

PRESIDENT'S LETTER

Greetings everyone,

I don't know about you, but things sure are busy here with meetings, planning, fieldwork, etc. keeping us on the go. I hope that each of you had a great Christmas season and is having a good 2002 so far.

Plans are underway for this year's meeting. Thanks for the great input many of you have given me as we try get things set up for our next conference. The dates for the meeting are October 29 – 31, 2002. We considered *at length* changing the date, but could not come up with an acceptable alternative, so it remains when it was before. The meeting will be held at Marriott's Bay Point Resort in Panama City Beach, which is located on the Gulf of Mexico about midway across the Florida panhandle. This is very nice facility positioned right on St. Andrews Bay and just a hop, skip, and a jump from the Gulf. We were able to get a room rate of \$84 per night, which is a little steep compared to some recent meetings, but a good rate for this location.

I want to issue an informal call for papers at this point. To help us in putting together the program, please let me know if you think you might want to present a paper, along with the general topic, at your earliest convenience. I realize, of course, that many things can change between now and late October, but we just want to get an idea of the talks that we can look forward to hearing.

In addition to the regularly discussed topics, I hope to have sessions on spring systems, odonates, and wetland bioassessment. I have already invited several speakers, and have gotten some commitments, and will be working on this more in the very near future.

Good luck in your upcoming spring sampling. If you have any questions, concerns, comments, etc., please feel free to call or email Joy Jackson, SWPBA secretary or me.

Take care.

Dana

News from Florida

Bureau of Laboratories – Tallahassee

SOP Training

The Bureau of Laboratories has been conducting a four-day standard operating procedure (SOP) training course. Since the SOPs will be mandatory after adoption of our proposed QA Rule, we want to familiarize private companies and local governmental agencies with these field requirements. A number of topics, including groundwater, wastewater, surface water, and biological sampling protocols, are covered. Three of the courses have been completed, and have had an average of 100 participants per session. The remaining SOP training courses have been scheduled for the last weeks of February, March, April, May, and September with full registration. For more information: <http://www.dep.state.fl.us/labs/training/index.htm>

RCRA Audits

The Environmental Assessment (EA) Section has been conducting audits on private consulting firms in order to assess their ability to sample groundwater monitoring wells at RCRA sites. Two audits have been completed so far this year with another ten scheduled.

State Parks Spring Sampling

The Bureau of Laboratories has been conducting algal and invertebrate bioassessments of Florida's state park springs as part of the Springs Initiative biannual spring monitoring program. A web site is also being developed for the Springs Initiative that will contain information on various springs in the state of Florida. For more information: <http://www.dep.state.fl.us/labs/reports/springs.htm>

TMDL Studies

The Bureau of Laboratories has been actively involved in sampling many of Florida's TMDL (Total Maximum Daily Load) designated sites. One purpose for conducting bioassessments in TMDL waters is to determine if the observed low dissolved oxygen levels are of natural origin or as a result of human influence. Bioassessment results may also be used to confirm impaired water bodies. To access reports about these sites, or for general information on the TMDL and Impaired Waters Rule, please visit: <http://www.dep.state.fl.us/labs/reports/basin/index.htm>

Environmental Education

The Bureau of Laboratories is dedicated to providing environmental education. One major project of emphasis this year has been the section's participation in helping develop the State Fair Exhibit. This year's topic is "Sunset on the Drought", which addresses the long-awaited

end of Florida's two-year drought. The exhibit will be stationed at different venues around the state over the course of an eighteen-month tour. Furthermore, we continue to devote time and effort to routine educational opportunities including the Rainbow Springs State Park "Springs Day", the Ichetucknee Springs State Park field trip, and the Front Porch Initiative at Maclay Gardens, among many other events.

Invertebrate Zoology

The Invertebrate Zoology subsection is in the process of developing marine methods for use in Florida. Methods will be used to:

- 1) characterize the severity of negative effects from point source outfalls as part of the Fifth Year Inspection (FYI) program,
- 2) help identify sources and causes of biological impairment,
- 3) evaluate the effectiveness of control and remediation actions,
- 4) support use attainability studies and cumulative impact assessments, and
- 5) assist in characterizing regional biological characteristics of unpolluted marine waters.

To date, we have reviewed a series of possible statistical approaches and benthic macroinvertebrates have been sampled at three outfalls:

- 1) a citrus processing plant discharging on a seagrass-dominated flat,
- 2) a reverse osmosis plant discharging into the Indian River, and
- 3) a waste water treatment plant discharging into the Anclote River.

To date, non-metric multidimensional scaling and principal components analysis following the analytical procedures developed by R. T. Clarke and R. M. Warick (Primer V) have proven the most robust at discriminating among sites along pollution gradients. We are also developing methods for *in situ* toxicity testing using *Americamysis bahia* for estuarine waters.

Northwest District Office – Pensacola

- Eighteen streams were sampled for SCI's
- Forty-four BioRecon's were performed
- Six lakes bioassessments were performed
- Seventeen Ecosummaries and two Lake Reports were prepared

Lake Reports:

- PAYNE, R.G., 2000. An Assessment of the Biological Health and Water Quality of Martin Lake, Bay County, Florida.

- PAYNE, R.G. AND G.L. BUTTS, 2001. An Assessment of the Biological Health and Water Quality of Four Coastal Dune Lakes in Walton and Bay Counties.

Data was provided to other agencies for their use:

- Report to Eglin AFB/USFWS documenting Okaloosa Darter impaired streams with BioRecon bioassessments at 7 sites that indicated a declining population of this endangered fish (Shaw Still Branch, Turkey Creek East, Swift Creek, 2 sites on Open Branch, and 2 sites on Rocky Creek).
- Brickton Road stream crossing bioassessment data used as Post-restoration monitoring for 319 grant paving selected Escambia County dirt roads.
- North Pine Barren Road stream crossing bioassessment data used as Post-restoration monitoring for 319 grant paving selected Escambia County dirt roads.
- Sandy Hollow Road stream crossing bioassessment data used as Post-restoration monitoring for 319 grant paving selected Escambia County dirt roads.
- Bioassessment data provided to Yellow River Aquatic Preserves to assist in purchasing of Escribano Point property along East Bay by Division of State Lands.
- Provided ecosummaries and GIS maps for s Dr. Pescador's (Florida A&M) presentation of sediment impact to rare panhandle mayflies at the X International Conference on Ephemeroptera in Perugia, Italy.
- Provided data and photos of stream bioassessment sites for Aquatic Life Use Support Presentation given by Tallahassee staff
- Bioassessment data provided to City of Mary Ester, Okaloosa County, for a University of Florida grant assisting the city using P2000 funds to develop and maintain Oak Tree Park.

Presentations and partnership meetings:

- A Power Point presentation given on biomonitoring partnership activities with Eglin AFB to the Air Force partnership committee meeting at Tyndall AFB
- Participated in Santa Rosa County Water Quality meetings and technical advisory work group on determining pollution sources.
- Participated in Martin Lake, Bay County, technical advisory work group to develop restoration plan for Martin Lake.
- Provided Technical Assistance for Deadhead logging compliance staff and Eglin AFB.
- Sent voucher specimens of megalopterns and neuropterans to Florida A & M (Dr. Pescador) for taxonomic QA and publish records

- Continuing yearlong study of fish management impacts with Fla. Fish & Wildlife and Blackwater River State Forest agencies.
- Facilitated Bear Creek restoration project with USFWS, USGS, and the landowner
- Worked with Eglin AFB/USFWS on endangered species (Okaloosa Darter) recovery for Eglin's Mill Creek Golf Course using data from 4 previous bioassessments
- Trained the new Eglin AFB/USFWS biologist and performed 10 QA duplicate BioRecon bioassessments to compare results and data sent to Tallahassee.
- Provided Bioassessment support for enforcement and clean-up actions for regulatory programs in District office and Waste Program office in Tallahassee.
- Facilitated converting a SLERP permit application to turn Ten Mile Creek into a concrete ditch to a viable stream restoration project (USFWS, NRCS, COE, FDEP, Escambia County, and 2 private engineering firms participating).

