

Southeastern Water Pollution Biologists Association

Summer Newsletter, August 2008
Volume 35 Number 2



TABLE OF CONTENTS

Secretary's Letter	3
North Carolina	5
Mississippi	13
Kentucky	17
Tennessee	19
Georgia	25
South Carolina	32
Of General Interest	34

Alabama, EPA and Florida updates not available at this time

From the Secretary's Desk

I hope this summer newsletter finds all of you doing well. Sampling season in North Carolina is still in full swing but we have found the time, bit by bit, to put together all the details for the upcoming meeting in Asheville. I cannot stress enough how much effort everyone has put forth regarding the meeting. You may have heard that some States are cutting back on travel and others are prohibiting travel altogether, but that hasn't stopped some SWPBA members coming to the meeting on their own dime. Thank you very much for those of you who have gone the extra mile to make it to the meeting.

The Asheville meeting (September 23-25) will feature a wide variety of talks and discussion topics. As you all know, SWPBA meetings are great opportunities to follow up with the presenters regarding their talks. Because of the single session format, we will have some flexibility on time should a large amount of interest be generated around a talk or subject. I would urge presenters to submit your talks on time (due dates are on the website) so that we can properly load and go through your powerpoints to ensure that there will not be any delays.

This summer newsletter highlights accomplishments and ongoing activities throughout Region 4 this spring and summer. Please take the time to read about all the environmental and water quality work that is taking place in the Southeast. I am sure you will learn something new.

I look forward to seeing all of you in Asheville. Until then, have a safe and happy summer.

A handwritten signature in black ink, appearing to read 'WBC', enclosed within a hand-drawn oval.

Bill Crouch
SWPBA Secretary 2007-2008



West Fork Pigeon River, Haywood County NC

“When the well is dry, we know the worth of water”

Benjamin Franklin

“If we do not address the issues of global ecology, we won’t have to worry about the other issues”

Carlos Salinas De Gortari

North Carolina SWPBA update

NC Division of Water Quality-Environmental Sciences Section

The past year has provided many challenges to water quality sampling in North Carolina. Some areas are coming out of a two year drought and other areas remain in exceptional drought status. Separating anthropogenic effects from meteorological extremes has seldom been harder. Fortunately, our sizeable temporal and spatial coverage have helped in determining where biological sampling was appropriate.

As other states, we have suffered from staff turnover in recent years, but again have been fortunate to hire talented individuals that are willing to learn our methodologies and are in the business to protect and enhance water quality and our aquatic resources.

Following are brief overviews of some of our ongoing efforts Please visit our website at

<http://h2o.enr.state.nc.us/esb/>



RAINBOW OVER THE PAMLICO SOUND

Biological Assessment Unit



l-r: Bryn Tracy, Dee Dee Black, Bill Crouch, Richard Thorp, Eric Fleek, Michelle Simonson, Trish Finn MacPherson, Jeff Deberardinis, Mike Walters, Steve Beaty.

Staff changes: We now have two vacant positions, but were fortunate to get two excellent interns, one to help with fish community monitoring for the summer, and one as part of a new Department level intern program, that was able to float among all units to get a good, basic idea of what goes on with ESS and especially BAU. One vacancy had been frozen until a new MOA was signed with a Department agency that funds the position, and one occurred recently when Richard Thorp returned to Colorado after a year in North Carolina.

Basinwide Sampling: Basinwide assessment began this year with sampling for benthos in swamp streams in the Cape Fear River in February. Some reference swamps were still not flowing, following the 2007 drought. Many Cape Fear sites are being delayed a year because prior drought studies had shown it can take up to a year to recover. However, those studies were based on flow returning quickly, and staying high, while 2008 has seen a more sporadic rainfall pattern. Summer basinwide sampling in the Cape Fear basin had some streams with flow, and some that should have been flowing, were not. Samples were able to be collected from all basin sites in the New and Watauga River basins in the mountains. About 90 fish community samples were collected in April, May and June, and about 80 benthos samples are scheduled for basinwide sampling in July and August.

Special Studies: A drought study was initiated in March to collect both fish and benthos at slate belt reference streams that had stopped flowing by December 2007. Fish were to be collected

every month, based on the assumption that a more mobile fish community might recover sooner, while the benthos are being sampled every third month, until recovery to pre-drought levels are found. Results have been mixed, based perhaps on proximity to larger water bodies. One site had fish recovery in one month, while two other sites took 2 to 3 months to recover. Benthic communities are returning at a much slower rate, perhaps due to continued low flows.

A high quality waters (HQW) study was undertaken on the North Fork New River at the request of a regional office. This study involved sampling mainstem and most tributaries in the requested area (12 sites).

DWQ has a signed MOA with another Departmental agency, the Ecosystem Enhancement Program (EEP). That program provides funding for several DWQ staff and we provide water quality monitoring and data analysis in watersheds where Local Watershed Plans are being developed. As part of that support, 17 sites were sampled for benthos in the upper Little Tennessee River Basin near the town of Franklin. That data will be used to characterize the watershed before restoration projects are initiated by EEP.

Benthic sampling continued in 2008 at the RAMS sites that are part of the probabilistic monitoring design. Even though chemistry is collected every month, several of these sites do not meet the flow requirements for benthic sampling, or were too small for benthos or fish community sampling.

A site on the Northeast Cape Fear River was sampled for benthos after a large pickle plant undertook plant modifications to reduce the level of chlorides coming out of its discharge. An improvement was found.

We are trying to formalize best biological reference sites across the state, develop templates of their attributes, including taxa lists for benthos and fish, and make them available via the Web. Benthos samples were collected at reference sites with fish community data, and later in the year, fish will be collected at benthos reference sites. Land use characteristics, habitat scores, and discharger maps will be used to define reference site criteria. The goal is to have a small, two medium, and one large watershed size reference site for each Level IV ecoregion. Some ecoregions are such that there are no large watersheds, or maybe even any flowing streams. Plans are to have these templates on the Web by April 1, 2009 using an interactive Google Earth format.

A major undertaking for the past few years has been a project to develop benthos criteria for evaluating small streams (less than 3 square mile watershed). Analysis is complete and in-house review of conclusions will take place before criteria are adopted by the end of 2008. Eric Fleek is the lead on this project.

Fish Tissue Sampling

Approximately 40 streams, rivers, and lakes have been or will be sampled during the summer of 2008 as part of DWQ's fish tissue contaminant monitoring program. Results are routinely forwarded to the NC Department of Health and Human Services (DHHS) for human fish consumption risk assessments. 2008 DWQ fish mercury sites include long-term monitoring stations in the Cape Fear River basin in the vicinity of a former chlor-alkali manufacturing facility, and several long-term state-wide monitoring stations in collaboration with a mandated investigation of mercury control reductions from North Carolina's coal fired power plants. Organic fish contaminant studies include a follow up investigation of residual pesticides from apple orchards in the southern mountains, and two investigations of suspected PCB

contamination in the Neuse River and the Yadkin Pee Dee River basins. The DWQ is also continuing a collaborative effort in 2008 with the NC Wildlife Resources Commission and the DHHS to determine risk assessments associated with North Carolina's most popular fresh water sport fish.

Intensive Survey Unit (ISU)

The Intensive Survey Unit (ISU) has been conducting ambient lake surveys at 19 lakes in the Cape Fear River basin as part of the Ambient Lake Monitoring Program. The objective of these surveys is to determine the trophic state of each lake and whether the designated uses of the lake have been threatened or impaired by pollution. The monitoring associated with this activity includes monthly sampling between the months of May - September for nutrients, solids, and chlorophyll a concentrations, turbidity, as well as secchi depth and depth stratified physical measurements (temperature, dissolved oxygen, pH, and conductivity).

