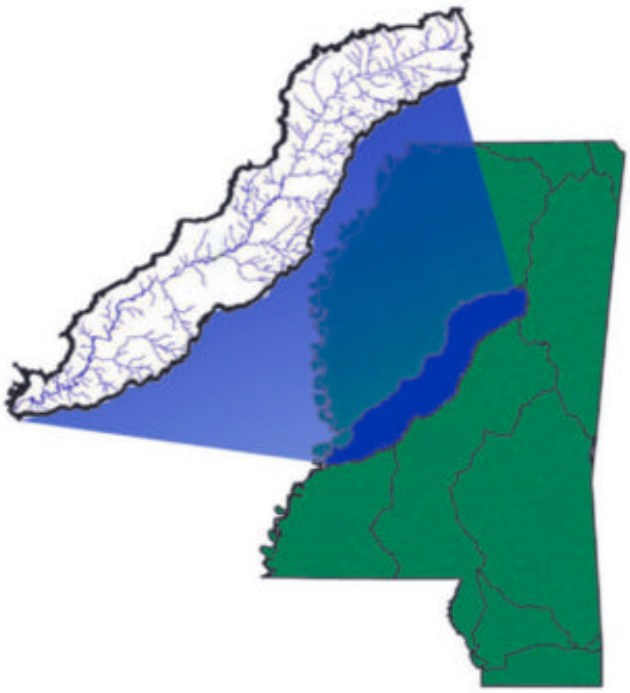
BASIN GROUP 1

BIG BLACK RIVER BASIN

DATA COLLECTION PLAN

1999-2000



BASIN TEAM FOR THE BIG BLACK RIVER BASIN

FORWARD

This Big Black River Basin Data Collection Plan represents a collaborative effort on the part of a number of State and Federal agencies to address water quality issues. The State and Federal agencies that participated in this effort are collectively referred to as the Basin Team and include the following agencies:

Mississippi Department of Environmental Quality
Mississippi Department of Wildlife, Fisheries and Parks
Mississippi Department of Agriculture and Commerce
Mississippi Forestry Commission
Mississippi Soil & Water Conservation Commission
Mississippi State University, Cooperative Extension Service
United States Army Corps of Engineers, Vicksburg District
United States Fish & Wildlife Service
United States Geological Survey
Natural Resources Conservation Service, USDA

In addition to the Basin Team, participation by local stakeholders and stakeholder groups was instrumental in the development of this plan. During the initial stakeholders meeting held in Canton, Mississippi on November 2, 1998, a number of public-generated issues and comments were submitted for consideration during the development of this plan. Another stakeholder meeting was held April 12, 1999 in Kosciusko, Mississippi where comments were requested for the Proposed Data Collection Plan. Comments were received from the Basin Team and Stakeholders and they were incorporated in this plan where possible. Although the Data Collection Plan has been established for this phase of the Basin Cycle, comments are welcome. Comments may be submitted in written or verbal form to the following address:

Mr. Jackie B. Key
Big Black River Basin Coordinator
Office of Pollution Control
Mississippi Department of Environmental Quality
P.O. Box 10385
Jackson, MS 39289-0385

tel. (601) 961-5057
fax. (601) 961-5357
e-mail Jackie_Key@deq.state.ms.us

DATA COLLECTION PLAN CONTENTS

OVERVIEW OF BIG BLACK RIVER BASIN
DATA COLLECTION PLAN
1999

Background

Strategic data collection is one of the core activities of the Mississippi Basinwide Approach to Water Quality Management. Data collection in the basin planning process has four primary purposes. These are: (1) describing the watershed, (2) supporting control strategy development, (3) measuring success of ongoing management activities, and (4) involving the public. Preparation of this Data Collection Plan addresses the final step of Phase 1 planning for the Big Black River Basin.