Central District - Orlando

- TMDL-related sampling (Ocklawaha River basin)
- NELAC/QA preparations
- taxonomic QA round-robins
- sampling training courses
- taxonomic workshops
- ongoing wetland bioassessment study in Seminole County
- increase in section size to 10 due to reorganization to include Ecosystem Management folks and addition of three OPS positions

News from Georgia

Georgia Department of Natural Resources

Environmental Protection Division

Water Protection Branch

Watershed Planning and Monitoring Program

As usual, I find myself waiting until the last minute to pull everything together for a submission. I started 3 weeks ago with a memo to all of the SWPBA members around here, notifying them of this issue and asking for input. Well, they must all be out in the field, so look forward to a bare bones update. We have found a few new people this reporting period, lost an old one, and had the legislature promise us a bunch more. Who wants a job here in the Peach State with the Georgia EPD?

We're looking forward to the yearly conference in Florida this year and our sincere thanks go out to the Sunshine State for acting as host organization for 2002. Preliminary plans look good. Also, thank you Kentucky for a great 2001 Conference. The Mammoth Cave field trip was, well, Mammoth!

Georgia's staffs are in full swing preparing for the spring/summer sampling season, and yes, we're preparing for another drought year. We have lake work scheduled on eleven different reservoirs in 2002. Tributary gauging and sampling is being conducted to document lake and drought issues. TMDL sampling work is still in full swing and basin lake work focuses on the Savannah-Ogeechee Basin Group. Read on to see what's up here in Georgia for 2002.

Significant Activities:

NonPoint Source Program

- After four years with the Georgia Adopt-A-Stream Program, Michele Droszcz has left EPD's Water Protection Branch for an exciting new job with the North Carolina Coastal Reserve Program on the Outer Banks. The Adopt-A-Stream Program will miss Michele's technical expertise and her enthusiasm.
- Anne Italiano, a recent graduate from the University of Maryland, began working as an Environmental Project Administrator with the Section 319(h) Grant Program in January 2002. Welcome to the Water Protection Branch, Anne!
- Chip Scroggs of the NonPoint Source Program participated in a panel discussion on Erosion & Sedimentation Control at the Georgia Society of Professional Engineer's winter meeting in Macon on January 25th.
- Terry Green and Chip Scroggs of the NonPoint Source Program gave presentations at the Fundamentals of Erosion & Sediment Control training course held at the UGA Continuing Education Center in Athens. Approximately 100 people attended the two and a half day course, which is sponsored by the Georgia Soil & Water Conservation Commission and is offered four times each year.

Permitting, Compliance & Enforcement Program

- Three orders were executed during the month of January and a total of \$87, 736 in monetary settlements was collected.
- EPD is proposing to issue a non-discharging land application system NPDES general permit to owners of medium and large non-swine animal feeding operations (AFOs). The proposed NPDES general permit will authorize these applicants to land apply waste as specified in nutrient management plans. We held a public hearing on the proposed issuance of the general permit on January 31, 2002 at the EPD Training Center in Atlanta. Approximately 25 people attended the public hearing and nine individuals provided comments. The permit is currently under review by U.S.EPA Region IV. Subject to EPA approval, it is anticipated that the permit will be issued in March 2002. This general permit will cover approximately 35 farms in Georgia.

Watershed Planning & Monitoring Program

- EPD proposed 137 TMDL's for parameters including: biota, fecal coliform, dissolved oxygen, fish consumption guidelines/PCBs, and metals in June 2001. The TMDL's were public noticed and public comment was reviewed and changes made to the TMDL's as appropriate. The TMDLS were finalized and transmitted to EPA for review and approval on January 31, 2002.

Ecoregions:

- The 319(h) Ecoregion Project is proceeding on schedule. Phase 1 (Level 4 Ecoregion Map) has been completed and is at USGS awaiting printing. Phase 2 (reference site selection and sampling) is complete and the macroinvertebrate identification is underway. Phase 3 (resampling of reference sites and sampling sites of varying degrees of impairment) is also complete, with macroinvertebrate identification underway. The Phase 4 (Biocriteria Development) work plan and QAAP is being written and should be sent to EPA for approval late this month.

Water Quality:

- Seventeen new sites have been added to the monthly monitoring for a total of 59 sites. The new sites expanded our monitoring to the Coosa River basin, and increased monitoring in the upper Chattahoochee River basin. We have also begun sampling for e-coli in addition to fecal coliform.

- The Watershed Planning and Monitoring Program welcomes our new Environmental Technicians Ian Stansbury, Josh Davis, Erica Schuler, Sidra Dorsey, and Michelle Monroe to EPD.
- The Branch Chief's office also added a new employee. Jimmy Stephens (formerly of Land Protection) joined the staff as an Environmental Technician. Welcome, Jimmy. We also said farewell to Stacy Allman, our GORA secretary when she transferred to Air Protection on February 1, to work as an Environmental Specialist Associate. Good luck to Stacy.

AMBIENT MONITORING UNIT

- In the fall of 2001, the Ambient Monitoring Unit (AMU) completed bioassessments of streams located in the Coosa, Tallapoosa, and Tennessee River basins. We are currently busy working on the identification/data analyses for these samples. We will be returning to five streams we were not able to collect samples from due to flow conditions or low numbers of organisms. We are in the planning phase for a special impact study on Proctor Creek in Cobb County that will take place towards the end of the month.
- We are continuing to work with Columbus State University in the development of biocriteria for Georgia. Reference sites have been selected and we should have the final document in late spring. The biocriteria portion of the project is proceeding on schedule.
- Georgia continues its rotating river basin management strategies. Water quality monitoring efforts will be focused in the Savannah and Ogeechee River Basins during the 2002 calendar year. The River Basin Plans are nearing completion for the Satilla, St. Marys, Suwannee and Ochlockonee River Basins.
- The Georgia EPD's 2002 305(b)/303(d) list of impaired waters is wrapping up the public comment period. These comments will be reviewed and incorporated where appropriate. The final list will be submitted to the U.S. EPA by April 1, 2002.
- GA EPD is saying farewell to Bill Kennedy, long time biologist and manager of AMU. He is retiring after 34 years of service. We wish him luck and are sad to see him go. Bill will be starting a new career as either a couch potato or a Wal-Mart store greeter. With Bill's extensive experience in management and easy going personality, the local MacDonald's franchise has been recruiting Bill for a full time supervisory position to manage the kid's party room.

INTENSIVE SURVEYS UNIT

- The ISU has lost an associate over the Christmas holidays. Michael Carter transferred out to the engineering unit. We wish him the best at his new position. Lake Standards

sampling will begin again in April. Lake Allatoona, Walter F George, Jackson, Lanier and West Point will be monitored once a month April through October over a wide range of parameters. It is expected that Carters Lake will be added to this list for 2002.

- Basin Major Lakes Sampling will occur in the Savannah–Ogeechee Basin Group for 2002. This basin group includes lakes Burton, Rabun, Tugalo (Georgia Power lakes), and Hartwell, Russell and Clarks Hill (US ACE lakes). Basin lakes are sampled once a quarter for the same parameters as the Standard Lakes.
- Draft reports for year 2001 Standard Lakes have been completed and processed on lakes Allatoona, Jackson, Lanier, Walter F George, and West Point. They should be available for review by late spring. The draft 2001 Basin Lake report has also been completed. The 2002 lake sampling for these projects will begin this month (February).

