

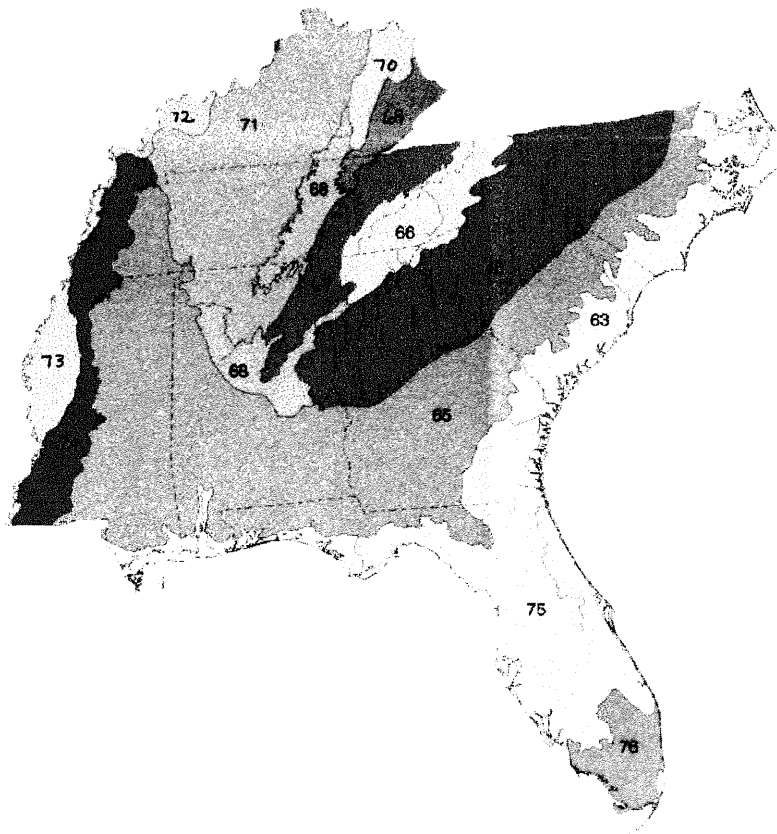
SWPBA

Southeastern Water Pollution Biologist Association

NEWSLETTER

Volume 20, Number 1

March 1996



- | | |
|---|------------------------------------|
| 45 Piedmont | 70 Western Allegheny Plateau |
| 63 Middle Atlantic Coastal Plain | 71 Interior Plateau |
| 65 Southeastern Plains | 72 Interior River Lowland |
| 66 Blue Ridge Mountains | 73 Mississippi Alluvial Plain |
| 67 Central Appalachian Ridges and Valleys | 74 Mississippi Valley Loess Plains |
| 68 Southwestern Appalachians | 75 Southern Coastal Plain |
| 69 Central Appalachians | 76 Southern Florida Coastal Plain |

ON THE COVER:

Ecoregion Map of EPA Region IV States. Reprinted from Level III Ecoregions of the Continental United States (Revised 1996) map with permission from G. Griffith.

TABLE OF CONTENTS

| | |
|--|----|
| President's Letter | 1 |
| 1995 Business Meeting Minutes | 3 |
| Thanks from Tennessee | 4 |
| 1995 Meeting Agenda | 5 |
| 1995 Meeting Attendees | 9 |
| SWPBA Historical Records | 10 |
| 1996 Meeting Plans | 11 |
| Reminders | 14 |
| SWPBA Constitution and By-Laws | 15 |
| ALABAMA | 20 |
| FLORIDA | 23 |
| GEORGIA | 28 |
| KENTUCKY | 31 |
| MISSISSIPPI | 32 |
| NORTH CAROLINA | 35 |
| IN MEMORY | 39 |
| SOUTH CAROLINA | 40 |
| TENNESSE | 42 |

*L*etter from the President.....

I would like to take this opportunity to thank everyone for their support of the past annual meeting. All states were well represented, but we were not complete without the presence of our EPA cohorts. However, our thanks go out to Ron Weldon & Dave Smith for having “lunch” with us. Appreciation is extended to outgoing President Joy Broach for all of her work this past year and to Donna Wingfield for her efforts on the SWPBA NEWS and meeting arrangements.

It is not too early to begin thinking about next year’s meeting. By popular demand, the 1996 annual meeting will be held in none other than ***GULF SHORES, ALABAMA on November 4 - 7 at the Quality Inn Beachside***, so mark your calendars and make your reservations now. The cost is \$45 or \$55/night. The phone number and related information are included in the next few pages.

As an associated note, the first official day of the SWPBA meeting is also the Presidential election (no, not SWPBA president). So, please look into how to vote absentee in your state. We all need to have input into who is going to lead our country over the next four years!

Please consider this the FIRST CALL FOR PAPERS. Let me hear from you concerning suggestions for sessions or presenters for the next annual meeting. Some of those topics already mentioned at the 1995 business meeting and the impromptu business lunch that followed include:

- 1) Adopt-a-Stream/ Volunteer Monitoring
- 2) Intensive - Multiple Parameter Studies (i.e. Toxicity/chem./Fish/Bugs/Algae)
- 3) Watershed Monitoring Approaches
- 4) Applied Biology Studies with results

The agenda is still wide open, so any suggestions will be presented to the Executive Committee for consideration and discussion. We are also asking that presenters submit abstracts a few weeks prior to the meeting so that they can be included

with the meeting agenda. A form is included in this newsletter so you can begin thinking about it.

At the last meeting, concern arose over macroinvertebrate bioassessment data comparability between the Region IV states. As a result, we are planning a Monday trip to several sites in the Gulf Shores area (Baldwin Co.) for one representative crew from each state to conduct a joint bioassessment. The purpose is to compare sampling methods and evaluation techniques in Coastal Plain Streams by each state in Region IV (and EPA, too). This would be an effort similar to what North Carolina attempted several years ago but ran into a few complicating factors such as weather and travel funding. Hopefully the Gulf Coast will be more hospitable and by conducting it just prior to the SWPBA meeting it will be easier for states to participate. Lisa Houston is in charge of planning and execution of this effort. If you have any questions please contact her at (334) 260-2755.

It was mentioned during the last meeting that 1996 was the Associations 25th Anniversary. Based on information that Butch Younginer (SC) published in 1992-93 in the SWPBA newsletter, it appears to be our 20th anniversary. If anyone has anything that contradicts this please send a copy to me or Butch. While I'm at this, I also updated and included Butch's list of the officers and newsletter editors and when they served. If anyone has any other info of historical significance (or insignificance) please forward it to Butch. As our charter members are nearing the time of retirement and the past officers and newsletter editors memories get foggy, it is probably time to get some more of our history in written form. Any assistance in this endeavor would be greatly appreciated.

HAPPY 1996!



Vickie Hulcher
SWPBA President
Alabama Dept. of Environmental Mgmt.

1995 SWPBA Business Meeting

The SWPBA Business Meeting was called to order at approximately 10:00 am Thursday, November 2, 1995. Joy Broach, the 1995 President, thanked everyone for their active participation in the meeting. Special thanks went to Donna Wingfield for planning and registration, Chip Cutcliff for the rafting trip, Kim Spark for her artwork, Tammy Hutchinson and Debbie Arnwine for behind the scenes participation. Also a special thanks to Florida for passing on the extra money from 1994, which allowed us to enjoy the Tennessee Aquarium.

Old Business

The minutes from the 1994 meeting were published in the April newsletter. A motion to approve those minutes was made by Debbie Arnwine and seconded by Peggy Morgan. The minutes were approved as printed in the newsletter.

Joy Broach asked that updates to the SWPBA membership listing be sent to her by the end of November. She will update the listing and then pass it on to Alabama.

New Business

The one and only order of business was to elect officers for next year. Alabama accepted responsibility for hosting the 1996 SWPBA meeting.

Nominations for officers started with a motion from Peggy Morgan to nominate Vickie Hulcher as President. This was seconded by Lythia Metzmeier, nominations were closed and the vote was unanimously "aye". Next, Lythia Metzmeier nominated Janet Glenn for secretary, this was seconded by Debbie Arnwine. Nominations were closed and the motion was passed.

The "worm" was passed to Vickie Hulcher, who then suggested Gulf Shores as the site for the 1996 meeting. Next, Vickie requested ideas for the 1996 agenda. Many suggestions followed, most of which are listed here:

- Database compatability, sharing between states
- Taxonomy workshop as part of 1996 meeting
- Rapid Bioassessment Methods comparison workshop as part of the 1996 meeting
- More presentations on whole projects that the states are involved in.

One final suggestion made by Dave Penrose, was to send out a questionnaire to the Region IV states which would cover sampling methods used, metrics used, and many other "interesting facts". This was discussed briefly and agreed upon as a great idea. Dave Penrose agreed to organize, distribute the questionnaire, and discuss the results at next years' meeting. If possible, the results will also be included in one of the SWPBA newsletters.

A motion for dismissal was made by Tammy Hutchison and seconded by Dave Penrose. The meeting was adjourned at approximately 11:00 am.

Comments or corrections to the minutes need to be received by May 1, 1996.

TENNESSEE
DEPARTMENT OF HEALTH
AND
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

News from the BEST*

Department of Health
Aquatic Biology Section

To my fellow SWPBA members:

I wanted to take this opportunity to thank everyone who attended the SWPBA meeting in Chattanooga, Tennessee, October 30 - November 2, 1995. Without the support of its members no organization can hope for success. Our meeting was very successful.

Everyone in attendance supported all of the functions. Even though we overbooked the banquet (and had to pay for it), before the meeting was over everyone pitched in to buy up all of the T-shirts, sweatshirts, and mugs. Ultimately, we were able to break even.

I hope everyone is enjoying their shirts and mugs. Once again I want to thank everyone for their enthusiastic reception of all items we attempted to push upon them.

For those who were able to go on the Ocoee River rafting trip I hope you received your copy of the video intact. I can only assume that all copies were of adequate viewing quality. I have watched mine about twenty times. Each time I am able to find a new amusing action or gesture one of the crew experienced. I'm so glad we were able to put the trip together and pull it off. I know I will never forget it.

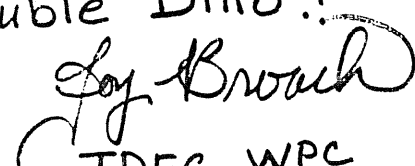
Speaking of memorable events.....Halloween night at the banquet. It was truly a gala affair. Everyone really got into it. I honestly think it was the first time that many of the members got together in such fashion. There is no way I could describe the antics. I only wish we had videotaped the entire event. The food and music was good, but the costumes were creative and outrageous. The dancing costume judging contest provided all there the opportunity to view a side of their fellow biologists they had never before witnessed. A truly great time was had by all. I might add that a rumor was heard that Alabama is considering a similar event, so everyone needs to be putting on their thinking cap to come up with a creative benthic costume, oh, spirit of the riparian zone.

I know I keep saying this but I really cannot thank all of those who helped out at the meeting enough. It made my job that much easier and actually enjoyable. Although, I have to honestly say that I am looking forward to this year's meeting where I can just kick back and enjoy the ride. Hope to see everyone there.

Thanks again,

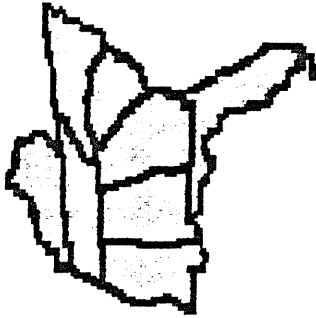


Donna Wingfield
Aquatic Biologist, TDH - Lab Services

Double Ditto!!

TDEC - WPC

*Biologist/Environmental Specialist Team

**SOUTHEASTERN
WATER
POLLUTION
BIOLOGIST
ASSOCIATION**



Monday, October 30, 1995

Crystal Room

1:00 - 7:00 pm

Registration

Donna Wingfield

**Welcome
Agenda Changes
Introduction of Sponsors**

State Overviews

2:10 - 2:20 pm Tennessee: Joy Broach

2:20 - 2:30 pm Mississippi: Mike Beiser

2:30 - 2:40 pm Kentucky: Lythia Metzmeier

2:40 - 2:50 pm Georgia: Patricia Foster

2:50 - 3:00 pm Alabama: Janet Glenn

3:00 - 5:00 pm

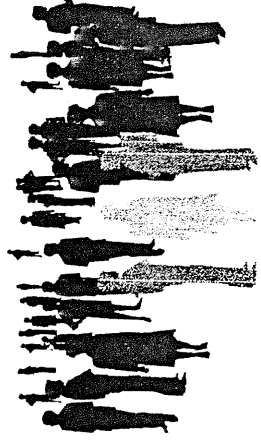
Equipment Needs and Arrangements

7:00 pm

Executive Committee Meeting

4:00 pm

Hospitality Room 224



1995

Annual Meeting

October 30 - November 2

Chattanooga ChooChoo Hotel

Chattanooga, Tennessee

Many Thanks to All Our Sponsors

Eagle - Picher, Hydrolab, YSF

SWPBA Members and Participants

Tuesday, October 31, 1995

Finley Lecture Hall

8:00 - 10:00 am Late Registration
Donna Wingfield, TDH, SWPBA Secretary

8:30 - 8:40 am Joy Broach, TDEC, SWPBA President: *Introductions*

8:40 - 8:50 am Ken Pointer, TDEC Enforcement Coordinator: *Welcome*

8:50 - 9:00 am Robert Worthington, Director, TDH Environmental Labs:
I Remember When...