Identification of Issues

Initially, the Basin Planning Team, whose members consist of technical personnel familiar with water resource issues related to the Big Black River Basin, prepared a comprehensive list of issues. Subsequently, a public meeting was held in Canton, Mississippi on November 2, 1998 for the dual purposes of informing the public about the Basinwide Approach to Water Quality Management and seeking input from the public about its concerns related to the Big Black River Basin. During the meeting, a survey was distributed to all attendees who were asked to rate the importance of an initial list of issues and to list any additional issues of concern (Appendix A). The results of this survey were collated and reviewed by the Basin Team (Appendix B). From this information, the Basin Planning Committee, in collaboration with the Basin Team, decided to address the following issues:

1. Condition of Section 303(d) Evaluated Waters
2. Determining Cause of Impairment for Selected Streams
3. Assessment of the Big Black River
4. Wasteload Allocation Studies on Selected Streams

Purpose of the Data Collection Plan

The Basin Team has reviewed each issue in detail, identifying available data, data needs, and resources needed to adequately address these issues.

Within this Data Collection Plan, each issue is addressed individually using a standard format that addresses a description of the issue, sampling approach, location of monitoring stations, sampling frequency, special considerations, and the responsible agencies.

ISSUE 1. CONDITION OF SECTION 303(d) EVALUATED WATERS

Issue Description

Section 303(d) Evaluated Waters are those waters listed as AEvaluated@ on the State=s 1996 and 1998 Section 303(d) List of Waterbodies. Evaluated waters are those waters for which no monitoring data exist that can be used to determine whether or not the waterbody is impaired. Generally, evaluated waters are drainage areas thought to be potentially impacted as defined by the State=s Nonpoint Source Assessment Document of 1989 and 1998. The potential causes of impairment are those pollutants normally associated with agricultural and silvicultural practices (e.g., sediment, nutrients, bacteria, pesticides, and organic enrichment).

Due to the existence of the evaluated waters on the State=s Section 303(d) List, the State is committed to collect the data necessary to determine their condition. Based upon this data, the State can then determine if these waterbodies are actually impaired.

Sampling Approach

Larval forms of aquatic insects (i.e., macroinvertebrates) serve as excellent indicators of the overall health of an aquatic ecosystem and will be collected at each monitoring site using a screening level Rapid Biological Assessment (RBA) Protocol III approach. This approach examines biological diversity, relative sensitivity or tolerance to pollution of the overall biological community and community balance, and compares these findings to a "least impaired" reference station. At the time of biological sampling the water in the stream will also be analyzed for traditional water chemistry parameters such as dissolved oxygen, suspended solids, and nutrients.
Sunday, June 25, 2000 9:00 AM - 4:30 PM - Intermediate Word Class at New Horizons

Location of Monitoring Stations

There are 38 evaluated waterbodies (drainage areas) that need to be assessed in the Big Black River Basin. The locations of the evaluated waters in the Big Black River Basin are shown on page 5. The drainage areas to be assessed are based upon 11-digit watersheds developed by the Natural Resources Conservation Service. Water quality in these watersheds will be determined by a sampling program that will be performed at the most accessible downstream site nearest each watershed=s boundary. Where needed, additional sites will be included in watersheds having more than one significant stream.

Sampling Frequency

A RBA and water chemistry profile will be conducted once during 1999 during the summer low-flow season. Where stream access is unavailable for a RBA, water chemistry sampling will be performed quarterly.