FACILITIES MONITORING UNIT

- The Georgia Environmental Protection Division (EPD) has documented instances of Total Residual Chlorine (TRC) excursions at water pollution control plants (WPCPs) as a direct result of overuse of hypochlorite powder and similar products during cleaning and wash down activities. In many cases, operators have applied chlorine-bearing powder liberally on effluent weirs, clarifier launder troughs, and other surfaces. Even those facilities equipped with dechlorination often cannot neutralize the high effluent chlorine concentrations that result. In one case, EPD personnel measured an effluent TRC level of 123 mg/L. Results from EPD stream sampling for TRC have been as high as 0.35 mg/L after documenting improper WPCP cleaning activities. Severe water quality degradation can result when toxic slugs of chlorine enter State waters. This impact can include fish kills.
- It is essential that WPCP staff closely monitor what is being used in plant cleanup activities and the effect on receiving streams. Chlorine limitations in NPDES permits are becoming increasingly common and stringent. Guidance from the U.S. Environmental Protection Agency recommends that in-stream concentrations of TRC not exceed 0.011 mg/L to avoid toxicity to aquatic life. Effluent TRC limitations calculated for State NPDES permits are based on this guidance. In general, effluent TRC concentrations must be kept relatively low to ensure that the in-stream maximum of 0.011 mg/L is not exceeded.
- It is important to remember that TRC limitations in NPDES permits are instantaneous maximum values; they are not calculated as an average. This means that the limits may not be exceeded at any time; a single reading greater than the limit is considered a violation. Such excursions can be immediately toxic to aquatic life. EPD field inspectors are charged with tracking compliance with these limitations and any documented violations of the limits or impact to State waters are subject to enforcement action. In

conclusion, we strongly recommend that WPCP operators, supervisors, and administrators re-evaluate their current use of chlorine products and other material being used at the WPCP to ensure that environmentally safe products are in place for plant housekeeping activities. It is essential to proper operation of the wastewater treatment system and good water quality protection.

News from Kentucky

Bioassay Section

- Since the annual meeting, conditions at the culture facility have continued to improve. We have successfully fended off attempts to take away our mobile trailer and the vehicle that allows it to be mobile. Sediment toxicity tests for samples taken from the Green River are complete and we have finalized our 28-day test protocols. We are beginning to believe that our DI water system is cured. Our fathead minnows are starting to lay eggs and the daphnids are reproducing nicely. We are in the planning stages of selecting facilities in the Big and Little Sandy River Basins for compliance monitoring. We are looking forward to a more normal year.
- Betty Beshoar continues to collect TSS samples in the Benson Creek drainage. She is trying to find out which section of that basin is contributing the greatest sediment load. We hope to have a report this year. We have also initiated a sediment toxicity study around the Paducah Gaseous Diffusion Plant. This is a facility that enriches uranium. Janet Miller (hopefully, you met her at the 2001 SWPBA meeting) is lending a much needed hand in this effort. If the sediment to be tested doesn't glow in the dark, we hope to complete this work before April.
- Susan Cohn, SWPBA president in 2001, has left the building. Her workstation has been officially moved to a building across the parking lot. We are hopeful that a change in atmosphere will alleviate some nagging health problems. She has completed the retooling of our SOP. Just before Christmas, she injured her knee playing indoor soccer. She managed to avoid reconstructive surgery, but had to spend more than a few weeks on crutches.

Ecological Support Section

- Since our 2001 SWPBA meeting in Bowling Green, KY, aquatic biologists have been very busy identifying samples and analyzing data from the Green River basin. Currently, sampling sites for the Big Sandy River, Little Sandy River, and Tygarts Creek are being selected for the upcoming sampling year. Biologists have been involved in collecting

recovery data for the Martin County coal spill, as well as, reviewing consultant data to ensure proper clean-up. Fish tissue samples have been processed and sent off for analysis. These included ambient watershed stations, PCB lake monitoring stations (Green River Reservoir), PCB spill stations on Drakes Creek, and Federal Lakes stations. Scoring criteria for the Diatom Bioassessment Index, the Macroinvertebrate Index, and the Fish Index of Biotic Integrity have been developed by staff biologists based upon a 100-point scale. This will allow each community equal weight when determining designated uses for stream segments.

- The Kentucky Division of Water is considering adoption of an *E. coli* standard in response to the latest draft (February 1, 2002) from USEPA titled "Implementation Guidance for Ambient Water Quality Criteria for Bacteria". In preparation for this possibility, *E. coli* testing has been conducted in parallel with fecal coliform testing in the North Fork Kentucky River watershed. Testing according to the MTEC procedure in 2000 did not receive favorable laboratory reviews, despite data showing a strong correlation between the two indicators.
- In 2001, *E. coli* testing was performed in parallel with fecal coliform testing using IDEXX Laboratories, Inc. Quantitray 2000 equipment. This procedure was much preferred over the MTEC procedure. The procedure is also excellent for evaluating well water samples, as it also provides total coliform data. The correlation of *E. coli* with fecal coliform in this data set is not finished, but we are hopeful it will be acceptable. One noticeable occurrence is that incubation past the 24-hour mark to 48 hours can show an increase in the *E. coli* level found in the sample. We hope to place IDEXX equipment in each field office to build a transition database, but with a budget shortfall, this may not be possible.

Nonpoint Source Section

- The Nonpoint Source (NPS) Section has had a scattering of staff about Frankfort. NPS staff have been moved to various locations in the main office complex and three have been exiled to the DES laboratory across town. Communication within the Section has been, and will continue to be, an interesting challenge. We've been told, however, that this move is only temporary (6-9 months)...Yeah, right.
- Biological sampling in the Green and Tradewater basin was completed at the first of August (fish, macroinvertebrates, habitat, and p-chem). Everything has been identified except for handful of macroinvertebrate samples and preliminary data analysis has started. We have also started preliminary site selection in the Big Sandy basin for our River Basin Cycle sampling. NPS will continue to sample first and second priority 303(d) streams (<4th order) that do not "support aquatic life standards", and/or are a priority for TMDL development.

- One of our biologists, Steve McMurray, recently had a journal article published on one of our large-watershed demonstration projects. If you would like a reprint, contact him at Steve.McMurray@mail.state.ky.us. The abstract of the paper is below:

Macroinvertebrate, Fish, and Physicochemical Differences Between an Acid Mine Drainage Impacted Stream and a Kentucky Wild and Scenic River

Stephen E. McMurray and Guenter A. Schuster

ABSTRACT

Acid mine drainage (AMD) causes a myriad of impacts to macroinvertebrates and fishes and causes changes in the chemical properties of water. Macroinvertebrate, fish, and physicochemical data were collected and compared from Bear Creek, an AMD impacted stream, and Rock Creek, a Kentucky Wild and Scenic River, during 1991 and 1992. Macroinvertebrates, fishes, and physicochemical data were also collected from Bear Creek in 1994 to determine if reclamation efforts had been successful. Three replicate 0.09 m² Surber samples (900 µm mesh) supplemented with qualitative sampling in available habitats were used for macroinvertebrate sampling. Fishes were collected with a 3.4×1.2 m seine (0.3 cm mesh) in all available habitats. Water samples for physicochemical analyses were collected with either grab or depth-integrated techniques. Significant differences (Mann-Whitney U, $P \leq 0.05$) were found between the macroinvertebrate taxa richness, total number of individuals, EPT, %EPT, %Chironomidae and mHBI values; the fish IBI values; and 13 of the 25 physicochemical variables examined from the streams. Reclamation occurred at three locations in the Tennessee portion of the Bear Creek watershed, but no improvements in water quality in the Kentucky portion were observed.

Standards and Specifications Section

- This is a busy time for the Standards and Specifications Section. Tom Van Arsdall is "covered up" in topo maps and 305(b) bioassessment forms. Given the increased assessments performed on the Commonwealth's water resources, this may be the most data collected and analyzed for the 305(b) biennial report. Data have been submitted from a number of local, state and federal sources. Some data submissions have been slow in coming in; hence the last minute crunch to get maximum information on waterbody conditions in Kentucky. These data were gleaned from the 1999 basin-year (Salt and Licking rivers) and the 2000 basin-year (4-Rivers (Ohio, Cumberland, Tennessee and Mississippi rivers)).