9:00 - 9:10 am Joey Holland, TDEC Nashville Environmental Field
Office Manager: *State Organization Overview*

State and EPA Region 4 Overviews

9:10 - 9:20 am North Carolina: Neil Medlin

9:20 - 9:30 am South Carolina: Jim Glover

9:30 - 9:40 am EPA Region 4: Morris Flexner

9:40 - 10:00 am BREAK

Current and Future State and EPA

Water Quality and Biological Databases

Moderator: *Jessica Kinsell, TDEC*

10:00 - 10:15 am EPA's STORET X Update and Developing
Foxpro Biological Database

10:15 - 10:30 am AL: Vickie Hulcher: *Benthic and Habitat
Assessment Database*

10:30 - 10:45 am KY: Lee Colton: *Macroinvertebrate and Fish Database*

10:45 - 11:00 am NC: Norman Bedwell - North Carolina's Basin
Assessment and Analysis System: BAAS

11:00 - 11:15 am SC: Dr. Jim Glover - *An Aquatic Macroinvertebrate
Database on Foxpro 2.6 for Windows*

Tuesday, October 31, 1995

Finley Lecture Hall

11:15 - 11:30 am TN: Kathy Larrieu: *GIS Water Quality Data
Retrieval*

11:30 - 11:45 pm TN: Tim Thompson: *Map Expert*

11:45 - 12:00 pm TN: Joy Broach: *Ambstor: Water Quality
Database and STORET upload*

12:00 - 1:30 pm LUNCH

Aspects of Multi - Agency Projects Monitoring/Assessment

Moderator: Beverly Brown, TDEC

1:30 - 1:45 pm FL: Urania Quintana / Donald Ray: *Statewide
Biological Database*

1:45 - 2:00 pm TN: Tammy Hutchinson: *North Chickamauga
Creek: Watershed Protection Project*

2:00 - 2:15 pm GA: Chip Cutcliff: *Update on the Chattahoochee
River Project*

2:15 - 2:30 pm EPA: Ron Preston Region 3: *Mid Atlantic
Highland Assessment Project*

2:30 - 2:45 pm TVA: Dr. Neil Carriker: *Regional Monitoring
and Data Compatibility*

2:45 - 3:00 pm EPA: David Melgaard: *Part 1: Progress Report
the Southern Appalachian Assessment Project*

3:00 - 3:15 pm EPA: Morris Flexner: *Part 2: Progress Report
the Southern Appalachian Assessment Project*

3:15 - 3:30 pm BREAK

Tuesday, October 31, 1995

3:30 - 5:30 pm Concurrent Sessions

Finley Lecture Hall

3:30pm Computer Demonstrations

Directors Room

3:30 pm TVA: Dr. Neil Carrier: *Southeastern Regional Council Meeting (Open to All Participants)*

The Galleries

3:30 pm Poster Session and Exhibitors Hall

NC: Kathy Herring: *A Comparison of North Carolina's Benthic Macroinvertebrate Bioclassification System to the NCIBI Rating for Fish*

NC: Mark Hale: *Investigation of Atmospheric Mercury Deposition in Eastern North Carolina: An Emerging Source of Mercury in Picivorous Fish*

TN: Tim Thompson - *NPS Water Quality Well Monitoring*

AL: Lisa Houston: *Comparison of Sampling Methodology: RBP - Multihabitat Versus Hester-Dendies.*

TN: Valorie Hamilton: *City of Chattanooga - Stormwater Management.*

TN: Linda Hixon: *Friends of North Chickamauga Creek Greenway.*



The Roosevelt Room

7:00 - 8:00 pm

Cocktails

8:00 pm

Banquet: Costume Dress
Music provided by Stutz



Wednesday, November 1, 1995

Finley Lecture Hall

Ecoregions/Reference Sites

Moderator: Dave Stucki, TDH

9:00 - 9:15 am TN: Joy Broach: *Summary of Tennessee's Ecoregion Delineation Project*

9:15 - 9:40 am TN: Debbie Armwine: *A Quick Tour of Tennessee Ecological Subregions.*

9:40-10:00 BREAK

Community Assessment and Structure Applied Bioassessments

Forestry BMPs

Moderator: Annie Goodhue, TDEC

10:00 - 10:15 am TN: Deborah Gillis - Hamilton / Jimmy Smith: *Assessment of Water Quality in Middle Tennessee Using Macroinvertebrate Community Analysis: Methods and Results.*

10:15 - 10:30 am KY: Lythia Metzmeier: *The Surprising Effects of Phosphorus Levels on Periphyton in Urban Streams.*

10:30- 10:45 am GA: Trish Foster: *A Comparison of Sampling Methods*

10:45 - 11:00 am NC: Neil Medlin: *A Comparison of Benthic Macroinvertebrate and Fish Communities in North Carolina Coastal Plain Swamp Streams.*

11:00 - 11:15 pm FL: Lyn Burton - *Experimental Design of Florida Forestry BMP Study.*

11:15 - 11:30 pm FL: Jim Hulbert: *State Summary*

11:30 - 1:30 pm LUNCH

Wednesday, November 1, 1995

Finley Lecture Hall

Monitoring and Trend Analysis

Limnological Investigations

Modeling

Moderator: Amy Fritz, TDEC

1:30 - 1:45 pm TVA: Charlie Saylor: *Use of Index of Biotic Integrity for Assessment and Monitoring of Watershed Restoration.*

1:45 - 2:00 pm TVA: Janice Cox: *Lessons Learned on the Hiwassee River Action Team*

2:00 - 2:15 pm KY: Giles Miller: *Water Quality Sampling Frequency and Implications for Trend Analysis*

2:15 - 2:30 pm MS: Mike Beiser/Doug Upton: *Physical and Chemical Conditions in Lake Washington, A Mississippi Delta Oxbow: Current and Historical Perspective.*

2:30 - 2:45 pm TTU: Paul Piszczek: *Watershed Modeling*

2:45 - 3:00 pm TTU: Christopher O'Bara: *Fish Biodiversity Modeling*

3:00 - 3:15 pm BREAK

3:15 - 4:30 pm Computer Demonstrations

The Galleries

Poster Session

3:15 - 4:30 pm



The Tennessee Aquarium Night Tour

6:30 - 9:30 pm

Meet at the Aquarium Lobby at 6:30 pm. Shuttle Service is provided between the Hotel and the Aquarium. Last Shuttle leaves the Aquarium at 9:40 pm. Name tags Required.

Thursday, November 2, 1995

Finley Lecture Hall

Toxicity Testing

Tracking / Analysis

Moderator: Rob Lindbom, TDEC

9:00 - 9:15 am EPA IV: Bill Pelitier: *Toxicity Manual Update*

9:15 - 9:30 am KY: Charlie Roth: *Results of a National Survey Addressing Whole Effluent Toxicity Requirements*

9:30 - 9:45 am NC: Melissa Rosebrock: *Performance Evaluation Samples as a Component of a Biological Laboratory Certification Program: A Seven Year Overview*

9:45 - 10:00 am NC: Phil Bethea: *WET Compliance Update*

10:00 - 10:15 am BREAK

10:15 - 11:00 am Business Meeting
Election of 1996 SWPBA Officers

11:00 am MEETING ADJOURNED

Special Thanks to Donna Wingfield, SWPBA Secretary, for handling the Hotel and Banquet Arrangements, Mugs, T-shirts, and the 1995 Newsletters.

Additional Thanks to Kim Sparks, TN, for an Art Design; and Chip Cutcliff, GA, for organizing the Ocoee whitewater rafting trip.

SWPBA Members Attendance List, November 1995 Chattanooga, Tennessee

| | | | |
|-----------------------------|--|--|--|
| EPA : | Hoke S. Howard David L. Melgaard Ronald Wheldon | Morris Flexner David R. Smith | Kay L. Millar Ed. R. Decker |
| ALABAMA : | Janet Glenn | Lisa Houston | Vickie J. Hulcher |
| FLORIDA : | Lyn Burton Peggy Morgan | James L. Hulbert Urania Quintana | Donald H. Ray |
| GEORGIA : | Patricia Foster | Chip Cutcliff | |
| MISSISSIPPI : | Mike Beiser | Billy Gene Justus | |
| KENTUCKY : | Lee Colton Charles Roth | Lajuanda Maybriar Skip Call | Giles Miller Lythia Metzmeier |
| NORTH CAROLINA : | Phil Bethea Neil Medlin Mark Hale | Kathy Herring Norman Bedwell Trish MacPherson | Melissa Rosebrock David Penrose <i>— who was impersonating me ?!</i> |
| SOUTH CAROLINA : | Dr. James B. Glover | Peyton Sasnett | William T. McDermott |
| TENNESSEE : | Joey Holland Tina Robinson David Turner Marsha Waters Debbie Arnwine Sherry Wang Jimmy Smith Jessica Kinsall Donna Wingfield Johnathon Burr Joy Broach | Rob Lindbom Robert Worthington Greg Denton Jennifer Thompson Tammy Hutchinson Kim Sparks David Stucki Ken Pointer Beverly Brown Ann Morbitt | Paul Stodola Renee Parker Rob Karesh Kathy Larrieu Tim Thompson Greg Russell Amy Fritz Deborah Gillis-Hamilton Annie Isenhour-Goodhue Patricia Alicea |

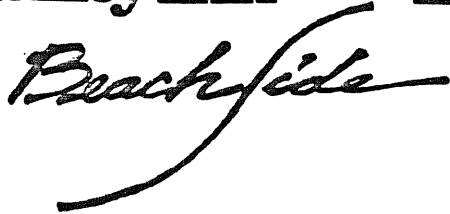
Southeastern Water Pollution Biologist Association (SWPBA)
Officers 1974 - Present

| YEAR | HOST | LOCATION | PRESIDENT | SECRETARY | EDITOR |
|-------|------|-----------------------------------|----------------------|-------------------------------------|----------------------|
| 1974* | EPA | Athens, GA | Lee Tebo, EPA** | none | none |
| 1975* | SC | Santee State Park, SC | Russ Sherer, SC** | none | Ron Raschke, EPA |
| 1976* | TN | Montgomery Bell State Park, TN*** | John Glass, TN ** | none | Ron Raschke, EPA |
| 1977 | FL | Wakulla Springs, FL | Landon Ross, FL | Steve Tedder, NC | Ron Raschke, EPA |
| 1978 | AL | Gulf Shores, AL | Steve Tedder, NC | Russ Sherer, SC | Ron Raschke, EPA |
| 1979 | NC | Wrightsville, NC | Harry Gaymon, SC | Harold Mullican, TN | Dave Smith, EPA |
| 1980 | KY | Lexington, KY | Ron Houpp, KY | Rick Sinclair, TN | Dave Smith, EPA |
| 1981 | MS | Biloxi, MS | Phil Bass, MS | Henry Folmar, MS | Dave Smith, EPA |
| 1982 | EPA | Athens, GA | Dave Smith, EPA | none | Dave Smith, EPA |
| 1983 | SC | Charleston, SC | Russ Sherer, SC | Doug Darr, SC (acting) | Dave Smith, EPA |
| 1984 | NC | Ashville, NC | Bob Cooner, AL | Doug Darr, SC | Dave Smith, EPA |
| 1985 | KY | Frankfort, KY | Bob Logan, KY | Barb Kleiss, MS | Dave Smith, EPA |
| 1986 | FL | Pensacola, FL | Tom Savage, FL | R.J. Helbling, FL (acting) | Dave Lenat, NC |
| 1987 | TN | Nashville, TN | Ken Pointer, TN | Robert Worthington, TN | Dave Lenat, NC |
| 1988 | AL | Gulf Shores, AL | Tim Forester, AL | Harry Gaymon, SC | Dave Lenat, NC |
| 1989 | MS | Biloxi, MS | Jimmie Overton, NC | Dave Penrose, NC | Stanley Rodgers, MS |
| 1990 | EPA | Jekyll Island, GA | David Chestnut, SC | Lythia Metzmeier, KY | Giles Miller, KY |
| 1991 | SC | Hilton Head, SC | Lythia Metzmeier, KY | Vickie Bauer (Hulcher), AL | Giles Miller, KY |
| 1992 | NC | Wrightsville, NC | Bruce Pruitt, EPA | Fern Winborne, NC/Corrine Wells, KY | Jimmie Overton, NC |
| 1993 | KY | Louisville, KY | Skip Call, KY | Neil Medlin, NC | Lythia Metzmeier, KY |
| 1994 | FL | San Destin, FL | Jim Hulbert, FL | Joy Broach, TN | Jim Hulbert, FL |
| 1995 | TN | Chattanooga, TN | Joy Broach, TN | Donna Wingfield, TN | Donna Wingfield, TN |
| 1996 | AL | Gulf Shores, AL | Jackie Hulcher, AL | Janet Glenn, AL | Janet Glenn, AL |

* Group was known as Southeast State & Federal Biologists Workshop

** Served as Chairman of the workshop. No President

***SWPBA was officially formed at the 1976 meeting.



Southeastern Water Pollution Biologists Association

GROUP RESERVATION INSTRUCTIONS

Room Block: November 4-7, 1996

To make a room reservation at Quality Inn Beachside, please call Group Reservations at 1-800-844-6913, Ext. 302, Monday-Friday, 8am-4pm.