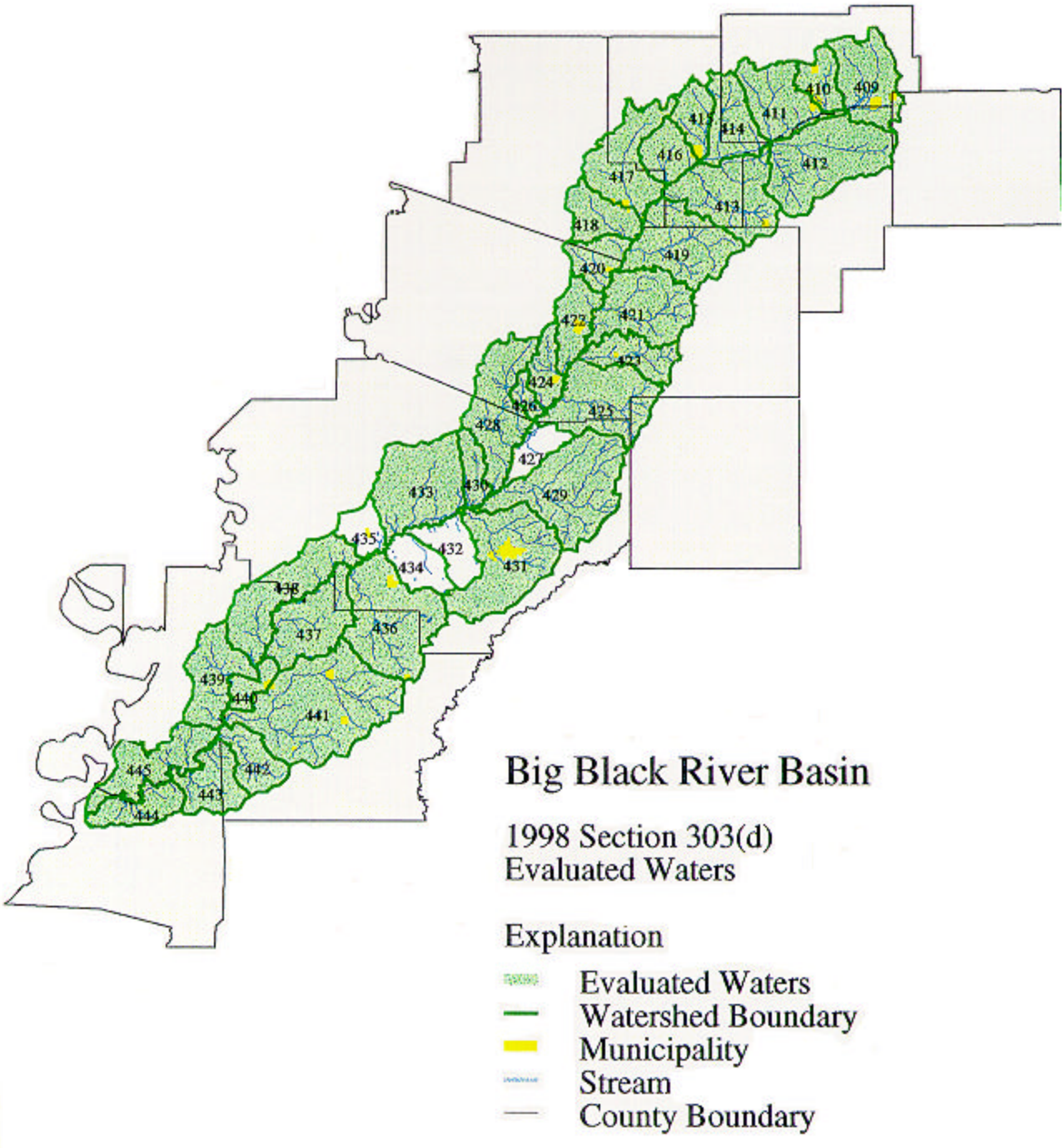
Special Considerations

Because of the intrinsic linkage of the aquatic health indicators (macroinvertebrates) with the existence or absence of potential contaminant sources, an attempt will be made to establish the following relationships:

1. Linking pollutant causes and sources to existing impairments where found; and
2. Identifying land-use in the watershed upstream of the sampling station.

Responsible Agencies

MDEQ is responsible for monitoring the evaluated waters. Field Services Division's Biological Section will perform the RBAs and will monitor for physical and chemical parameters. The Chemical Services Section will be responsible for all chemical analyses. Surface Water Division's Water Quality Assessment Branch, in coordination with the Field Services Division, will compile, manage and interpret the data to determine if a waterbody's designated use is supported. If the use is supported and water quality standards are met, the waterbody will be removed from the Section 303(d) List.


