

Southeastern Water Pollution Biologists Association

Spring Newsletter, March 2008
Volume 35 Number 1



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Alabama and EPA updates not available at this time



Chowan River, near Gatesville, NC

“A river is the cosiest of friends. You must love it and live with it before you can know it”

G.W. Curtis - from Lotus Eating: Hudson and Rhine

President's Letter

March 2008

www.swpba.org

What a nice thing you guys did to elect me your 2008 SWPBA president. That means I get to initiate use of the SWPBA web page. This will be a wonderful tool to facilitate interaction between SWPBA members and make access to that all important meeting information just a click of the mouse away. In the past we have relied on state contacts to disseminate SWPBA newsletters and meeting information. While the web page won't do away with the middleperson compiling state summaries for the newsletter, it will allow those members who care about SWPBA to get the meeting and newsletter information directly. This will avoid the list-serve fiasco of years ago-oops NC started that also didn't we? Ever wonder what your state did before you got there? Past newsletters are now on our web page. Need to contact your counterpart in another state, but you're new and have no idea who those people are? SWPBA members and their contact information are also the web page. Even the constitution and by-laws are there and I'd bet many members didn't even know we had these.

Asheville September 23-25

Old-time SWPBA members will remember when we used to always have the meeting in **September** and new members don't have the meeting time-frame imprinted yet, so I hope the transition back to a **September** meeting is easy. Asheville is a fantastic place for a meeting-beautiful setting, great places to eat, centrally located for most states (sorry Florida!), but the rates in October and early November are exorbitant. You can't beat \$63.75 + tax a night and I only reserved 50 rooms! So make your reservations now for the **September** 23-25 meeting (Tues am to noon Thurs), when it will be warm, you'll have daylight after the sessions end for hiking or collecting or visiting Biltmore Estates (group discount available), and if you're finishing up summer sampling-then just reschedule that last week in the field and come to the meeting. It's only 6 months till **September**-get me your session ideas, get working on an abstract, and I'll see you in Asheville. North Carolina biologists are working hard to make this the best meeting ever!!

Thanks so much,



Trish Finn MacPherson

From the Secretary's Desk

I wanted to thank the membership for their vote of confidence last fall in making me the SWPBA Secretary for this year. I have been a small part of SWPBA for the past five years, and now it is my turn to give back some of what I have gained from working with all of you.

Trish and I are attending to all the details for our upcoming meeting in Asheville this September. If you should need any special accommodations or if you have any questions or concerns about the meeting as details develop, please contact me directly so that I can ensure that everyone who wants to attend can do so, and that all the members have the best time possible.

I am very excited about the SWPBA web site. No longer will the membership have to rely on email forwards and word-of-mouth to find out the latest happenings in Region 4. I have high expectations of the new web site as well, but only the membership can make it really work. One thing that we need from you is suggestions for making it as user friendly as possible. SWPBA and the web site are here to serve you, its members. Trish and I have made an effort to compile as many SWPBA related documents as possible so that new members (and maybe some old ones) can more quickly become familiar with our Association, past and present. Also, the web site will be an important tool for highlighting the hard work that all of us do in protecting our water quality in the Southeast.

And speaking of hard work, the majority of the rest of this newsletter is full of monitoring, collecting, assessing, creating, discovering and many other things, that SWPBA members and their Agencies are doing. Some of us are so busy, in fact, that we couldn't submit a report for this newsletter! We hope to hear from all the member Agencies in the next newsletter. Until then, have a safe and productive field season.

Sincerely,

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

Bill Crouch
SWPBA Secretary 2007-2008

**2007 Southeastern Water Pollution Biologists Association
General Business Meeting Minutes
November 8, 2007**

- 1025 Ann-Marie Denman (SC) calls the 2007 business meeting to order.
- 1026 Ann-Marie Denman does roll call. All member institutions are present, with exceptions of Alabama (ADEM) and Florida (FLDEP). Requirements for a quorum are met.
- 1027 Emily Cotton (MS) reads last year's minutes.
- 1031 Mike Beiser (MS) moves to approve last year's minutes on the condition that corrections are made to the misspelling of his and Bill McDermott's (SC) names in last year's minutes. Emily Cotton promises to make corrections. Trish Macpherson (NC) seconds the motion to approve last year's minutes, and it is unanimously approved.

Old Business

- 1033 Ann-Marie Denman explains to the members the situation of the development of the SWPBA website. Brandon Moody (GA) had accepted the responsibility of the development of the website at the 2006 meeting. Due to lack of communication between GA and SC, the website was never completed, but server and domain name had been purchased. Brandon Moody states that workload in GA was the cause of the failed attempt of the website, but says that he would try again for the 2008 meeting in NC. Brandon Moody also asks members for suggestions with regards to the website. South Carolina moves to approve development of website. David Chestnut (SC) seconds the motion, and it is unanimously approved.

New Business

- 1035 Ann-Marie Denman thanks all the vendors for coming to the meeting. She also thanks Jim Harrison (USEPA), David Penrose (NCSU), for the Restoration Workshop and Glen Suter and Kate Schoefield (USEPA) for the CADDIS workshop.
- 1037 Ann-Marie Denman asks if North Carolina will host in 2008. Trish Macpherson says yes. Ann-Marie Denman asks if Kentucky will host in 2009, and Susan Cohn says yes.