- Our Section sampled 41 1st-5th-order streams this past summer in the random designed basin assessment effort for the combined Green and Tradewater rivers basin. This year all probabilistic bioassessments utilized the Ecological Support Section's methodology for high and low gradient streams. In the Division of Water's effort to refine the multimetric index for macroinvertebrates, riffle samples (when available in high/medium-gradient streams) were picked and kept separate from dipnet collections in other habitats (e.g., wood, undercut banks/root mats, large cobble-small boulders, bedrock or slabrock, etc.). Low gradient streams (no riffles) dictate the 20-jab method be used for available habitats. We are currently in the process of identifying those macroinvertebrates collected from these streams for later analyses.
- Dr. Scott Grubbs (Western Kentucky University) was contracted using 319(h) funds to perform probabilistic bioassessments, primarily in the combined lower Green and Tradewater rivers basin. He and students collected macroinvertebrates from 35 streams (1st-5th order) in this basin as well as habitat assessments and meter readings for water quality. His lab is currently identifying those animals and will report their results once analyses are complete.
- Next basin-year will find us in northeast Kentucky, in the Big Sandy/Little Sandy/Tygarts watersheds. Planned are 50-55 1st-4th-order streams to be randomly assessed. The small 1st and 2nd order watersheds will be sampled in spring and the 3rd and 4th order streams sampled in summer.
- Water quality sampling in the Green/Tradewater Watershed continues. December and January samples were collected under high flow to flooding stage heights. This should give a good indication of nonpoint source pollution impacts on water quality.
- Site selection for the Big Sandy/ Little Sandy/Tygarts Watershed is under way. We should have sites selected by mid-February. In late February or early March, we will reconnaissance these sites and make adjustments if necessary. Sampling of this watershed begins in April.
- Last fall Giles Miller attended a national STORET conference in Las Vegas. Software for entering batch data was distributed. As yet, data entry has not taken place. The delay has been caused by a higher priority being placed on completing an update of our SOP manual. The SOP manual should be completed by the end of March, then STORET data entry will begin.
- Twenty-five reservoirs were sampled for water quality and vertical profile data of the water column. These samples were collected at three intervals during the growing season.
- The lake section of the 305(b) report for the Salt/Licking Basin and Four Rivers Basin is currently being written. These samples were collected in 1999 and 2000, respectively.
- With the retirement of our Assessment Database (ADB) and ArcView/GIS coordinator this past fall, those duties have been divided between Section employees. With the current budget constraints, this position is yet unfilled.

Water Quality Certification Section

- 2001 saw many changes within the 401 Section. Long-time staff members Bill Sampson and Ed Carroll moved on to pursue other career paths. We have recently hired Brent Johnson to fill one of those positions, and look to fill the other shortly. We are continuing to work with Martin County Coal Corporation on the restoration of Coldwater and Wolf Creek and the associated tributaries that were damaged in the slurry spill that occurred in October 2000. We are also quite busy working with county governments on local flooding issues that became evident after the August 2001 storm events. Jenni Garland has been involved in the Natural Channel Design Working Group with Margi Jones of the Nonpoint Source Section learning the technical aspects of fluvial geomorphology and stream dynamics. She and John Dovak recently attended the North Carolina Stream Restoration Conference in North Carolina. The 401 staff have developed new guidelines for evaluating stream restoration and relocation projects and assigning mitigation credits. We are also focusing some of our efforts on developing guidelines for monitoring these projects so as to better evaluate their success/failure.

News from Mississippi

The rains are upon us here in Mississippi. This has really been a winter period of extremes -- one day its 80 degrees, the next day we're looking at a winter storm in the northern portion of the state. Since this is the first newsletter of the year, let all of us from Mississippi DEQ say congratulations to President Dana Denson on his election, and express our appreciation to the Kentuckians who put on such a great meeting last October.

New Faces

- We wish to introduce and welcome two new members of the SWPBA "Family" from Mississippi, David Barnes and Will Green. David Barnes will be our coordinator for the coastal 2000 EMAP in addition to his other duties. Will Green have been hired as an additional field biologist/taxonomist. We are fortunate to have both Will and David join our staff.
- David Barnes received his BS in biology as well as his MS in zoology with marine emphasis from the University of Southern Mississippi. His master's thesis is entitled The Colonization of an Artificial Reef in the North Central Gulf of Mexico by Polychaetes. Before joining the staff of the Mississippi Department of Environmental Quality as a field

biologist he was employed for 23 years at the Gulf Coast Research Laboratory. Born and raised in Biloxi, MS, he resides in neighboring Ocean Springs.

- Will Green has joined the staff of the Biology Section, and is based at our laboratory in Jackson. Will is a native of Oklahoma, has a B. S. degree in Biology from Southwestern Oklahoma State University, and is nearing completion of his M.S. Degree from the University of Southern Mississippi. His thesis is titled "A Comparison of two Backwater Lakes in Pool 10 of the Upper Mississippi River". Prior to coming to our lab, Will worked for three years as a contractor for the Waterways Experiment Station, Environmental Lab. While at Waterways, he was involved in numerous long-term malacological monitoring projects as well as conducting Rapid Bioassessments on several Military Bases throughout the US.

Field Activities

- Since the last SWPBA Newsletter, staff from the Biological Services Section has been heavily involved in several large-scale projects.

Coastal EMAP

- David Barnes and Barb Viskup represented the Biological Services Section during this sampling effort that occurred during August and September, 2001. This effort was led by the Gulf Coast Research Lab. Fifty sites throughout the Mississippi Sound were sampled, with benthos, fish, sediments and water column samples collected for various analyses, as well as various field measurements.

Field Reconnaissance and Biological Sampling for 303(d) Listed Streams

- This is a continuation of the effort begun last year to sample the 303(d) listed waters of the state. Last year's effort consisted of 523 sites (including replicated and duplicated sites). During the latter part of 2001, staff biologists participated in the reconnaissance of sites for this portion of the study. A total of 85 sites were selected for this phase of the study. Similar to last year's collection effort, these sites were situated statewide with the exception of the Mississippi Alluvial Plain, which is the focus of a separate monitoring effort (see below).
- Beginning in January, Barb Viskup and David Felder of the Biological Services Section assisted in the sampling of sites for this study. High waters from winter rains have caused approximately 8 sites to be deleted from the sampling plan. The sampling is nearing completion. Alice Dossett and Will Green are leading the subsampling and taxonomic efforts in the laboratory, where there are approximately 80 samples remaining to be processed.

Mississippi Alluvial Plain Monitoring Project

- Biological Services Section scientist Chip Bray has worked diligently on the field portion of this project, which concentrates on the 303(d) Listed waters in the Mississippi Alluvial Plain (Delta). Working with personnel from the USGS, the project goal is to sample 50 sites using both a natural substrate method and Hester-Dendy samplers. Some of the sites, which are being considered as potential reference sites, are located in Arkansas. The project was scheduled to begin in early January, but winter rains forced a delay. Fortunately, the weather seems to have broken, and the samplers are making progress towards completion of the field collecting. Another round of sampling is scheduled for late summer.