409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
Big Black River Basin
1998 Section 303(d)
Evaluated Waters
Explanation
Evaluated Waters
Watershed Boundary
Municipality
Stream
County Boundary

1998 SECTION 303(d) LIST OF EVALUATED WATERBODIES WITHIN THE BIG BLACK RIVER BASIN

WATERBODY NAME	WATERSHED# FROM MAP
Apookta Creek Drainage Area near Durant	421
Bakers Creek Drainage Area near Morning Star	441
Bear Creek Drainage Area near Virlilia	431
Bear-Beaver Creeks Drainage Area near Flowers	438
Betsy Creek Drainage Area near Vaiden	416
Big Bywy Creek Drainage Area near Stewart	412
Big Cypress Drainage Area near Vaughan	428
Big Sand Creek Drainage Area near Reganton	443
Bogue Chitto/Lime Kiln Creeks Drainage Area near Nevada	436
Box Creek Drainage Area near Goodman	424
Calabrella Creek Drainage Area near Pellez	411
Clear Creek Drainage Area near Bovina	439
Doaks Creek Drainage Area near Way	429
Durant Co Drainage Area Goodman	422
Ellison Creek Drainage Area near Way	430
Five Creeks Drainage Area near Bentonia	433
Five Mile Creek Drainage Area near Newman	442
Fourteen Mile Creek Drainage Area near Newman	441
Hamer Creek Drainage Area near Raganton	445
Hays Creek Drainage Area near Vaiden	417
Jordan Creek Drainage Area near Hoffman	420
Kennison Creek Drainage Area near Galloway	444
Lewis Creek Drainage Area near Poplar Springs	416
Little Black Creek Drainage Area near Eupora	410
Long Creek Drainage Area near Boyette	423
Lower Big Black River South of Pickens	
McCurtain Creek Drainage Area near Pellez	412
Mulberry Creek Drainage Area near Sibleyton	415
Peachahala Creek Drainage Area near Beatty	418
Poplar Creek Drainage Area near Poplar Springs	413
Porter-Cox Creeks Drainage Area near Youngton	437
Senesha Creek Drainage Area near Pickens	425
Spring Creek Drainage Area near Sapa	409
Tackett Creek Drainage Area near Pickens	426
Tilda Bogue Drainage Area near Virlilia	431
Upper Big Black River North of Pickens	

ISSUE 2. DETERMINING CAUSE OF IMPAIRMENT FOR SELECTED STREAMS

Issue Description

The 1998 Section 303(d) List of Waterbodies catalogs waterbodies for which current monitoring data indicate impairment of designated use and violations of water quality standards. The cause(s) of impairment as well as the designated use of the waterbody are provided on the list. In some cases, pollutant-specific data indicate that specific water quality standards were violated. However, for some waterbodies the primary monitoring data available (e.g., RBAs) indicate that the health of the aquatic community has been impacted relative to a reference site. Because a RBA does not provide direct information on the specific chemical pollutant causing the impairment, biological impairment (BI) is listed as the cause in those cases. When these situations occur, additional monitoring is required to determine the specific causes of the impairment so that TMDLs can be established.

Five waterbodies in the Big Black River Basin are not fully supporting their aquatic life use and are listed as Biologically Impaired. All five of these waterbodies receive effluent from municipal wastewater treatment plants. Additional monitoring of these waterbodies will be required to more fully understand the specific causes of impairment.

Sampling Approach

In order to verify impairment, a RBA Protocol III will be performed on the receiving stream. Physical and chemical water quality parameters will also be sampled, as will water column metals, in an attempt to determine the cause(s) of the biological impairment. Both point and nonpoint pollution sources will be inventoried, and the effluents of point sources, if present, will be sampled for the same suite of physical and chemical water quality parameters that were sampled during previous studies. To assess the potential impact from nonpoint sources of pollution, land use activities will be characterized through aerial photography and/or ground surveys. *The analysis of water column metals was dropped after an initial screening of these sites.*

Streams Scheduled for TMDL Studies

The streams for which the cause(s) of impairment will be determined are:

1. Unnamed tributary of Pigeon Roost Creek at Maben
2. Unnamed tributary of Big Black River at Durant
3. Poplar Creek at French Camp
4. Town Creek at Bentonia
5. Bogue Chitto Creek near Flora

Sampling at these locations will likely include monitoring at sites upstream and downstream of any point source to assess any impairment caused by the point source.