The room block for Southeastern Water Pollution Biologists Association, will be held until October 4, 1996. In order to ensure a room and/or the group discount, you must make your reservation *before* this date. All reservations must be guaranteed with a credit card (Visa, MasterCard, American Express, Diner's Club, Discover) or by cash deposit. On a first-come, first-served basis, you will have your choice of the following room types:

| | |
|--|-------------|
| Gulf Doubles, West Gulf Doubles | \$45 |
| West Gulf King Suites | \$45 |
| King Kitchens (East Bldg, Non-Gulf Front) | \$45 |
| Gulf King Kitchens | \$55 |

Due to the busy nature of the hotel, we ask that you please make reservations early so we may accommodate as many people with the group as possible.

Check-in is 4pm and Check-out is 11am. Reservations may be cancelled up to 48 hours prior to arrival with no penalty.

We look forward to seeing you in November!

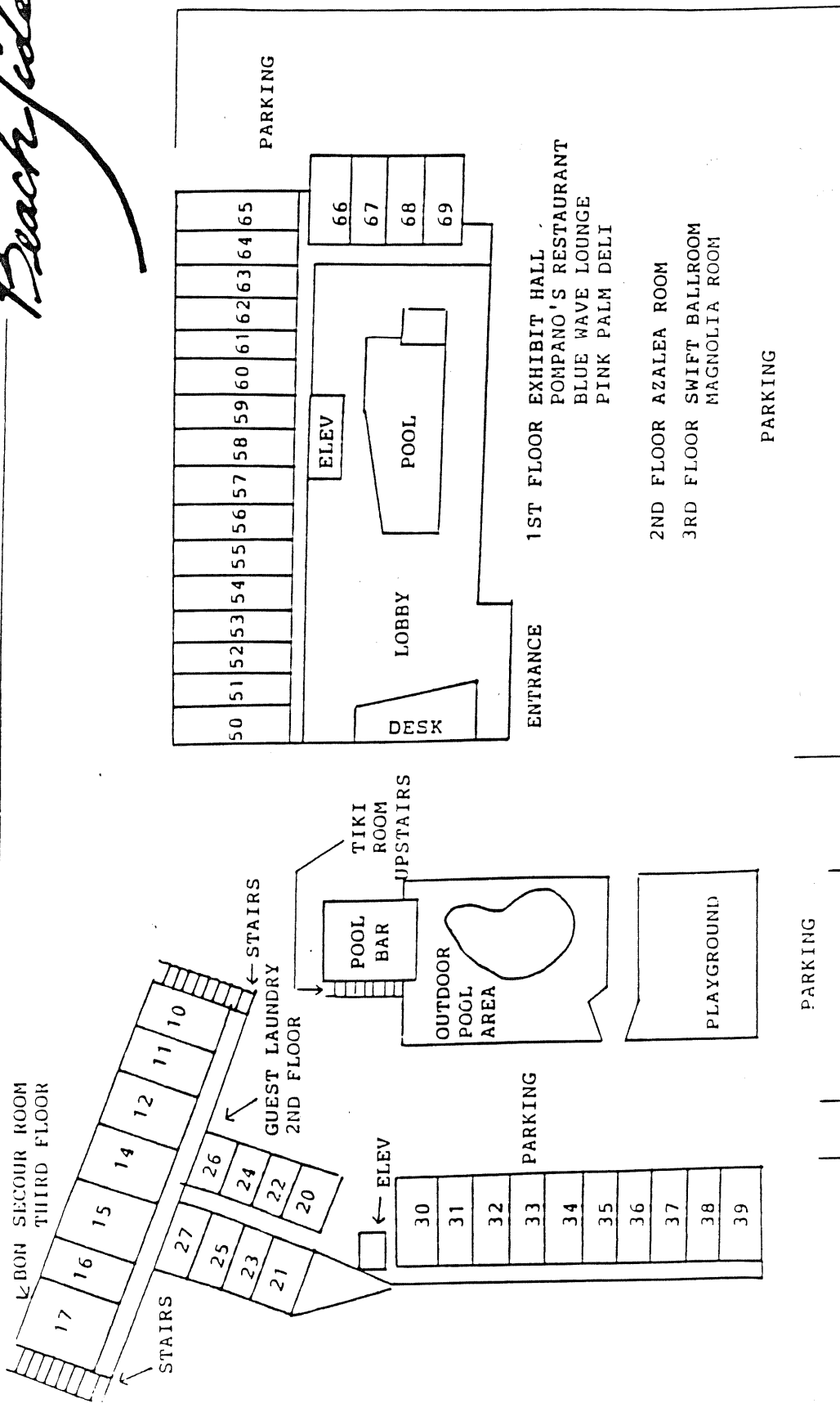


Property Layout

GULF OF MEXICO

Quality Inn

Beach side



Your Room Number Is

We provide your room number in this manner to assure confidentiality.
See other side for street map and list of area businesses for your use and convenience.
See the In-Room Directory of Guest Services for local television listings.



SWPBA ABSTRACT FORMS

All abstracts will be submitted on diskette this year to expedite printing the SWPBA programs. Each state will be sent one diskette to work from. The diskette will be sent to a contact person as outlined below. Contact that person to add your abstract to the disk before the deadline (end of September). **I need the disks back in Alabama by September 30, 1996.**

| | | | |
|--------------|-----------------------------|----------------|-------------------------|
| EPA(Athens) | Hoke Howard | Kentucky | Lythia Metzmeier |
| EPA(Atlanta) | Jim Harrison | Mississippi | Mike Beiser (Pearl, MS) |
| Alabama | Janet Glenn | North Carolina | Jimmie Overton |
| Florida | Jim Hulbert (Orlando, FL) | South Carolina | Dave Chestnut |
| Georgia | Chip Cutcliff (Atlanta, GA) | Tennessee | Joy Broach |

Due to budget constraints, I am not sending a separate disk to each field office, so share if possible. If you are in a field office and need a separate disk, call your contact person and have them make you a copy.

The form is saved as a Microsoft Word document. If your word processor can't read or convert the document, let me know.

Please copy the form below to the bottom of the document and complete for each paper or poster session. The sections are formatted to the size and type style that will be used in final printing. Please do not change these defaults.

Don't forget to complete the equipment sections so we will be able to plan for all requirements.

If you have any questions or problems, call Janet Glenn at (334)260-2749.

| NAME OF PAPER title continued | |
|--|-----------------------------|
| Presenters | |
| State or Department Name | |
| Please leave this section blank | |
| ABSTRACT This section is formatted to 10 point type that will allow a 12 line description (175 - 200 words). | |
| TYPE OF PRESENTATION: _____ Oral _____ Poster Session | |
| LIST EQUIPMENT REQUIRED _____ Slide Projector _____ Overhead Projector _____ | OTHER SPECIAL REQUIREMENTS: |

Just a Reminder

Deadlines for newsletter item are May 24 and August 23, 1996. (Due in AL on these days, this is not the day you start writing it!) We want to know what you're doing, so get some information to your state's contact person before each deadline.

Thanks to everyone for submitting information for this newsletter on such short notice.

Membership Listing/Fax Numbers

I think the membership listing is up to date, but if you have any other changes, send them with the next newsletter items.

It has been suggested that we include fax numbers on the membership listing. If you'd like to have your office's fax number included in the next update just send it to Janet Glenn.

1996 Meeting Agenda Suggested Topics

- Adopt a Stream/Volunteer Monitoring
- Nonpoint Source Projects
- Fish Tissue Monitoring
- Watershed Monitoring
- Wetlands Programs
- Database Sharing/Uploading Update
- Questionnaire
- Mining Impacts
- Intensive Surveys (Multiple parameter studies)
- Toxicity Testing (C.d. culturing)

Contact Vickie Hulcher (AL) with any other suggestions. We plan to have a draft agenda for the next newsletter. So send your ideas or paper titles ASAP. Don't forget we'll also need an abstract for each presentation.

Macroinvertebrate Bioassessment Data Comparability between Region IV States

A one-day trip is being planned for one crew from each state to compare sampling methods. Contact Lisa Houston for more information.

THE CONSTITUTION AND BY-LAWS OF THE SOUTHEASTERN WATER POLLUTION BIOLOGIST ASSOCIATION

CONSTITUTION

Article 1. NAME. This association shall be called the Southeastern Water Pollution Biologists Association (SWPBA).

Article 2. PURPOSE. The purpose of the Association shall be to promote further understanding of the aquatic biological communities and the impact of pollutants on the aquatic ecosystems and to provide a medium for exchange of appropriate information among the membership.

Article 3. MEMBERSHIP. Membership shall be restricted to Water Pollution Biologists whose programs are funded through the Region IV Environmental Protection Agency.

Article 4. ANNUAL MEETING. An annual meeting of the membership shall be held in one of the eight states in Region IV of EPA. The manner of choosing the host state of the next years meeting will be to offer the meeting in the following order: Mississippi, Georgia, EPA-Athens, South Carolina, North Carolina, Kentucky, Florida, Tennessee and Alabama. A state will either offer to accept or refuse the meeting. Upon refusal, the next state in order will entertain the offer, until the host state is confirmed. The time of the meeting shall be at the discretion of the host state with the agreement of the members of the Executive Committee.

Article 5. OFFICERS. The officers of the Association shall be a President and a Secretary. At the annual meeting consenting nominees (Three (3) maximum for any office) shall be voted on by a secret ballot with the majority vote recipient being declared winner. The officers shall hold office for a term of one year, and their terms of office shall not be coterminous. The terms of the officers shall begin at the close of the annual meeting which they are elected.

Article 6. ACTIVITIES. The Association shall be organized and operated exclusively for scientific and educational purposes, and shall not be organized or operated for profit. No substantial part of the activities of the Association shall consist of carrying on propaganda, or otherwise attempting to influence legislation. The Association shall not participate in, or intervene in, any political campaign on behalf of any candidate for public office.

Article 7. DISSOLUTION. The Association may be dissolved following a poll of the entire membership, conducted at the direction of the Executive Committee, in which two-thirds of the mail ballots received within 30 days of issuance support the dissolution.

Article 8. RATIFICATION AND AMENDMENTS. The constitution shall become effective upon ratification by a two-thirds vote by the member agencies present at the annual meeting and may be amended by a vote of two-thirds of the member agencies present at the annual meeting, providing a quorum is present, or in an emergency, by two-thirds of the members responding to a mail ballot within thirty days of issuance.

BY-LAWS

Article 1. ANNUAL MEETING. The annual meeting will normally be held in the fall of each year and will include a business meeting and the exchange of appropriate information. The presence of two-thirds of the member agencies shall constitute a quorum, and the business meeting will be held according to Robert's Rules of Order.

Article 2. ELECTION OF OFFICERS. The President and Secretary shall be elected by a majority of the member agencies present at the annual meeting by a secret ballot. Each office shall not have more than three (3) nominees which will be selected by the Executive Committee. An unexpired term of President or Secretary shall be filled by majority vote of members responding within 30 days to a special mail ballot. In emergencies, interim appointments can be made by the Executive Committee.

Article 3. OFFICE OF PRESIDENT. The President shall be responsible for planning and organizing the annual meeting, and shall appoint a Local Arrangements Program Chairman. He shall appoint three (3) members to the Executive Committee, one of whom must be a member from the host state. He shall make other appointments that he deems necessary and shall serve as chairman of the Executive Committee. He shall preside as chairman of the annual meeting.

Article 4. OFFICE OF SECRETARY. The Secretary shall be responsible for keeping the minutes of the annual meeting, the printing and distribution of ballots, and the normal correspondence of the association. The Secretary shall disseminate the annual meeting agenda as appointed by the Executive Committee. No later than three (3) months after the annual meeting, the Secretary shall distribute to all of the members of the Association copies of the annual meeting and a roster of attendance at the meeting. The Secretary shall also serve as a member of the Executive Committee. The Secretary shall furnish incoming officers with a copy of the Constitution and By-Laws.

Article 5. EXECUTIVE COMMITTEE. The Executive Committee shall consist of the officers of the Association and the three (3) committee members appointed by the President, one (1) of whom must be from the host state. No member can be appointed to the Executive Committee more than three consecutive years. The President shall preside as chairman of the Executive Committee. The Committee shall meet prior to the annual business meeting and review all amendments to the Constitution or By-Laws and major motions to be presented at the annual meeting, if any. The Committee shall serve as a steering committee to decide the main points of discussion and presentation at the annual meeting. The Executive Committee shall decide the order and length of the paper to be given. It shall make recommendations concerning the policies of the Society. The Committee shall be responsible for notifying the members of the Society of the vacancies in elected offices and to solicit nominations for these offices. After reviewing the nominations, the Committee shall select a maximum of three (3) consenting nominees for each office and place their names on ballots to be distributed by the Secretary. The ballots received in 30 days will be opened and counted by the Secretary, and interim officers will be announced by mail.