- 1038 Executive Committee has received a nomination for Trish MacPherson to become SWPBA president in 2008. Bill Crouch (NC) is nominated for Secretary in 2008. Members vote unanimously yes in favor for both. Brian Rabon (SC) moves to end nominations. David Chestnut seconds. Nominations closed.
- 1039 Ann-Marie Denman passes The Worm to Trish MacPherson. Trish MacPherson graciously accepts The Worm and thanks South Carolina for a lovely meeting.
- 1040 Ann-Marie Denman moves to close the meeting. Mike Beiser and Susan Cohn second the motion. Meeting is adjourned.

Kentucky Division of Water (KDOW) SWPBA update

TMDL Section

The TMDL Section has been busy with turnover and hiring over the last several months. Julie Tabor and Christine Oelschlager were hired to fill the vacant Madisonville biologist positions. One new TMDL modeler, Scarlett Stapleton, was hired to write TMDL reports. Charles Noble left the Madisonville office and accepted a biologist position with TMDL in Frankfort. Joe Ferguson left TMDL during the middle of Dec; transferring to the Transportation Cabinet. As noted in the last update, Jessica Schuster had a baby girl, Ava, in Sept. She has returned from maternity leave and is back at work. All field staff, Jessica, Julie, Chris, and Charles, are working hard, collecting chemical data in several watersheds and compiling data from the 07 season. The modelers, Eric Liebenauer and Scarlett have several TMDLs close to being released for public comment or to being sent for final EPA approval. All TMDL staff are involved in learning techniques to collect data for sediment load determinations and several are also attending a fluvial geomorphology training event. In addition to hiring staff, Ann Fredenburg has been working on the 303(d) list for 2008.

Ecological Support Section

This winter we lost Paulette Akers to our Nonpoint Source Section, where she has taken up the reins as section supervisor. Congratulations, Paulette. That leaves a macroinvertebrate position vacant. If anyone is interested, contact john.brumley@ky.gov. We plan to sample 20 or so sites in the Pennyroyal bioregion. These sites are being sampled monthly by the USGS for nutrients. We plan to follow that up with biological sampling in the spring and summer. Hopefully, some nutrient response data gaps can be filled with this project.

401 Water Quality Certification Section

WQC has hired two project managers, Adam Jackson and Jesse Robinson, and one compliance manager, James "Jay" Bicknell. Alan Grant is the new WQC Supervisor as Jennifer Garland is now with USFWS. WQC has completed the new general certifications for 2007. The general certifications are renewed every 5 years. WQC is working on Public Notice regulations

319 Section: Nonpoint Source Pollution

Kentucky's (KY) Nonpoint Source Section has undergone some staff changes since the last newsletter. John Eisiminger has left the supervisor position for greener pastures and Jessica Bevins departed us to join Standards and Specifications. We have hired Bryan Marbert as the macroinvertebrate biologist and Paulette Akers from Ecological Support as the supervisor. The NPS section has been busy this winter streamlining our 319 grant

process to better serve the needs of Kentucky, and as always, we're hustling to identify bugs and fish while preparing for the upcoming field season. Rodney and Bryan have been conducting intensive biological, nutrient, and pathogen sampling on Elkhorn Creek in Eastern KY, while completing the post-restoration monitoring project for Obion Creek in Western KY. Our technical advisors (TA) continue to steward a wealth of 319 projects developing numerous watershed-based plans with community groups across the Commonwealth. Currently, these projects include a variety of watershed-based projects that include wetland and stream restoration, upgrades to wastewater treatment plants, and reduction of livestock density and agricultural runoff in streams. Finally, we continue to provide educational outreach to our partners enlightening them to improvements regarding nonpoint source pollution control.

Standards & Specifications Section

Currently, the focus is to complete the 305(b) portion of the Integrated Report for 2008 due 1 April. The emphasis of this report will be two basin management units (BMU), the upper Cumberland – 4-Rivers and Green – Tradewater. Statewide assessments are included for those waters monitored outside of the BMU cycle as well.

Jessica Bevins joined our section last summer to become the Probabilistic Biosurvey Program Coordinator. This winter she was able to attend Dr. Epler's midge workshop in Wakulla Springs, Florida and has previously attended the Southeastern EPT workshop taught by Dr. Morris of Clemson University. There will be a shift in direction this monitoring year as our probabilistic program will work with others in the branch on a special study related to nutrient criteria development in eastern Kentucky.

Our joint study with Kentucky Geological Survey on selenium occurrence in the Appalachian Coalfield of Kentucky is well underway. We collected water, sediment and fish tissue samples from hollowfill mine sites throughout the region last summer; however, the severe drought of 2007 caught up with us and we had to suspend sample collections at one of our remaining test watersheds, as well as the control watersheds, until this spring. Data analyses and report on those findings are anticipated by end of this calendar year. Also, our reservoirs and ambient water quality monitoring programs will focus on those waters in the Kentucky River BMU.

**North Carolina
Division of Water Quality
Environmental Sciences Section
November 2007 thru February 2008**

The exceptional drought that has gripped most of North Carolina since July 2007 is the hot item these days with regard to water quality and monitoring. The unprecedented severity and duration of this drought has reduced large watersheds in the Slate Belt ecoregion to dry streambeds. This is primarily affecting water supplies in Raleigh and Durham, but basinwide monitoring is also being switched to alternate basins where streams have retained some flow during the latter half of 2007.