Sampling Frequency

Monitoring will be performed once in 1999 during the critical conditions of high stream temperature and low flow, which commonly occur from May through October. The study will last one-to-two days at each location. *If after the low flow sampling more data are needed, a spring high flow sampling event will be conducted.*

Special Considerations

Because of the intrinsic linkage of the aquatic health indicators (macroinvertebrates) with the existence or absence of potential contaminant sources, an attempt will be made to establish the following relationships, where possible:

1. Linking pollutant causes and sources to existing impairments where found.
2. Identifying land-use in the watershed upstream of the sampling station

Responsible Agencies

MDEQ is responsible for monitoring impaired waterbodies. The Field Services Division will perform the RBAs and monitor for physical and chemical parameters. The Water Quality Assessment Branch will survey land use activities. The Water Quality Assessment Branch and the Field Services Division will coordinate to compile, manage and interpret the data to determine the cause(s) of impairment.

ISSUE 3. ASSESSMENT OF THE BIG BLACK RIVER

Issue Description

More information needs to be developed about the current water quality condition of the Big Black River. Although routine ambient monitoring has been performed on the river by various agencies, water quality data is limited in coverage and usability for the river as a whole. The monitoring program planned for this issue is an attempt to gather recent and more comprehensive water quality data to develop an accurate assessment of the water quality condition of the main stem of the Big Black River.

Sampling Approach

A comprehensive approach to assessing the water quality of the main stem of the Big Black River is planned. This approach involves three monitoring elements which are discussed below:

1. The first element will consist of fish counts and identification and analysis of fish flesh. Fish will be collected using hoop nets and via electroshocking. During this process, water samples will also be collected to determine concentrations of potential pollutants.

2. The second element involves the collection of certain type of adult aquatic insects at selected sites to determine community diversity and stability. This information will be compared to historical records collected 10 to 15 years ago to determine biodiversity shifts, if any. *Due to limited resources this approach was changed to two screening level Rapid Bioassessments (RBA) Protocol III.*

3. The third element addresses the water quality condition by performing routine water chemistry and bacteriological monitoring.

It is anticipated that the combined analysis of all three elements of this comprehensive approach will generate sufficient and accurate data on which to base an accurate assessment.

Location of Monitoring Stations

The locations of the monitoring sites for the assessment of the water quality condition of the main stem of the Big Black River are described in the following section.

1. Fish sampling stations will be located at five sites previously used by the Department of Wildlife, Fisheries, and Parks (DWFP).

2. Aquatic insect collections will be conducted along the main stem of the Big Black River at sites used in previous studies in order to provide a historical perspective of the effects of changing water quality or habitat (i.e., accelerated erosion, headcutting). *Since this approach was changed, the sites chosen for the RBAs are:*

    1. Near the town of Kilmichael
    2. Near the town of Bovina

3. Water quality samples will be collected from the following sites:

    1. Near the Town of Kilmichael at Highway 407
    2. Near the Town of West at Highway 19 (MDEQ station # 07289350)
    3. Near the Town of Goodman at Highway 14
    4. Near the Town of Bovina at Highway 80(MDEQ station # 07290000)
    5. At Grand Gulf *(To eliminate back water effects from the Mississippi River this site was move to near the town of Reganton at Fisher/Ferry Road.)*

Sampling Frequency

Fish sampling will be conducted once during 1999 and aquatic insect counts (faunal surveys of the Trichoptera) will be performed monthly. Water quality (physical/chemical) and bacterial sampling will be performed twice a month for a year. *The aquatic insect aspect was changed to RBAs which will be performed as a single event.*

Responsible Agencies

This comprehensive approach to assessing the water quality of the main stem of the Big Black River will be accomplished by a coordinated effort between MDEQ, DWFP, U.S. Geological Survey, and the U.S. Corps of Engineers (Vicksburg District).