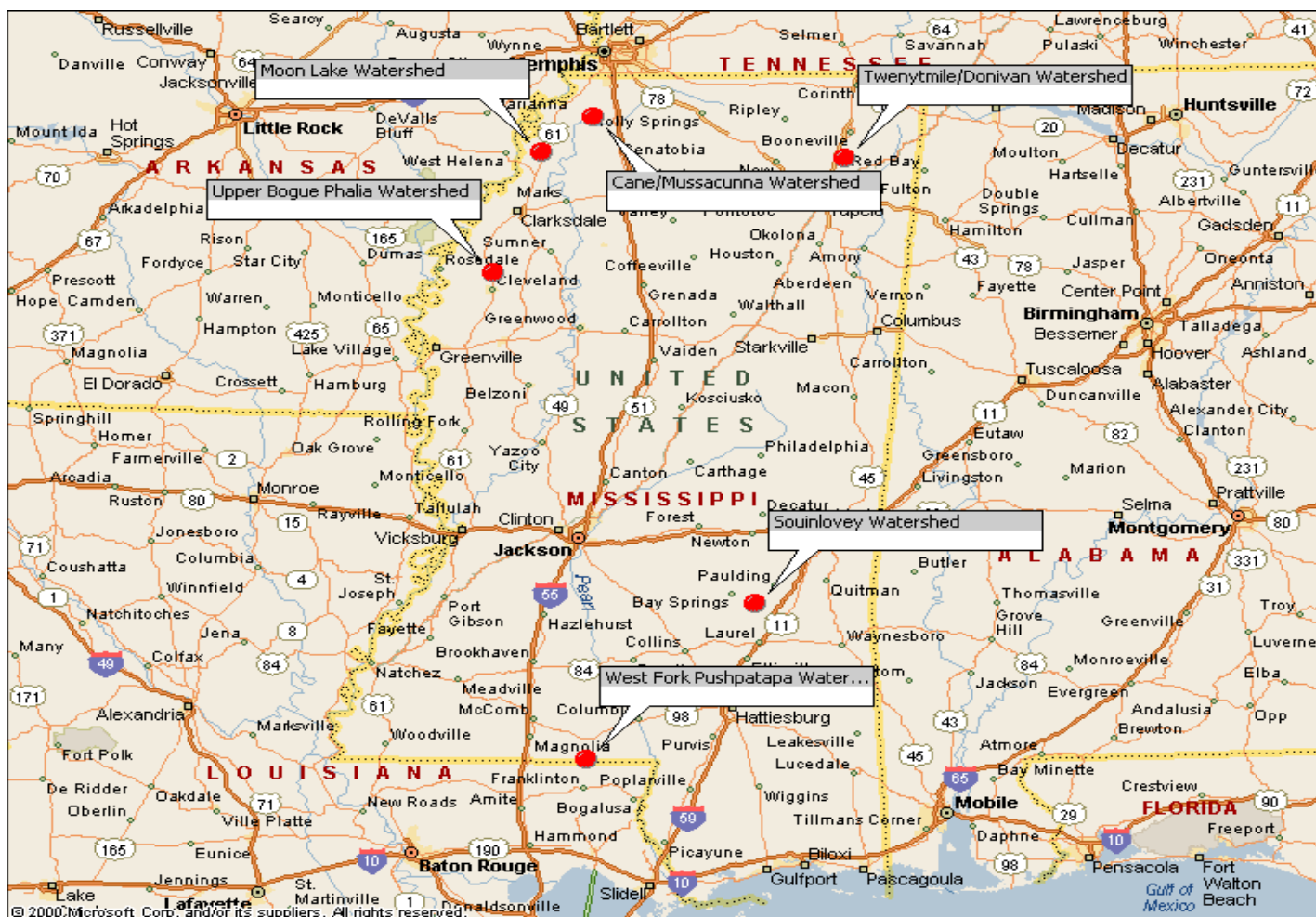
Monitoring of the Effectiveness of BMP's

- The Mississippi Department of Environmental Quality, Office of Pollution Control, Biological Services Section has been involved in the field monitoring of six non-point source watershed projects throughout the state (See attached map). Water quality monitoring is performed quarterly at selected sites within each watershed to evaluate the effectiveness of implemented best management practices (BMP's). Sites were selected below BMP's and within receiving waters to monitor improvement (if any) in the water quality of these receiving streams. Completion is scheduled for June 30, 2002.

Ecoregion Projects

- **Mississippi Level IV Ecoregion Project.**

We continue to make progress on the finalization of the subcoregions of Mississippi. Our workgroup, which includes members of the Mississippi Office of Pollution Control, the Mississippi Office of Geology, the NRCS, the USGS, the US Forest Service, Mississippi State University, US EPA Region IV, Mississippi Automated Resource Information System (MARIS), and the Arkansas Soil and Water Conservation Commission have engaged in some good e-mail discussions regarding certain draft subregions.



- We continue to work closely with Dr. Barb Kleiss (formerly USGS and currently US Army Corps of Engineers- Waterways Experiment Station) and Phil Crocker (US EPA Region VI), on the subregionalization of the entire portion of the Mississippi Alluvial Plain Ecoregion (#73). In early December, a two-day discussion was held in Vicksburg complete with Jim Omernik and Shannon Chapman on potential reference areas, the draft subregion map for the Mississippi Alluvial Plain, and appropriate representative photographs for the final poster. Just last week, an informal meeting was held in which Barb presented some maps and some of her thoughts to the group for discussion.

Natural Resource Damage Assessments

Staff Biologists continue to be involved in several projects of this nature

Leaf River Oil Spill near Collins.

- Work continues on the Natural Resource Damage Assessment and Restoration (NRDAR) on this stream and associated wetland and tributaries that were impacted by the spill.

Activities on this NRDAR have been mostly limited to meetings among the trustees to determine acceptable restoration alternatives, and among the trustees and the Responsible Party to attempt to finalize the restoration plan. Focus of the restoration plan has been narrowed to four areas: wildlife injury (wood ducks); wetland injury; injury to the riparian zone of the tributary which conducted the oil into the Leaf River; and injury to the tributary which conducted the oil into the river.

Oil Spill in Boggy Hollow, near Purvis, Mississippi.

- This spill occurred on March 23, 2001. Activities have consisted of a preliminary investigation and censusing of the resources affected, and biological studies to quantify the damages. We are awaiting the results of these studies from the contractor. A Damage Assessment and Restoration Plan (DARP) are in preparation.

Oil Spill in Meyer's Creek, south of Hattiesburg, Mississippi

- This spill occurred when a bulldozer operator accidentally ruptured a pipeline, releasing a small amount of oil into Meyer's Creek. Oil also spewed into a private pond, which resulted in the killing of approximately 2-dozen fishes. Water samples have been collected throughout the clean-up phase, which ended several months ago. Plans are now underway to conduct a preassessment of the stream to determine if an NRDA is warranted.

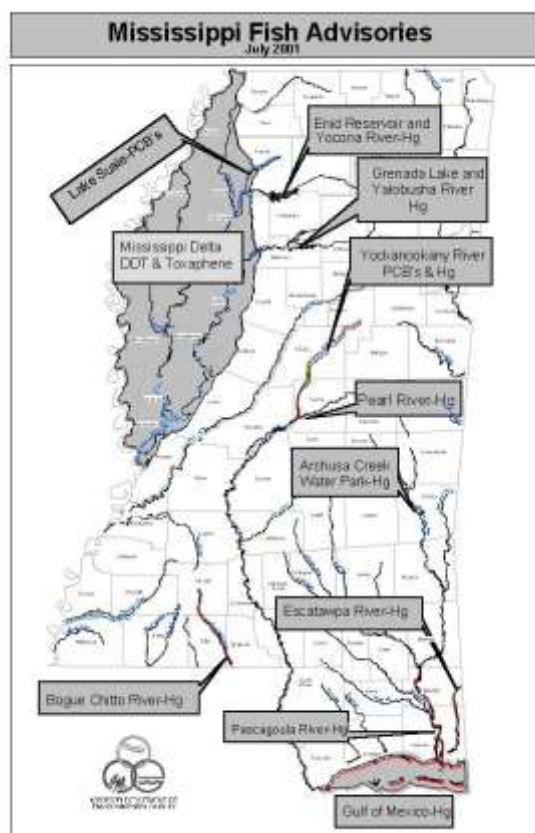
Response to Diesel Spill in Jackson, Mississippi

- In early January, staff biologists were called to quantify natural resource damages from a 500-gallon diesel spill from a storage tank. The leak began "around Christmas" and flowed into a small pond, killing hundreds of fish, and some bullfrogs. Turtles were also injured by this incident and were cleaned by staff biologists, placed in clean water for observation, and then released into another nearby pond.

Fish Tissue Monitoring Program

- Mississippi has historically used FDA Action Levels for issuing fish consumption advisories. However, in the 1990s it was recognized that since these action levels were developed for use with foodstuffs entering interstate commerce, that for some chemicals, these levels may not be adequately protective for recreational and subsistence fishermen who routinely consume most of their fish from a single water body. In the last 10 years, most states have gone to a risk based approach for issuing fish advisories. EPA has developed a series of guidance documents to assist the states in standardizing the fish advisory process, and according to the EPA, forty-two states are now using this guidance for issuing advisories.