Collins Creek, Chatham County, NC December 2007

Biological Assessment Unit

During the past four months we have concentrated on completing sample work up and writing up the basinwide assessment reports for the French Broad, Catawba and Tar River basins. BAU is using a new one page template format for each basin site that is being well received by the public and our sister government agencies. We also completed two large High Quality Waters studies in the French Broad and Catawba River basins with about 20 sites in each study. We did a large reconnaissance of basinwide

sites in the Cape Fear River Basin in December 2007 and found over half of the sites scheduled for sampling in 2008 had either no water or no flow with water only in pools. This resulted in switching basinwide monitoring this coming summer to the New and Watauga River basins in the northern mountains of North Carolina with limited sampling in the Cape Fear River Basin in the middle part of the state. Drought sampling is scheduled to determine the impact of this drought on fish communities of reference streams most affected. Fish tissue monitoring continues to concentrate on mercury accumulation.

Intensive Survey Unit (ISU)

We have been conducting several studies to assess the impact of water quality on the biological communities in streams and reservoirs in the state of North Carolina. Stressor studies were conducted in the Catawba River, East Fork Deep River, and Little Troublesome Creek watersheds. These streams are listed on the 303(d) list of impaired waterbodies for having impaired biological integrity. The objective of these studies was to provide data needed to establish targets for Total Maximum Daily Load (TMDL) model development. The data collected included an assessment of stream cross sections and velocities, surface water physical parameters (dissolved oxygen, pH, temperature, and conductivity), surface water chemical parameters (nutrients and metal concentrations), and sediment chemical parameters (total organic carbon, metals, SVOCs, pesticides/herbicides, and toxicity assessment). Other studies conducted by ISU included monthly monitoring of Jordan Lake (on 303(d) list for chlorophyll a impairment) to support a post-TMDL adaptive management strategy, and biweekly monitoring of surface water physical parameters at various locations along the Tar, Neuse, and Cape Fear Rivers to assess the impact of the ongoing drought in the southeastern US on water quality.

Aquatic Toxicology Unit

Aquatic Toxicology Unit with the Division of Water Quality has a three-fold purpose.

- 1) Biological Laboratory Certification
- 2) Biological Laboratory Testing Facility
- 3) Compliance and Enforcement in regards to NPDES permits.

Lab Certification has received numerous requests for new lab certification for either Aquatic Population or WET testing. We are in the process of certifying two additional Testing labs, one for WET testing and other for Aquatic Population. We have also continued our annual visit of certified labs. We have completed site visits and review of five toxicity program for certification.

The biological testing lab coordinated with EPA to provide training on the Biotic Ligand Model in October for Division of Water Quality and opened the training to all within EPA Section 4 . The Lab section is collaborating with Ecosystems Unit on a Chlorophyll

A study. The lab has performed 7 WET tests in the last quarter. The lab has been working with the Watershed Assessment Team to extend the contract with the Ecosystem Enhancement Project to provide watershed assessment using “microbiotests”.

Compliance and Enforcement provided training for the Permit Section and others to better understand the Aquatic Toxicology Unit. We are working with the NPDES unit in updating the templates that are used for the “WET” portion of the NPDES permit. Compliance and Enforcement review draft permits for correct WET language. The Compliance and enforcement has sent out 15 Nov’s and 2 Civil Penalties Assessments.

Ecosystem Unit

Key staff attended the STORET users conference in November to prepare for EPA’s changes in submitting data to the national data warehouse. Staff throughout ESS, and the ambient monitors in our regional offices are participating in the 2008 USGS National Field Quality Assurance Program. Our coalition coordinators continue to work with six monitoring coalitions in four river basins to update memorandum of agreements. Emphasis is being placed on reshaping QA/QC measures and conducting field audits. They are almost finished with a Field Monitoring Guidelines document to improve consistency of collections across the program. The algae folks have completed draft taxonomic identification sheets for all estuarine taxa in our database. These are designed for members of the academic community and other biologists to facilitate the exchange of information on algae between the Ecosystems Unit and other professionals who monitor algae in the state.

TENNESSEE

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. Three seasons of nutrient sampling as well as five bacteriological samples, habitat assessments, one macroinvertebrate sample and one periphyton sample have already been completed. Once the last nutrient samples are collected this spring, TDEC will begin compiling the data with the final report targeted for completion in February 2009. Some of the goals of the study are to:

- Compile the data within each region to calculate results including exceedance 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.

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 implantation 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 to the commissioner to base fishing advisory decisions on the new national criterion.

The department 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. Tennessee is planning to use the 106 supplemental funds to conduct 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. These streams will be monitored for macroinvertebrates (both semi-quantitative and screening level), periphyton, nutrients, dissolved oxygen, pH, conductivity and temperature.

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.

Florida's Update - FY 2006-2007

Over the past few years, biological data have been used to refine an overall integrating macroinvertebrate index for streams, called the Stream Condition Index (SCI), and a rapid bioassessment tool for streams called BioReconnaissance (BioRecon). The recalibration for both of these tools, along with a Human Disturbance Gradient (HDG), was completed in December 2003. There continues to be further refinement of the SCI using the EPA's Tiered Aquatic Life Use System (TALUS). The Lake Vegetative Index (LVI) allows district biologists to rapidly and accurately assess the quality of a lake. The LVI is based on the Lake Visual Survey and the Floristic Quality Index. Also, training and certification in all of the bioassessment procedures continued throughout the past fiscal year.

The development of multimetric algal indices for streams and lakes is beginning. The project will investigate the feasibility of adding a periphyton-based bioassessment tool for Florida streams and a phytoplankton-based multimetric index for Florida lakes. It will also compare the status calls of lake and stream condition derived from biological assessments based on macroinvertebrates and algal assemblages.

