatment plants. Since TMDLs include both point and nonpoint sources expect agricultural activities to be addressed.

NPS and Wastewater – The NPS section has been actively working on developing strategies to deal with straight-pipes and failing septic systems in the state. As part of

these activities the NPS section has partnered with various other branches within the DOW including the KPDES Branch, Facilities Construction Branch, Enforcement Branch, and Groundwater Branch to improve water quality impacts for wastewater. The NPS section has also formed a partnership with the Department for Public Health, which regulates the onsite sewage program in Kentucky. At present, a draft onsite/decentralized action plan has been developed that outlines a strategy for improving onsite/decentralized wastewater management and provides suggestions for reducing straight-pipe discharges to the waters of Kentucky. It is hoped that implementation of this plan will significantly reduce fecal loading throughout the state.

Standards and Specifications Section

Staff has spent considerable time sampling streams affected by the Martin County Coal Company coal slurry pond collapse in October. Daily sampling was gradually reduced to weekly and then to wet weather response to rains greater than one inch. The primary concern is now turbidity levels and their affect on drinking water systems. Much cleanup has occurred, and hydroseeding of mutilated stream banks has begun.

We have established most of our rotating sites in the next watershed management unit, the Green/Tradewater. The random survey site network that we sample for macroinvertebrates was also received from the EPA Corvallis office. Recon will start on those sites soon. In the meantime, we are inputting data to the 305(b)-assessment database (ADB) from the Salt/Licking watershed management unit and analyzing samples from the Cumberland/Tennessee/Mississippi watershed management unit sampled in 2000.

On the water quality standards front, EPA has not acted on their August 2000 disapproval of one part of our antidegradation regulation. We are expecting (?) federal promulgation on the socioeconomic demonstration requirements for high quality (Tier 2) waters sometime before our next triennial review. We remain keenly interested and involved in the nutrient criteria development initiative by EPA.

Water Quality Certification Section

The main issue regarding the 401 program right now is the slurry spill in Martin County. A lot of damage to the stream channels occurred while removing the slurry. Martin County will need to restore Coldwater Creek and Wolf Creek once cleanup is accomplished. We've also taken enforcement actions against several county fiscal courts in recent months for ill-advised in-stream work.

MISSISSIPPI HAPPENINGS

Hello and Happy New Year to everyone from all of us in Mississippi. It seems that our 20 month drought (the driest 20 month period on record for our state) has lifted slightly, and most of our streams are again flowing. As usual we are busy with many and varied projects.

New Additions to our Staff

We in the Biological Services Section would like to welcome three new biologists (and SWPBA Members) to our staff. These are: Emily Cotton; Eric Pederson; and Jenny Ulmer. Emily Cotton is a Mississippi native, and has a Bachelor's Degree from the University of Southern Mississippi in Biology. She is based at our North Regional Office in Oxford. Eric Pederson has a B.S. Degree in Biology from the University of Wisconsin at Eau Claire, and a Master's Degree from the University of Southern Mississippi, where his Thesis was entitled "Bryzoa as an ephemeral estuarine Habitat: use by invertebrates and young fishes." Eric is a native of Minnesota, and is based at our South Regional Office in Biloxi. Jenny Ulmer is also a Mississippi native, and is based at our Laboratory in Pearl, where, like Emily and Eric, she functions as a Regional Biologist. She has been with DEQ for 5 years, and has worked as part of the Air Division. She joined our staff in December. She has a B.S. Degree in Marine Biology from the University of Southern Mississippi and a Master's Degree from the same institution. Her Thesis topic was "Toxicity of Nitrite to Tilapia during early development."

WE WELCOME ALL OF THESE HARD-WORKING PEOPLE TO OUR STAFF!!!!

Mr. Jimmy Palmer may re-enter Public Service

As many of you know from our recent contributions to the SWPBA Newsletter, Mr. Jimmy Palmer, previously Executive Director of DEQ, left that post to resume his environmental law practice. We learned a few days ago that Mr. Palmer is on the short list

to become Region IV's next Regional Administrator. We wish one of our own the best of luck in securing that appointment.

303(d)/IBI Project

An effort has begun to develop a more reliable and scientifically defensible biological assessment methodology for Wadeable streams and rivers in Mississippi. 303(d) and TMDL issues facing the State of Mississippi have expedited this effort. As a result of these critical issues, a statewide biological monitoring project has been initiated with two main objectives: to obtain monitoring data from 303(d) listed streams and rivers and to assess these data using an Index of Biological Integrity (IBI). This project involves sampling of over approximately 475 streams, statewide with the exception of streams in the Mississippi Alluvial Plains Ecoregion. Six teams consisting of MDEQ personnel and private contractors will collect biological (benthic communities) physical (habitat assessment, Wohlman pebble count, flow) and chemical (in-situ measurements, nutrients, solids) data from all stations.