- The Mississippi Fish Advisory Task Force has been charged with developing criteria for issuing Fish Consumption Advisories for Mississippi, and with making consumption recommendations to the agency directors. This group is made up of scientists, engineers, and epidemiologists from the Department of Health, the Department of Environmental Quality, the Department of Wildlife, Fisheries and Parks, the Department of Marine Resources, and the Department of Agriculture and Commerce. The chemicals of immediate concern are chlorinated organic compounds such as DDT, toxaphene, and PCB's; however, it is anticipated that the approach outlined here will be used for additional chemicals in the future.
- The Fish Tissue Monitoring Program had to quickly gather new data for DDT and Toxaphene from sites in the Mississippi Delta region of the state that traditionally contained measurable levels of these contaminants. These data prompted Mississippi's first Regional Fish Consumption Advisory. This advisory warns the public to limit consumption of buffalo, carp, gar, and large catfish (greater than 22 inches) caught in the Mississippi Delta region of the state. A figure illustrating all advisories currently in effect in Mississippi waters is given below:



Mercury Studies

- A new Mercury Advisory was placed on Mississippi's largest flood control reservoir this year. Data collected from Grenada Reservoir and the Yalobusha River warranted a "Limit Consumption Advisory" for bass and for catfish greater the 27 inches.

Fish Kill Investigations

- Nine fish kills were investigated by the MDEQ between October 2001 and January 2002. Four of the fish kills occurred in the southern region of the state. Two of the southern fish kills were of undetermined origin and two were caused from temperature shock. One fish kill occurred in the central region of the state. This fish kill was caused from a diesel spill. Four fish kills occurred in the northern region of the state. All four of these fish kills were determined to be from low dissolved oxygen.

Water Quality Assessment Section News

- In order to facilitate better communication with SWPBA members, beginning with this newsletter, news and activities from the surface water program management group within MDEQ will be presented under this heading within "Mississippi Happenings". As a brief introduction, the Water Quality Assessment Section (WQAS) is located in MDEQ's main office in Jackson and is composed of a section chief, Jeff Thomas, and five staff scientists – Matt Hicks, Kevin Pigott, David Loch, Pete Howard, and Natalie Guedon. Roles of the WQAS include the coordination of the Surface Water Monitoring Program (SWMP) which includes statewide ambient and basin monitoring, the planning and implementation of special water quality studies for 303(d), TMDL, wasteload allocation, and WQ Standards programs, and the responsibility for water quality assessments, reporting, and data management under the 305(b) Program.

Development of an Index of Biological Integrity (IBI) Project

- The statewide 303d/IBI biological monitoring project mentioned in the last three newsletters is nearly complete. Data entry is complete and analysis is underway. We have begun classifying streams in our state and have identified potential reference reaches for each unique region. We are also analyzing the data collected during this study to develop specific tolerance values for Mississippi benthos. The project is on schedule to be completed by February 2002. We plan to publish these data in a series of manuscripts and are extremely excited and encouraged about the potential outcomes of this enormous project. We believe that as a result of this project, we will make great strides with regard to our 303(d) List and regarding our future biological monitoring and assessment capabilities. For more information, contact Matt Hicks, Project Mgr, at (601) 961-5786 or Matt_Hicks@deq.state.ms.us.

Monitoring & Assessment of 303(d) Listed Wadeable Streams & Rivers of Mississippi Project

- This project is a continuation of the 303(d)/IBI biological monitoring project mentioned above. For various reasons, there were a handful of 303(d) listed wadeable streams and rivers that were not sampled during the 303(d)/IBI study. In addition, there were a few water bodies that were sampled during the 303(d)/IBI study, but for various reasons were selected to be re-sampled. Data collected during this project will be assessed in terms of impairment status using the newly developed IBI as an indicator. The same protocols will be used to collect and analyze all data. Data collection began in mid-January and will continue through February. The project and all assessment reports are scheduled to be completed by October 2002. For more information, contact Matt Hicks, Project Mgr, at (601) 961-5786 or Matt_Hicks@deq.state.ms.us.

National Coastal Assessment – 2002 Activities

- The U.S. EPA's National Coastal Assessment, initially known as Coastal 2000, is a five-year project designed to assess the condition of the Nation's coastal ecosystems. With the involvement of various resources from each coastal state, sampling is conducted annually during a summer index period utilizing standard protocols. Using a standard set of survey indicators, assessments will be made at state, regional, bio-geographical and national levels to summarize the ecological health of these waters.
- We will begin the third year of our participation in this project in August of 2002. A total of 50 randomly selected stations in Mississippi coastal waters will be sampled for in-situ field parameters, water/sediment/fish tissue chemistry, fish pathology, chlorophyll *a*, benthic community, sediment toxicity, and sediment particle size. Sample analyses from year 1 and 2 are ongoing and data that are generated are being forwarded to EPA's Gulf Ecology Division after entry into our database. For more information, contact Jeff Thomas, Section Chief, at (601) 961-5157 or Jeff_Thomas@deq.state.ms.us.

Coastal Beach Monitoring Program

- During the last quarter of 2001, only one beach closure of unknown cause was reported. The beach section was closed for a total of six days and was re-opened when fecal coliform levels were measured to be lower than required state water quality levels. The Beach Monitoring Web page can be accessed via the Mississippi Department of Environmental Quality's Homepage (www.deq.state.ms.us). This website contains beach advisory status, location of monitored sites, data associated with those monitored locations, and a history of beach closures. For more information, contact Kevin Pigott, Program Coordinator, at (601) 961-5787 or Kevin_Pigott@deq.state.ms.us.

Mississippi Alluvial Plains Ecoregion (73) Monitoring Strategy Project

- As stated in the last update, a work group was formed to develop a monitoring strategy for the Mississippi Alluvial Plains Ecoregion (73). This effort was instigated from pressing 303(d) list and TMDL issues facing this region of our state, and from uncertainty regarding an appropriate monitoring strategy for this unique ecological region. The work group consisted of scientists from various state and federal agencies, all who are represented on the Yazoo Basin Team. The work group met several times developed a study plan for a Pilot Study. This study plan was converted to a Quality Assurance Project Plan. The objectives of the study will be to test the utility of macroinvertebrates and fish community data as ecological indicator/s, and test data collection, analysis and interpretation methods. The macroinvertebrate portion of the Pilot Study has begun and the fish community portion will begin in mid-Spring. For more information, contact Matt Hicks, Project Mgr, at (601) 961-5786 or Matt_Hicks@deq.state.ms.us.

Fecal Coliform 303(d) Monitoring and Assessment Project

- 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 have been collected. For each water body on the 303(d) List, evaluated or monitored, the state is required to develop TMDL's for those pollutants impairing any use of the water body. 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 TMDL's. In addition, more data is needed for the monitored 303(d) water bodies to identify potential bacteria sources and develop science-based TMDL's. Three projects were initiated in order to collect the data needed for development of pathogen TMDL's in Mississippi.
- The projects consisted of sample collection at approximately 180 sites located throughout Mississippi as well as laboratory analysis for fecal coliform bacteria count. At each site, six samples were collected during each of two thirty-day sampling periods, one period during the winter (wet) season, and one period during the summer (dry) season. Samples were not collected within a 48-hour period following a rain event in the watershed of the sampling stations to ensure that the samples indicated fecal coliform bacteria levels at baseflow conditions. Data collection activities also included conducting tape-downs at each station at the time of sample collection, taking digital photographs of each station, as well as recording the latitude and longitude of each station. The SOP developed for this project included field duplicates, field blanks, and split samples. The sampling has been completed for two of the three projects, with one sampling period left for the third project. Upon completion of each project the data will be assessed and water bodies assessed as impaired will be reflected in the October 2002 303(d) List. Water bodies that are assessed as non-impaired will be submitted for de-listing. Additionally, development of TMDL's for impaired water bodies will be initiated upon completion of these projects.

For more information, you may contact either of the project managers, Matt Hicks (Matt_Hicks@deq.state.ms.us) at (601) 961-5786 or David Loch (David_Loch@deq.state.ms.us) at (601) 961-5618.

Ambient Monitoring Program

- MDEQ has suspended a major portion of its Ambient Monitoring Program for two years in order to free up resources to devote to other pressing agency needs. These needs include 303(d)/TMDL issues including intensive stressor identification studies, nutrient criteria development, and water quality indicator development (lakes, large rivers, MS Delta) including biological indices development. Major components that have been suspended include statewide and rotating basin networks of water quality, biological and pathogen monitoring for rivers, streams, lakes and estuaries. The statewide fish tissue monitoring network is the only network that will continue to be monitored during the next two years.