ISU is also conducting two intensive studies on impaired reservoirs in the State. Jordan Lake (chlorophyll a impaired) will continue to be monitored on a monthly basis through September, which will complete a two-year study to support a post-TMDL adaptive management strategy. High Rock Lake, also impaired for chlorophyll a, is being monitored 1-2 times per month to support TMDL model development. This study will continue until April 2010.

In addition to lake monitoring, ISU is conducting special drought monitoring at various locations in the Yadkin basin below W. Kerr Scott Reservoir to assess the impact of the ongoing drought in western NC. These data will also support reservoir management decisions to abate negative impacts on water quality downstream

Aquatic Toxicology Unit

Introduction

The Aquatic Toxicology Unit performs tests on facilities with NPDES permits that include "WET" testing from major dischargers. We support our Regional offices by conducting tests on ambient samples which may be chronic *Ceriodaphnia* tests, acute *Ceriodaphnia* tests, or acute fathead minnow tests. The Aquatic Toxicology Unit will employ *Daphnia magna* feeding inhibition tests in evaluating ambient waters in order to identify sub lethal effects. In addition, the Unit will utilize a number of newly developed "microbiotests." for specialty testing. These microbiotests are small scale biological tests that offer simplicity and cost efficiency in the field of Aquatic Ecology. We will continue to utilize these microbiotests to help assess watersheds for TMDLs and other programs. Most of these tests are used to assess North Carolina's Water Assessment Program and the Ecosystems Enhancement Program.

Compliance and Enforcement

All permitted dischargers of complex wastewater in the state are required to perform self-monitoring of aquatic toxicity of their wastewater. Currently this totals over **558** industrial and municipal facilities. The ATU reviews all toxicity data reported by these facilities to verify data quality, track compliance with established permit limits, and make enforcement recommendations for non-compliant situations.

ATU Compliance reviewed and documented over **2251** aquatic toxicity test forms into the 4-D Self Monitoring Data Base System. ATU reviewed over **133** draft permits, verifying all information was correct specifically for the bioassay monitoring requirement, including language, limits, targeted month of testing, etc in the permit. ATU reviewed for completeness over **126** new permits for this same information regarding toxicity monitoring requirements.

ATU Enforcement sent out **89** Notices of Violation (NOVs) for noncompliance of the Whole Effluent Testing (WET) NPDES requirements. Included in these were **65 NOVs** for limit non-compliance, of which **20** were for NPDES permits that included the copper and zinc action level policy notices. There were **4 NOVs** for non-reporting or late reporting. ATU issued **1** Notices of Deficiency (**NODs**) in lieu of NOVs. NODs are issued rather than NOVs for deficiencies such as reporting the WET data on their monthly DMR but then not sending the toxicity test report ATU. There are various other reasons that ATU assesses severity in issuing NODs versus NOVs. There were no warning letters sent for minor monitoring infractions.

ATU Enforcement had **11** civil penalty assessments over the course of 2008 for either late/non-reporting or for limit violations. ATU reviewed over **26** other documents for TRE/TIE progress reports, consent orders, copper and zinc final reports, biocide 101 forms for NPDES permit renewal, and various other toxicity reviews.

Overall facility compliance with self-monitoring limitations established by a facility's NPDES permit averaged 98%.

Enforcement and Compliance updates the Basinwide Information Management System (BIMS), the 4-D Database for ATU, and the Suspense Log that details all contact information concerning enforcement and compliance. ATU maintains a facility file with all pertinent information regarding NPDES enforcement and compliance.

Enforcement and Compliance incorporates interfacing with various agencies within Division of Water Quality (DWQ) including Regional Offices, Central Office, as well as NPDES facilities and certified commercial and municipal toxicity labs. ATU has provided training for Regional Offices, as well as other NPDES facility meetings through presentations concerning the toxicity requirements as related to NPDES permits.

Lab Certification:

All toxicity analyses reported by dischargers must, by water quality regulations, be performed by a biological laboratory certified by the State for these tests. The ATU operates this certification program, which includes, laboratory inspections, data tracking, and performance evaluation testing (PE testing). PE testing is an annual “blind round robin” testing procedure in which our lab (ATU) prepares an unknown chemical mixture and submits it to all North Carolina certified WET labs. The data is statistically interpreted in order to determine if all certified labs are able to meet the performance parameters.

For the year 2008, ATU certified/recertified **16 labs** for WET testing and Aquatic Population Survey Analysis. One lab was decertified during the year but regained certification after a month. ATU performed **11 laboratory inspections** and reviewed all Standard Operation Procedures for these labs. ATU sent out **9 Performance Evaluation** samples, which included Acute Fathead Minnow, Acute Ceriodaphnia dubia, and Phase II Ceriodaphnia dubia toxicity test samples, as well as select chemical analyses. ATU investigated **3 disagreeing split tests** that are defined as one facility effluent sample that is analyzed from two separate labs. ATU generated and submitted the Environmental Science Section's (ESS) FY 2008 Activity Report to the USEPA on a quarterly basis, as well as an annual report.

Lab Section:

In order to evaluate biological effects, aquatic toxicity tests are utilized by the ATU, allowing determination of the combined effects of all constituents of a complex mixture. These biological analyses therefore are very efficient and effective at predicting integrated aquatic effects without requiring complete chemical analysis of the test solutions. These results are an assessment tool in

order to make predictions of individual and/or multiple chemical effects. Tests may be conducted on samples of complex wastewater, individual chemical compounds, or surface water. These tests can be sensitive enough to determine not only lethality but also suppression of reproduction or growth of test organisms, effects that may ultimately reduce instream populations. The ATU maintains extensive scientific literature on the effects of many chemicals, which allows us to predict effects based on past testing by other researchers. This program has become a nationally recognized leader in its field and has produced demonstrated benefits in reducing the discharge of toxic substances in toxic amounts. By incorporating whole effluent toxicity monitoring with "Action Level" water quality standards, North Carolina has been able to avoid costly and unnecessary regulation of several ubiquitous wastewater constituents.

DWQ has a Whole Effluent Toxicity (WET) monitoring program that is coordinated with the Regional Offices to monitor 20 % of the major permit holders. The Regional Offices select the facilities within their region to schedule an ATU specified number of sampling events each year. ATU is dependent on the regional staff to perform the sampling and thus meet this testing goal. We also specify for a variety of test types and conditions (see table 1). The ATU lab section performed over **103** NPDES compliance tests for our NPDES monitoring program. There were **15** acute tests and **48** chronic tests performed. . Along with the **2** ambient samples submitted for toxicity test, we also performed **38** quality assurance tests.

During the year, ATU performed over **35** special toxicity analyses on samples for various programs. ATU has developed the water and sediment Watershed Toxicity Assessment Program (WTAP), in conjunction with Ecosystems Enhancement Program (EEP) via the Watershed Assessment Team (WAT) to provide a comprehensive toxicity testing component for watershed assessments. During the year, ATU performed WTAP assays on samples **watersheds for** WAT/EEP and on samples from **3 watersheds** studies for the Total Maximum Daily Load (TMDL) Unit. ATU also performed special studies for various Regional Office projects. ATU performed tests on samples received from **3 Harmful Algae Blooms** (HABs). ATU reviewed or provided input on **12** other reports for eco risk assessments or project reviews, etc from outside sources.

Miscellaneous Support & Programs:

ATU staff participated in a Lab Training Seminar sponsored by AWWA .

ATU staff presented an overview of the Aquatic Toxicity Program at the Carolina Area SETAC meeting in Asheville, NC in May 2008.