Biological data will be the primary data used in 303(d) assessments and decision-making. Specifically regarding the biological sampling, approximately 375 of the samples will be collected from streams on the State of Mississippi's 303(d) list, and another 100 samples will be collected for the purpose of developing an Index of Biological Integrity; they are targeted toward potential high quality or reference areas. Additionally, 70 samples will be collected for quality assurance/quality control (QA/QC) purposes. Several new monitoring procedures will be used throughout this project. Some highlighted changes from past procedures include:

Index Period - January through March

Sample collection method- slightly modified version of the EPA National Guidance, “Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates, and Fish”, 2nd Edition, EPA 841-B-99-002, Washington, DC 20460.

Sample processing – Laboratory sorting involving a randomized sub-sampling procedure, resulting in a 200 organism sub-sample

Taxonomic level of identification- the majority of organisms will be identified to Genus level, with a few Exceptions

Data analysis/interpretation- Data analysis will involve calculation of a set group of biological metrics determined to be most responsive to stressors and of minimal redundancy, and combined into an Index Score. These scores will be compared to a regionally calibrated Index of Biological Integrity, developed as part of the statewide monitoring project

Reference conditions – Data from streams found to have optimal physical and chemical attributes, or that are best attainable for that particular region will be combined in a multi-metric index, making up the reference condition. This will allow the reference conditions to reflect the natural variability that exists by region. Metrics will be chosen based on their responsiveness to stressors and minimal redundancy

Habitat assessment - The new form is a modification of the guide found in the EPA National Guidance, “Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates, and Fish”, 2nd Edition, EPA 841-B-99-002, Washington, DC 20460.

The field and laboratory phases of this project are underway. Site assessments and IBI development are targeted for completion by January 2002.

Natural Resources Damage Assessment on the Leaf River

At last years SWPBA Meeting, an update was given on the status of this project. We have since completed the identification and analysis of the benthic study which was undertaken to assess the potential impacts on the Leaf River as a result of the oil spill. We continue to make headway with resolving the remaining natural resource issues resulting from the spill.

On a related note, DEQ Emergency Services member Ernie Shirley and Biology's Mike Beiser attended a table-top spill drill sponsored by the Office of Pipeline Safety. The purpose of this drill the readiness of another of the production companies operating within the state, and to bring together the state and federal responders and natural resource trustees.

Refinement of the Ecoregions of Mississippi

On December 4, 2000, Jim Omernick and Shannon Chapman from EPA Corvallis came to Mississippi for the purpose of initiating a project to refine those ecoregions in Mississippi which were not treated during the Alabama/Mississippi Pilot Project. These ecoregions are: the Mississippi Valley Loess Plains and Hills; the Mississippi Alluvial Plain; and the Southern Coastal Plain. Representatives from various state and federal agencies were in attendance as resource people, and proved invaluable to the discussions which were held. Among those agencies represented were: US EPA Region IV; USDA— NRCS; US Fish and Wildlife Service, Endangered Species Unit; USDA National Sedimentation Laboratory; USGS NAWQA Program; Biology Department, Delta State University; Biology Department the University of Southern Mississippi; Department of Wildlife,

Fisheries, and Parks; and various sections of DEQ, including the Biological Services Section, The Office of Geology, and the Water Quality Assessment Branch. Those present are in the process of sending comments and observations to Jim and Shannon, and the group plans another meeting in the late spring.

Studies to Determine 7Q10 Flows in some Mississippi Streams

As mentioned at the top of our contribution to the newsletter, for the past 20 months drought conditions have been prevalent throughout much of Mississippi, and many streams were at or below the established 7Q10 flow. The Biological and Chemical Services Section staffs from DEQ assisted the DEQ Office of Land and Water in conducting windshield surveys of streams and rivers throughout much of the state to verify existing 7Q10 data.

Ambient Water Quality Monitoring

Biological sampling for the fixed station ambient network was suspended until 2002, to allow for resource focus on a statewide 303(d) monitoring project. All other ambient monitoring activities are ongoing according to program goals.

305(b) Report

Beginning with the 2000 305(b) Report, Mississippi is moving from a statewide 305(b) assessment approach to a basin specific approach, to be implemented over a five year basin rotation period. Water quality assessments will be conducted annually, rotating among the state's five basin groups, each of which represents approximately one-fifth of the state. This approach will allow resources to be focused in a smaller geographical area/basin for a given year, resulting in a more thorough assessment for that area. At the end of each five-year cycle, a comprehensive assessment of the state will be complete. For the 2000 305(b) Report, assessment of the Pascagoula River Basin is presented. The

remaining four basin groups will be re-evaluated and assessed annually, following the basin rotation, beginning in 2002. The next 305(b) Report is scheduled for release in April 2002 and will provide an assessment of the Coastal Streams, Tombigbee River, and Big Black River Basins.