Article 6. PROGRAM CHAIRMAN. The President shall preside as Program Chairman, and shall be responsible for preparing the call for papers, scheduling, appointing chairman for each session, and preparing the program for printing.

Article 7. LOCAL ARRANGEMENTS CHAIRMAN. The Arrangements Chairman shall normally be associated with the agency hosting the annual meeting. The Arrangements Chairman shall be responsible for securing adequate facilities to properly host the annual meeting. Responsibilities will include reserving rooms for formal meetings, social gatherings, and the banquet; securing audiovisual equipment required; arranging the banquet, coffee breaks, and luncheon facilities, providing registration receipts; advising members on lodging; arranging transportation, and serve to make the planned activities run smoothly. The Arrangements Chairman shall work closely with the President to achieve this goal.

Article 8. RATIFICATION AND AMENDMENTS. The By-Laws shall become effective upon ratification by two-thirds of the member agencies present at the annual meeting or two-thirds of the members replying within 30 days to a mail ballot. Proposed amendments shall be submitted to the Executive Committee two (2) months before the annual meeting, and voted on at the meeting with a two-thirds vote of a quorum of member agencies present at the annual meeting or by a mail vote.

ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

During the last quarter, significant staff time was dedicated to compiling and completing the narrative and water quality assessment information required by the ADEM Water Quality Branch for the 1994-1995 305(b) Water Quality Report to Congress.

Reservoir Water Quality Monitoring Program - Water quality data was collected from reservoirs in the Escatawpa, Tombigbee, Alabama, Chattahoochee, and Conecuh River basins during 1995 in completion of the two-year monitoring rotation of all reservoirs in the state. Data collected over the two-year period is currently being organized and reviewed in preparation for completion of the biennial ADEM Reservoir Water Quality and Fish Tissue Monitoring Program Report and the ADEM Water Quality Report To Congress. The Reservoir Water Quality and Fish Tissue Monitoring Program Report is scheduled for completion during February 1996 with the Water Quality Report to Congress to be completed later in the Spring.

The final draft of the Phase I Diagnostic Study Report for Neely Henry Reservoir is being completed by the Rivers and Reservoirs Laboratory of Auburn University. For copies of any of the above mentioned reports, contact Bob Cooner or Fred Leslie at (334) 260-2700.

Fish Tissue Monitoring Program - The ADEM initiated the expanded Fish Tissue Monitoring Program in 1991 in cooperation with the ADCNR and the Tennessee Valley Authority (TVA). The intent of the program was to sample fish from the 28 major lakes, 26 stream locations, and 19 state lakes maintained by ADCNR over a five-year period. This year's collections will complete sampling of all water bodies originally scheduled for monitoring.

During Fall 1995, Fish were collected from Weiss, Logan Martin, Gantt, Inland, and Big Creek Reservoirs as well as Lakes Nicol and Lurleen. Riverine locations included the Conecuh, Blackwater, Escatawpa, Fish, Pea, Perdido, Styx, and Yellow Rivers as well as Choccolocco, Cowarts, and Big, Little Escambia creeks.

Results of analyses of fish collected during 1994-1995 will appear in the ADEM Reservoir Water Quality and Fish Tissue Monitoring Program Report scheduled for completion in February 1995.

Macroinvertebrate Biological Monitoring - Data analysis is currently in progress for the sixty-eight Macroinvertebrate bioassessments conducted from May through July of this year. These included ecoregional reference sites, ambient monitoring stations, special studies for Sand Mountain and Flint Creek Nonpoint Source Projects and internal method quality assurance checks.

Toxicity Testing - Toxics Unit staff modified and rebuilt the recirculating culture system for the fathead minnows. Last quarter, toxicity tests were conducted on two municipal and two industrial facilities. Testing will resume when the fathead minnow cultures are back to 100%.

ADEM Director Position - The department had seventy-five applicants from 16 states and one foreign country apply for the position of ADEM Director as of the Nov. 30 deadline. The process of interviewing potential candidates will hopefully begin soon.

ZEBRA MUSSELS SIGHTED IN SOUTH ALABAMA

On November 10th of this year, a 50 foot pleasure craft from Holland, Michigan was hauled out of the water at a marina near the mouth of Dog River on the west side of Mobile Bay. The vessel had traveled down the Tombigbee Waterway and stopped for repairs. The owner pointed out zebra mussels on the hull to the boatyard manager. The manager froze some and destroyed the rest. Soon afterwards, the manager was contacted by Auburn University Research personnel about looking for zebra mussels and he was able to report he already had some. The mussels were collected and confirmed as zebra mussels.

Dog River is a tidally influenced stream some eight miles in length that enters Mobile Bay about six miles south of the mouth of the Mobile River. Salinities near the marina are highly variable but can be expected to be above 10 parts per thousand in the fall.

This is the first report of zebra mussels that we know about from Alabama outside the Tennessee River system. It is most likely that the mussels simply rode the boat from the Lake Michigan to Mobile. We still do not know of any sightings of the mussels at any navigation locks, water intakes or on other substrates. If you know of any sightings or come across any zebra mussels, please contact:

Wendy Seesock
Fisheries Department
Swingle Hall
Auburn University, Alabama 36849
(334) 844-9212

OR

Rick Wallace
Auburn Marine Center
4170 Commanders Drive
Mobile, Alabama 36615
(334) 438-5690

If you would like to be on the mailing list for the Alabama-Mississippi Zebra Mussel Network, please contact Rick Wallace.

reprinted from the Alabama Fisheries Association (AFA) January 1996 newsletter

FLORIDA NEWS

Caddisfly Identification Manual Will Soon Be Available

The new *Identification Manual for the Caddisfly (Trichoptera) Larvae of Florida* will be available in mid-March. To obtain a copy, please send a self-addressed, stamped 9" by 14" unpadded envelope containing \$3 in postage to the following address (overseas shipping is free):

Florida Department of Environmental Protection
Division of Water Facilities
Bureau of Surface Water Management
Room 548, Twin Towers Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Florida Association of Benthologists' Spring Workshop Is Scheduled for April 25 and 26

FAB's Spring Workshop will be held in Live Oak on April 25 and 26, 1996. There will be a number of presentations, including biostatistics by Roger Green and Deedee Kaufman, lepidoptera by Dale Habeck, water mites by Eric Pluchino, and others. For more information, contact Doug Strom at 407-871-7662.

Florida Lake Management Society Meeting To Be Held May 22-24

The next FLMS meeting will be held May 22-24, 1996, in Ocala. For more information, contact Mark Hoyer at 904-392-9617, ext. 227.

FDEP Using Bio-Recon as a Screening Tool

The Florida Department of Environmental Protection has adopted a Bio-Recon method (short for "Bioreconnaissance"), a fairly new troubleshooting technique for detecting potential water-quality problems. Bio-Recon is based on the idea that a river's biological health—the kinds and quantities of particular species and habitats—is a reflection of pollution levels. Once FDEP biologists use this rapid screening approach to identify areas with possible problems, they can then carry out a more detailed investigation. This allows the department to use its resources most effectively. The following describes the materials and methods used:

Bio-Recon (Rapid Bioassessment) Methods

STEPS

Materials

1. *Field Physical/Chemical Characterization Data Sheet*
2. *Habitat Assessment Sheet*
3. *Preliminary Assessment Score Sheet (PASS)*
4. Forceps
5. Transfer Pipettes
6. White Picking Pans
7. 10X Hand Lens
8. 3 Small Jars filled with Alcohol
9. Dip Net with No. 30 mesh
10. Meters (D.O., pH, Conductivity)

Methods

1. Visually examine the area or reach to be sampled. You must either walk or boat throughout the aquatic system, paying close attention to its physical and habitat characteristics.
2. Fill out *Field Physical/Chemical Characterization Data Sheet*, then *Habitat Assessment Sheet*. The percent coverage of substrate type refers to how much of each habitat type is actually present at the sampling site.
3. Determine the four "best" or "most productive" habitats, which, when sampled, will provide an accurate estimate of the site's maximum biological diversity. A particularly productive substrate may be sampled more than once.
4. Perform one discrete 0.5 meter sweep with the dip net in one of the best available substrates as determined by the above procedures. Four sweeps, in total, will eventually be performed at the site.
5. Return to a comfortable spot on the bank with the sampled material. Place small aliquots of the detritus plus organism matrix in a pick pan diluted with some site water. Scan the entire pan for organisms. When an organism is found, examine it with the hand lens, determine its identity to the lowest possible field level (usually family or genus), record on the PASS form in the column labeled "Tally" and place it in the alcohol bottle labeled with site identifier. Repeat these procedures until all the material in the net has been examined.
6. Repeat Step 5 for sweeps number 2, 3, and 4. The data from all four sweeps are recorded in the appropriate place on the PASS form and the organisms are placed into the jar. Provide the correct abundance estimate for each organism in the "Abun Code" column, using R for rare (1-3), C, for common (4-10), A for abundant (11-100), and D for dominant (> 100).
7. Add the columns for taxa richness, Florida Index, and EPT Index on the PASS form, entering the grand total in the appropriate spaces at the bottom of the form. Using the adjacent table, circle the assessment of the site.
8. Lab verify the field identifications, making appropriate changes if an organism was mis-identified in the field.

DEPARTMENT OF ENVIRONMENTAL PROTECTION
FRESHWATER BENTHIC HABITAT ASSESSMENT FIELD DATA SHEET (v2)

| | | | |
|--|------------------------------|---------------------|--------------------------------|
| SUBMITTING AGENCY CODE: _____ SUBMITTING AGENCY NAME: _____ | STORET STATION NUMBER: _____ | DATE (M/D/Y): _____ | RECEIVING BODY OF WATER: _____ |
|--|------------------------------|---------------------|--------------------------------|

| | | |
|---------|-----------|----------------|
| REMARKS | LOCATION: | FIELD ID/NAME: |
|---------|-----------|----------------|

| Habitat Parameter | Optimal | Suboptimal | Marginal | Poor |
|---|---|---|--|--|
| Bottom Substrate/ Available Cover <div style="border: 1px solid black; width: 50px; height: 20px; margin: 5px auto;"></div> | Greater than 40% snags, logs, tree roots, emergent vegetation, leaf packs (partially decayed), undercut banks, rubble, or other stable habitat. 20 19 18 17 16 | 20% to 40% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Adequate habitat. Some substrates may be new fall (fresh leaves or snags). 15 14 13 12 11 | 5% to 20% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Less than desirable habitat, frequently disturbed or removed. 10 9 8 7 6 | Less than 5% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Lack of habitat is obvious. substrates unstable. 5 4 3 2 1 |
| Water Velocity <div style="border: 1px solid black; width: 50px; height: 20px; margin: 5px auto;"></div> | Max. observed: >0.25 m/sec. but < 2 m/sec 20 19 18 17 16 | Max. observed; 0.1 to 0.25 m/sec 15 14 13 12 11 | Max. observed; 0.05 to 0.1 m/sec 10 9 8 7 6 | Max. observed; <0.05 m/sec, or spate occurring; > 2 m/sec 5 4 3 2 1 |
| Artificial Channelization <div style="border: 1px solid black; width: 50px; height: 20px; margin: 5px auto;"></div> | No artificial channelization or dredging. Stream with normal, sinuous pattern 20 19 18 17 16 | May have been channelized in the past (>20 yrs), but mostly recovered, fairly good sinuous pattern 15 14 13 12 11 | Channelized, somewhat recovered, but > 80% of area affected 10 9 8 7 6 | Artificially channelized, box-cut banks, straight. instream habitat highly altered 5 4 3 2 1 |
| Deposition <div style="border: 1px solid black; width: 50px; height: 20px; margin: 5px auto;"></div> | Less than 20% of habitats affected by sand or silt accumulation 20 19 18 17 16 | 20%-50% of habitats affected by sand or silt accumulation 15 14 13 12 11 | Smothering of 50%-80% of habitats with sand or silt, pools shallow, frequent sediment movement 10 9 8 7 6 | Smothering of >80% of habitats with sand or silt. a severe problem. pools absent 5 4 3 2 1 |
| Bank Stability <div style="border: 1px solid black; width: 50px; height: 20px; margin: 5px auto;"></div> | Stable. No evidence of erosion or bank failure. Little potential for future problems. 20 19 18 17 16 | Moderately stable. Infrequent or small areas of erosion, mostly healed over. 15 14 13 12 11 | Moderately unstable. Moderate areas of erosion, high erosion potential during floods. 10 9 8 7 6 | Unstable. Many (60%-80%) raw, eroded areas. Obvious bank sloughing. 5 4 3 2 1 |
| Riparian Buffer Zone Width <div style="border: 1px solid black; width: 50px; height: 20px; margin: 5px auto;"></div> | Width of native vegetation (least buffered side) greater than 18 m 20 19 18 17 16 | Width of native vegetation (least buffered side) 12 m to 18 m 15 14 13 12 11 | Width of native vegetation 6 to 12 m, human activities still close to system 10 9 8 7 6 | Less than 6 m of native buffer zone due to intensive human activities 5 4 3 2 1 |
| Riparian Zone Vegetation Quality <div style="border: 1px solid black; width: 50px; height: 20px; margin: 5px auto;"></div> | Over 80% of riparian surfaces consist of native plants, including trees, understory shrubs, or non-woody macrophytes. Normal, expected plant community for given sunlight & habitat conditions. 20 19 18 17 16 | 50% to 80% of riparian zone is vegetated, but one class of plants normally expected for the sunlight & habitat conditions is not represented. Some disruption in community evident. 15 14 13 12 11 | 25% to 50% of riparian zone is vegetated, but one or two expected classes of plants are not represented. Patches of bare soil or closely cropped vegetation. disruption obvious. 10 9 8 7 6 | Less than 25% of streambank surfaces are vegetated. Poor plant community (e.g. grass monoculture or exotics) present. Vegetation removed to stubble height of 2 inches or less. 5 4 3 2 1 |

Add 5 points if cross-sectional area of flow is estimated to be > one square meter during periods of normal flow.