ATU staff coordinated an EPA sponsored Biotic Ligon Model Seminar in Raleigh during October 2007.

ATU staff presented a power point presentation that reviewed the responsibilities of the North Carolina Aquatic Toxicity Program at the Southeastern Water Pollution Biologist Association meeting at Foley Beach, SC in November 2007.

ATU staff provided training for the Division of Quality NPDES permit writers.

ATU staff attended the Southeast Mussel Conference at NCSU.

ATU staff participated in an Arsenic Study with Aquifer Protection Section and a Chlorophyll a study within the Environmental Sciences Section..

Future Projects

Continued Development of WTAP methods – Focus on modifying the WTAP procedures for sediments testing. Continue refinement of data interpretation and presentation methods.

Endocrine Disruptors – Seeking systems to test for estrogenic and androgenic effects

Daphnia Pulex – Developed method for culturing organisms and modified a procedure for WTAP feeding inhibition test

TAR-PAMLICO AND NEUSE RIVER RESPONSE TEAMS

These teams with 4 staff each were established in the late nineties to ensure timely response to environmental emergencies such as fish kills, oil spills, algae blooms, and other complaint investigations. They have become an integral part of the regional activities including all ambient monitoring and special studies. One of the special studies they have performed is related to Submerged Aquatic Vegetation in our estuaries. The teams are identifying and mapping SAV throughout their watersheds, developing GIS layers and providing reports and locations on the Environmental Sciences Website as well as their own. Please go to <http://h2o.enr.state.nc.us/esb/> to learn more about this effort and other team activities including real time data at 6 locations in the estuary. Following is a brief description of the SAV effort.

Submerged Aquatic Vegetation Mapping

Submerged aquatic vegetation (SAV) is widely known to be an important primary producer and fishery habitat in shallow coastal environments and estuaries. The North Carolina Marine Fisheries Commission has by rule [15A NCAC 31 (20)] designated SAV as a critical habitat in coastal waters. The Fisheries Reform Act of 1997 requires the Marine Fisheries, Coastal Resources, and Environmental Management Commissions to work together to develop plans that protect and restore fisheries habitats. DMF's Coastal Habitat Protection Plan (CHPP) was developed to do just that.

Collaborative research in 1998 that characterized and mapped SAV in the Neuse River indicated a diverse range of SAV along the Neuse and Tar-Pamlico Rivers in shallow, low energy areas. In the summer of 2005, DWQ's Rapid Response Teams built upon this previous work, including a vast effort to incorporate the tributaries of these major rivers.

SAV coverage data was collected using the most accurate GPS method available. Three years worth of data have been collected and digitized using ArcGIS. Approximately 750 miles of shoreline have been observed with SAV. Calculating shoreline length and the distance of SAV from the shoreline resulted in over 5.5 square kilometers of SAV coverage to date. These data will not only be made available for public use, but will serve as an important tool in the permit review processes across multiple agencies that will be ultimately geared towards the CHPP plan. Submerged Aquatic Vegetation in Low Salinity Areas of Western Pamlico Sound and its Tributaries. Red indicates SAV surveyed from 2005-2007.



Mississippi SWPBA update

Ambient Coastal Monitoring

Federal funding for the National Coastal Assessment Program ended in 2006. However, MDEQ in an effort to continue monitoring the water quality of the state's coastal areas has maintained and abbreviated effort of this sampling. Currently 25 probabilistic sites along with 25 program wide targeted sites are currently being used to assess the water quality of the Gulf Coast.

This program is crucial to evaluating the quality of coastal waters as communities rebuild and grow following Hurricane Katrina and it is additionally imperative as the implementation of the Governor's Gulf Region Water and Wastewater Plan comes into effect. MDEQ is partnering with the Gulf Coast Research Laboratory and the Department of Marine Resources to continue this important program.

Ambient Beach Monitoring

Sampling for MDEQ's ambient beach monitoring program has been re-instated and includes approximately 22 sites along the 3 coastal counties. Current data and status of all beaches



monitored in Mississippi can be seen at the University of Southern Mississippi's Gulf Coast Research Laboratory's website:

<http://www.usm.edu/gcrl/msbeach/index.cgi>

Or at the MDEQ's website: **<http://www.deq.state.ms.us>** and then follow the link to Beach Advisories.

Gulf of Mexico Alliance

MDEQ along with its sister Gulf of Mexico states has taken an active role in supporting the Gulf of Mexico Alliance, and it's Governors' Action Plan for Healthy and Resilient Coasts. This plan is aimed at protecting and restoring water quality and habitat in the Gulf of Mexico and its estuaries, and improving public awareness of the Gulf through environmental education. The Alliance is devoted to accomplishing these goals through regional collaboration within the 5 US Gulf of Mexico States and it neighboring 6 Mexican states. Current information is available at the Gulf of Mexico Alliance website **<http://www.gulfofmexicoalliance.org/welcome.html>**

Ambient Fecal Monitoring

Ambient fecal monitoring has also been re-instated and includes approximately 40 sites. Our contractors are currently collecting samples from primary recreational areas throughout the state.

Ambient Fixed Station Monitoring

Ambient fixed station monitoring includes approximately 30 sites. Our contractors and regional office scientists are collecting samples from bridges throughout the state.

Wadeable Streams/§303d Monitoring

An effort was begun in 2000 to develop a more reliable and scientifically defensible biological assessment methodology for wadeable streams and rivers in Mississippi. TMDL/§303(d) issues facing the state were the impetus for this effort. As a result of these critical issues, a statewide biological monitoring project was implemented with two main objectives: to obtain monitoring data from §303(d) listed wadeable streams and rivers and to assess these data using an Index of Biological Integrity (IBI).

MDEQ has currently completed its seventh year of sampling. And results from this M-BISQ effort will be used to assess the status of §303(d) listed water bodies and to steer future biological monitoring and assessment activities focused on wadeable streams and rivers.



Mercury Study for Marine and Estuarine Fishes

Fresh seafood is important to the economy of the coast as well as the health and quality of life of many coastal residents. MDEQ and the Gulf Coast Research Laboratory have been working together over the past 2 ½ years to monitor mercury levels in marine and estuarine fish tissue in order to evaluate the health risks associated with eating these fish. The hardest part of the study has been collecting the number of individual fish needed of each selected species to make the sample size required for this study. We require 30 individuals with 10 fish representing each of three size classes. Thus far we have collected approximately 80 species, of these 20 species have



all size classes completed. Many fish are collected throughout the year through routine monitoring primarily by the University of Southern Mississippi Gulf Coast Research Laboratory, with some help from the Department of Marine Resources biologists. However, many of the larger fish (i.e., tuna, king mackerel, wahoo), and deep water fish (i.e., grouper, red snapper) are collected at the local fishing rodeos. At one of the biggest rodeos on the coast, The Mississippi Deep Sea Fishing Rodeo, a banner was made acknowledging the fisheries research personnel and the agencies

they were associated with. It was also a surprise when the Executive Director of MDEQ, Trudy Fisher, came by and decided to hang around for three days and help with the collection of the fish.



From left to right: Trudy Fisher (Executive Director), Barbara Viskup, Aaron Mc Gill (Entertainment Director for Rodeo), Emily Cotton, David Barnes

NATURAL RESOURCE DAMAGE ASSESSMENTS AND RESTORATION

Update on the Oil Spill in the Leaf River near Collins

Our staff continues to make periodic visits to the site to check on the progress of our restored stream. During our last visit, we conducted a survey of the vegetation replanted on the site to ensure that our survival and growth criteria were being met.