EMAP Coastal 2000

During the summer of 2000 (June –August), MDEQ and the University of Southern Mississippi Institute of Marine Science's Gulf Coast Research Laboratory began the first year of an anticipated five year coastal assessment study. During this study, 35 probabilistically - selected sites were sampled as part of the U.S. EPA's Environmental Monitoring and Assessment Program (EMAP) National Coastal Assessment, Coastal 2000. Coastal 2000 was created to survey the condition of the nation's estuarine and offshore waters as well as to create an integrated, comprehensive coastal monitoring program among the states. Samples included water column grabs, sediment grabs, fish trawls, and sediment grabs for benthos. These samples will be collected annually during a summer index period and analyzed for various parameters. Year two of the project is scheduled to begin in June 2001.

Coastal Beach Monitoring Program

MDEQ has an on-going contract with the University of Southern Mississippi Institute of Marine Science's Gulf Coast Research Laboratory to monitor water quality off of the coastal beaches within the state. Year-round weekly monitoring of bacteriological parameters and monthly sampling of other water quality parameters occurs at 20 stations along the Mississippi Gulf Coast. Samples are collected by wading, and samples and observations are made when sampling personnel are in one meter of water off the shoreline. Bacteriological parameters being monitored include fecal coliform *E. coli*, and

enterococci. Beach water quality conditions are made available to the public via a Web site: www.ims.usm.edu/msbeach.

303(d) Fecal Coliform Monitoring Contract

The State of Mississippi 1998 303(d) List identifies numerous water bodies as being potentially impaired by pathogens based on evaluated assessments for which no actual monitoring data has been collected. For each water body on the 303(d) List, evaluated or monitored, the state is required to develop TMDLs for those pollutants impairing any use of the water body, establishing pollutant level reductions that will cause the impaired use to be fully supported. For the evaluated 303(d) water bodies, MDEQ is committed to determining whether these evaluated waters actually are impaired prior to initiation of the development of TMDLs. Monitoring of these evaluated waters is scheduled to occur on a rotating basin group schedule as MDEQ implements and proceeds through MDEQ's Basin Approach to Water Quality Management.

In concert with MDEQ's basin schedule, 303(d) waters with pathogens listed as the impairment cause were designated for data collection and analysis in targeted basins. An MDEQ contractor performed bacteriological data collection at 64 locations in the study areas. During a thirty-day period in the fall of 2000, five sampling events were performed at each location. A second series of sampling is planned for the summer of 2001. Geometric Means calculated from the data collected during each of the five sampling events will be used by MDEQ to compare against State of Mississippi water quality criteria. Results from this monitored assessment will be used in final determinations of secondary contact and primary contact recreation use support for 2002 303(d) listing/delisting decisions.

NORTH CAROLINA

We are in the process of weathering significant state shortfalls in the budget, and by our state constitution can not close the year in the hole. The governor has invoked emergency powers and significant program cutbacks in funding are in place. So far we have not lost any people, but are in the midst of a job freeze and operating expenses have been severely cut. These cuts include travel, so if you don't have North Carolina folks showing up at meetings or conferences where you would expect them to be, that will be the reason. We still have great staff with phones and email (the later two, sometimes to our chagrin), so keep in touch. The following includes brief updates on program activities and changes, since our meeting.

Biological Assessment Unit

BENTHOS

New Staff

The Biological Assessment Unit hired Tracy Morman as a benthic biologist in December. Tracy had interned in the past with Ohio EPA, and had experience at the USGS National Water Quality Lab in Denver. We welcome his taxonomic expertise, and look forward to a long and enjoyable working relationship.

Basin Assessment

We have been desk-bound for most of the last three months, cranking out analysis of our data from the Broad, Neuse, Chowan and Pasquotanck basins. Almost all of the Pasquotank and Chowan River basin now falls into a "Not Rated" category, as we become more careful of putting ratings on streams that may have naturally lower diversity. This information, however, can still be used to examine pollution indicator groups, identify best/worst streams, and look at trends in water quality.

Special Studies

* Fire Recovery. Larry Eaton revisited some streams (many only ditches) in Dare County to look for recovery after a large fire in a landfill. These streams have very low diversity and are often subject to very low dissolved oxygen concentrations.

* Reynolds Creek, Sequoia WWTP. We were asked to resample above and below a small WWTP near Winston-Salem. This facility was depositing a blanket of sludge over the stream bottom, but the operators denied responsibility. The case was adopted by the local newspaper, so our reports became front-page news.

* Chicken processing. We sampled above and below two discharges from a chicken-processing plant near Pittsboro. The study was complicated by the very small size of these streams, with all “control” sites being ephemeral.

