State of Mississippi
Water Quality Assessment
2002 Section 305(b) Report

Big Black River Basin Supplement

Big Black River near Canton at HWY 16

December 2003

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Introduction

The intent of Section 305(b) reporting is to describe the status of the quality of Mississippi's water resources for EPA and the public. This report is required pursuant to Section 305(b) of the Federal Clean Water Act (CWA) and the Mississippi Department of Environmental Quality (MDEQ) is the state agency responsible for generating this document. For the 2002 Section 305(b) Report, MDEQ is submitting an assessment of the surface waters in the Big Black River Basin in accordance with the rotating basin cycle of MDEQ's Basin Management Approach. This 2002 report serves as a basin supplement to the Mississippi 1998 Water Quality Assessment Federal Clean Water Act Section 305(b) Report (MDEQ 1999), the State's most recent comprehensive statewide 305(b) assessment report. For more information about the contents of that report, refer to MDEQ's web site: wwww.deq.state.ms.us.

Surface water quality data and other environmental information for the state are compiled and summarized in Mississippi's Section 305(b) Report. Monitoring data are routinely collected by MDEQ throughout the state through several different monitoring activities: an Ambient Fixed Station Monitoring Network, Basin Monitoring Networks, intensive surveys and other special water quality studies. These data are used for many purposes, and are collectively analyzed and reported on annually as part of the Section 305(b) water quality assessment process. For the 305(b) report, the water quality data and information collected by MDEQ, as well as data provided by other agencies and institutions, are assessed as to whether a water body meets its designated use or uses. These water body designated uses may include aquatic life support, water contact recreation, fish/shellfish consumption, and/or drinking water supply. Waters assessed as not attaining their use(s) in the 305(b) assessment process become candidates for listing on Mississippi's Section 303(d) List of Water Bodies.

For the 2002 Section 305(b) Report submittal, the Big Black River Basin is assessed to determine if water bodies are meeting their designated use(s). Therefore, only data applicable for assessment of these uses that were collected on water bodies in the Big Black River Basin are analyzed and presented in this report. Ground water quality in Mississippi is generally good due to layers of clay that protect most aquifers from widespread contamination. Groundwater aquifers do not adhere to the same boundaries as drainage basins, assessments for ground water do not fall easily into the rotating basin approach to water quality management and assessment. As such, ground water assessments will be updated every five years at the end of a basin management cycle when a statewide assessment can be produced. In 2004, the State will develop and submit a comprehensive statewide 305(b) report summarizing updated water quality assessments for all basins in the state.

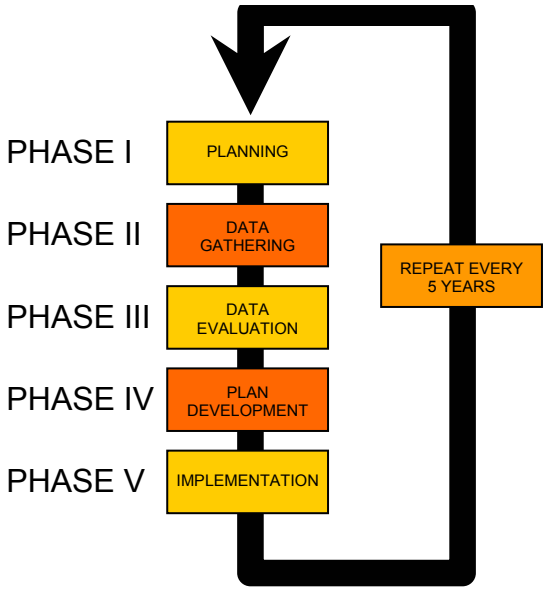
Mississippi's Plan for Comprehensive Assessment

Mississippi's Basin Management Approach is an effort to conduct comprehensive water quality planning and assessment and to foster the implementation of practices that will result in water quality protection on a basinwide scale. This approach recognizes the

interdependence of water quality on the many related activities that occur in a drainage basin. Some of these activities include monitoring, assessment, problem identification, problem prioritization, planning, permitting, water use and land use. In Mississippi's Basin Management Approach (detailed in the document Mississippi's Basin Approach: Framework Description (MDEQ 1999)), these activities and their associated information will be integrated by basin, resulting in basinwide water quality assessments, basin management plans and implementation strategies that will serve to focus water quality protection efforts.