Oil Spill in Middle Fork Creek near Baxterville

We are nearing a resolution with the responsible party in this incident. More information as it becomes available.

Train Derailment spills Chemicals into Meyers Creek

We are in the process of proposing monitoring and restoration actions to be taken in response to this incident. All of the details are currently being worked out.

National Rivers and Streams Assessment coming to the Lower Mississippi

During the week of May 18th, 2008 the MDEQ Biologists hosted the training session for the Lower Mississippi River component of the NRSA in Tunica, MS. This will be a combined Region IV and Region VI project, with participation by various state agencies, the NRSA contractors and the USGS. Training included classroom lectures by staff from EPA Duluth, as well as an opportunity to view the field aspects of the project. Even though the river was up, the training was a success. Region IV participants included MDEQ and the KY Division of Water.

New Personnel

As many of you might know last summer we lost one of our biologists Brian Alford as he left for another position and to complete his PhD. We are happy to report that Brian is doing well and has recently informed us that he will be receiving his Doctorate in August. Congrats to Brian on a job well done!

With Brian's leaving we were faced with bringing on a new staff member – Alicia Jacobs. She came to us from Southern Illinois University with a Bachelors degree in Zoology. She is currently working towards her Masters degree and doing research on the impact of artificial lake de-stratification on the zooplankton community. We welcome Alicia onboard as she has hit the ground running and is fitting nicely with our team.

Kentucky SWPBA update

Cabinet and Division Reorganization

The Environmental and Public Protection Cabinet has been reorganized into three cabinets: the Public Protection Cabinet, the Energy and Environment Cabinet and the Labor Cabinet. The current Department for Environmental Protection and Department for Natural Resources will move into the new Energy and Environment Cabinet. The Division of Water (DOW) is still in the Department for Environmental Protection. For a new organizational chart of the Energy and Environment Cabinet, visit the DOW Web site at www.water.ky.gov.

DOW has also reorganized into six branches: Surface Water Permits Branch, Water Infrastructure Branch, Resource Planning and Program Support Branch, Watershed Management Branch, and Water Quality Branch. The reorganization streamlined DOW's approach in serving Kentucky's communities more efficiently.

Monitoring Section (Formerly Known as the Ecological Support Section)

Personnel

The Division of Water underwent a reorganizational process in July. Biologists formerly in the Nonpoint Source Section, Standards and Specifications Section and Madisonville Field Office were added to the Ecological Support Section to form the Monitoring Section. Members of the Monitoring Section are Mark Vogel (macroinvertebrates), Bryan Marbert (macroinvertebrates), Jessica Bevins (macroinvertebrates), Cliff Schneider (macroinvertebrates/lakes), Sue Bruenderman (fish), Rodney Pierce (fish), Eric Eisiminger (fish tissue), Lara Panayotoff (algae/nutrients), Patrick Hoban (bacteria), Morgan Jones (Wild Rivers) and Ed Carroll (ambient monitoring). In the fall, Cliff Schneider (ADB administrator, lakes coordinator, federal T&E point of contact) is retiring with over 30 years of service. His knowledge and expertise in many facets of the Water Quality Branch will sorely be missed. We wish Cliff great happiness in his upcoming retirement. Additionally, Gillian Miller retired as the ambient monitoring coordinator at the end of June. We wish Gillian luck with future endeavors and thanks for over 30 years of service.

Activities

The Monitoring Section has been extremely busy this summer. Staff attended large river sampling protocols workshop earlier this year. Thanks to Mississippi for hosting that event. We'll be sampling two of the large river sites in conjunction with the National Flowing Waters Survey later this fall. Ambient chemistry and bacteria is being collected monthly with Ed Carroll as the new coordinator. Data is being collected at Kentucky River basin lakes during the summer. In addition to normal parameters of concern, algal growth potential data will be collected as part of a nutrient data collection grant. *E. coli* samples are being collected from some large reservoirs during the PCR season to ensure the public that boating and swimming in these waters is safe. Biological samples being collected in the mountains and in the Crawford-Mammoth Cave Uplands in conjunction with nutrient data collection grants. Fish samples are also being collected at Reference Reach sites within the Kentucky River basin to assess the current water quality at these important sites. Intensive surveys of Elkhorn Creek in Pike Co. (pre-TMDL data collection), Clarks Run in Boyle Co. (for possible delisting) and Bluelick Creek/Floyds Fork in Bullitt Co. (train derailment follow-up) are being conducted. The Fish Tissue Program has gone probabilistic in attempts to strengthen the statewide mercury consumption advisory. The Wild Rivers program continues to track down leads for possible tracts of land that might be for sale on or near Wild River corridors.

TMDL

Charles Noble left the KDOW for work in Ohio. The Frankfort office now has two vacant positions, one for monitoring and one for TMDL development. We hope to fill the TMDL development position in the near future. If anyone is interested, please submit an application to the Personnel Cabinet and register for this position when it is posted. On a bright note, the Madisonville office has been fully staffed for about nine months. The monitoring staff have been busy with routine chemistry sample collections and with biological sample collections. The TMDL development staff have several TMDLs currently in the works and expect to release about three documents for public comment in the near future. On a final note, the 303(d) list was approved in late June.

401 Certification Section

The Water Quality Certification Section has hired three people, Jesse Robinson, Project Manager; Adam Jackson, Project Manager; and James Bicknell, Compliance and Monitoring Manager.

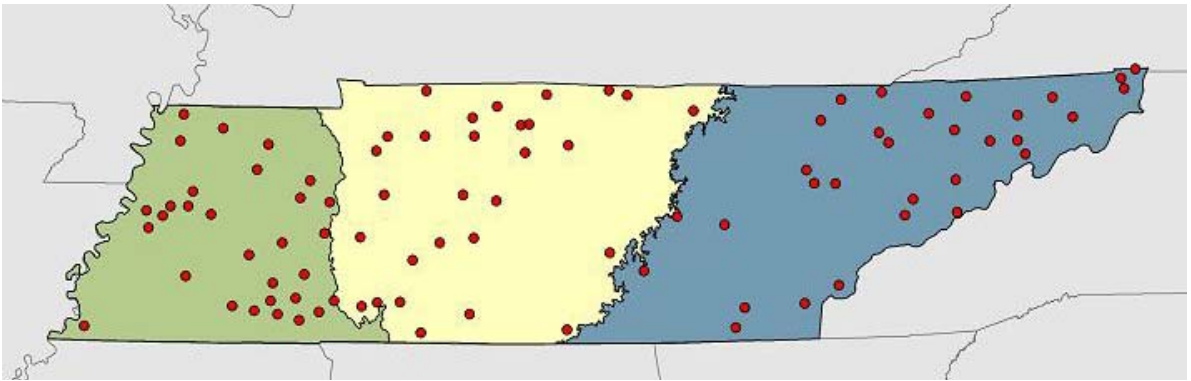
The 2007 USACE Nationwide Permits along with Kentucky's General Conditions placed on those permits have been finished and are located on our website.

The Water Quality Certification Section now has to Public Notice individual certifications. The Public Notice Period is 30 days. Comments are reviewed and taken into consideration when writing the certification.

Tennessee SWPBA update

State-wide Probabilistic Monitoring Study

In July 2007, TDEC began a state-wide probabilistic monitoring study of wadeable streams. This project was based on the 2004 survey of the nation's wadeable streams. Ninety streams (30 in each of the state's main regions) were randomly selected for the project. Sampling was completed in June 2008. Four seasons of nutrient sampling as well as five *e coli*, habitat assessments, a macroinvertebrate sample and a periphyton sample were collected at each site. All of the analyses, except periphyton, have been completed.