Fisheries

1. Reached a consensus on what watershed, instream, and riparian habitat characteristics help to define a fish community reference site.
2. North Carolina Index of Biotic Integrity re-calibrated and biocriteria developed for the Outer Piedmont (Cape Fear, Neuse, Roanoke, and Tar River basins) and the Inner Piedmont, Foothills, and Eastern Mountains (Broad, Catawba, Savannah, and Yadkin River basins).
3. Another group of fish community samples was collected using the small electrofishing boat. The additional information indicated that the collection protocol is sufficient to give a representation of the fish community present at a site. This will eliminate the need for continued subsampling and therefore greatly reduce collection time at each site.
4. Completed the Year 2000 fish kill report. This report summarized 58 fish kill events mostly in the coastal river basins. In 2000 the most frequent fish kill activities were reported in the Neuse River and Pamlico River basins.
5. Analyses of fish tissue for organic contaminants following Hurricane Floyd was made possible by the acquisition of new instrumentation acquired by the Chemistry

Laboratory. This instrument should allow for more efficient organics analyses in fish tissue than was previously available.

6. Activities in 2001 will include:

- Basinwide assessment of Wadeable streams in the Yadkin River and Lumber River basins.
- Continue to evaluate fish community data from Sandhills and coastal plain sites in the Chowan, Pasquotank, Neuse, Tar, Cape Fear, and Lumber River basins.
- Collect small boat fish community samples as part of Lumber River basinwide monitoring program.
- Participation in EPA's chemical residues in lake fish study will continue. Four more lakes will be sampled and analyses will be performed for 90 organic and metals analytes.
- Staff will sample 13 stations across eastern part of the state for fish tissue mercury contamination as part of a 104 (b)(3) study to assess waterborne mercury.
- Continue trend monitoring of mercury at six sites around the closed Holtrachem plant in Riegelwood, N C.

Aquatic Toxicology Unit

As you may or may not be aware, the North Carolina Division of Water Quality employs "action levels" to regulate discharge of certain substances to the State's waters. These are derived similarly to traditional water quality standards, but their application in establishing limits in NPDES permits are dependent upon the presence of toxicity in the effluent as measured by WET tests. The action level strategy is applied to substances that are generally not bioaccumulative and have variable toxicity to aquatic life because of chemical form, solubility, stream characteristics, or associated waste characteristics. The Aquatic Toxicology Unit will play a major role in implementation of new action level procedures for copper and zinc. The process begins when a facility fails a WET test and analytical monitoring indicates effluent levels of copper and/or zinc that may result in an exceedance of the action level standard instream. The facility is informed that if toxicity

continues it may receive a permit limit for the metal of concern unless it can prove through investigation that the observed toxicity is not caused by one of these two metals. The notification also includes a prospective permit limit for the metal of concern. If either of the two monthly follow-up tests required by the permit indicates toxicity, a nine-month period begins within which the facility may undertake investigations to document that the observed toxicity is or is not caused by copper and/or zinc. These investigations may include "clean" or "ultra clean" metals sampling and analyses or toxicity identification evaluations (TIEs). If copper and/or zinc cannot be ruled out as the source of WET during the period, limits are applied. The facility may elect to accept a permit limit without undertaking investigations. The intent of the policy is to apply permit limits if copper or zinc cannot be ruled out as the source of toxicity. The Aquatic Toxicology Unit's roles will be to track compliance with WET and evaluate TIEs.

Ecosystems Unit

The Ecosystems Unit is still seeking a new member with programming and computer skills to manage our ambient databases. Susan Gale has done a tremendous job with stop-gap data bases that allowed us to provide data to requesting parties. Mark Vander Borgh and Elizabeth Fensin with database evolution for phytoplankton information and have spent a busy summer with blue-green algal blooms. It was a fairly quiet year 2000 for *Pfiesteria*, with many samples being sent to DNA probes yet less than a handful actually containing potentially toxic species. Zi-Qiang Chen has been working with our discharger coalition monitoring programs, learning the ropes and performing field audits of each of the coalitions. The Unit expects to replace one more position and work towards development of quality assurance program plans for the Water Quality Section. Larry Ausley, after 15 years of management (+8 as a biologist) has opted to work again with the unit as an Environmental Biologist. Larry will be analyzing information and writing ambient monitoring summaries in the Basinwide Assessment Documents. Therefore we will be seeking to employ a new unit supervisor as well. (When and if the job freeze on state positions is lifted)

SOUTH CAROLINA

DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

Aquatic Biology Section

Macroinvertebrate Group-As always this is the time of year that we process our samples. We have been logging in many hours of scope work attempting to finish our 2000 samples. We are working in the Saluda-Edisto basin for 2001. We will be doing several swamp streams in the coastal plain in February and the remainder of our sites in the summer. We also we be starting our random sampling this year and will attempt to collect macroinvertebrates from 30 randomly selected sites across the state.

More and more instream macroinvertebrate studies are being placed on permits in our state. Industry hires consultants to perform this work and the final report comes through our office. If the present trend holds, we will probably have to hire more staff to help review some of the reports. Our governor has proposed a 15% across the board budget cut for all state agencies so I'm not going to hold my breath on any new staff for a while. More and more special studies are also being requested and, like Krissy in NPS, we are being hauled in to court on a more regular basis. So far it has not been too stressful but I'd rather be looking at bugs.