FDEP established the Biocriteria Committee in 1989 for developing and implementing bioassessment methods to improve FDEP's capability to detect impairments to aquatic ecosystems. Bioassessment procedures have been developed and finalized for freshwater streams and lakes and integrated in the following point and nonpoint source programs to date: point source evaluations (Fifth Year Inspection Program), TMDL Program, Forestry BMP Program, basin assessments, and the statewide surface water status monitoring network program. The expansion of bioassessment capabilities into other waterbody types is ongoing.

The Biocriteria Committee met once in the past year. A complete summary of all information presented at the meeting is available at <http://www.dep.state.fl.us/water/bioassess/bcmeet.htm>.

A central function of the Biocriteria Committee is to provide a statewide training program designed to keep statewide bioassessment methods standardized and provide for QA/QC coordination between FDEP's district and Central Laboratory staff. The training programs are designed to ensure consistent, repeatable results that are scientifically defensible. Continuous annual training since the program's inception has produced a clear trend toward improving QA performance. Formal training provided during the past year includes the following:

Grass and Sedge training in Tallahassee, October 25–26, 2006
SCI and Habitat Assessment testing in the Tampa area on April 4, 2007

Northwest District Office – Pensacola, Florida

Samples:

Performed 12 SCIs

Performed 59 Biorecons:

Performed 22 Lakes bioassessments

Reports prepared:

Ecosummaries were written and published on the FDEP web site for 21 bioassessments.

Meetings attended:

Attended Biocriteria Committee meetings

Attended FAB Annual Meeting

Attended Oligochaeta Taxonomy Workshops

Attended Land Management Review of Tarklin Bayou State Park

Attended Land Management Review of Big Lagoon State Park

Attended Land Management Review of Yellow River Aquatic Preserve

Participated in QC round-robins

Other:

Participated in taxonomic QC round-robins.

Participated in habitat assessment QC testing.

Seven Northwest District FDEP employees completed Boat Certification.

Northeast Florida District Office – Jacksonville, Florida

Lakes:

TMDL sampling of STORET 10 lakes: nutrients, algal, metals, physical parameters:

Lake surveys:

Plant identification LVI training

Lake data entered into WELFS/ELFS

Small lake near ocean pond 19010100

Group 2 Lower St. Johns River TMDL:

Sampling 130 WBIDs for nutrients, metals, physical parameters, DO, fecal coliform

STORET data entry for fecal coliform, field parameters, sample parameters

Group 3 Nassau/Amelia River TMDL:

Reconnaissance and site selection

Tributary Assessment Team (TAT):

Sample approximately 60 priority ranked sites for fecal coliform as Phase 2 of tributary assessment plan

Conduct site assessment and evaluate/track sources of fecal contamination in the impaired waters as follow-up to initial sampling

Attend TAT meetings between agencies (FDEP, city of Jacksonville, JEA, FDOH)

Meetings:

Attended St. Johns River TMDL TAC, stakeholder, executive, and public meetings

Biocriteria Committee meeting, September 2006

Other:

Fecal coliform investigation in Marietta, Lake Jacksonville, Florida

Sampling and testing sanitary overflows JEA for fecal coliform Hogan Creek, Wills Branch, and Ginhouse Creeks

Fecal coliform testing and laboratory operations

Southwest District Office – Tampa, Florida

Summary totals:

Stream Habitat Assessments: 27

Stream BioRecons: 16

Stream Condition Index: 11

Lake Vegetative Index: 52

Lake Condition Index: 7

Core samples (marine invertebrates): 8

Hester-Dendy samples (marine invertebrates): 4

Kick net samples (marine invertebrates): 8

Reports Written: 4

- 16 Stream BioRecons and habitat assessments performed, lab-verified in Tampa Lab and entered into SBIO.
- 5 SCI and habitat assessments performed; SCIs analyzed in Tampa Lab & data entered into SBIO.
- 5 SCI and habitat assessments performed; SCIs sent to Central Lab for analysis.
- 7 LCIs sent to Central Lab for analysis.
- 52 LVIs, aquatic macrophytes identified in Tampa and data entered into VPDB
- 20 Marine invertebrate samples collected, analyzed in Tampa Lab and data entered into SBIO.

Fifth year inspections:

City of Bradenton WWTP

Special studies: Benthic survey below Hillsborough River Dam, Rowlett Park:

Kick net samples, 2 collections (4 reps)

Hester-Dendy sampler, 1 collection (4 reps)

Core samples, 2 collections (4 reps)

Technical assistance, presentations, and data provided to other sections, agencies, and the public:

Great American Teach- in

Middleton High School Science project

Review Coronet Biological Monitoring Reports (2), provide recommendations and attend 2 meetings

Jackie Champion – Phosphate Management (re Little Manatee permitting issues)

Review sediment data for ERP

Clam Bayou invertebrate data per citizen request

Review Mosaic restoration plan

Taxonomic verifications for Hillsborough County Environmental Protection Commission

Review and comment on SCI rule changes

Brooker Creek Environmental Open House

Review LVI Report (Leska Fore)

Training provided:

Biological Methods field training for WSM OPS staff

Taxonomic training for Gitta Schmitt

Taxonomic training for Mike Schuman

Vascular Plant Database training for Rose Taylor and Kim Mann

Evaluated Mike Dalsis (IWRM) for SCI training

Administrative duties:

Served as supervisor for 2 positions, ESI and ESII (OPS)

Annual Performance Evaluation, Gitta Schmitt

Annual Performance Evaluation, Mike Schuman

Organized judges for Student Presentations at annual NABS meeting

Served as data administrator for SBIO, ELFS, and VPDB in charge of quality control and marking complete, etc.