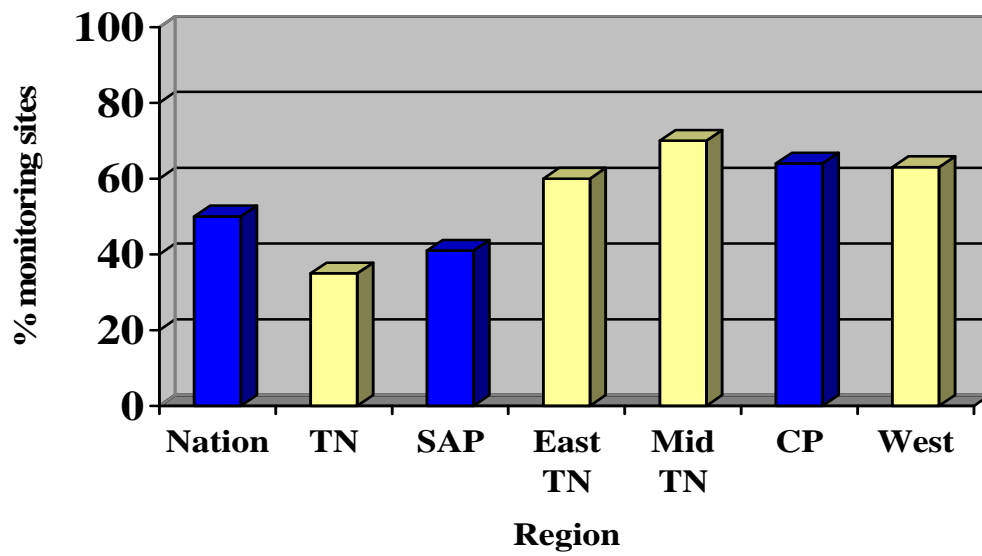
Location of randomly selected monitoring sites in Tennessee

The primary goals of the study were to

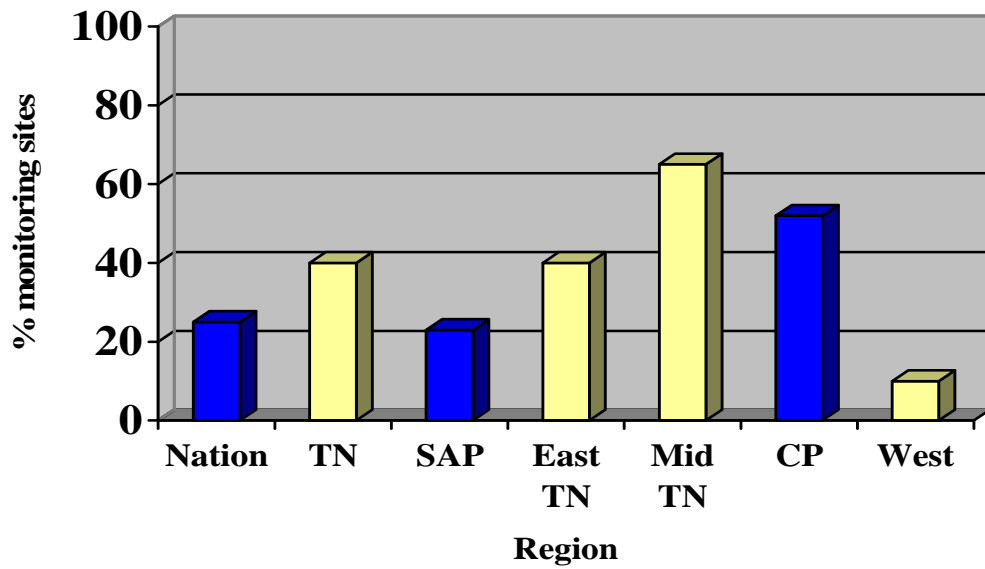
- Compile the data within each region to calculate results including exceedence rates, support for designated uses, causes of impacts, and sources of pollutants.
- Analyze data from within each area to compare and contrast water quality in each of the three regions (east, middle, and west).
- Compile assessment information from all stations in order to extrapolate results to the entire state of Tennessee
- Compare probabilistic results to extensive targeted monitoring program.
- Establish baseline data for trend analyses.

Preliminary results of the habitat and bacteriological data have been compiled. A final report on the macroinvertebrate, bacteriological, habitat and nutrient data should be completed early next year. The periphyton portion of the study will be reported separately.

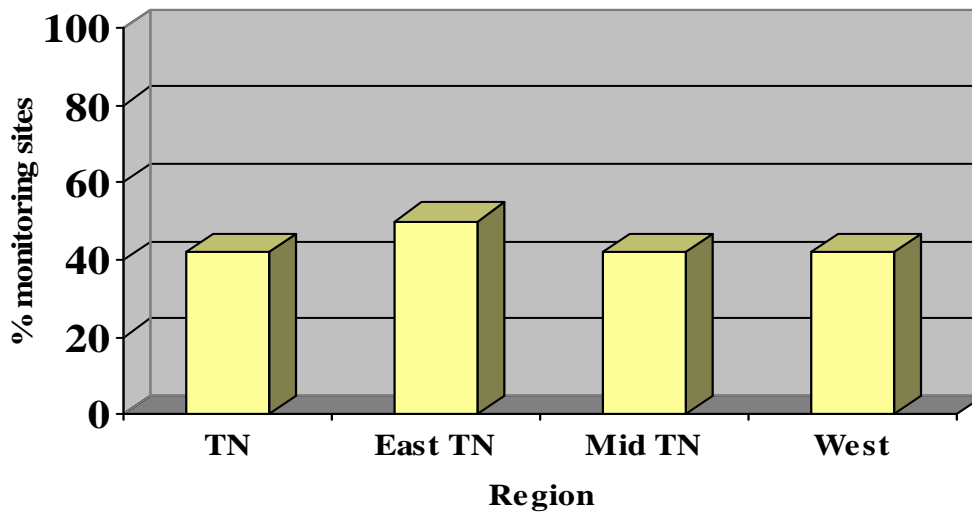
% Streams with Sediment in Good Category



% Streams with Riparian in Good Category



% Streams Exceeding *E coli* Criteria



Fish Tissue Mercury Advisories

In 2001 EPA published a new national criterion of 0.3 parts per million mercury based on fish tissue concentrations. Because mercury is not considered a carcinogen, TDEC previously issued “precautionary” fish advisories at half the Food and Drug Administration (FDA) Action Level for fish sold in interstate commerce. This policy resulted in a trigger point of 0.5 ppm.

EPA recommended that states adopt the new mercury criterion, but allowed them the flexibility to wait until an implementation procedure was developed. By the time the draft implementation procedure was released in 2006, Tennessee was approaching the end of its triennial review of water quality standards. The department decided to not delay the review by attempting to adopt a new mercury criterion after rulemaking had already begun. However, the department did revise the regulation under the recreational use to allow the commissioner to base fishing advisory decisions on the new national criterion.

Tennessee now uses this level as a trigger point for consideration of fishing advisories for Tennessee waters. The type of advisory considered appropriate when mercury levels are over 0.3 ppm, but not above 1.0 ppm will be the “precautionary advisory” which advises pregnant or nursing mothers, plus children, to avoid any consumption of fish. All other persons will be advised to limit fish consumption to one or two meals per month. If 1.0 ppm is exceeded, all persons will be advised to avoid consumption in any amount.

Prior to 2007, Tennessee had two mercury advisories in effect. The first is on East Fork Poplar Creek near Oak Ridge. The other is North Fork Holston River. At these sites, historical industrial discharges are the known source of the mercury.