NPS Program

Once again, the NPS team has undergone metamorphosis. Natalie Constantino has left us to work for the National Wild Turkey Federation in Edgefield, SC. She is working in the Education and Outreach Section, teaching young "JAKES" about wild turkeys. Peyton Sasnett gave birth to Richard Maxwell Sasnett III, "Max", on January 5, 2001. Between Max and Joy (Peyton and Rich's 3 year old daughter), she truly has her hands full. So with Natalie gone, and Peyton off on maternity leave, that leaves me all alone. I went

from being the new kid on the block, to the only kid on the block. Suffice it to say that I have been keeping busy.

We have been conducting several new bacteria studies for stations on the 303(d) list. The Watersheds Section has asked us to do small-scale bacteria studies on some of the stations for which they are required to do TMDLs. We begin with the trend station, and select 4-6 stations around it in an attempt at pinpointing the source of fecal contamination. This assists them in properly writing the TMDL. For me, it gets me out of the office and off to see some beautiful country. We conducted three this past winter (when we were fully staffed!), and I am beginning a new one now.

I am still working on two §319 Studies, one in the Wilson Creek and Ninety Six Creek Watersheds (in Greenwood County), and one in the Twelve Mile Creek Watershed in Pickens County. Both projects deal with cattle exclusion and alternate watering sources. The Pickens study will be over this October, but the Greenwood study has several more years. At this time, we are expecting to have another project to monitor, but have not received any information on it yet.

On a not so exciting note, we are seeing our day in the courtroom. Each of us has been “hailed” into court as DHEC is getting challenged on our stormwater enforcement cases. Since NPS does the biological assessments on these stormwater cases, often we are one of the key witnesses. DHEC issues fines out of the Pollution Control Act, which stipulates penalties up to \$10,000 per day per violation. Compare this to the Stormwater and Sediment Reduction Act, which imposes a meager \$1,000 per day fine. Naturally, we like the big guns associated with the Pollution Control Act, so we have to prove creek impact. Enter the NPS group. Our job is to prove that impact has occurred, with macroinvertebrate assessments and habitat assessments. I expect more depositions and court cases in the future. This is not settled yet. I have to say; testifying in court is my least favorite part of the job.

I continue to work on identifying macroinvertebrates collected last year for the 303(d) list. We were trying to get stations on the list for metals off, if the biology came back good. So far, it is not looking positive for the removal of any of the 13 we collected. When I am finished with those, I plan to help the bug guys get out of their hole and work on identifying some trend bugs.

Big news! Harry Gaymon taught me how to ID midges! This is very exciting for me, as I have always wanted to dig into the wonderful world of larval Chironomidae. Now all I need is a slide microscope, then I could really do some damage! For now, (and probably forever) I am borrowing scopes when Harry and Jim aren't looking.

If you have any comments or questions, you may contact me at:

Kristine Hoskins (803) 898-4400 or hoskinkc@columb32.dhec.state.sc.us

Phycology Program

This past fall and winter have been dedicated to completing analyses on phytoplankton samples collected during the year 2000 ambient monitoring season. From the ambient monitoring network, we collected 17 lake/reservoir stations once per month May-October for phytoplankton analyses (102 samples total).

The Bureau of Water at SCDHEC will present proposed standards for nutrients and chlorophyll *a* in lakes/reservoirs to the South Carolina legislature this year. The standards are ecoregion-based. The standards, as proposed, are as follows: for the Blue Ridge a total nitrogen concentration of 0.35 mg/l, total phosphorus 0.02 mg/l, and chlorophyll *a* 10 ug/l; for the Piedmont and Southeast Plains a total nitrogen concentration of 1.50 mg/l, total phosphorus 0.06 mg/l, and chlorophyll *a* 40 ug/l; for the Coastal Plain a total nitrogen concentration of 1.50 mg/l, total phosphorus 0.09 mg/l, and chlorophyll *a* 40 ug/l. The fate of these proposed standards in the legislature will be watched with great

interest as all potential legislation this session that have to compete with the South Carolina lottery bill.

Fisheries

The fisheries group has been busy collecting fish for the fish tissue program, with emphasis this year on the Edisto River basin. We have already collected approximately 300 fish from 30 sampling stations. We are also gearing up, along with the South Carolina Department of Natural Resources, for IBI work this spring. We are currently working on a SOP for IBI's in South Carolina, tentative sampling scheduling, and arranging a shiner identification workshop. In addition, we are reviewing the 2001 Fish Advisory for public release within the next month.