TOTAL SCORE

Comments

| | | |
|----------------|----------|------------|
| ANALYSIS DATE: | ANALYST: | SIGNATURE: |
|----------------|----------|------------|

PHYSICAL/CHEMICAL CHARACTERIZATION FIELD DATA SHEET - (Version 5)

| | | | | | | |
|-------------------------------|--|----------------------------|--------------------|------------|-------------------------------|--|
| SUBMITTING AGENCY CODE: _____ | | STORE STATION NUMBER _____ | DATE (MO/Y): _____ | TIME _____ | RECEIVING BODY OF WATER _____ | |
| SUBMITTING AGENCY NAME: _____ | | | | | | |
| REMARKS _____ | | LOCATION: _____ | | | FIELD ID/NAME: _____ | |

RIPARIAN ZONE/INSTREAM FEATURES

| | | | | | | | |
|--|-----------------------|---|-----------------------|--|---------------------|---------------------|---------------------------|
| Predominant Surrounding Land-Use (specify relative percent in each category): | | | | | | | |
| Forest/Natural _____ | Silviculture _____ | Field/Pasture _____ | Agricultural _____ | Residential _____ | Commercial _____ | Industrial _____ | Other (Specify): _____ |
| Local Watershed Erosion (check box): None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/> | | | | | | | |
| Local Watershed NPS Pollution (check box): No evidence <input type="checkbox"/> Some potential sources <input type="checkbox"/> Obvious sources <input type="checkbox"/> | | | | | | | |
| Width of riparian vegetation (m) on least buffered side: _____ | | <i>List & map dominant vegetation on back</i> | | Typical Width (m)/Depth (m) /Velocity (m/sec) Transect (draw cross-section & provide at least 3 velocity & depth values) | | | |
| Artificially Channelized <input type="checkbox"/> no <input type="checkbox"/> yes | | | | | | | |
| Artificially Impounded <input type="checkbox"/> yes | | | | | | | |
| High Water Mark (m above bed): _____ | | | | | | | |
| Canopy Cover % : Open : <input type="checkbox"/> Lightly Shaded (11-45%): <input type="checkbox"/> Moderately Shaded (46-80%): <input type="checkbox"/> Heavily Shaded: <input type="checkbox"/> | | | | | | | |

SEDIMENT/SUBSTRATE

| | | | | | | | |
|--|------------|-----------------|--------|---|------------|-----------------|--------|
| Sediment Odors: Normal: <input type="checkbox"/> Sewage: <input type="checkbox"/> Petroleum: <input type="checkbox"/> Chemical: <input type="checkbox"/> Anaerobic: <input type="checkbox"/> Other: <input type="checkbox"/> | | | | | | | |
| Sediment Oils: Absent: <input type="checkbox"/> Slight: <input type="checkbox"/> Moderate: <input type="checkbox"/> Profuse: <input type="checkbox"/> | | | | | | | |
| Sediment Deposition: Sludge: <input type="checkbox"/> Sand smothering: none slight moderate severe Silt smothering: none slight moderate severe Other: <input type="checkbox"/> | | | | | | | |
| Substrate Types | % coverage | # times sampled | method | Substrate Types | % coverage | # times sampled | method |
| Woody Debris (Snags) | _____ | _____ | _____ | Sand | _____ | _____ | _____ |
| Leaf Packs or Mats | _____ | _____ | _____ | Mud/Muck/Silt | _____ | _____ | _____ |
| Aquatic Vegetation | _____ | _____ | _____ | Other: | _____ | _____ | _____ |
| Rock or Shell Rubble | _____ | _____ | _____ | Other: | _____ | _____ | _____ |
| Shorezone (Roots/Veg.) | _____ | _____ | _____ | <i>Draw aerial view sketch of habitats found in 100 m section</i> | | | |

| | | | | | | | |
|----------------------|------------|-------------|----------|--------------|------------------------------------|-------------|-------|
| WATER QUALITY | Depth (m): | Temp. (°C): | pH (SU): | D.O. (mg/l): | Cond. (µmho/cm) or Salinity (ppt): | Secchi (m): | |
| Top | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| Mid-depth | _____ | _____ | _____ | _____ | _____ | _____ | |
| Bottom | _____ | _____ | _____ | _____ | _____ | _____ | |

| | | | | | | | |
|--|--|--|--|---|--|--|--|
| System Type : Stream: <input type="checkbox"/> (1st - 2nd order 3rd - 4th order 5th - 6th order 7th order or greater) Lake: <input type="checkbox"/> Wetland: <input type="checkbox"/> Estuary: <input type="checkbox"/> Other: <input type="checkbox"/> | | | | | | | |
| Water Odors (check box): Normal: <input type="checkbox"/> Sewage: <input type="checkbox"/> Petroleum: <input type="checkbox"/> Chemical: <input type="checkbox"/> Other: <input type="checkbox"/> | | | | | | | |
| Water Surface Oils (check box): None: <input type="checkbox"/> Sheen: <input type="checkbox"/> Globbs: <input type="checkbox"/> Slick: <input type="checkbox"/> | | | | | | | |
| Clarity (check box): Clear: <input type="checkbox"/> Slightly turbid: <input type="checkbox"/> Turbid: <input type="checkbox"/> Opaque: <input type="checkbox"/> | | | | | | | |
| Color (check box): Tannic: <input type="checkbox"/> Green (algae): <input type="checkbox"/> Clear: <input type="checkbox"/> Other: <input type="checkbox"/> | | | | | | | |
| Weather Conditions/Notes: _____ | | | | Abundance: | | | |
| | | | | Periphyton <input type="checkbox"/> Absent <input type="checkbox"/> Rare <input type="checkbox"/> Common <input type="checkbox"/> Abundant <input type="checkbox"/> | | | |
| | | | | Fish <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | | | |
| | | | | Aquatic Macrophytes <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | | | |
| | | | | Iron/sulfur Bacteria <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | | | |

| | | |
|----------------------|------------------|-------------|
| SAMPLING TEAM: _____ | SIGNATURE: _____ | DATE: _____ |
|----------------------|------------------|-------------|

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

Well, it's hard to believe it has been five months since the last newsletter, four months since our wonderful meeting and raft trip in Tennessee, three months since the Carters Lake Project started, two months since Christmas and one month since I decided that *this* winter was not going to be slow at all! This has been one of the busiest winters that I can remember. Snow, rain, sleet - we got it. Between bioassessment protocols, structural reorganization and Basin Management, there hasn't been a chance to slow down. **And**, in 152 days, 5 hours, 11 minutes and 35 seconds the Centennial Olympic Games in Atlanta will officially begin (got your tickets yet?).

This will undoubtedly be the most hectic summer ever seen here in Atlanta. It is said that the two *million* people expected for the Olympics will be somewhat noticeable in the area, especially on our streets and in our parking lots. All downtown Atlanta State employees are being encouraged to plan ahead: take annual leave, work in the field, work out of a regional office, telecommute, etc... Our Water Quality Lab on 14th street here in Atlanta will probably remain open, though with adjusted hours. The Olympics are a big deal and most everyone is excited. Be patient in late July and early August if you have a difficult time finding us.

CHATTAHOOCHEE RIVER MODELING PROJECT

Work on the Chattahoochee River Modeling Project (CRMP) continues. The initial three year schedule of field work was completed in November of 1995. Resources have allowed additional field work to be undertaken for 1996. Modules three, four and five still have a presence in the field, and continue to collect tributary and main stem data. Temperature profiles were established for a one hundred day period this past fall on 18 of the established 35 tributary sites. Newly developed equipment allows us to deploy for 330 days at a time, measuring temperature every hour. The CRMP will provide a time-variable hydrodynamic and water quality model for the Chattahoochee from Buford Dam to West Point Lake. This will be a general purpose model capable of supporting regulatory decision making for a variety of water resource and water quality issues into the 21st century.

BIOLOGICAL MONITORING

The Ambient Monitoring Unit (AMU) finished all River Basin Monitoring sites in September. Since then, time has been spent in the laboratory working on test samples. A QA/QC activity was conducted to see how much repeatability there is when identifying samples. This exercise has come to a close and now the staff is processing River Basin Monitoring sites. In addition, AMU has started a biological study on the Ebenezer Creek watershed in Effingham

County. This effort is part of a watershed demonstration project conducted by the Georgia Natural Heritage Inventory Program.

Recently, two reports (Mattox Creek and Thompson Creek) have been completed and submitted to the Northeast Regional Office. Special requests were made by this office to conduct these biological studies in support of administering consent orders because of water quality violations. Also, AMU staff were called as expert witnesses in an administrative order hearing: State of Georgia vs Hog Farm Operation. The habitat assessment information did not stand up very well in court. If you've had some experience with habitat assessment information being used in court, Trish Foster would like to talk to you about it.

A study was completed by an AMU technician on "A Comparison of Current and Proposed Adopt-A-Stream biological sampling methods". Based on the results of this study, the Adopt-A-Stream coordinator has made a few adjustments to the methods.

Chlorophyll a samples are being processed from West Point Lake and the Chattahoochee River. AMU personnel are completing Georgia's biological and habitat assessment SOP, as well as performing macroinvertebrate sampling for River Basin studies and light/dark bottle studies on the Chattahoochee River. Sampling potential reference sites for biocriteria development and AGP tests on the Chattahoochee are underway.

RIVER BASIN MANAGEMENT PLANNING

The Georgia Environmental Protection Division (GA EPD) continues to implement and develop elements of its watershed protection approach, River Basin Management Planning (RBMP). Water quality monitoring was completed in the Chattahoochee and Flint River basins in 1995, and has begun in the Coosa, Tallapoosa, and Oconee River basins for 1996. Water quality monitoring plans will be developed in 1996, for monitoring of the Savannah and Ogeechee River basins in 1997. Final river basin management plans for the Chattahoochee and Flint are scheduled to be completed by December 1997, and work is ongoing for developing these plans. Meanwhile, programs within GA EPD are modifying their water resources related activities to take advantage of the benefits of this new approach to water resources management.

CLEAN LAKES SECTION 314 CARTERS LAKE PHASE 1 STUDY

The phase 1 diagnostic-feasibility study on Carters Lake began in November of 1995, with field work scheduled through 1996. Carters Lake is the only major lake in the Alabama-Coosa-Tallapoosa (ACT) drainage basin that has not had a major study performed by the GA EPD. This particular study has been timed to coincide with the drainage basin study, which is being undertaken for 1996-1997. Goals for this study include baseline monitoring, nutrient budget calculations, determination of priority pollutants in fish, sediments and water, and sediment oxygen demand (SOD) testing. Carters Lake is a mountain lake, and the deepest lake in Georgia with depths in excess of four hundred twenty feet. Field work will be performed throughout 1996, with a final report due second quarter, 1997.

EPD-ISU DIVE TEAM

There has been little opportunity to dive over the winter months, but the team has kept busy. Team equipment has been updated and we now have the capability to put four people in the water using completely sealed dry suit systems. The yearly training exercise will occur late this spring. The unit has just ordered a special boat to be used exclusively for Sediment Oxygen Demand (SOD) testing. Schaeffer boats of Michigan produces a large, wide body version of an aluminum John boat. This craft has a jet drive propulsion system that allows motored use in as little as six inches of water. This shallow water travel capability gives us easier access to many of the river sites that we are currently investigating and allows us to gain access to sites that have been unreachable with current equipment.

As part of the Carters Lake Project, SOD testing will be attempted in two scheduled sites, three if depth allows. The mountain profile around the lake perimeter will probably make this a very difficult lake to locate ideal testing areas. SOD diving is scheduled twice, once in late spring and again in late summer.

KENTUCKY NEWS

Since the last newsletter, we've mostly been in the office, working on the 305(b) report, reference reach reports, and the intensive surveys we did last fall (field verification of WET results). Not much field work going on; the weather's been pretty nasty.

Publication

Ron Houp and Karen Smathers have published "Extended Monitoring of Mussels (*Bivalvia*: *Unionidae*) in the Rockcastle River at Billows, Kentucky, an Historical Site," *Transactions of the Kentucky Academy of Science* 56(3-4): 114-116. Reprints of this journal article are available from either Ron or Karen.