Determined and planned all biological sampling for Southwest District (except LVIs for Ambient Program)

Researched equipment and supplies for purchase for the Biology Lab

Organization of macroinvertebrate reference collection

Organization of herbarium aquatic plant collection

Four Quarterly Reports

Meetings and training attended:

NABS Annual Meeting, Columbia, SC

Charlotte Harbor National Estuary Program Management Committee Meetings (3)

Myakka River Regional Council Meetings (3)

Grass and Sedge Workshop

Biological Gradient Workshop
Supervisor Training
FAB Annual Meeting
Tolerant/sensitive species workshop
Microbial Source Tracking Workshop
Myakka Watershed Initiative meeting
Coast Guard Boat Class
Spring Biocriteria Committee meeting, Tampa
FAB Fall workshop – Mites
Train the Trainer workshop

Other activities:

Participated in four taxonomic round-robins
Attended watershed retreat at Weedon Island Preserve
Duette restoration site – vegetative transects
Amphipod IDs for algal project (watershed resources assessment team)
Organized plant specimens for verification by Dr. Hall
Served on Employee of the Quarter Committee

South Florida District Office – Punta Gorda, Florida

Most TMDL sites in the current group are marine and not suitable for SCI sampling. The few freshwater sites are canals or ditches, where any SCI results would be inconclusive because of a low habitat score.

- 2 TMDL SCIs were performed
- 1 BioRecons performed.
- 1 TMDL periphyton sampling performed.
- 1 TMDL water quality sampling.
- 11 areas were sampled during calendar year 2006, including the period from 10-1-06 to 12-31-06:
- 20 areas were sampled during calendar year 2007, including the period from 1-1-07 to 9-30-07:

Charlotte Harbor Benthic Hypoxia Study – benthic macroinvertebrate and water quality data collected:

This study is looking at the impacts of hypoxia events that normally occur in the upper harbor during the summer months, when large freshwater inflows create stratification in the harbor. The effects of these hypoxia events on the benthic community are being investigated.

Estero Bay DO Study – water quality data

YSI 6600 sondes deployed for one year (12/06–12/07) for continuous data recording. Grab samples collected weekly for nutrients, BOD, color, turbidity, chlorophyll *a* and Secchi depth. Monthly metals testing are also collected. The study will help determine how well discrete DO readings represent the daily fluctuations in DO concentrations in an estuary system.

Estero Bay Oyster Study – water quality data:

Bimonthly water samples and oyster tissue are collected to be analyzed for pesticides, metals, nutrients, and mercury (01/05–11/07). This is a joint project with Florida Gulf Coast University to gain information on effects of NPS pollution.

Charlotte Harbor CDOM sonde study:

CDOM has been recognized as a significant factor in light attenuation in southwest Florida estuaries. The role of CDOM (and other light-attenuating parameters) on seagrass communities is being investigated. This project is being complemented by other studies and partners to better understand the dynamics of various water quality parameters, their nonpoint sources, and how they affect seagrass communities.

Charlotte Harbor seagrass monitoring:

This project builds on the Charlotte Harbor Aquatic Preserves seagrass monitoring network to better capture seasonal and long-term changes in seagrass communities that are affected by the Caloosahatchee River.

Shell Creek monitoring:

This long-term monitoring project is used to track the conductivity of the surface water that flows into the Punta Gorda drinking water reservoir. There was significant contamination of the surface water by high TDS wells used for agricultural purposes. For several years FDEP has been involved in a multiagency/property owner group to address the contamination issues. Staff monitor surface water at the following locations:

Caloosahatchee River Pesticide Project:

In response to heightened interest in the levels of pesticide in the Caloosahatchee River, FDEP set up and implemented a study in the river proper and in selected tributaries. The study was developed in cooperation with the SFWMD and FDACS.

Samples were collected monthly in 2006. These included 3 sites that collected composite samples and 6 grab sample locations. FDEP's Central Lab analyzed the samples for 85 pesticides using low detection level methods and is working on the final report at this time.

Reports/publications prepared:

Walton, A.S. 2007 Results of Lake Condition Index Sampling in Lake Annie, September 2006. Punta Gorda, Florida: Florida Department of Environmental Protection.

Meetings attended:

FDEP Biological Condition Gradient Workshop, Tallahassee, 10/23-24/06
FDEP Biocriteria Training, Orlando 4/3-5/07, LVI Training
FDEP Biocriteria Training, Tallahassee 6/25-27/07 – Train-the-Trainer Training
Florida Association of Benthologists Marine Taxonomy Workshop 10/11-13/06, Rookery Bay NERR
FDEP Insect Taxonomy Workshop, Tallahassee, Florida, 1/22-25/07
Charlotte Harbor NEP Technical Advisory Committee, 4/11/07
Florida Association of Benthologists Mite Taxonomy Workshop, Orlando, Florida, 5/21-24/07
Charlotte Harbor NEP CDOM Conference, Punta Gorda, Florida, 5/29-30/07
16th Annual Southwest Florida Water Resources Conference "Coastal Eutrophication and Harmful Algal Blooms", Fort Myers, Florida, 11/17-06
Florida Oyster Reef Restoration Workshop, St. Petersburg, Florida, 3/14-15/07
FLCOOS Bio-Sense Workshop, Sarasota, Florida, 6/18-20/07
Estero Bay Agency on Bay Management, Fort Myers, Florida
Southwest Florida Regional Restoration Coordination Team meetings
Lake Placid Watershed Plan meeting, Highlands County 8/21/07

Other activities:

Participated in the FDEP quarterly round-robin taxonomy QC program. Have continued to maintain a 100% accuracy rate.
Responded to complaints relating to fish kills, algae blooms, water quality; provided numerous insect identifications.
Prepared reference collection specimens for verification by experts.
Established large batch of new STORET numbers and entered them in district Access

database.