On April 26, 2007, the department issued revised and new advisories based on the new 0.3 trigger point. At several waterbodies with existing “do not consume” advisories for either chlordane or PCBs, the justification for the advisory was modified to include mercury. These waterbodies

were the Mississippi River, McKellar Lake, Wolf River and Loosahatchie River in West Tennessee, plus Tellico Reservoir in East Tennessee.

At seven additional waterbodies (or waterbody segments) new advisories were issued for mercury. These include the Buffalo River, Emory River, Holston River, Hiwassee River, Norris Reservoir, South Holston Reservoir and Watauga Reservoir. Tennessee's fishing and bacteriological advisories can be found at <http://www.state.tn.us/environment/wpc/publications/advisories.pdf>

At a few additional sites, mercury levels were over 0.3 ppm in a species, but an advisory was not issued. The reason was that either few data were available or the data were not recent. In these cases, the waterbodies were put on a 2007 study list. The fish have been collected and are currently being analyzed.

First Order Reference Stream Project

Tennessee has been using ecoregion-based biological and nutrient guidelines to translate narrative criteria since 2001. In the majority of ecoregions, these guidelines only apply to wadeable streams that are third order or larger. In recent years, there has been an increasing demand to assess headwater streams. TDEC has started a five-year project to develop biological and nutrient guidelines in these important components of the watershed.

The goal is to add approximately 16 headwater reference streams each year over a five-year period. Hopefully, by the end of five years, there will be at least 80 headwater reference streams established in each of the state's 13 bioregions. Selection and sampling of the first group of candidate headwater reference streams found in ecoregions 65e, 65j, 67f, 67h, 67i, 69d, 69e, 71e, 71f, 71h and 74b began in July 2008.

Project Objectives

1. Establish a minimum of 80 headwater reference stations in 13 bioregions. The following criteria will be used for site selection.
 - Streams are first or second order and less than 2 square mile drainage.
 - Stream type, flow regime and substrate are typical of the bioregion. Perennial streams will be targeted except in those ecoregions where the majority of headwater streams are intermittent.
 - Streams are in a protected watershed or upstream land-use is primarily forested. In heavily urban or agricultural bioregions, stations will be selected where upstream watershed is least disturbed and is comparable to percent forested of larger established reference streams.
 - The upstream watershed does not contain a municipality, mining area, permitted discharger and is not heavily impacted by nonpoint source or other non-regulated source of pollution.
 - Upstream drainage is at least 80% within a single ecoregion.

- The stream flows in its natural channel. There are no flow or water level modification structures such as dams, irrigation canals or field drains.
 - No power lines or pipelines or any structure that is routinely cleared crosses upstream of the monitoring station.
 - The upstream watershed contains few or no roads.
2. Determine most appropriate seasons for biological monitoring of headwater streams. Document seasonal variation.
 3. Collect chemical, physical, stream flow and biological (macroinvertebrate and periphyton) data at each station in two seasons over a five-year period in accordance with watershed cycle. .
 4. Develop biological and nutrient criteria translators for narrative criteria associated with headwater streams in each of the state's bioregions.
 - Develop family and genus level bioecon guidelines based on a minimum of three qualitative metrics for each bioregion.
 - Determine the most sensitive biometrics to various pollution types and develop a multi-metric index specific to headwater streams based on a minimum of seven metrics for semi-quantitative macroinvertebrate samples in each bioregion.
 - Develop a periphyton index for headwater streams in each bioregion.
 - Develop nutrient guidelines based on reference total phosphorus and nitrate+nitrite levels for headwater streams in each bioregion and/or nutrient region.
 - Develop habitat assessment guidelines (total score and parameter specific) in each bioregion in headwater streams.

Elk River TMDL Study

TDEC has been conducting an intensive TMDL study since June 2006 in the Tennessee portions of the Upper Elk (06030003) and Lower Elk (06030004) watersheds. Seventeen monitoring sites were selected by a team of TDEC Central and Field Offices as well as USGS staff using a geographic information system (GIS), internal staff knowledge, and SPARROW modeling output. GIS data included 1992-95 MRLC (land use), 2004 Tennessee Stream Assessment, TDEC historical monitoring sites, NPDES dischargers, subwatershed sediment loading, and phosphate enriched limestone.

The goals and objectives of this project are to:

- Complement and supplement the ongoing effort of Alabama's nutrient TMDL development in the Elk River Embayment.

- Collect additional field data (both causal and response variables) to be used for reference nutrient criteria or targets development for the non-wadeable portion of the Elk River watershed.
- Adapt the regionally calibrated SPARROW water-quality model of nitrogen and phosphorus transport for watershed-based loading analysis in the Elk River Basin.

Data collection will consist of monthly water-column samples at 17 sites and laboratory analysis of nutrient constituents, as well as field measurements of stage/discharge, turbidity, pH, dissolved oxygen, conductivity, and temperature from June 2006 through August 2008. A comparison between the measured response variables of algae (periphyton and chlorophyll a) and turbidity to the measured nutrient load/concentrations will be used to identify a threshold of impairment in non-wadeable streams in the Elk River watershed, and to establish the nutrient loading rate associated with this threshold. In addition, measurement of canopy cover and continuous monitoring of dissolved oxygen, pH, temperature, conductivity will be conducted at these sites.

Periphyton

Tennessee has begun to incorporate periphyton into its stream assessment strategy. Periphyton has been collected at approximately 20% of the state's established ecoregion reference streams. The other reference streams are scheduled for sampling over the next four years in conjunction with the watershed monitoring cycle. Periphyton will also be collected at the headwater reference streams as they are established over the next five years. It is hoped that regional periphyton indices can be developed after five years when all the reference data are available. In the meantime, the state is also collecting periphyton in conjunction with nutrients for special projects such as the state-wide probabilistic monitoring study and the Elk River TMDL study. These data will be compared to reference stream data where available as well as periphyton indices used by other states.

Georgia SWPBA update

State Water Plan

Georgia's Water Plan is continuing forward. For information please go to the following website: www.gawaterplanning.org

Currently the State Water plan is under a procurement public notice period. The state is seeking statements of qualifications for the first 4 contracts supporting state water plan implementation that have been posted to the DOAS website. The contracts are:

1. Assimilative Capacity Water Quality Modeling and Water Quality Standard Review
2. Groundwater Resource Assessment
3. Surface Water Availability Modeling and Technical Analyses
4. Technical Guidance Documents

A link to the DOAS website will be posted to the Georgia Statewide Water Planning website shortly.

The official call for nominations for the Regional Water Planning Councils is now up on the State-wide Water Planning website. In accordance with the Georgia Comprehensive State-wide Water Management Plan, formal nominations for 28 seats (25 members and 3 alternates) on each of 10 regional Water Planning Councils are now being accepted. Nominations will be accepted through August 29, 2008, and must be placed on the official nomination form located at www.georgiawaterplanning.org.

Watershed Planning and Monitoring Program (WPMP)

Change of Staff:

Corey Babb has left GADNR/EPD to work with the Atlanta Regional Commission. We wish him the best of luck on his new adventure.

Ambient Monitoring Unit (AMU):

Georgia EPD (GAEPD) submitted its 2008 integrated 305(b)/303(d) list to USEPA on March 31, 2008. The 2008 303(d) list was approved by USEPA on June 6, 2008. Important features concerning the 2008 integrated report are as follows: 1) This is the first year that GAEPD submitted its integrated 305(b)/303(d) list of waters to the USEPA in the ADB format 2) GAEPD adopted the 5-tier or category method for assessing waters; 3) GAEPD utilized macroinvertebrate data for the first time in the 2008 list in

assessing waters; 4) A large number of waters along Georgia's coast were assessed for the first time using data from Georgia's Coastal Resources Division.