ISSUE 4. WASTELOAD ALLOCATION STUDIES ON SELECTED STREAMS

Issue Description

Mathematical computer models are used to develop wasteload allocations (WLAs) for wastewater discharges by predicting water quality impacts of pollutants from these sources on the State's freshwater and estuarine waterbodies. The MDEQ water quality-based effluent limitation (WQBEL) process sets forth the conditions for which these mathematical models are used. A cost-effective method for documenting the actual in-stream effect of a potential or existing point source discharge is the comparison of available biological and physical/chemical monitoring data upstream of the existing discharge or prior to effluent release with data collected downstream or after initiation of the discharge. Such studies provide valuable in-stream water quality information for WLA decision-making purposes.

The combined use of modeled WLA determinations and in-stream monitoring data ensures that in-stream water quality standards, as well as the biological community, are protected. This approach also lessens the incidence of unfair penalties to NPDES permittees that could occur based on incorrect modeling assumptions.

Sampling Approach

NPDES facilities are targeted for WLA studies based on preliminary investigations that incorporate such factors as the potential issuance of stringent effluent limits, permit reissuances with significant increases in discharger flow, new discharges to sensitive waters, and facilities consistently found to be noncompliant with their established permit limits. The actual WLA studies involve biological data collection to assess the in-stream benthic macroinvertebrate community, stream flow measurements, land use surveys, and the limited collection of physical/chemical monitoring data in the stream and effluent. Multi-parameter dataloggers are also used in-stream to monitor dissolved oxygen, temperature, pH, and specific conductance/salinity/total dissolved solids. This is usually done at hourly intervals over a 24-48 hour period to determine diurnal fluctuations in these parameters. Chemical sampling of the effluent and at in-stream locations generally involves conventional water quality parameters such as biochemical oxygen demand, nutrients, solids, and turbidity.

Location of Study Sites

The locations of the monitoring sites for WLA studies in the Big Black River Basin are described as follows:

Location	Waterbody	Purpose
1. Raymond East POTW	Snake Creek	Verification of permit limits
2. French Camp POTW	Poplar Creek	Support TMDL development
3. Bentonia POTW	Town Creek	Support TMDL development
4. Maben POTW	Unnamed trib. to Pigeon Roost Ck.	Support TMDL development
5. Madison County Dev. discharges	----	Verify potential impact of urban growth, WLAs

Each study will generally involve both effluent sampling and sampling at two-to- three sites in the receiving stream. The receiving stream sites will consist of an upstream (control) site for background conditions, a mixing zone site in the area of expected maximum pollutant impact, and at a site further downstream in the recovery zone. *Due to the vague description of the proposed locations of the Madison County Development discharges, a land use survey will be performed first and then sampling may be planned for the spring of 2000.*

Sampling Frequency

These studies are normally carried out between May and November during low-flow, high temperature conditions. After a reconnaissance visit to the study area, sampling will occur over a one-to-two day period.

Responsible Agencies

The MDEQ Water Quality Assessment Branch and Field Services Division are responsible for coordinating data collection for wasteload allocation studies.

ADDITIONAL PUBLIC-GENERATED ISSUES

As discussed previously in this report, the Basin Planning Team (whose members consist of technical personnel familiar with water resource issues related to the Big Black River Basin) prepared a comprehensive list of issues related to water quality concerns within the basin. Subsequently, a public meeting was held in Canton, Mississippi on November 2, 1998 for the dual purposes of informing the public about the Basinwide Approach to Water Quality Management and seeking input from the public about its concerns related to the Big Black River Basin. During the meeting, a survey was distributed to all attendees who were asked to rate the importance of an initial list of issue categories and to list any additional issues of concern (Appendix A). The results of this survey and the additional public-generated issues were collated and reviewed by the Basin Planning Team (Appendix B) and from this information, six categories were established into which each issue was assigned. These public-generated issues not previously addressed are discussed below.