Staff News

Lee Colten, formerly of the Bioassay Section, has taken the position as Watershed Coordinator for the Division of Water. Lee served for 7 1/2 years in the Division as an Environmental Biologist, doing biomonitoring and toxicology. His new job will be to shepherd the many environmental programs toward a more coordinated effort to manage the watershed resource as a whole, versus the "programmatic" approach we are all so familiar with. This coordination includes promoting involvement by other agencies, local and regional authorities, non-governmental organizations, etc. and educating staff and the public about the benefits of a watershed approach.

Nonpoint Source Conference

The first Kentucky nonpoint source conference took place last September in Frankfort. The conference, which drew more than 135 attendees, was co-sponsored by the Nonpoint Source section and the Kentucky Water Resource Research Institute. The goal of the conference was to familiarize attendees with the successes and shortcomings of nonpoint source pollution projects. Presentations were given on forestry, mining, pesticides, education, social and economic studies, groundwater studies, on-site wastewater treatment, watersheds, animal wastewater, and best management practice research and development. For abstracts or more information, contact Kathleen O'Leary of the Nonpoint Source Section (502)564-3410.

MISSISSIPPI HAPPENINGS

Here in Mississippi the operative word this winter has been "WRITE". Most of the staff has been involved heavily in the completion of several project reports, as well as the 305 (b) Report. Many of these have been completed, and are undergoing in-house review. Hopefully submission will occur prior to the next deadline for SWPBA Newsletter material.

Three cheers to the folks from Tennessee who put on an excellent SWPBA meeting last year. We enjoyed it!

On a more somber note, we at the MS OPC wish to express our condolences to the Sherer Family and to Russ's co-workers at SC DHEC. Many of us who knew him have lost a friend, and the scientific community a good scientist.

Mississippi Alluvial Plain Ecoregion Project.

This project is nearing completion, with the final report ready for submission for in-house review. During this two year effort, many sites in this highly impacted ecoregion were visually and aerially examined, with the "least" disturbed sites being sampled. Several of these sites possessed biological characteristics similar to those sites used by the Arkansas Department of Pollution Control and Ecology as reference sites, in terms of dominant taxa and composition of the samples. Taxa richness and EPT indices were lower in Mississippi, however. We feel that this indicates that the Mississippi portion of the Alluvial Plain is more impacted than the Arkansas Delta region. Because of similar land use in the Mississippi Blackland Prairie, we are considering using these streams as a model for expectations within the Mississippi Delta Ecoregion.

Clean Lakes Update.

Fish tissue from 25 lakes sampled during the 1995 season are currently being analyzed for organochlorine pesticide contamination. Mercury levels have already been determined for these samples and we are presently engaged in returning to lakes which produced fish at or above the action level. Report writing is still in progress; completion is anticipated in the next couple of months.

Lake Washington Phase II Monitoring Project.

The initial Phase II monitoring study ended July 1995 but because of additional funds the monitoring was extended six months and was recently completed. The final report is now in draft and circulating the agency for review.

Pearl River Water Supply District Chlorophyll Monitoring.

Chlorophyll a determinations were performed monthly. Samples from this project were split with South Carolina DHEC in November as a quality assurance exercise. Thanks, Mike Pearson! We plan to do more of this as schedules permit.

Dioxin Studies in the Leaf and Escatawpa Rivers.

Fish collections continued on the Leaf and Escatawpa Rivers in 1995 at the same rate as in 1994.

The advisory on the Leaf River was removed in 1995 and results for samples collected in 1995 indicate that dioxin levels are near background. The agency has reached an agreement with the industry to conduct another year of monitoring, however we are yet to decide if this will be a project for 1996.

We have not received results from the 1995 sampling effort on the Escatawpa River at this time. If levels continue to decline at the rate of previous years this advisory could come down, as well. This advisory area lies within an estuary. The nature of this environment has not favored sediment flushing, hence the rate of decline for dioxins has been slower.

Mississippi Mercury Study.

The lab continues to delegate more resources to this project every year. In 1995 we analyzed 230 samples composed of 651 fish from 62 sites across the state. What we're seeing is pretty much old news: contamination is higher in the piscivores (particularly largemouth bass (lmb)), from low pH environments. We have observed that lmb samples >3 lbs from these environments are typically >1 ppm elemental Hg. Although we haven't documented any trends, we do continue to find additional sites with elevated Hg levels with every annual sampling effort.

Fish Kills.

Our Field Services division investigated 22 fish kills in 1995, and none of these were considered major. Compared to past years it was pretty light (life was good). This was attributed to a relatively dry summer which coincides with the application of cotton insecticides.

Toxicity Testing Section.

Due to budget constraints no toxicity tests have been performed.

Science Workshop for Teachers, K-4.

Biology staff are making preparations to conduct a series of three teacher workshops in early March. These are geared toward science teachers from kindergarten through fourth grade. We plan to cover such titillating topics as "Life in a Drop of Pond Water", "Microscopic Examination of Sewage Sludge", "pH of Some Common Household Substances, and Rainwater", "Rearing of Common Aquatic Insects", and "Biological Assessments of Streams".

If any SWPBA members have had similar experiences, please share with us.

Meetings Attended.

Billy and Henry attended a joint AFS meeting between MS/TN.

NORTH CAROLINA

Those of us who have been around a while are trying hard to remember if there ever was a lag time in the winter months. Activities shift from the field into analyzing, reporting, integrating scientific information into basin plans and use support decisions, planning next seasons activities, refining criteria, providing defensible information to proposed rules and legislation, and other fun (not) stuff. There is definately not a lag. Below are highlights from each of the groups in the Environmental Sciences Branch.

BENTHOS

This section summaries our activities since the last newsletter update, i.e., since September 1995. We have been in the office way too much, working on various reports and planning this summer's samples.

Basin Assessment

The basin sites sampled last summer (167 benthos, 79 IBI and 28 fish tissue sites) have had all the samples worked up, and we are busy compiling basin reports that are sometimes not due for at least a year. The high spring flow and low summer flow are making data analysis more complicated than usual.

Special Studies

National Park Service/DEM joint survey. Several sites in Great Smoky Mountains National Park were sampled to compare evaluations by both groups using DEM sampling methodology and to determine impacts to streams of using Anakeesta rock as road fill. Severe impacts were found just downstream of the road cut (< 1 mile).

MACS Workgroup. We participated in this mid atlantic coastal plains workgroup that sampled coastal streams in October from six states using same method. Sites were to be reference, habitat impacted or water quality impacted. The goal of the project is to come up with metrics than can be used to evaluate swamp streams that all have similar fauna when summer low flows hit.

Little River Ceraclea hunt and multiple reach study. We were able to extend the range on an undescribed Ceraclea to about a four mile stretch of river and showed that we can come up with consistent bioclassifications by sampling three stretches of the river that differed somewhat in substrate characteristics.

Nationwide 37 sampling. Yancey County was given a permit to repair streambank damage caused by flooding, but concerns were raised about abuse of permit. We sampled above and in the restoration area and found no change in bioclassification, but the area restored was only about 400 meters long.

Estuarine Studies (Larry Eaton)

More plans are being made to collect samples to verify consistency of results using the timed sweep and trawl methods that seem to be working best.

FISH

Bryn Tracy, who was employed by Carolina Power and Light Company for the past 12 years as an environmental biologist, filled our vacant fish biologist position and will be working on the IBI program, as well as other aspects of our fish program. We are very happy to have such an experienced biologist on our staff. Mark Hale is still finding high mercury values in bass and bowfin in the coastal sites sampled this year. He has also developed a new fish kill monitoring field sheet and devised a database for tracking fish kills.

Thoroughfare Planning Pilot Projects

History

The Division of Water Quality (DWQ) is participating in the third NC Department of Transportation (DOT) thoroughfare planning pilot project. Legislation passed in 1959 requires municipalities and DOT to cooperatively develop a major street plan adequate to serve future traffic needs (Thoroughfare Plan). Once an alignment of a future road is placed on the thoroughfare plan, it is added to the Transportation Improvement Program (TIP) which sets the funding and construction timing for various transportation projects. An environmental document is written for the TIP project to satisfy the NEPA/SEPA requirements. This was typically the time when DWQ and other resource agencies would become involved in review of the project. Frequently municipalities had protected the right-of way in the thoroughfare plan alignment. Usually the thoroughfare line had connected the project termini without considering environmental impacts. Unfortunately, the stream valleys/floodplains were often the locations chosen for the road alignments. This resulted in many protected alignments being discarded at the environmental document stage. For obvious reasons, this reduced the effort that municipalities exerted to protect the thoroughfare plan alignment.

In an effort to minimize environmental impacts and construct the road in the alignment protected by the municipality, DOT and DWQ developed pilot projects for thoroughfare planning process. The three thoroughfare pilot projects to date are Wilkesboro/N. Wilkesboro, Asheville and Elizabeth City.

Pilot Project Process

The overall process is described below.

DOT studies the municipality and identifies the traffic problems. Using a Geographic Information System (GIS), DOT can determine the probable wetland and stream locations. Impacts to houses and businesses, floodplains, parks, hospitals etc. can all be gathered quickly from the GIS data layers.

DOT develops proposed roadway alignments that reduce the traffic problems. The proposed alignment impact data is generated and provided to the resource agencies. Since these are pilot projects, some ground truthing on wetland impacts has occurred. If the wetlands can be avoided or do not significantly protect water quality, DWQ concurs with the proposed roadway. Changes are suggested if problems are encountered. DOT returns to the preliminary design phase and attempts to alleviate these concerns.

After all problems are resolved, a consensus letter is drafted and signed by DOT, FHWA, the municipality, county, and resource agencies. The letter recommends the preferred alignments. Should issues still need to be addressed, an accompanying signed letter by the objecting resource agency stating what is acceptable, and identifying the problem area(s) becomes part of the record and replaces the signed consensus letter.

A Phase I environmental analysis report is written by DOT that includes all of the commitments and letters of support. Although this document may not be immediately used by DOT, it is a planning tool for the municipality since they are required to protect the alignment from encroachment.

Conclusions

Prior to inclusion in the TIP, the resource agencies have reviewed potential impacts. Wetland avoidance and minimization efforts are undertaken early in the planning stage and not at the permitting stage. This clearly benefits the resource agencies, however, it has meant more up-front time which has placed a burden on the projects already in the TIP.

FHWA and DOT benefit because they write an EA where only one build alternative and the no build alternative are studied. This accelerates the review process and the road is therefore constructed sooner and cheaper.

The municipality benefits because the road is constructed sooner than using the old process. Municipalities are also given incentive to protect the alignment because only one build alternative will be studied.

Should laws or regulations change, a complete analysis of this change on the alignment is made during the EA. For instance, if a new species is added to the Endangered Species list, the effect of the proposed road on this species is determined.

The Phase I Thorough Plans will benefit the citizens of North Carolina without compromising environmental quality. DWQ views this as a win-win situation. Further information may be obtained by contacting Mr. Eric Galamb at (919) 733-1786.

EG/gh

AQUATIC TOXICOLOGY GROUP

Since the previous newsletter Environmental Biologist II Susan Carroll has decided to become a full-time mother. We regret the loss of a fine biologist but wish Susan greatest success in her new endeavour.

The group, in the persons of Phil Bethea and Matt Matthews, participated in a special workgroup with Norman Bedwell, Aquatic Survey and Toxicology Unit Supervisor Larry Ausley, and Assistant Water Quality Section Chief Ken Eagleson. The workgroup was charged with addressing sensitivity issues in chronic *Ceriodaphnia* tests. The workgroup made extensive use of the chronic test database developed by Norm and Melissa Rosebrock over the last two years. As a result of the efforts of this workgroup, modifications have been made to the procedures for evaluating the data produced by chronic *Ceriodaphnia* tests performed to meet North Carolina NPDES monitoring requirements.

These changes relate to the analysis of data produced by the chronic *Ceriodaphnia* WET procedures. As you may be aware, the identification of a "fail" or "effect" in these tests is significantly influenced by the variability of control organism reproduction. Extremes in this variability can produce either very sensitive tests or very insensitive tests. Two strategies have been introduced to address this influence.

If control organism reproduction over the test interval is very consistent among the control organisms, for example varies from 22 to 28 young per organism, the test is very sensitive and capable of detecting small differences in reproduction of the treatment organisms as compared to the control organisms. So, an effluent that produces a 10% reduction in young production could be determined to be a "fail" by such a test. This situation creates the possibility that individual test sensitivity could affect the reported result of the analyses and lead to possible over or under protective results. In order to address this situation and steer our program to more practically achievable results, we've established methods to evaluate and consider the sensitivity of analyses in the context of compliance. We have termed these "Practical Sensitivity Criteria" for *Ceriodaphnia* chronic toxicity tests. Based upon analysis of over 5,000 test results submitted to this office, we have determined that the subset of NC DEM certified toxicity testing laboratories is capable of routinely (>50% of tests) conducting chronic *Ceriodaphnia* WET tests that can detect a 20% or greater reduction in reproduction by the treatment (effluent) test organisms as compared to the control organisms. Therefore, under the new procedures, a pass/fail test which produces a statistically significant difference between control organism reproduction and treatment organism reproduction but which produces less than 20% reduction will be considered to have detected toxicity below the PSC and will be considered a "pass." In the case of a chronic multiple concentration test, the effluent concentration in question would be considered to have "no observed effect."