Georgia is in the middle of our Triennial Review process. We are considering about eight changes to our Rules. The most controversial change is the addition of new dissolved oxygen criteria for the Savannah Harbor. Initial public meetings were held across the State the last year and the early part of this year. Formal public hearings will be held in August. GAEPD plans to take the proposed revisions to our Board of Natural Resources for adoption in September 2008.

Facilities Monitoring Unit (FMU):

FMU has continued water quality permit-related inspections in South Georgia in the Ochlockonee, Satilla, St. Marys and Suwannee River Basins including NPDES (municipal and industrial), Land Application Systems and PID (Private Institutional Development) facilities. FMU has also sampled point sources (source sampling of municipal, PID and industrial dischargers) for the Carters Lake TMDL modeling project. FMU associates have been involved in two industrial groundwater/surface water sampling projects in conjunction with GAEPD's Permitting & Compliance Program staff and the Regulatory Support Program. Special request sampling of LAS, PIDs and NPDES facilities outside the river basins of focus (statewide) has also been conducted. As every year, FMU has inspected all Atlanta-Metro area Major Municipal dischargers to the Chattahoochee River. FMU is continuing USEPA-required annual "Industrial User" inspections statewide ("Industrial Pretreatment" facilities).

Modeling & Development Unit (MADU):

The TMDL Modeling and Development Unit proposed draft TMDL documents for the Coosa, Tallapoosa, and Tennessee River Basins. These were based on Georgia's 2008 303d list, and are currently at Public Notice until August 25, 2008. These documents are on GAEPD's website. They include:

- 7 segments for Biota in the Tallapoosa River Basin
- 6 segments for Fecal Coliform in the Tallapoosa River Basin
- 16 segments for Biota in the Tennessee River Basin
- 5 segments for Fecal Coliform in the Tennessee River Basin
- 49 segments for Biota in the Coosa River Basin
- 29 segments for Fecal Coliform in the Coosa River Basin
- 3 segments for PCB in Fish Tissue in the Coosa River Basin

TMDL Implementation Program

The Georgia EPD Total Maximum Daily Load Implementation Program now has a new resource available to aid in TMDL Implementation planning as well as general watershed planning activities. The "Tools for Total Maximum Daily Load (TMDL) Implementation and Watershed Planning" web page, which is maintained and updated by the TMDL Implementation Program, brings together many different resources in support of TMDL implementation and watershed planning. It contains information and links to resources for funding, planning, best management practices, and more. This page will be updated regularly to announce things such as new funding opportunities, workshops, and conferences.

The web page may be accessed by the following link: http://www.gaepd.org/Documents/WPB_TMDLTools.html or by going to the GAEPD main web page. Then click on either 'Water' or 'Technical Guidance' then click on the heading "Total Maximum Daily Loadings ". Look for and click on the heading "Tools for Total Maximum Daily Load (TMDL) Implementation and Watershed Planning". Once on the page, click on the bold blue headings to reveal additional information. The cursor will not turn into a hand once over the headings, but they ARE active.

Please feel free to share this with anyone who may be interested.

Nonpoint Source Program (NPSP)

Outreach Unit:

Staff Changes:

Allison Hughes Swims Upstream...

At the last EEA Conference Awards Banquet, Allison Hughes proclaimed to the 100 plus participants that, "I have the greatest job in the world!" And if you had heard her say it, you would have believed it. If you ever wondered what it would take for her to leave the Adopt-A-Stream State Coordinator position, we now have the answer: island paradise living in Western Samoa. Allison and her husband have accepted positions to work in the environmental education field, managing a small school for American students on the island of Western Samoa. We're sorry to see her go, but we're also excited for Allison and her husband as they accept new challenges clear across the world in their little slice of paradise. Best of luck Allison!



Adopt-A-Stream:

"Georgia Adopt-A-Stream Partners with the Total Maximum Daily Load Program and Regional Development Centers"

The TMDL (Total Maximum Daily Load) Implementation Program has been cooperating with the Watershed Protection Branch Adopt-A-Stream program and the Ambient Monitoring Units in the development of monitoring procedures that Regional Development Centers and other local groups may use to: 1) determine whether water bodies should be retained on the State's list of impaired waters; and 2) conduct "targeted" watershed monitoring to evaluate potential nonpoint sources of pollution.

While originally intended to provide a TMDL implementation plan revision option when water quality data used to list a segment for elevated bacteria or depleted dissolved oxygen were more than five years old, the procedures for evaluating those constituents are now available to any competent local group willing to prepare and submit a Sampling Quality Assurance Plan (SQAP) to the GAEPD and properly collect and report the results to GAEPD. The procedures for conducting targeted watershed monitoring for dissolved oxygen and bacteria using *E. coli* as a surrogate for fecal coliform were devised to assist Regional Development Centers in conducting watershed surveys to geographically isolate significant sources of impairments for extensive TMDL Implementation Plan revisions.

These procedures are available to local watershed groups interested in conducting watershed assessments. In both of these cases, the Regional Development Centers are encouraged to coordinate with or enlist the support of local watershed and Adopt-A-Stream groups.

"Local Coordinators Bring Growth, Success to Adopt-A-Stream"

Georgia Adopt-A-Stream's more than 50 local coordinators have helped the state-run program to triple in size over the past ten years by training and coordinating volunteers at the local level.

Georgia is unique in that the state program relies so heavily on these local coordinators to provide local training of volunteers. This umbrella approach towards coordination of our volunteer monitoring program has resulted in phenomenal success. Between 1999 and 2007, the number of workshops held each year almost tripled, with the number of certifications rising at the same rate.

With demand only increasing for Georgia Adopt-A-Stream's services and only two state coordinators and one to two part-time staff at the state level since 1998, local coordinators have proven instrumental in helping the program attain the capacity to train over 10,000 volunteers in the past decade.

Utilizing local coordinators to train volunteers has also benefited Georgia Adopt-A-Stream by providing a local advantage. Local coordinators know their watershed best and are better able to connect with local resources to promote the Adopt-A-Stream program. They are also able to assist local groups more readily. Having coordinators and trainers at the local level allows state coordinators to target less-served areas and focus on programmatic needs.

Georgia Adopt-A-Stream is looking for more local coordinators to continue the process of locally training and certifying volunteers statewide. To become a local coordinator, one must first be certified in the Adopt-A-Stream visual, chemical or biological monitoring programs, and then complete the Coordinator-Trainer Certification Workshop in order to train new volunteers.

Benefits of becoming a local coordinator include support for local projects, database access, training resources and quarterly coordinator meetings. If you are interested in becoming a local coordinator, please contact the Georgia Adopt-A-Stream State Office.

“Coming Soon: Adopt-A-Stream E-coli Monitoring Manual”

The Adopt-A-Stream Bacterial Monitoring manual is set for release by this fall as testing and editing is coming to a close shortly. The protocol for this manual has been developed to make it easy to track *E. coli*, which the USEPA recognizes as good indicator bacteria for assessing risks to human health from potential pathogens. Once the manual is completed, workshops will be available to train volunteers and trainers in this new protocol, which utilizes 3M Petrifilm (pictured below) for inoculation purposes, and egg incubators for incubation.