Issue Category: Aquatic Life & Habitat Protection

Issue #1: Aquatic habitat loss due to stream bank erosion, sedimentation, and head cutting

Response: A review of this issue by the Habitat Protection Data Collection Subcommittee concluded that, although historic physical/chemical and biological data exist for this issue, a multi-agency approach is necessary to develop the additional data necessary to accurately evaluate this issue. Such an approach should include increased water quality monitoring, fish population studies, and aquatic insect studies. In addition, field assessments of bank failure rates and automated sampling of sedimentation rates would need to be performed. Budgetary constraints and existing program workloads will need to be assessed prior to further consideration of this issue.

Issue Category: Water Quality Impacts from Point Sources

Issue #1: Discharge from Burrow Paper Corp. in Pickens

Response: The MDEQ Basin Coordinator for this basin will contact the stakeholder who raised this issue to gather more specific details. Burrow Paper Corp. will then be contacted by the Basin Coordinator and asked to meet with the stakeholder.

Issue #2: Characterizing and quantifying impact from unsewered communities

Response: A review of this issue by the Point Source Data Collection Subcommittee revealed the existence of fifty-two unsewered communities that are currently identified in the Big Black River Basin. Of these, four have been identified as needing central collection systems and pose a potential

bacteria problem. Currently, no information exists for which to evaluate forty-three of the fifty-two communities. Information should be obtained from the MSDH as well as county governments in an effort to correlate the 303(d) listings with the locations those communities. Additional data needs will require a multi-agency approach and include collection of effluent data from point sources, inventories of nonpoint sources, land use analysis, geographic data analysis (vegetation, soils, construction, hydrologic diversions, etc.), as well as bacteria sampling. Budgetary considerations, existing program activities, and cross-agency cooperation will need to be addressed prior to the development of a data collection plan for this issue.

Issue Category: Protection of Ground/Drinking Water Sources

Issue #1: Concerns about drinking water supplies

Response: Two programs are currently in place within MDEQ that address the protection of drinking water sources in the State. The new Source Water Assessment Program focuses on determining the relative susceptibility of public water supply wells and surface water intakes to nearby potential contaminant sources. The Wellhead Protection Program focuses on developing management plans and strategies for identified potential contaminant sources in order to reduce the threat of contamination that they present.

Issue Category: Urban Nonpoint Source Impacts

Issue #1: Characterizing and quantifying runoff from urban areas in the basin

Response: A review of this issue by the Urban Nonpoint Impacts Data Collection Subcommittee concluded that sufficient national data exists which establishes that impacts to water quality exist due to sediment pulses during construction, nutrient enrichment, bacterial contamination, greater organic loads, higher trace metals and hydrocarbon loads, increased stream temperatures, and debris accumulation. Additionally, it is clear that different source areas such as residential, industrial, commercial, etc. contribute different pollutants at different concentrations. However, great difficulty exists in quantifying urban runoff locally due to the large data gaps that exist. Only the City of Jackson has performed some limited monitoring and the USGS is currently conducting a limited sediment study on a suburban stream in Rankin County (Pelahatchie Bay). Significant additional information is needed to quantify urban nonpoint source runoff. Resource constraints do not allow this issue to be addressed at this time.

Issue Category: Agricultural Nonpoint Source Impacts

Issue #1: Characterizing and quantifying forest activities

Response: A review of this issue by the Agricultural Data Collection Subcommittee revealed that the Big Black River Basin contains approximately 1.285 million acres of forestland. Of this amount, seventy-one percent is privately owned and twenty-four percent is owned by the forest industry and corporations. The primary activities which cause nonpoint source pollution to occur are road construction to support forest harvesting and site preparation in steep terrain. To address these situations, Best Management Practices (BMPs) were developed and implemented on a voluntary basis as a joint effort of the Mississippi Forestry Commission and the forest industry. Since implementation, the Forestry Commission has completed two state-wide surveys focusing on BMP compliance which revealed an eighty-nine percent compliance rate in all areas surveyed.