Figure I

Basin Management Cycle



The purpose of Mississippi's Basin Management Approach is to restore and protect the quality of Mississippi's water resources by developing and implementing effective management strategies that address water quality issues while fostering sound economic growth. The majority of water quality management activities in Mississippi will be based on a repeating five-year management cycle. This management cycle is composed of five annual activity phases that are sequenced and repeated throughout the five-year interval (Figure I).

MDEQ is already beginning to manage its water programs on a basinwide scale and will be routinely developing basin management plans for Mississippi's major drainage basins that will include all 305(b) assessments. These basins serve as the hydrological boundaries that guide MDEQ's water quality activities. The waters of Mississippi are divided into ten major drainage areas or basins. These ten basins are the Big Black River Basin, Coastal Streams Basin, North Independent Streams Basin, Mississippi River Basin, Pascagoula River Basin, Pearl River Basin, South Independent Streams Basin, Tennessee River Basin, Tombigbee River Basin and Yazoo River Basin and their boundaries are shown in Figure II.

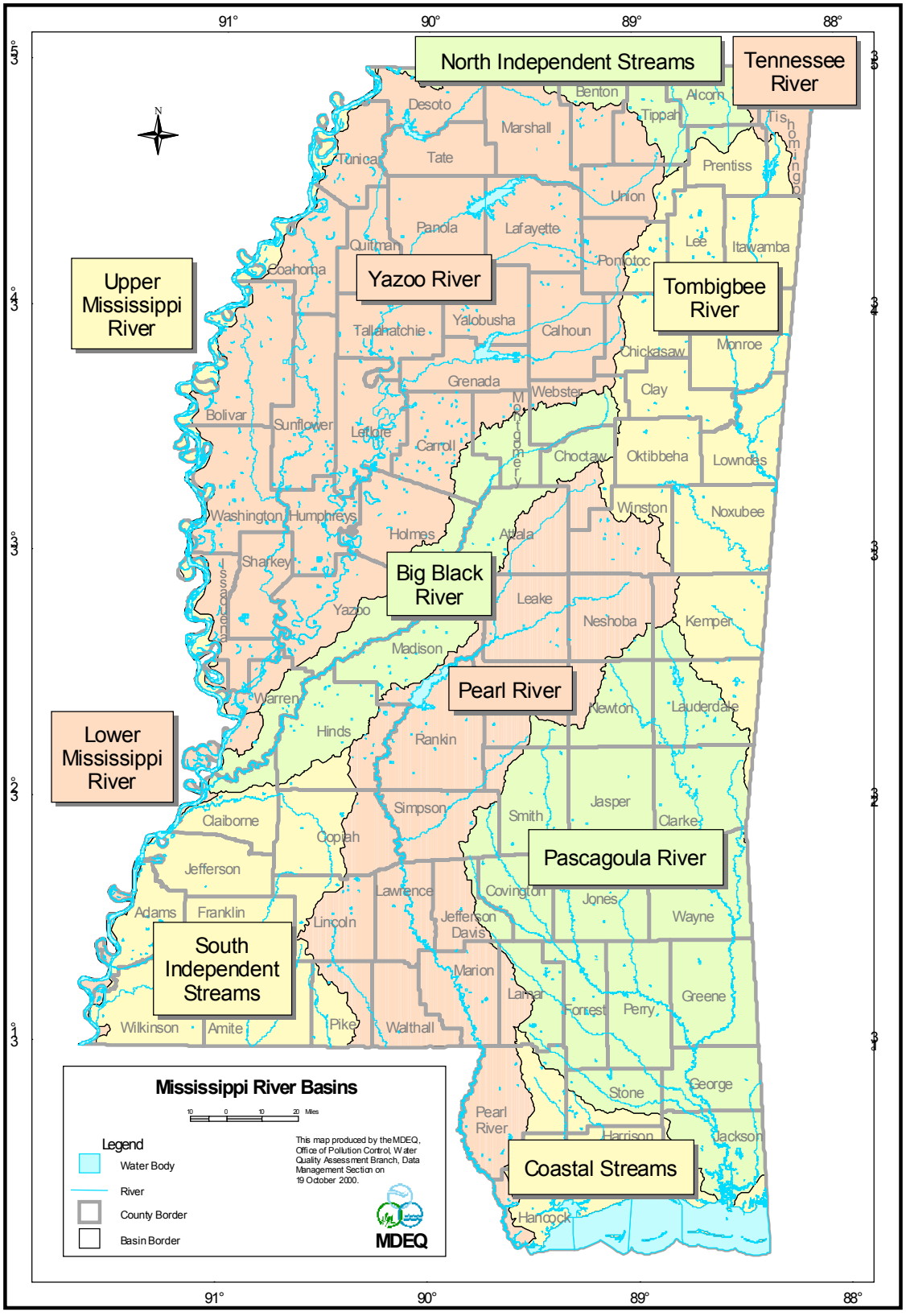


Figure II: Mississippi's 10 Major Drainage Basins

Because of the five-year rotation, Mississippi's ten drainage basins have been placed into five basin groups, thereby allowing all of the basins to receive equal focus. Each of these basin groups is configured to represent one-fifth of the state. Figure III depicts the five rotating basin groups. At the end of the five-year rotational period, Mississippi should reach its goal of comprehensive statewide assessment.

The Basin Management Approach strategy is supported by various water quality monitoring activities. One major activity is a basin fixed-station monitoring network, which augments the statewide primary ambient fixed station network with supplemental monitoring sites in the large drainage basins. One objective of the basin monitoring network is to increase the total aerial coverage of