District updates:

Jennifer Nelson Environmental Manager for Environmental Assessment and Restoration Section.

Erin Dykes promoted to Environmental Supervisor for Environmental Assessment and Restoration Section.

Gordon Romeis runs TMDL Program; few SCIs for 2007 due to record dry season. Moved into new building November 2006.

Biocriteria Committee Meeting Summary Notes

A Biocriteria Committee meeting was held April 3–5, 2007, in Tampa, Florida. Meeting summaries are provided below. Summaries and presentations from these meetings may also be found at <http://www.dep.state.fl.us/water/bioassess/bcmeet.htm>.

*Please see presentations for more details.

Stream Condition Index (SCI) recalibration update

- *Biological Condition Gradient (BCG) score of 34 and below is impaired.*
- *Used 64 sites as reference streams. The reference streams were chosen using specific criteria, not “best professional judgment.”*
- *Both the BCG and the SCI determined that a score of 34 or below is impaired.*
- *Scores of 71 – 100 are the best of the best sites (exceptional sites).*
- *Scores of 35 – 70 are normal healthy sites.*
- *Subsampling:*
 - 2 x 150 draws for organisms identified
 - 300 individuals for the SCI
 - Tallahassee lab started this method in August 2006

Revisions to QA rule will be made this summer, then added to the SOP.

Lake Condition Index (LCI) issues

Tried to recalibrate the LCI like the SCI to develop objective biological criteria.

44 metrics were tested; none had a significant association with the Human Disturbance Gradient (HDG).

14 metrics correlated with sunlight penetration (color of the lake).

Biological metrics were not associated with habitat condition or the Landscape

Development Index (LDI).

LVI variability study:

Final report is posted on the biocriteria web site under the September meeting notes (<http://www.dep.state.fl.us/water/bioassess/bcmeet.htm>).

MISSISSIPPI PROGRAM HIGHLIGHTS

National Rivers and Streams Assessment coming to the Lower Mississippi

As part of the NRSA there is a side project to sample the lower Mississippi River. This will be a combined Region IV and Region VI project, with participation by various state agencies, the NRSA contractors and the USGS. The training workshop for this and the NRSA wadeable and non-wadeable components will be held in Tunica, MS the week of May 18th. We at MDEQ look forward to hosting fellow scientists.

Fish Tissue Monitoring Program

Ambient Fish Tissue Monitoring

MDEQ continues to actively sample fish for ambient monitoring purposes. The 2008 Ambient Fish Tissue Monitoring will focus on 25 lakes

Steele Bayou Monitoring for DDT and Toxaphene

In the last newsletter we reported that in March 2007, MDEQ Biologists sampled fish at 3 sites on Steele Bayou for DDT and Toxaphene. The data analysis has been completed to see if the current consumption advisory on Steele Bayou is still warranted. The Fish Advisory Task Force has not met on this matter to date.

Our Phone Numbers Have Changed

Recently our main office underwent relocation to downtown Jackson. While we SWPBA members at the MDEQ Lab were not involved with lifting furniture, etc. We were affected in that our phone system was changed to be compatible with the remainder of state government. Our new phone numbers are below:

Main Laboratory Number 601-961-5701 Fax Number 601-961-5704

Al Gibson 601-961-5763
Alice Dossett 601-961-5664
Chip Bray 601-961-5687
Chuck Thompson 601-961-5795
Doug Upton 601-961-5635
Jennifer Milner 601-961-5739
Jenny Ulmer 601-961-5632
Mike Beiser 601-961-5681
Natalie Guedon 601-961-5765
Pete Howard 601-961-5724
Valerie Alley 601-961-5182
Will Green 601-961-5762

News from South Carolina DHEC

Phycology Program

We have both some business as usual and some exciting new developments from the Phycology front here in South Carolina. For the usual activities, we continued with the rather active chlorophyll monitoring program. For the 2007 season, 104 stations were collected once per month May-October for chlorophyll with an additional 30 stations in estuaries collected once. The breakdown on the (104) station types included 74 lakes sites and 30 estuarine sites. From 1999-2007, about 500 locations have been sampled in estuaries using a probability-based, random sampling design. The 2007 data will be added to the series of GIS-based maps depicting estuarine chlorophyll concentrations.

Again in the routine business vein, there has been the usual assortment of phytoplankton samples to analyze from fish kills, algal blooms and the lakes ambient monitoring network. However, numbers of reported fish kills continue to be very low since last summer.

Now, here is the exciting news for us. We are truly fortunate to have been able to hire an additional phycologist, something that has been long-discussed as needed in the Aquatic Biology Section. Emily Hollingsworth will be working with us to develop a program to assess water quality using benthic algae (“periphyton”). Emily hails from Michigan where she obtained her undergraduate degree from Aquinas College. She did her master’s work studying benthic algae at Ohio University with Dr. Morgan Vis. We look forward to everyone meeting Emily and know she will enjoy the benefits of our SWPBA organization.

This past summer we participated in the second round of the Region 4 Southeastern Plains Nutrient Response (SPNR) study using benthic algae. The sampling seemed to go smoother with a previous year of experience under our belts. The choice to select sites of opportunity rather than random sites was also very helpful, particularly since the recent severe drought left many stream beds stagnant or even entirely dry.