TENNESSEE

DEPARTMENTS

Agriculture (TDA), Environment and Conservation (TDEC), and Health (TDH)

News from the BEST*

** Biologist and Environmental Specialist Teams*

TDEC – Division of Water Pollution Control



Nashville Environmental Assistance Center (EAC) Relocated

The Nashville Environmental Assistance Center (Nashville EAC) has recently moved to its new facility. This building will house eight regulatory divisions (90 staff

members). The one location will promote improved inter-Divisional working relationships (a.k.a. working well with others). The EAC is across the street from TDH Laboratory Services. **The mailing address is: TN Environmental Assistance Center-Nashville, 711 R.S. Gass Boulevard, Nashville 37243. The local phone number is 615-687-7000.**

Other Environmental Assistance Centers are located in Chattanooga, Columbia, Cookeville, Jackson, Johnson City, Knoxville, and Memphis. The phone number for the general public is 1-888-891-TDEC (8332). The call is automatically routed to the appropriate EAC.

Environmental Training Program

Ann Morbitt (Nashville EAC) and Isabelle Ford (former WPC employee) spent time in the "Tower" (Central Office in downtown Nashville) developing a training program for newly hired technical staff. Isabelle developed an Inspection Module and Ann developed a Complaints Module. It was a challenge writing sections that would be easily understood by entry-level technical staff. Both modules involve SOPs, forms, and appropriate responses for how to perform an inspection or handle a complaint. Standard Environmental Training (as opposed to learning from the "old dogs") will hopefully result in greater consistency statewide when performing these activities.

Update on Total Maximum Daily Load (TMDL) Development

State status: TDEC continues to develop TMDLs. Personnel from EPA region 4 and its contractor, Tetra Tech, came to Nashville to transfer the computer modeling techniques and associated software for fecal coliform TMDL development. Two draft TMDLs developed for metals for John's Creek and Nonconnah Creek have been available for public comment (www.state.tn.us/environment/wpc/). There are currently more than 20 TMDLs in various stages of development. A TMDL will be developed for all of the waterbodies impaired by fecal coliform in Group 1 watersheds by Spring 2001. TDEC will begin development of TMDLs for pollutants such as nutrients and organic enrichment as soon as EPA Region 4 develop protocols and methodologies for those pollutants.

Water Pollution Control – Natural Resources - Creek Rock Removal Causing Concern

The commercial and private removal of creek rock and cobble for landscaping uses in Eastern and Southeastern Tennessee has intensified this summer. Businesses have sprung up around this increasingly lucrative activity, with teams of workers removing large amounts of rocks from creeks. (O.K. Beiser. Bring the rocks back. Cobbling your

reference streams wouldn't help them.) The large-scale removal of these rocks increases erosion and eliminate habitat besides other adverse impacts. Such activities are regulated under the Water Quality Control Act and require a permit from TDEC – WPC – Natural Resource Section. TDEC has developed an enforcement policy to halt illegal rock removal. North Carolina and Georgia are also considering the problem. To report potentially illegal rock harvesting, the public has been advised to call (888) 891-TDEC. Contact: Phil Stewart (423) 634-5734, Robbie Baker (615) 532-0710 or Joe Sanders (615) 532-0131

Save Our Cumberland Mountains - SOCM's Victory for Fall Creek Falls

Citizens who form the backbone of SOCM -- -- convened with U.S. Secretary of the Interior Bruce Babbitt to declare victory in SOCM's 25-year struggle to protect the state's most visited and most scenic state park, Fall Creek Falls, from strip mining.

Mr. Babbitt announced that the Department of Interior, and its Office of Surface Mining, have reversed a 1998 decision that would have allowed strip mining throughout the park's crucial 86,000-acre watershed, including an area just 300 feet from the boundary of the 18,700-acre park. Such mining would have exposed the park's spectacular waterfalls, the highest east of the Rockies, to acid drainage.

OSM initially ruled that strip mining by Skyline Coal Co. would be allowed in the park's watershed with site-specific environmental assessments and damage-containment plans. But the Cumberland Plateau's porous limestone and karst geology almost certainly would have prevented full containment on which the OSM based its decision.

Strip mining for coal on the Cumberland Plateau exposes the toxic shale and iron pyrite that lie above the Sewanee coal seam to the air and water, creating sulfuric acid. Rain, runoff and seepage through the permeable limestone layers would impact the creeks -- Piney, Fall and Cane -- that feed the park's falls.

SOCM's battle to contain strip mining on the Cumberland Plateau first began 25 years ago. It started when a whistleblower within the state's Division of Surface Mining tipped off a SOCM staff member about a secret file outlining plans by AMAX, which had obtained a permit to explore for coal on 10,000 acres in the southern Cumberland Plateau.

State restrictions on damage to permanent streams, had been temporarily preventing strip-mining in the park's watershed. But it probably would not have been undertaken against the nation's third largest Coal Company had SOCM members and affected landowners not mounted their intense, persistent and highly public campaign against Skyline's mining plans.