“Adopt-A-Stream Growth 1995-2007”

Year	Workshops	Trainers	Certifications
1995	5	1	11
1996	14	5	71
1997	22	5	205
1998	35	6	398
1999	78	11	852
2000	54	12	587
2001	88	19	618
2002	120	26	909
2003	154	41	1448
2004	143	32	1182
2005	139	42	1228
2006	170	56	1992
2007	207	55	2000

Project Wet:

It is with great sadness, that we announce that our own Petey Giroux passed away after suffering from pancreatic cancer. She died peacefully at her home surrounded by family and friends. We will miss Petey's smile and her role as Momma Bass at Branch functions and environmental activities throughout Georgia. She made significant contributions to environmental education in her curriculum development, songs, and volunteer coordination. Her work with Project WET and other programs will benefit Georgia for many years to come. An article on Petey's accomplishments can be viewed at: <http://www.eealliance.org/net/content/go.aspx?s=63140.0.0.7182>

In lieu of flowers, her family has asked that donations be made to the Environmental Education Alliance of Georgia. Checks can be made payable to EEA with "in honor of Petey Giroux" in the memo section. Checks should be mailed to Environmental Education Alliance of Georgia, P.O. Box 286, Mansfield, GA 30055. The family is also making arrangements for the Pancreatic Cancer Action Network to receive donations in

Petey's name. More on that will be available on Petey's Web site, www.mylifeline.org/petey in the coming days.

Wildlife Resources Division WRD

Fisheries Management Section

GADNR Stream Survey Team:

The Stream Survey Team assesses the status of fish communities in wadeable streams across the state using the fish Index of Biotic Integrity (IBI). This index integrates 12-13 functional and compositional attributes of a fish community at several trophic levels to evaluate stream health. Two additional assessment tools, the modified index of well-being (Iwb) and a visual habitat assessment, are also employed. The IBI, modified Iwb, and habitat assessment tools provide information about potential sources of degradation in streams having impaired fish communities.

The Stream Survey Team sampled 75 streams in FY2008 (July 1, 2007 – June 30, 2008). These streams were located in 13 of Georgia's 14 major river basins (no sites in the Flint River basin in FY2008) across three of the state's five major ecoregions: Piedmont (PDM-18), Ridge and Valley (RGV-11), and Southern Coastal Plain (SCP-46).

The Stream Survey Team has been tasked with developing an IBI for each of Georgia's five major ecoregions: Blue Ridge (BRM), PDM, RGV, SEP, and Southern Coastal Plain (SCP). IBIs are complete for the PDM, RGV, and SEP ecoregions; the BRM IBI is under final review; and data collection has begun for development of the SCP IBI.

Fish biomonitoring reports on all streams are provided to Georgia's Environmental Protection Division (EPD). EPD is tasked with establishing Total Maximum Daily Loads for the causative pollutant(s) in impaired streams. By reducing and controlling pollutant loads, healthy fish populations should be able to re-establish and maintain themselves in these streams. The overall goal is to improve fish diversity, abundance, and health by meeting federal Clean Water Act criteria and returning impaired streams to their designated water use classification (fishing, swimming, drinking water, etc.).

Georgia Fish IBI sampling protocols and scoring criteria can be found at: <http://www.georgiawildlife.com/content/displaycontent.asp?txtDocument=436>, and data and final reports can be obtained by calling 770-761-3011 or by contacting Patti Lanford at Patti.Lanford@dnr.state.ga.us.

South Carolina SWPBA update

Aquatic Biology Section and Water Quality Monitoring Section

There has been a tremendous amount of change that has occurred in the Bureau of Water over the past several years. Many staff that began with the agency back in the 1970's have begun to retire, bring many challenges but also opportunities.

First one eventful occurrence was a fire in the building that houses the two sections. At 5:30 AM a fire broke out in the building and destroyed an upstairs area that housed the Water Quality Monitoring Section. There was very little physical damage to the downstairs portion but extensive smoke damage occurred. The Aquatic Biology Section was without a home for about 1 month. The members of the Water Quality Monitoring Section are still out of the building and will likely not be able to return to their offices for another month. Fortunately no one was hurt, no data was lost, and all of our literature survived.

Jake Bickley, a familiar face at SWPBA meetings, retired this past Friday after 31 years of service to the Agency. As many of you know Jake was our lone phycologist and was active in many activities related to phytoplankton and nutrient criteria. We hope to have the vacant position posted in the near future. On a positive note, we are extremely excited to have Emily Hollingsworth on board in the Aquatic Biology Section. Emily has taken the "bull by the horns" and is in high gear in the development of a benthic algal bioassessment program for streams and rivers. She has begun her fieldwork this summer and will begin identifications this fall. Some of you met Emily at the Utah NABS meeting and she will be in attendance at the 2008 SWPBA meeting.

It appears that 2008 will be another drought year. Our macroinvertebrate bioassessment group is in full swing but the creeks are very low. We are in the Pee Dee Basin this year and have had to pass on many streams because of little or no water. We are all hoping for rain. Traditionally we have not identified Unionid mussels beyond family but David Eargle is becoming quite proficient at their identification. He has been working closely with the Nature Conservancy and the SCDNR.

The Fish Tissue Program has been the center of attention lately with much focus on mercury contamination. I am participating on several committees dealing with mercury in the environment. A controversial proposal to construct a new coal fired power plant is the eye of the storm with a tremendous amount of press being devoted to the topic. While global climate change and the reliance on fossil fuels are all issues relevant to the proposal, the Achilles heel seems to be related to mercury and its bioaccumulation in fish.

Several projects are on the horizon for those working under 319 money. A thermal imaging project is underway led by Frank Nemeth. The goal is to identify areas of potential concern related to septic tank releases. Aerial images taken in the winter highlights potential problems. Targeted monitoring along the coast is being conducted in an attempt to isolate any releases.

Another topic receiving much press is related to the listing of impaired waters related to standard violations for fecal collators. Our Agency is often mentioned in the press and usually not so

favorably. The Water Quality Monitoring Section has been devoting a tremendous amount of time to this topic.

There are of course many other activities that come and go in a given day. We have a large group coming to the NC SWPBA meeting and I know everyone is looking forward to a break in the Tar Heel State.

Jim Glover,
Manager of the Aquatic Biology Section

Of General Interest

Ecologist (GS-07/09) – Stream Macroinvertebrates

Duty Location: USFWS Niceville sub-office, Eglin Air Force Base, Niceville, FL

Salary Range: \$38,751 - \$61,625

Closing Date: August 22, 2008

Overview:

Encompassing almost 500,000 acres in the western Florida Panhandle, Eglin AFB is the largest forested military base in the U.S. Eglin's streams are inhabited by more than 500 species of aquatic invertebrates, many endemic to Eglin. The primary responsibility for this position will be to conduct standardized monitoring of the aquatic invertebrates of streams and rivers on Eglin and the Florida panhandle. This is an excellent opportunity to practice invertebrate taxonomy while gaining extensive field experience in one of the nation's centers of biodiversity.

Primary Duties:

Design and conduct surveys and other management studies involving stream macroinvertebrates and ecological factors such as habitat preference, zoogeography, ecological condition indicators, or community ecology.

Provide technical assistance and guidance to federal lands and their partners in the formulation and execution of fishery and aquatic conservation programs.

Coordinate program activities with state and other federal agencies.

Assist with other aspects of aquatic resource management including fish and aquatic vertebrate monitoring, stream restoration, GIS applications, and public outreach.

For more information, qualifications, and application instructions see the full position announcement online at:

<http://jobsearch.usajobs.gov/getjob.asp?JobID=74608736&AVSDM=2008%2D08%2D08+00%3A03%3A01&Logo=0&lid=376&jbf571=5&paygrademin=7&paygrademax=9&FedEmp=N&sort=rv&vw=d&brd=3876&ss=0&FedPub=Y&SUBMIT1.x=75&SUBMIT1.y=16>

Or Search www.usajobs.gov, Job Announcement Number: **AT200064**

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