At the opposite extreme, when the control organism reproduction varies dramatically among replicates, for instance 0 to 28 young per control organism, the test has the ability to detect only very large differences between the control and effluent. In such a test a 40% reduction in reproduction by organisms exposed to the effluent may be called a "pass." A common measure of variability is called the coefficient of variation (CV). To address the problem of highly variable control organism reproduction have implemented a maximum control organism reproduction CV test acceptability criterion of 40%. Any test submitted for compliance purposes in which the control organism reproduction CV is greater than or equal to 40% will be rejected. Analysis of our current database indicates that only approximately 5% of the submitted tests would be more variable than this criterion.

Without these proposed modifications NPDES facilities may seek out laboratories which produce less sensitive tests, since their effluent is more likely to be evaluated as

compliant using insensitive tests. We believe the proposed modifications will address concerns arising over extremes of testing sensitivity/insensitivity, as well as move DEM's chronic toxicity testing program in a positive direction towards greater analytical precision and an overall goal of "common sense" regulation.

ECOLOGICAL ASSESSMENT GROUP

Neuse River

During the summer of 1995 extensive fish kills occurred in the estuarine portion of the Neuse River ranging from New Bern to Minnesott Beach (approximately a 20 mile stretch). Menhaden were the primary fish involved in the kills and many exhibited sores. Numerous water quality samples were collected in the areas of the fish kills. Hypoxia was present in much of the water column in July and September but appeared to be sufficient in October during sample collection. Corresponding chlorophyll *a* values were generally low.

Degraded water quality on the lower Neuse River is primarily associated with episodes of low dissolved oxygen associated with stratification and algal blooms. Algal growth within the water column is accelerated by the presence of nutrients, elevated temperatures and slow water velocities. Reduction of nutrients will likely provide water quality benefits. Freshwater entering a saline system with stagnant conditions may result in a density gradient often referred to as a "salt wedge." The water below this gradient has great resistance to mixing so that when oxygen is depleted from bottom waters, conditions are anoxic until stratification is broken. The early summer of 1995 appears to have had a combination of these factors that created ideal conditions for the occurrence of fish kills.

Numbers of *Pfiesteria piscicida*, a toxic dinoflagellate found in estuarine waters, were varied in samples collected from the Neuse River. It has been suggested that the toxic dinoflagellate, *P. piscicida*, is responsible for 30-50% of the fish kills in the lower Neuse. The various life stages and unusual activities associated with this species support the need for research to better understand its threat to the aquatic environment and human health. Laboratory assay work done at North Carolina State University has confirmed the abilities and mechanism of this organism to cause fish mortalities.

Fish kills and algal blooms are frequently identified by the public through contact with agencies such as the Department of Environment, Health and Natural Resources or through the observations of resource agencies on the water for routine monitoring activities. Most of these data are documented through the Algal Bloom Tracking Program within the NC Division of Environmental Management. It is likely that the number of blooms and fish kills exceeds the numbers within this database because some may go unreported and therefore undocumented.

Wetland Issues and Developments.

Wetland Rules: The Environmental Management Commission is expected to take final action on the rules drafted in 1994 and presented at public hearing in 1995. The rules establish standards and uses for wetlands as well as codify the 401 water quality certification process.

Legislative Study Commission: A Legislative Study Commission was formed to examine the current wetland regulatory programs in North Carolina and determine the need to develop a statewide wetland restoration program. The Commission is expected to make their recommendations this spring.

Strategic Planning Grant: North Carolina has received a grant from the Environmental Protection Agency for strategic planning for NC wetland programs. Goals for future development of wetland programs will be developed based on public input among governmental units and non-profit groups. This will lay the foundation for the development of a state wetland conservation plan. Work on this grant began in April 1995. Accomplishments to date include a survey of existing wetland programs, fact sheets on wetland issues, a catalog of wetland programs in North Carolina, and holding workshops for interested parties.

Computer Tracking of 401 Water Quality Certifications: A computer database is being designed to track applications for Section 401 water quality certifications and the violations, and mitigation associated with 401 projects. The goal is to more accurately track the various aspects of the water quality certification program on a single database. The database will be made accessible to the Regional Offices so that they can review project histories and provide comments on projects electronically. The database would also allow certification letters with standard conditions as well as other correspondence to be pulled directly off the database. By bringing the regional offices "on-line" with new database, we should be able cut the processing time of some projects. The new database will allow a more accurate and detailed analysis of the 401 program and wetland impacts.

Wetlands Task Force: Secretary Howes convened a wetlands task force in January 1995 to examine the future for state wetland protection and make recommendations for future state wetland policy. This task force was composed of representatives from business, environmental groups, and state government. Recommendations were released in June 1995 and addressed: 1) mapping, delineation and planning, 2) acquisition and conservation, 3) permitting and 4) restoration, creation and mitigation.

South Carolina

In Memorial

On February 6, 1996, Russ Sherer died from a heart attack at the age of 52. He was a charter member of SWPBA and played a major role in its success. Russ will be greatly missed by all who knew and worked with him.

The following is an excerpt of a memo that Doug Bryant, SCDHEC Commissioner, sent to us regarding Russ' death. It describes well what Russ meant to South Carolina and we share it here with SWPBA members:

"The DHEC family has been shocked and saddened by the death of Russ Sherer, chief of our Bureau of Water Pollution Control. His career parallels the agency. He started in July 1973, the same month DHEC became an agency as the State Board of Health merged with the Pollution Control Authority. Russ had just finished graduate school at Northern Illinois University and drove to South Carolina seeking employment.

He joined DHEC, working and managing areas including a special studies section, biological monitoring section, division of emergency response, division of monitoring, inspection, enforcement, water quality standards, and modeling. He was named chief of the bureau in 1991.

His goals included increasing the level of knowledge South Carolinians had about their environment, particularly water quality, and increasing the public's awareness of the agency's efforts to protect the state's water quality. Russ achieved them both.

He never hesitated to participate in public forums on water quality issues, even meeting with angry citizens. His calm manner and knowledgeable responses helped increase awareness of the issues we as an agency faced. Russ led the Bureau of Water Pollution Control through many tough and controversial issues. His philosophy and vision helped mold the bureau into the fine organization it is today.

South Carolinians, and we of the DHEC family, are richer for having Russ Sherer. I am glad Russ made that drive south...and into our hearts. We will miss him."

A native of Waukegan, Illinois, Russ graduated from Carthage College in Kenosha, Wisconsin with a bachelors degree in biology. He received a masters in biology from Northern Illinois University in DeKalb, Illinois. Russ is survived by his wife Barbara, four children and one grandchild.

If any of you would like to make a memorial, the family has requested that memorials be made to the Mt. Horeb Lutheran Church Memorial Fund c/o Mt. Horeb Lutheran Church, P.O. Box 8, Chapin, SC 29036, or the American Heart Association, P.O. Box 6604, Columbia, SC 29260.

All of us here in the Water Quality Monitoring Section thank you for your many expressions of sympathy during this difficult time. It was a great comfort.

NPS

Nonpoint source personnel are currently investigating areas where known nonpoint source pollution impacts on water quality have occurred, as well as, areas of potential impacts. Watershed Water Quality Management Strategies are being used to determine areas of interest and priority. Macroinvertebrate sampling and habitat assessments are conducted along with assessing water quality parameters and BMP compliance.

The objectives of the nonpoint source program are to identify and assess NPS problem areas; identify and quantify NPS pollutants; assess impacts on water quality, biological communities, and watershed uses; evaluate the effectiveness of existing BMP's; and recommend areas for BMP implementation to prevent and control water resource and water quality impacts from nonpoint sources.

Year long NPS studies are underway on the Little Salkehatchie River, the New River and the Steven's Creek Watershed in the Savannah/Salkehatchie Basin of South Carolina. These watersheds, for the most part, are heavily farmed and/or timbered, and are identified in the watershed strategy as impacted waterbodies from nonpoint sources.

BMP effectiveness is being monitored in the Steven's Creek Watershed, in cooperation with several other State, Federal and local agencies. Biological communities and water quality parameters are being assessed for determination of possible benefits to the watershed from implemented BMP's on private farms.

Other one-time bioassessments are conducted in areas of suspected violations for enforcement purposes. There is also a conscious effort to complete NPS investigations in the Savannah/Salkehatchie Basin before update of the Watershed Strategy next year. For additional information on our NPS program, contact Peyton Sasnett.

GPS/GIS

Have you ever wondered where you were, exactly, when you collected a particular water sample? In South Carolina we've grown tired of this and have done something about it. We purchased 14 Global Positioning System (GPS) units and have begun the arduous task of creating accurate latitudes and longitudes at all sites where data is collected.

We began by shooting lats and longs at our trend monitoring stations. Since we knew where these stations were, this phase of the program was

quickly completed. However, locating the actual spot where wastewater dischargers empty into rivers and streams was a different story.

Since most NPDES permits require monitoring at the effluent box, there were a lot of sites where no one had any idea where the effluent entered the stream. Of course, this was the location where GIS wanted the lats and longs. So we have begun to fight the Kudzu, snakes, hornets, and the occasional water buffalo, to find these outfall pipes. Only God knows when this phase of the study will be completed. We are committed, however, because we like GIS.

GIS has generated some very useful information for us, thanks to our efforts to give them accurate lats and longs. Furthermore, GIS has become invaluable to us since we have adopted the watershed management approach to river basin development, featuring basinwide permitting and the integration of point and non-point source control programs.

If you're not presently using GIS and GPS units in your water quality programs, we highly recommend them to you. If you would like to talk to some of our people about these systems, call Jeannie Eidson (GIS) or Bill McDermott (GPS).

- T N -

**Department of Environment and Conservation
Division of Water Pollution Control**

Talks

Pat Patrick (Jackson Field Office), Tim Thompson, Kathy Larrieu (Watershed Management Section) Greg Denton and Joy Broach (Planning and Standards Section) gave talks at the Tennessee Chapter of the American Water Resources Association. It was the 6th Water Resources Symposium held in Nashville the week of February 12th. It was sponsored by the USGS, TVA, Corps of Engineers, Oak Ridge National Laboratory, Tennessee Department of Environment and Conservation, University of Tennessee - Knoxville, and Environmental Consulting Engineers, Inc. Topics included Ecoregions (had to with me there), GIS mapping (we showed them GIS Overlays of the TN Ecoregions and a sample of STORET stations in Tennessee), Wetlands and Channelized Streams, Water Quality in Karst Terrain, Reservoir and Watershed Management issues, and Groundwater Dynamics to name a few. The symposium produced a 1/2 inch thick book of extended abstracts . (And believe it or not, mines in there too!)

Ecoregions

Since the last two weeks of August, well over 200 potential candidate sites have been screened statewide by our Field Office BEST. They've seen so many candidate sites, they'll probably wear shirts that say "Streams-R-Us." There's been little time for anything else. The next phase will hopefully begin approximately April. Up to 6 very potential streams will be chosen to see how the specific analytes cluster to minimize the selection of anomalous streams. From this cut, our final minimum of 3 reference streams will be selected. Glenn and Jim are working on an Ecoregion Poster for Tennessee (which should include our Poster Child). Linda Cartwright sent Glenn a selection of over a hundred pictures from nearly every subregion for the Poster. Like baby pictures we think every one of our pictures are perfect.

GIS

We have downloaded all the state's STORET stations for the last 5 years in our GIS system. Joyce Boyd, EPA/STORET worked with Kirk Pickering, GIS Manager for our Department, to create the routine. If you have GIS and want to see if your state's STORET information can be downloaded into your system, please contact either Joyce (1-800-424-9067) or Kirk (615-532-0249). Kirk can also be contacted at:kirk@music-city.tdec.state.tn.us.

Chattanooga

Chattanooga Field Office staff have been working with the Athens (TN) Utility Board (AUB) on land application of "biosolids" on agricultural land. They have been so successful that an article appeared in the November / December issue of Biosolids, the WEF publication. Additionally, there is now more demand for the sludge than there is supply [Hey Mike, maybe you could help out ;)].



ETHANOL

Now that we expect many more benthic collections due to the Ecoregion project, preservation has become an issue. Besides its high cost, pure ethanol requires permits and tracking. Reagent grade ethanol does have some isopropyl alcohol and other impurities in it, but since it is not a controlled substance, it is cheaper and easier to get. One of our Field Offices has used reagent grade alcohol and found that the specimens do become slightly brittle over long term storage (3-4 yrs). I'd like to know if anyone out there has used, or has any information on reagent grade alcohol. Would it be possible to use reagent grade for field preservation and short term (3 months) storage and use pure ethanol for long term storage and reference collections?

Well, That's All Folks !

CORVALLIS, ORE.