Macroinvertebrate Program

The macroinvertebrate group just finished our 2008 winter sampling in the Pee Dee basin. We are now completing the IDs for those samples and also analyzing the 2007 data. During the past few months, Scott Castleberry attended Dr. Epler’s midge workshop in Florida. In addition, David Eargle attended Dr. Bogan’s workshop on freshwater mussels in North Carolina. Rick Renfrow is still here plugging away too and we thought he was retired!

Fisheries Biology

Many of you met our fisheries biologists, Chad Altman and Will Dillman, at last year's meeting in Folly Beach, S. C. Chad and Will work hard throughout the year under all kinds of conditions to collect fish for tissue analysis. They also process the fish tissue to the extent that it can be readily analyzed at our Central Laboratory for mercury and a variety of other parameters of interest. Chad and Will keep the fish advisory program running with their efforts and we truly thank them for all they do.

Speaking of mercury advisories for fish tissue, there have been some interesting developments recently here in South Carolina. At the behest of South Carolina DHEC board members and others, an enhanced effort has been made recently to inform the public about mercury in fish tissue. South Carolina already has conducted a public awareness campaign for a number of years that consisted of distributing Fish Consumption Advisories pamphlets to doctors' offices, bait and tackle shops, etc. A toll free line was, of course, also maintained to field citizens' questions about the advisories.

The further step being taken with fish consumption advisories entails posting signs at boat landings with information specific to the water body. Signs with a number of variations in the information given were necessary to post at the respective water bodies. The design of the signs and much of the logistical planning for their posting fell to Jim Glover and that was a lot of work! Some 280 fish consumption advisory signs were posted in South Carolina with the aid of a number SCDHEC staff.

Non-point Source Monitoring

The Non-point Source Monitoring team has been reduced to just one person, Frank Nemeth. Most of you that were at the South Carolina-hosted SWPBA probably met him and he gave a talk on his graduate work. Hopefully he'll have a new addition to help him out in the near future. Meanwhile, I (Ann-Marie Denman) have taken on a new position and a new challenge. I moved to the TMDL, NPS, and Program Development Section as a TMDL project manager where I am in charge of writing TMDLs for impaired sites. In addition to writing fecal TMDLs, I am working on developing shellfish TMDLs. In other words, instead of being on the monitoring side of things, I'll be on the implementation side of things. Don't worry, I still get to get out in the field and I will still be very active in SWPBA!

As far as any projects going on with Frank, things have been pretty routine since last time we talked. He continues to pick up monthly water samples to monitor the effectiveness of implemented BMPs and TMDLs around the state. He is still working closely with one of our watershed managers developing a sampling plan along our coastline for sites that showed up as "red flags" after a thermal imaging flyover of the area. Hope to see y'all in North Carolina!

Georgia's State Update

Watershed Planning and Monitoring Program (WPMP)

With the recent approval of Georgia's Comprehensive Statewide Water Management Plan, the Watershed Planning and Monitoring Program (WPMP) will soon be expanding. The WPMP will add a total of seventeen new staff, which will include GIS and database specialists and engineers. There will also be a team of six field monitoring staff that will be based out of Tifton, GA. It is expected that all new hires will start around July 1, 2008. Additional new hires are also expected for 2009 and 2010.

Ambient Monitoring Unit (AMU):

305(b)/303(d):

Georgia EPD is currently working on finalizing its 2008 305(b)/303(d) submittal. The draft 305(b)/303(d) list of waters was placed on public notice on January 23, 2008. EPD held three public meetings across the State in Atlanta, Rome, and Midway on February 19th, 21st and 25th, respectively. Approximately 20 people attended these meetings. Georgia is currently working on responses to comments received. EPD has made a number of changes to the format of the 305(b)/303(d) list of waters. One major change is that the State has adopted EPA's 5-part categorization of waters. Georgia EPD is also utilizing EPA's ADB database for the first time in 2008.

Biological Monitoring:

AMU collected diatoms in October of 2007 and macroinvertebrates in January 2008 in selected tributaries around Lake Lanier. This was to coincide with a year of water quality collection data for TMDL development. Also collected were macroinvertebrates for a third sampling event, and the second time after restoration occurred for a 319(h) restoration site, Swamp Creek. We plan on collecting diatoms and macroinvertebrates in tributaries around Carters Lake in coordination with TMDL development similar to the one conducted for Lake Lanier. This data may be used with development of nutrient criteria. We are currently working on metric evaluation, subsampling, identification, and QC of last season's samples.

Trend Monitoring:

Carters Lake Chlorophyll a TMDL:

Beginning in January 2008 until December 2008, with collections occurring every other week, the primary objective of this study is the collection and analysis of discrete water quality samples at locations on the Upper Coosawattee River basin and tributaries to Carters Lake. The Upper Coosawattee River watershed is composed of twenty 12 digit HUCs (Hydrologic Unit Codes) nested within four 10 digit HUCs. Fourteen of the 12 digit HUCs have been selected to determine input contributions to the Carters Lake Chlorophyll *a* TMDL Study. Water samples will be sent to the laboratory where they will be analyzed for the following parameter list: 5-day biochemical oxygen demand (BOD5),

total Kjeldahl nitrogen (TKN), ammonia nitrogen (NH₃), nitrate-nitrite nitrogen (NO₂-NO₃), total phosphorus, ortho-phosphate (dissolved), total organic carbon (TOC), and turbidity. These data will be used to calibrate the watershed model for the Upper Coosawattee River Basin.