waters monitored in Mississippi and fill data gaps identified in the planning phase of the basin cycle. Concentrating monitoring and assessment resources in specific drainage basins thereby maximizing sampling efficiency achieve this objective. As a result, basin management plans and implementation strategies, as well as comprehensive basinwide assessments may be developed. Another short-term major objective of the basin network is to verify the actual water quality of waters historically assessed as "potentially impaired" in the 305(b) process in cases where these past assessments were based on evaluations rather than actual monitoring data. Such verification by monitoring ultimately confirms the accuracy of the state's list of impaired water bodies that is required pursuant to Section 303(d) of the Clean Water Act.

Supplemental basin sampling is rotated annually among the five major basin groups (Figure III) in the state resulting in each basin group being intensively monitored every five years. This monitoring takes place during the data gathering phase of the basin management cycle. The predominant sampling tool used by MDEQ for the basin stations is biological monitoring for benthic macroinvertebrates using modified EPA rapid bioassessment protocols. In addition, the basin monitoring effort utilizes multi-media sampling involving limited water chemistry, bacteria, algae, fish and/or sediment sampling as needed to address basin data collection needs. Primary selection criteria for basin stations to achieve basinwide geographic coverage are the mainstem tributaries in each of the NRCS 11-digit watersheds in the targeted basin. For 2001-2003, in lieu of statewide historical ambient fixed network and discreet basin network monitoring, MDEQ focused resources to conduct a statewide biological monitoring project to verify 303(d) evaluated impairments as well as to develop an Index of Biological Integrity for Mississippi wadeable streams. Data collected as part of this monitoring effort were used in the development of this 2002 305(b) Water Quality Assessment Report and the Mississippi 2002 Section 303(d) List of Water Bodies (MDEQ 2003).