Nutrient Criteria Development for Streams and Rivers Project

- In response to EPA's National strategy on development of nutrient criteria, Mississippi is aggressively moving forward to develop clear numerical criteria that will allow discernment of natural nutrient concentrations from heightened anthropogenic concentrations in Mississippi water bodies. The purpose of this project is to gather scientifically defensible data for use in developing numeric nutrient criteria for streams and rivers, both Wadeable and non-Wadeable. The ultimate objective is to reduce the anthropogenic component of nutrient over-enrichment to levels that restore beneficial uses (i.e., described as designated uses by the CWA), and to prevent nutrient pollution. The project is intended to facilitate a better understanding of cause-and-effect relationships in these complex systems.
- This project will involve the collection of data on total phosphorus (TP) and total nitrogen (TN) as primary causal variables of eutrophication, and a measure of water clarity (e.g., Secchi depth) as primary response variables. In addition, other traditional water quality data (e.g., dissolved oxygen, pH, turbidity, etc.) will be collected as primary response variables. Biological data will also be collected from all stations to provide a better understanding of the link between cause and effect. Data will be collected from targeted stations (303(d) listed water bodies and Wadeable reference reaches) as well as randomly selected stations based on a probabilistic design. Targeted stations will be sampled quarterly for two years, while two separate sets of random stations will be collected quarterly each year with a small core group that will be sampled in both years. Biological data will be collected once from all stations.

- We intend to gather sufficient data to make comparisons and perform statistical analyses of causal and response variables to help determine effect thresholds and further refine nutrient criteria. Nutrient criteria thresholds for Wadeable streams and rivers will be derived using a reference condition approach. Verification of these thresholds will be performed using cumulative distribution functions calculated from data collected from the random sites. Nutrient criteria thresholds for large rivers (non-Wadeable) will be performed using cumulative distribution functions calculated from data collected from the random sites.
- The work outlined for this project includes historical water quality data gathering and analysis, water quality monitoring, laboratory analyses, and database development and analyses. The project will benefit not only Mississippi but also the National Nutrient Strategy by providing additional water quality from Mississippi Level 3 Ecoregions. For more information, contact Matt Hicks, Project Mgr, at (601) 961-5786 or Matt_Hicks@deq.state.ms.us.

News from North Carolina

Hi fellow SWPBA members. The main word in our state is **money**. We have little, with no promise of improved revenue in the near future. The other word is **people**. We have lost a lot of experience to the private sector and to other programs. But we still have a lot of good ones and we've acquired some good ones and our program is working hard to continue our mission. This submission is brief, in that we are in a very busy, but transitional time of year. We are analyzing data and finalizing reports from last years basin assessments, planning and scheduling for this spring and summer's work, working to hire staff from vacated positions, and conducting special studies. We are still working hard to get our data base management efforts back up to par, and are making good progress. Hope all is well with our sister states.

Jimmie

BIOLOGICAL ASSESSMENT UNIT

Fisheries Activities

- Basinwide monitoring activities in Spring and early Summer 2001 focused on Wadeable streams the Yadkin - Pee Dee River and the Lumber River basins. The basins were previously monitored in 1996. Special studies conducted during the later half of 2001 included a large watershed trout reclassification (Use Attainability) study of Richland Creek in Haywood County (French Broad River basin) and two smaller studies supporting the Watershed Assessment and Restoration Unit.

Fish Tissue Monitoring

Waccamaw/Riegelwood Study

- The Lumber River basin covers a broad swath of southeastern North Carolina and includes several major water bodies, including the Lumber and Waccamaw Rivers and Lake Waccamaw. At present, 11 water bodies in the basin are covered under section 303(d) of the Clean Water Act due to elevated mercury levels in several fish species. This area is characterized by some of the highest fish mercury levels in the state, thus it can be considered high priority in terms of potential human exposures. As part of the section 303(d) requirements, the North Carolina DENR Division of Water Quality (DWQ) has completed a draft Total Maximum Daily Load document that attempts to identify inputs of mercury to these waters. One of the conclusions made in that document is that wet deposition of regional atmospheric releases of mercury, principally emanating from a single chlor-alkali plant estimated to release over 1,400 pounds per year of mercury to the air, are responsible for the majority of mercury inputted to these sensitive waters.
- In April of 1999, the chlor-alkali plant began converting to a membrane process for chlorine bleach production that does not involve mercury. This should result in a substantial reduction of local mercury inputs to both air and waterways. At present, the DAO is cooperating with EPA Region IV to assess the air quality impact of the conversion process. In the Spring of 2001, ESB began monitoring mercury levels in fish tissues at six stations around Riegelwood in the area to continue to assess long-term trends following regional source reduction. ESB anticipates returning to the sites for the next several years.

EPA's National Fish Tissue Study

- Fish tissue sampling for EPA's National Fish Tissue Study continued in 2001. ESB was scheduled to collect fish from selected NC lakes in late summer as part of an ongoing national assessment of fish contaminants. The 2001 station was Mt. Island Reservoir (Mecklenburg Co.).
- **Fish Kills – 2001** (<http://www.esb.enr.state.nc.us/Fishkill/fishkillmain.htm>)
- Field investigators reported 77 fish kill events from January to December 2001. Kill events were reported from the coastal counties to as far west as Alexander County in 8 of the states 17 major river basins. The ESB tracks fish kill events when at least 25 fish are affected and when investigators confirm the event.
- The total reported fish mortality for 2001 was just under 1.4 million. The 2001 figure is the highest mortality total since systematic fish kill reporting began in 1996. Mortality totals for individual events ranged from 31 to 162,000 with a median mortality of 1000.
- Over half of the year's kill events occurred in estuarine waters during 2001. A majority of the year's mortality was a result of large coastal events in the lower Neuse and Pamlico

ivers. Reports noted 48 events affecting estuarine species and 29 involving freshwater fish. No events were reported in ocean waters.

Benthos Program

- Basin monitoring was completed, all samples identified, and basin assessment reports are nearing completion for the Yadkin and Lumber River basins. This was also the second year that all sites on the 303d list in the same basins were resampled, if benthos data was used to put the site on the list. Using this approach allows better integration of impaired streams data with basin assessment data. It also provides a larger database for evaluation of the impact of natural phenomena (such as the extreme drought that occurred in the Yadkin River basin in 2001) on the impaired streams.
- Recent special studies included such varied interests as: the impact of drilling small cores in a national forest (none), the impact of using rocks with high sulfur content as rip-rap along a small stream (none), the impacts of a breached dam and subsequent sediment release (major), discharger impacts, and impacts of pesticide mixing stations.

AQUATIC TOXICOLOGY UNIT

- For the first quarter of the Federal Fiscal Year 2001, the Unit performed 30 acute and 58 chronic effluent toxicity tests, 60 quality assurance tests, 14 contract laboratory related tests, and 15 ambient chronic tests. During the same period, the Unit reviewed 2431 NPDES WET toxicity reports and generated 133 letters to permittees concerning environmental test conditions that were not achieved. The Unit also generated 198 NOVs for WET noncompliance, 37 NOVs for failure to report or report late WET results, and generated 46 enforcement actions for toxicity limit noncompliance. Unit personnel reviewed issuance or re-issuance of 120 permits with WET, reviewed and responded to 19 TIE/TRE plans and/or activity reports, reviewed 7 biocide use applications, and completed 14 biological laboratory inspections.
- EPA Region 4 is currently reviewing NC DWQ's modified *Ceriodaphnia dubia* chronic toxicity testing methodology for approval as an alternate method. Some of the critical issues being evaluated are inter and intra-laboratory precision of the method, the method's ability to meet the EPA method's test acceptability criteria, and side-by-side effluent test results. Kristie Robeson, who has been with the Unit since late 1992, has decided to take the "mommy track" in her career and stay at home with her children, son Bradley and newborn daughter Kaitlyn. Kristie will be sorely missed with regards to both her friendship and high-quality work output. Kristie routinely evaluated 2400 whole effluent toxicity test reports per year, looking at things like control organism survival, sample holding times and dilution water hardness. We wish her well in her new career.