Eight state agencies involving over 25 state experts reviewed the original federal proposal to allow mining and determined that federal officials should re-think their proposal. The State's analysis found that significant portions of the petition area were not suitable for mining and offered factual, legally defensible evidence (ecoregion reference stream information) to federal officials to support a ban on mining in the area. The State also did not favor re-mining in the park's watershed until it could be demonstrated in a similar watershed that re-mining would cause a net gain in water quality. The state's analysis of the proposal and response can be found on the Web:

<http://www.state.tn.us/environment/epo/fallcreek/fallcreek.htm> Contact David Turner (423) 594-5529 or Dodd Galbreath (615) 532-8545. (Dave Turner is a SWPBA oldie. He and Doug McCoy presented a paper at the 1988 SWPBA meeting in Alabama.)

Pigeon River Watershed Advisory Committee Kicked Off

The Pigeon River Watershed Advisory Committee met last May to review current issues and prepare for public comment on the next permit for Blue Ridge Paper Products. The settlement agreement for the clean up of the Pigeon River between Tennessee, North Carolina, EPA and Champion Paper (now Blue Ridge Paper Products) called for the establishment of a Joint Watershed Advisory Committee. The Committee is composed of

local citizens in eastern Tennessee and western North Carolina, with technical input from state and federal staff. The committee will be used to encourage public input on decisions affecting the Pigeon River. For a summary of the events, review of the settlement agreement, or weekly color data on the Pigeon River, visit the TDEC Web site: <http://www.state.tn.us/environment/epo/pigeon/pigeon.htm>

Update on Confined Animal Feeding Operation (CAFO) Regulation

The Division of Water Pollution Control continues to implement the permitting program for CAFOs. WPC has issued permits to 39 Class II CAFOs. Permits for five additional facilities and eight Class I operations were issued around July 28, 2000.

Background: The State's current strategy for CAFOs establishes a two-tiered permit system based on the size of the operation and the type of waste management system in place. The permit system is designed to prevent impacts from CAFOs to water quality. Tennessee enacted this strategy, even though the state has few CAFOs, to prevent the problems seen in other states such as North Carolina. Farmers have until May 1, 2001 to comply with the new standards. Some communities have taken action to prevent CAFOs from locating near them due to concerns about odor and large amounts of animal waste. The Rutherford County Commission voted in November to alter their zoning regulations to require a conditional use permit for CAFOs. Even though no CAFOs have expressed interest in locating in Rutherford County, local officials wanted to be prepared should such a situation arise. Rutherford County is adjacent to Davidson County where Nashville is located. To learn more about this issue, visit the TDEC Web site: <http://www.state.tn.us/environment/permits/cafo.htm>

TDH – Aquatic Biology Section

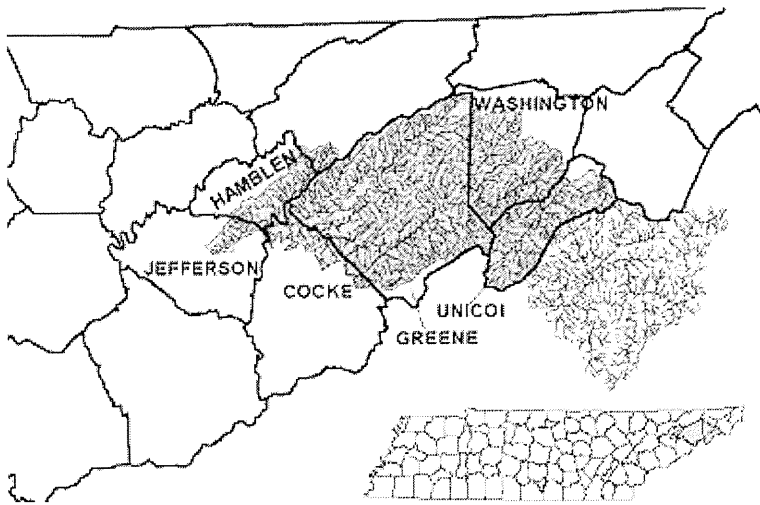
The Aquatic Biology Section is busily working in the Unified Watershed Assessment and Restoration Plan Project. The Nolichucky River: USGS HUC: 06010108 is the Watershed of the Year 2000. This watershed is located in East Tennessee covering Hamblen, Greene, Washington, and Unicoi counties. Nearly 47% of its waterbodies have been assessed as impaired.

The Nolichucky River watershed is primarily being affected by excess silt and nutrients apparently due to agricultural practices such as livestock operations and row cropping. Other nonpoint sources of pollution in this watershed include mining, urban runoff, failing septic systems, and some riparian loss.

Partnerships and Ongoing Efforts involve landowners/ operators, Soil Conservation Districts, Cherokee National Forest staff, local officials, NRCS staff, RC&D Council staff, TDEC, TDH, TVA, and EPA water quality professionals. TDA staff have put in a lot of work into this watershed to implement BMPs.