MONDAY, JANUARY 8, 1996

35 CENTS

Smith, Wyden clash

Senate race is dead heat, survey shows

By Jeff Barnard
Associated Press Writer

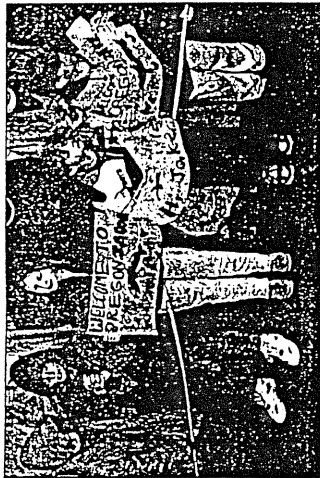
MEDFORD — Locked in a dead-heat battle for the U.S. Senate, candidates Gordon Smith and Ron Wyden clashed sharply Sunday over the environment in their second campaign debate.

Smith, the Republican state Senate president from Pendleton, said he supports restoring Columbia River salmon runs, but also supports logging healthy old-growth timber under the controversial "salvage rider" because it provides jobs for people, who should not be left out of the environmental equation.

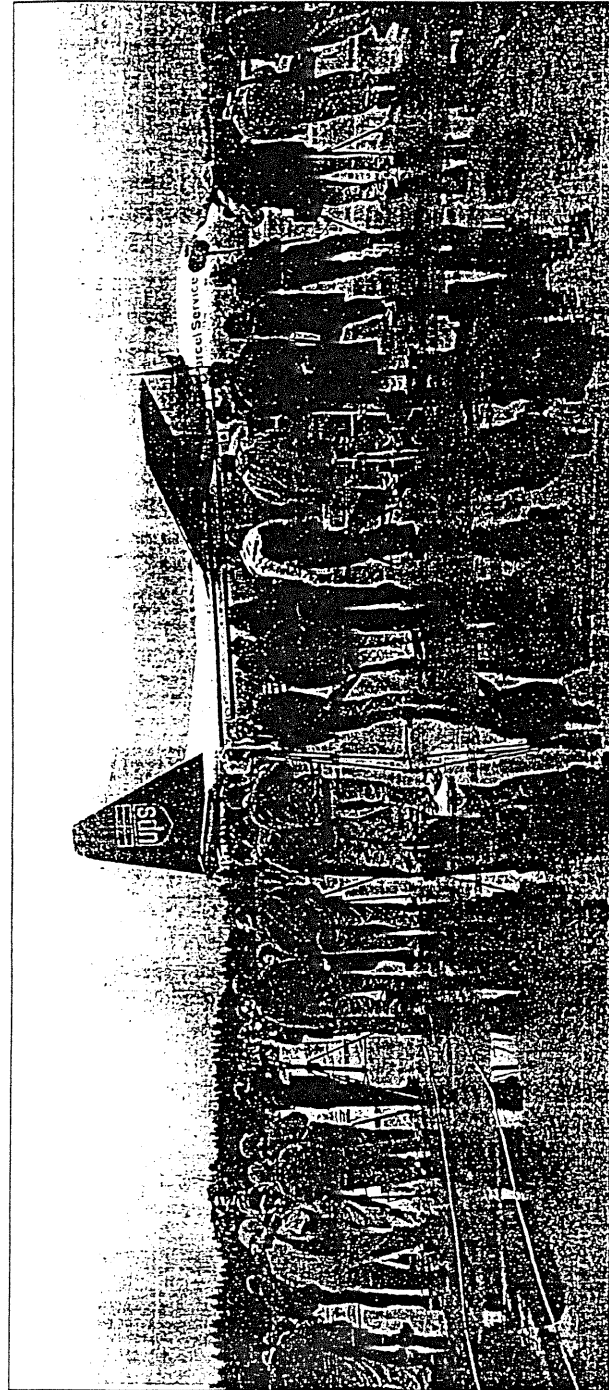
Wyden, a Democratic congressman from Portland, responded that "our salmon had better watch out," if Smith is elected. He characterized Smith's position on the salvage rider as "farfetched," even to the right of the Conservatives in Congress now trying to change it.

The salvage rider enacted by Congress last summer suspended environmental laws to speed the logging of dead and dying timber on national forests as a way to lessen the danger of catastrophic forest fires.

Pushed by the timber industry, the rider also suspended environmental laws to expand logging in green old-growth timber on national forests in the Northwest, raising loud objections from envi-



Jacob arrives in Oregon



More than 330 journalists from around the world descended on Corvallis to document the arrival of Jacob Eugene Griffith, who arrived in a UPS C-130 cargo plane.

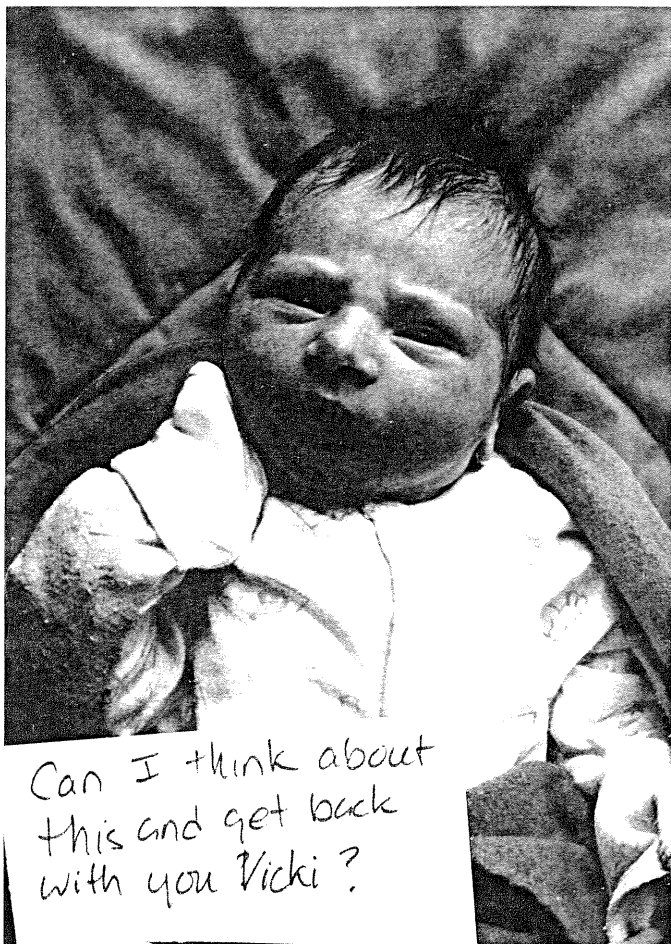


Huge crowd is on hand as famed baby finds a home

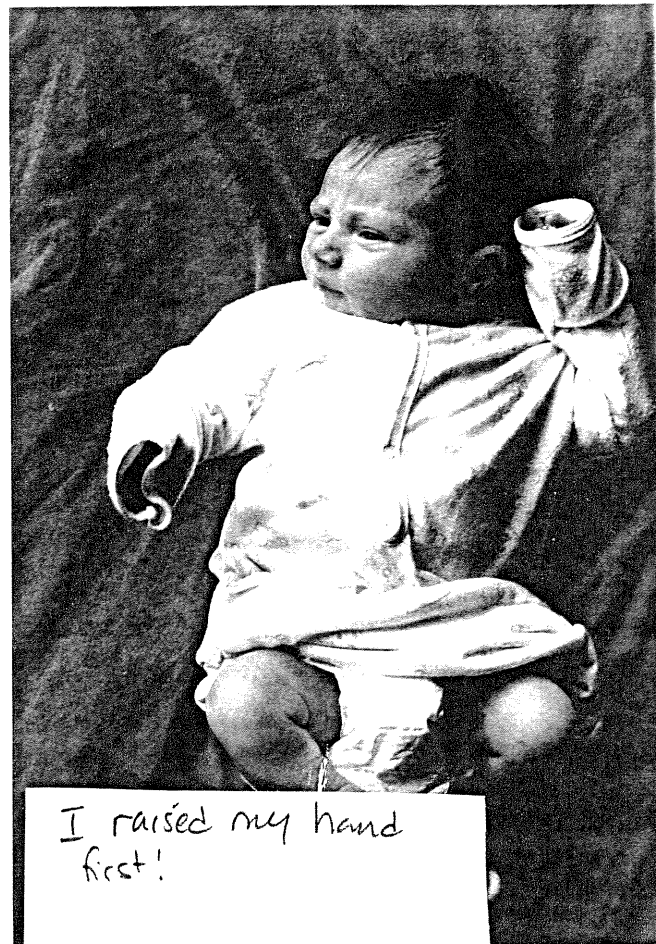
CORVALLIS — Jacob Eugene Griffith arrived in Corvallis today, weighing in at 7 pounds 12 ounces with a length of 20.5 inches. Born at 10:51 AM to parents Anne Loreta Griffith and Glenn Edwin Griffith, the lad gave a strong yell and quickly turned a crimson color. His older sister Marlee, 2-1/2 years old, hugged him in the hospital later in the afternoon. The

Glen Griffith's
Ecoregion Baby Arrives!

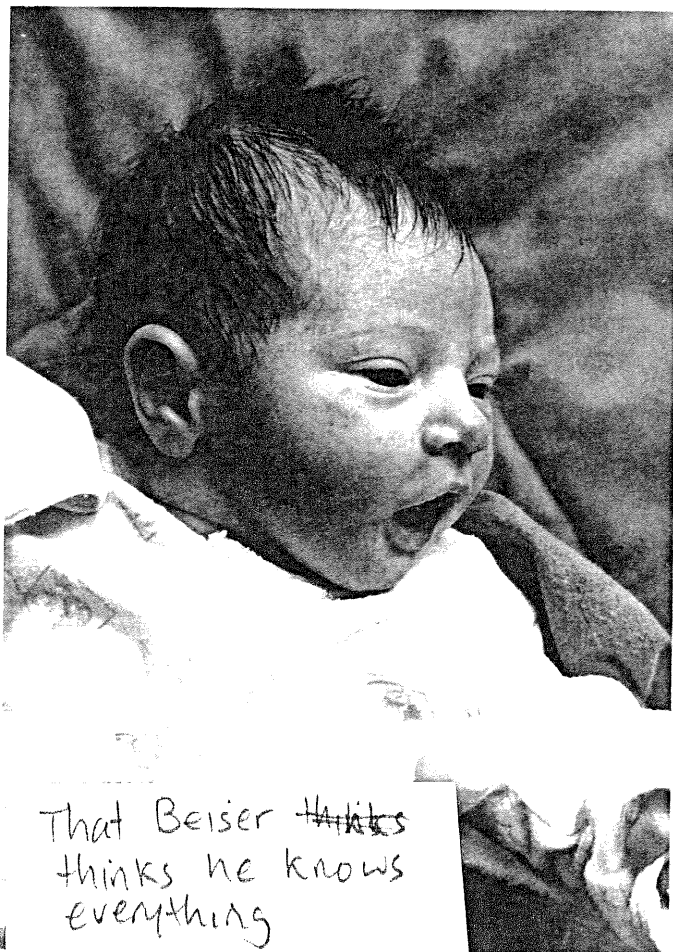
CHERYL HATCH/Gazette Times



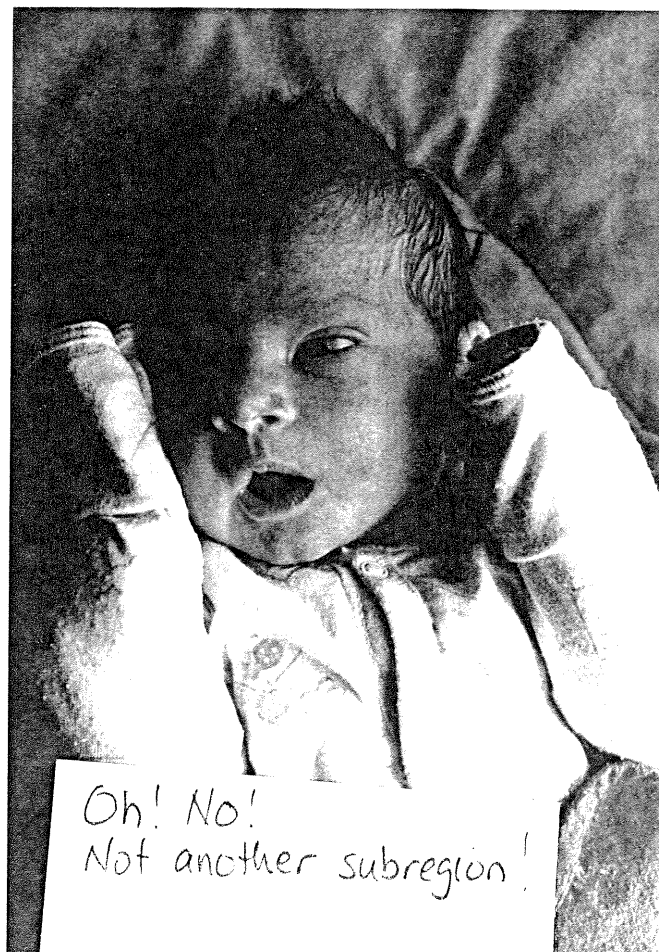
Can I think about
this and get back
with you Vicki?



I raised my hand
first!



That Beiser ~~thinks~~
thinks he knows
everything



Oh! No!
Not another subregion!