Given that the State has frozen vacant positions, the Unit has made a special request to be able to advertise Kristie's former position. Interested parties should contact Matt Matthews at (919) 733-2136 or matt.matthews@ncmail.net.

INTENSIVE SURVEY UNIT

- Dianne Reid has returned to her roots, and is now Supervisor of the Intensive Survey Unit. She has provided the following update on a few of her new challenges. She can be reached at (919) 733-6510 or email at dianne.reid@ncmail.net.
- In these trying times of TMDL's and Use Support that actually means something, we're trying to figure out how to assess lakes and reservoirs based on limited budgets and sampling. How do you do it in your state? Coming back into this process from doing standards for 10 years, I'm open to any information and suggestions folks might have. Another interesting project the group has taken on is determining a definition for swamp waters for classification purposes and documenting waters fitting the new definition for reclassification, if needed. Again, thanks to the TMDL process, we've got many waters with elevated DO and pH that appear to be due to naturally occurring swamp waters BUT the waters are not classified swamp. This project has been batted around for several years. Our goal is to have something definitive by 2003. Been through that process in your state, or something similar, let me know what you've done.
- Other than that, we are gearing up for ambient lakes sampling this summer, a bacteria source tracking study, and some other studies associated with TMDL work such as coordinating watershed investigations with our Bug folks in biologically impaired waters.

NC Division of Water Quality

Wetlands/401 Certification Unit

- The Wetlands/401 Certification Unit is administering two EPA grants. These grants are 1) assessing the biological functions of restored streams, and 2) assessing the biological functions of intermittent streams.
- Biological Functions of Restored Streams. At the current time approximately fifty stream restoration projects that involve biological monitoring components are being conducted or planned. At this point most of these projects only have preconstruction data or are in the planning phase (401 Certifications have not been issued) with no biological data. Many of these monitoring projects are being conducted in cooperation with the NC Department of Transportation and/or the NC Wetlands Restoration Program who have private consulting agencies to collect the biological data. In order to coordinate these monitoring programs two activities have been conducted. First, a technical guidance document describing biological monitoring protocols for stream restoration projects was

written. This guidance document describes the rationale, methods of collection and data analyses protocols for stream restoration projects and was reviewed by many of the regulatory agencies in North Carolina. Secondly, all consulting firms that planned to collect benthic macroinvertebrate samples to assess the ecological functions of stream restoration projects were given a two-day workshop describing collection protocols. Consultants were expected to pass a written examination and a field verification exercise prior to completing this workshop. The table below lists the projects summarized by ecoregion and whether or not the project was in a small or large catchment (large being greater than 1 square mile) or in a rural or urban setting. For more information contact dave.penrose@ncmail.net.

Ecoregion	Small	Large	Rural	Urban
Mountain	1	3	3	1
New River Basin	6	0	4	2
Western Piedmont	19	1	11	9
Slate Belt	1	0	1	0
Triassic Basin	3	0	2	1
Eastern Piedmont	10	1	4	7
Sand Hills	0	1	0	1
Coastal Plain	3	1	4	0
subtotals	43	7	29	21

Ecological Functions on Intermittent Streams

- North Carolina defines intermittent streams as streams that dry up for some portion of the year, so the big questions around here are what aquatic life uses are supported by a dry stream, and how do you measure them? Other questions we hope to address include: How does the fauna in an intermittent stream differ from the fauna just downstream in the perennial? Does the fauna at the top of the intermittent stretch, near the ephemeral zone, differ from the fauna at the bottom, near the perennial portion? How big of a role does the hyporheic zone play in supporting aquatic organisms? Do these answers change with ecoregion? The next three years won't be dull. For more information contact larry.eaton@ncmail.net.

News from South Carolina

Department of Health and Environmental Control

Aquatic Biology Section

Nonpoint Source Team

Mike Pearson

Well it is a new year and the Nonpoint Source Team has two new members. Brad Martin and Barrett Stone have moved over from the Fish group to replace Kristine Hoskins and Melissa Tyson. Melissa has moved back to her native Pennsylvania. Kristine is now the full time mother of Alexander Charles Hoskins, born December 26, 2001. Both are doing well. Brad and Barrett are currently working on learning macroinvertebrate identification, as well as special study development and implementation. All three of us are hoping to attend Dr. John Morse's EPT course in the future.

Currently we have only one active monitoring study. Sampling for the Wilson Creek Study in Greenwood County will continue until May 2003. Several short-term bacteria studies have been completed. These were conducted to support TMDL development for those selected watersheds. They were designed to collect both land use data, and supplemental bacteria data.

Future goals are to have at least one or two long-term 319 studies started by April and to continue work on macroinvertebrate identifications.

Mike Pearson dmpearso@dhec.state.sc.us

Brad Martin martinbw@dhec.state.sc.us

Barrett Stone stonebw@dhec.state.sc.us

Macroinvertebrate Group

- Wintertime is bug identification time for us and we continue to spend most of our days behind the microscopes. The last several years have been drought years in South Carolina and many of the streams we have sampled in the past have very little water in them. Our 2000 data showed a marked decrease in the bioclassification scores almost across the board as compared to previous years. We feel this is due to the low flows and lack of water in the streams. We are currently processing our 2001 samples but believe we will see a similar trend in these data. Sampling in the Middle Atlantic Coastal Plain Ecoregion in SC occurs in February and we are preparing to head out next week for the swamps. It

will be a nice break from the microscope work. As noted above there has been yet another change in the NPS group and we are currently helping out with special studies and enforcement investigations until everyone can get up to speed. Last year we reviewed 50 instream macroinvertebrate reports prepared by consultants for industry. This is becoming a large part of our job duties. We continue to discuss ways we can better insure proper quality control for our consultants.

Fisheries Section

- The fisheries section has been cut in half due to recent budget cuts. Barrett Stone and Brad Martin have been moved to the NPS group with Mike Pearson. We have spent the last year working cooperatively with SCDNR on establishing and calibrating IBI metrics for the Piedmont of SC. However, our reduction in force will severely limit our capabilities to continue with both IBI and routine tissue collections. We will be focusing our tissue collection efforts in the Catawba-Wateree and Santee Basins this year and continue monitoring primary sites under advisory.

2001 SWPBA Minutes

Susan Cohn called the meeting to order at 10:43 am. Susan thanked several members of the Kentucky WQ Branch for their help with the meeting.

Old Business

- Five options for the Honorary Membership issue, which had been discussed in 1999 and 2000, were sent to all members in 2001. Comments on this issue were received prior to the meeting. Neil Medlin read comments stating that the Executive Committee, by unanimous vote, motioned not to amend the SWPBA constitution to include provisions for honorary/emeritus membership in the organization. Reasons for doing so were listed:
- "(1) part of the original intent to include this provision was to maintain contact and mailing information for past members. This can be done by maintaining a "mailing list" in addition to the regular membership list; and
- (2) the annual SWPBA meetings are not open meetings. Existing language in the Constitution & By-laws allows the President and Executive Committee to govern who attends the meeting. This issue has been addressed by precedent that has become policy." Neil made motion to the floor, and was seconded by Steve McMurray.
- Chip Cutliff and Mike Beiser gave examples of the honorary membership category. Beiser called to resolve the honorary membership question as proposed by Neil, Dave Melgard seconded the motion. All members said "Aye".

New Business

- Chip Cutliff recommended that the new committee consider changing the business meeting to Wednesday to account for a time when the majority of the members are present. Susan Cohn yielded to Florida to consider.
- Mike Beiser moved to open the floor for discussion of the new President and Secretary. Danny Peake seconded the motion. Neil Medlin nominated Dana Denson from Florida to be 2002 President. Dana accepted. Neil nominated Joy Jackson for 2002 Secretary, all votes were unanimous. Mike Beiser moved to close nominations.
- Susan passed the worm to Dana who thanked KY for hosting 2001 meeting and expressed ideas for 2002 event. A meeting date was not set but Dana mentioned Bay Point Resort in Panama City Beach as the likely location.
- Business meeting adjourned at 11:25.