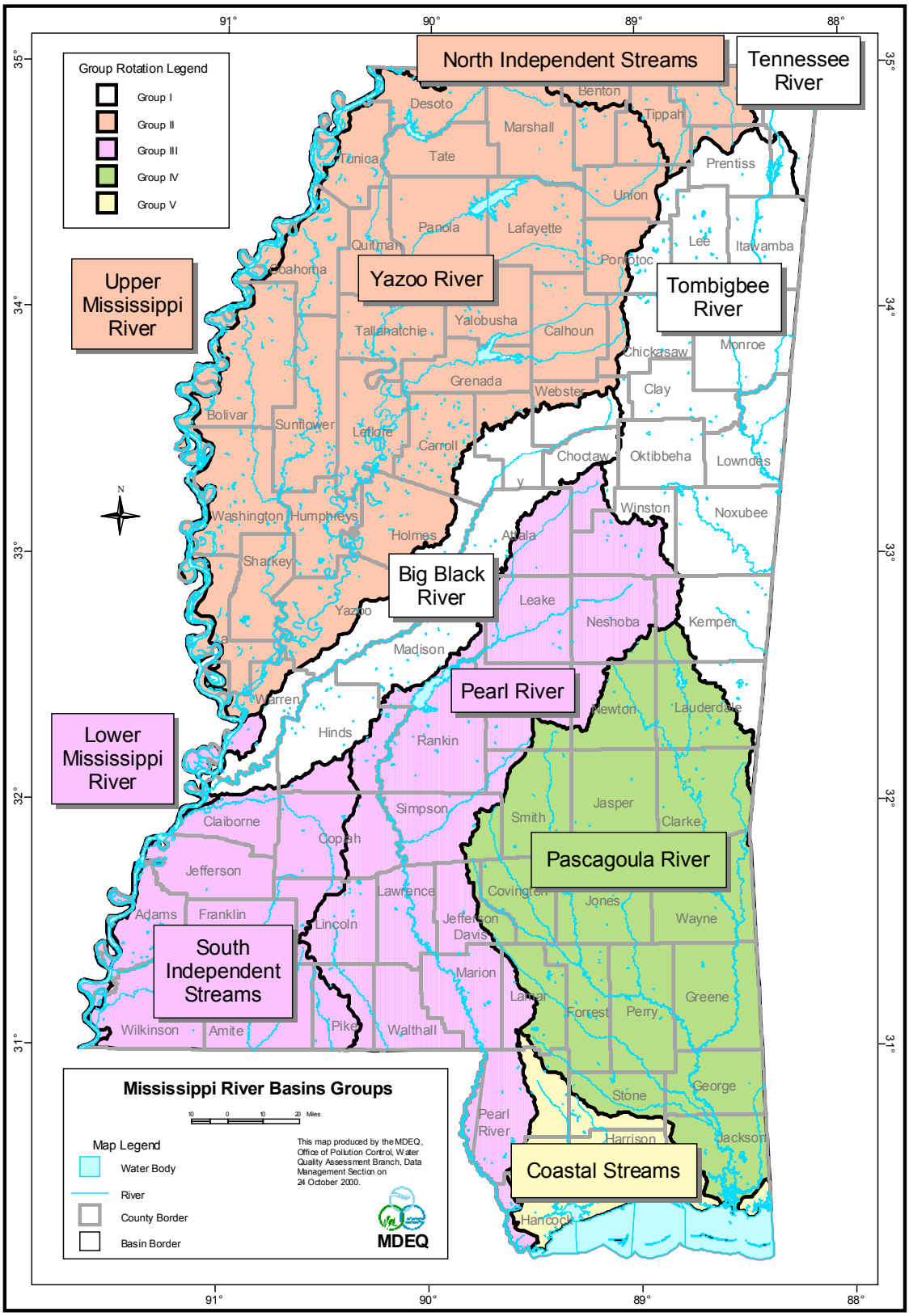


Figure III: Mississippi River Basins Groups

SURFACE WATER QUALITY ASSESSMENT

Introduction

Surface waters in Mississippi are used for a number of purposes. Waters are used for drinking and food processing, shellfishing, recreation, fishing, and aquatic life support. Surface waters are classified and assigned various use classifications by MDEQ in the State's Water Quality Standards based on the existing identified use of the water body along with any expected future uses. The use classifications and associated EPA designated uses for water quality assessment purposes used by the State of Mississippi are as follows:

Use Classification	EPA Designated Use
Public Water Supply	Drinking Water Supply
Recreation	Contact Recreation
Fish and Wildlife	Aquatic Life Use, Fish Consumption
Shellfish Harvesting	Shellfish Consumption

Most of Mississippi's waters are classified as Fish and Wildlife but there are several waters that fall under classifications in addition to Fish and Wildlife. For each of the use classifications listed above, there are various water quality criteria or standards that apply to those water body uses and which are used in the assessment process. A water body (part or all of a stream, river, lake, estuary or coastline) is normally required to support one or more of these uses. A complete description of the Mississippi's water body use classifications and water quality standards can be found in the State of Mississippi Water Quality Criteria for Intrastate, Interstate, and Coastal Waters (MDEQ, 2003).