Critically impaired watersheds were identified using existing priority watershed and resource lists including the following: 1998 303(d) List of Impaired Waters for Tennessee 1997 & 1998 Environmental Quality Incentives Program (EQIP) Priority Watersheds Section 319 Funded and Proposed Nonpoint Source Project Areas

Specific information on the UWA is available at
<http://www.state.tn.us/environment/wpc/watershed/>



Corps Still Evaluating Water Storage Fees

The U.S. Corps of Engineers plans to charge industries, utilities and municipalities for "storing" water in Corps lakes. The Corps is preparing to issue a Water Supply Reallocation Report and draft environmental impact statement for J. Percy Priest Lake and Reservoir located in Middle Tennessee, just southeast of

Nashville. This study will evaluate how much surplus water is available for water supply (as opposed to navigation or power production). Based on the study's findings, the Corps intends to assess fees to all entities that regularly intake water. The amount of these fees is uncertain, although it is expected that it could be significant. The State has insisted upon a full discussion and disclosure in the Corps' report of the fees and their associated economic impacts. Some Tennessee industries have voiced strong opposition to the fees, which have historically been charged at other Corps reservoirs across the country. (Hey, guys, any in your backyard?)

The Corps has also initiated the same evaluation of fees for five other reservoirs, including Old Hickory Lake (TN), Center Hill Lake (TN), Lake Barkley (TN/KY), and two lakes in Kentucky. One study has been released for a lake in Kentucky (Hey KY, which lake and can we get a copy?). The public will have an opportunity to provide scoping comments and also comment on the draft EIS for the Water Supply Reallocation Report. This study is the first in a series of reports evaluating all Corps-managed reservoirs in Tennessee for their water supply potential. Contact: David Draughon (615) 532-0152 or David Harbin (615) 532-0144

West Tennessee River Management Update (*a.k.a. more Corps woos*)

Due to continued stalemates with the *Memphis* District Corps of Engineers and litigants of previous federal laws suits over channelization, the State has abandoned its effort to use federal funds and agencies to restore natural rivers in West Tennessee. The State will instead redirect federal funds to communities that seek restoration projects outside of contested federal boundaries. The State will also continue to prefer restoration of dysfunctional rivers, preservation of natural rivers, and seek to avoid and discourage river channelization.

Background: State and federal agencies and private interests have battled over river management policy in West Tennessee for decades. These fights resulted in the exit of the Corps of Engineers from river projects in West Tennessee in 1986. In recent years, these previously warring interests joined to support new policy that promotes the return of man-made streams to their natural form and greater protection for existing natural streams. Unfortunately, legal fights dating back to the 1970's, designed to stop construction of man-made rivers, created mitigation requirements that continue to be unresolved and have created barriers to the new policy. The Memphis Corps of Engineers and the original parties to the 1970's legal battles will not support projects implementing the new restoration policy until their disagreements are resolved.

Previously, Stokes Creek, a tributary of the North Fork of the Forked Deer River in West Tennessee, had been chosen as the first restoration demonstration and was slated for construction this year. The unresolved issues have delayed this project. The State and EPA have decided to secure permits for the project but to shelve implementation until legal issues are settled. Project funds will be transferred to other restoration projects in the meantime. The Stokes Project would have created a two-mile, meandering channel in place of a channelized stream, removed levees and restored a natural floodplain and wetlands.

TDEC – Division of Department of Energy Oversight

Improvements to Global Positioning System (GPS) Enhance Field Work

Contact: Dale Rector, DOEO (865) 481-0995: The Department of Defense selective availability on GPS signals was turned off <http://www.igeb.gov/>, which enhanced the accuracy and precision of handheld civilian GPS receivers. From Internet data (http://www.cnde.iastate.edu/staff/swormley/gps/check_sa.html) and informal field trials, it appears that the need for cumbersome differential capable equipment is largely eliminated. Single reading positioning is now within four to ten meters instead of the former 100 meters. Low cost (\$100 to \$500) civilian receivers are now much more useful, allowing TDEC to strengthen its GIS capability. Most receivers can electronically upload and download data with personal computers. This allows TDEC field data to be electronically superimposed on maps with greater accuracy. It also allows a field investigator to revisit sampling stations with great confidence by using coordinates downloaded from an established GIS database. In addition to enhancing GIS capability, TDEC projects can benefit through better identification of sampling sites and easier navigation through the woods and on roads and waterways. For more information, (or help identifying macroinvertebrates) – call Dale. Dale gave a SWPBA talk at the 1987 Nashville meeting. Many enjoyed his “country” style.

TDA - Stop Work Orders on Water Quality Violators (Public Chapter 680)

New legislation allows the Commissioner of TDEC, in consultation with the Commissioner of TDA, to *issue a stop work order against any operator whose failure or refusal to use forestry best management practices (BMPs) results in water pollution*. The stop work order requires that the operator cease pollution-causing activities, and will remain in effect until the operator follows forestry BMPs that eliminate and prevent further pollution. Any operator that does not use BMPs will incur penalties, which will be enacted by the Water Quality Control Board. (Let’s hope this effort is not just a “paper”

tiger.) For more information see:

http://www.legislature.state.tn.us/bills/101gahtm/101_Chap/PC0680.pdf

That's All Folks!

2/07/01