Intensive Surveys Unit (ISU):

Carters Lake Chlorophyll a TMDL:

Lake sampling will include: Vertical profiles for: pH, DO, temperature, and specific conductance. Lake level (above sea-level) and in-situ depth will be recorded. In addition, the light penetration will be determined using a Li-Cor and a secchi depth will be measured to determine the photic zone, from which a depth composite water sample will be collected and analyzed for chlorophyll a, nutrients (see above), hardness, alkalinity, and total suspended solids (TSS). A fecal coliform grab sample from the surface will also be collected. Additional, chlorophyll *a* and ortho-phosphate (dissolved) will be collected for a total of twice a month.

Perfluorinated Compounds in the Conasauga River:

Perfluorinated compounds are used widely in carpet, upholstery, and fabric industries because their chemical properties allow them to repel both water and oil. They are also used in aqueous fire-fighting foams. A recent study found extremely high levels of perfluorinated compounds (e.g. PFOA, PFOS) in water samples from the Conasauga River in northwest Georgia. In response to that study, WPMP is coordinating with researchers from EPA, USGS, and the University of Georgia to better determine the extent of the contamination. The study tentatively includes additional surface water samples and samples from groundwater, soil, fish and mussels.

Determination of Sediment Quality around Drinking Water Intakes:

With the drought, some water treatment facilities have had to use secondary intakes that lie close to the bottom of lakes. There has been some concern that potentially contaminated sediments could be inadvertently taken up by these intakes. This year the Intensive Surveys Unit will be collecting sediment samples from lakes with drinking water intakes. Sediments will be analyzed for metals, organochlorine pesticides, polychlorinated biphenyls (PCBs), polybrominated diphenyl ethers (PBDEs; flame retardants), additional flame retardants and a suite of pharmaceuticals and personal care products.

Facilities Monitoring Unit (FMU):

Sampling continues this year in the FMU. We move from Lanier Lake to Carters Lake for the special modeling project. The facilities data will be combined with ISU and AMU data collected for use in the model. Other data collected will be from our focus basin for

this year is the “South Georgia Four” (Suwannee, Satilla, Saint Mary’s, and Ochlockonee).

Modeling & Development Unit (MDU):

Debbie Siemon became the Coordinator of the Modeling and Development (MAD) Unit June 1, 2007. Mary Barcala and Tyler Parsons recently joined the MAD team. Mary formerly worked with the Engineering and Technical Support Program of EPD. Tyler had been an Environmental Technician for the Watershed Planning and Monitoring Program (WPMP). Total Maximum Daily Loads (TMDLs) were completed by the MAD Unit for 303(d) listed streams in the Chattahoochee and Flint River Basins, and recently submitted to the USEPA for final approval. The Unit is currently working on TMDLs for 303(d) listed streams in the Coosa-Tallapoosa-Tennessee River Basins. The Unit has also reviewed and approved several City and County Watershed Assessments and Watershed Protection Plans.

TMDL Implementation:

TMDL Implementation Program is facilitating volunteer monitoring initiatives (dissolved oxygen, E. coli and conductivity) sponsored by County and City Watershed Management Departments, and supporting Water Quality Restoration Projects in forestry and agricultural areas.

Nonpoint Source Program (NPSP)

Outreach Unit:

Adopt-A-Stream

On April 16th, Adopt-A-Stream will be hosting the annual Rivers Alive Award Ceremony, recognizing the outstanding efforts of our 150 waterway cleanup organizers.

On April 1st, Adopt-A-Stream will launch our online volunteer water quality monitoring database. Georgia citizens will be able to enter data online, view and share data, network with other programs, graph different parameters, and view EPD water quality information.

Adopt-A-Stream is also launching a new bacteria-monitoring program that will train volunteers on testing E. coli.

In June, Adopt-A-Stream will coordinate monitoring activities for Paddle Georgia, a 7-day, 95-mile paddle down the Flint River. Five monitoring teams will sample 50 plus sites along the Flint and tributaries.

Project Wet

On May 4th, Project WET will be hosting the annual River of Words Award Ceremony, recognizing the outstanding poetry and art work by Georgia students using the theme of watersheds.

Alabama

No report submitted

EPA

No report submitted

For those of you who purchased the new 4th edition of “An Introduction to the Aquatic Insects of North America” by Merritt, Cummins, and Berg, there is a better edited version which has corrected many of the mistakes found in the first printing. You can obtain a “fixed” copy of this important text by contacting Kendall/Hunt Publishing Company. The biologists here in NC have recently been through the below procedure and incurred no cost to ourselves. In addition to the corrections, the quality of this printing is superior to the ones we purchased last summer/fall.

Message from Kendall/Hunt Publishing Company

Thank you for your purchase of AN INTRODUCTION TO THE AQUATIC INSECTS OF NORTH AMERICA by Richard W. Merritt, Kenneth W. Cummins, and Martin B. Berg. This message is to notify you that the above book (4th) edition has been reprinted and Kendall/Hunt is now offering to replace your beta version with a new updated printing at no cost to you as a purchaser. The beta version you now own contains significant errors in both content and printing and should not be used. These errors have been corrected and thus the reason for the updated reprinting. Please contact Kendall/Hunt's Customer Service Department at 800-228-0810 for instructions about how to receive this new printing, ISBN 978-0-7575-5049-2. We sincerely apologize for the inconvenience, and we trust that you will be pleased to trade your beta version in for the updated printing.

Sincerely,

Richard W. Merritt
Kenneth W. Cummins
Martin B. Berg