Issue Category: Hydrologic Modifications

No additional issues

GENERAL CONSIDERATIONS AFFECTING THE BIG BLACK RIVER BASIN DATA COLLECTION PLAN

General considerations exist which are common to all of the described issues addressed by the Big Black River Basin Data Collection Plan. These considerations typically are associated with the large volume of data to be collected, assimilated, analyzed and reported.

Coordination Among the Contributing Programs

The assistance provided by contributing programs, such as MDEQ Field Services Division, MDEQ Water Quality Assessment Branch, U.S. Geological Survey, U.S. Army Corps of Engineers, MS Department of Wildlife, Fisheries, and Parks, and others is essential for the success of the Basinwide Approach to Water Quality Management. In order not to infringe upon the regularly-scheduled duties of the contributing programs, recognition of those established duties as well as periodic increases in the workloads of those programs is important. Because of this, coordination among the contributing programs prior to and during data collection and sample analysis is important in order to prevent overtaxing the contributing programs.

Assimilation and Management of Collected Analytical Data

The assimilation and management of the collected biological and physical/chemical water quality data into functional data bases and ultimately a geographic information system (GIS) is essential in order for the information to benefit potential users. To help in this area, the Surface Water Division of MDEQ is in the planning stage of development of a comprehensive Surface Water Information Management System (SWIMS) which will provide the framework for the effective use of the generated data.

APPENDIX A

BIG BLACK RIVER BASIN
STAKEHOLDER ISSUES SURVEY
NOVEMBER 2, 1998

The following Astarter@ issues have been identified by the Big Black River Basin Team for consideration by the Stakeholders Group. The Team would like your input concerning the appropriateness of these issues and would also like to know of any additional issues the Stakeholders Group thinks important. The issues below are not in a priority order.

1. Aquatic Life Use Impairment
2. WQ Impacts from Existing WWTPs
3. WQ Impacts from New Point Sources
4. Protection of Drinking Water Sources
5. Impacts from Animal Operations
6. Non-point Source Impacts (Silviculture, Urban, Unsewered Communities, Agriculture)
7. Impacts from Air Deposition
8. Evaluate Wetlands Protection Needs
9. Monitor AWaters of Concern@
10. Develop maximum pollutant loads (TMDLs)

Of these issues, list the 3 - 5 that are of the greatest concern to you (place *item numbers* of issues in the boxes provided). “ “ “ “ “

Of these issues, list the 3-5 that are of least concern to you.

“ “ “ “ “

What issue/s would you like added to the list above?

Now that you=ve heard about the Basin Approach, the Basin Stakeholder Group, and issues identification, what suggestions do you have for the Basin Team?

Please print your name:

APPENDIX B

BIG BLACK RIVER BASIN
STAKEHOLDER ISSUES SURVEY RESULTS
NOVEMBER 2, 1998

ISSUES TALLY

During the November 2, 1998 Big Black River Basin Stakeholders Meeting, attendees were asked to complete a questionnaire designed to prioritize the environmental issues of greatest and least concern to basin stakeholders. The following list is a compilation of the rankings contained in the individual questionnaires.

Level of Concern	Greatest	Least
1. Aquatic Life Use Impairment	3	3
2. Water Quality Impacts from Existing Waste Water Treatment Plants	7	1
3. Water Quality Impacts from New Point Sources	8	2
4. Protection of Drinking Water Sources	8	0
5. Impacts from Animal Operations	4	2
6. Nonpoint Source Impacts	6	1
7. Impacts from Air Deposition	1	9
8. Evaluate Wetlands Protection Needs	2	6
9. Monitor AWaters of Concern@	5	3
10. Develop TMDLs	4	2