MDEQ comprehensively assesses the waters of the state on a routine basis to determine if their designated use(s) are supported as required by Section 305(b) of the CWA. Each use assessed for a water body is determined to be either "Attaining" or "Not Attaining" in accordance with the applicable water quality standards and EPA guidelines for assessments pursuant to Section 305(b) of the CWA. A water body's use is said to be impaired when, based on current and reliable site-specific data of sufficient quantity, quality, and frequency of collection, it is not attaining its designated use(s).

Section 305(b) Assessment Methodology

For §305(b) Water Quality Assessment Reports, MDEQ assesses the state's streams, rivers, lakes, estuaries and coastlines by considering all existing and readily available information. This information is not limited to data collected only by MDEQ but is also solicited from various state, federal, and private sources of water quality data collection activities. Water quality data and information can take many different forms, from intensive multi-parameter surveys detailing water chemistry, biology, and physical characteristics to simple observations. This broad spectrum of available data needs to be considered when making water quality assessments.

Previous EPA §305(b) guidance, Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates: Supplement (USEPA 1997), promoted the use of two types of assessments: "evaluated" and "monitored". MDEQ has historically utilized evaluated assessments in addition to monitored assessments to allow broader water quality statements to be made to make up for limited monitoring coverage. A water body assessed using evaluated data is defined as one for which the use support decision is based on information other than site-specific ambient data. Such information includes land use surveys, incidents of pollution spills/fish kills, point source discharge data, and older monitoring data. However, this data generally has a greater degree of uncertainty in associating in-stream water quality condition with water quality standards adherence than assessments based upon site-specific in-stream monitoring data. In past §305(b) assessments, this evaluated information was used and identified in the State's §305(b) report as having these limitations, however, any water quality impairments identified with the use of this data were still subject to §303(d) listing. This produced a very long §303(d) List for which the State has and still is committing monitoring resources at the expense of other statewide water quality monitoring needs, to address many low priority waters for which no impairment may actually exist. Although data of the type previously used for evaluated assessments will still be considered and used as screening tools in the general §305(b)/§303(d) assessment and listing process; beginning in 2002, MDEQ will only use this information for an assessment decision when those data and information demonstrate compelling evidence of the water quality condition of a water body. Consequently, MDEQ will primarily use site-specific monitoring data of sufficient quality and quantity for making final water quality §305(b) assessments and §303(d) listing decisions.

Section 305(b) water quality assessments are based on one or more different types of monitoring data that have been grouped together by water body and then analyzed collectively in order to determine water quality status or condition of the water body. Monitoring data used for §305(b) assessment primarily consist of one or more of the following data types: physical/chemical, biological, habitat, bacteriological, and/or toxicological. Current site-specific ambient monitoring data are believed to most accurately portray water quality conditions. A water body is considered monitored if sufficient (both in quantity and quality) physical, chemical, biological, bacteriological, and/or fish tissue data were collected on the water body at any time within the appropriate data window established for the five-year §305(b) reporting period.

In accordance with recommendations from EPA's new Consolidated §305(b) Assessment and §303(d) Listing guidance document, Consolidated Assessment and Listing Methodology, Toward a Compendium of Best Practices (USEPA 2002), MDEQ used more rigorous data sufficiency requirements for the 2002 §305(b) assessment than for previous assessments. The use of more stringent data quality and quantity requirements to identify assessable data resulted in the reduction of the amount of data available for assessment decisions compared to previous assessments. Consequently, for the 2002 §305(b) assessment, only biological data collected in wadeable streams and rivers as part of a MDEQ statewide biological monitoring project to develop a Mississippi Index of

Biological Integrity (see project description below) met quality and quantity requirements for surface water monitoring data to be used in assessment for the Big Black River Basin. The table below shows the data window for this biological monitoring data and any other applicable water quality information reviewed to assess the Big Black River Basin.

Data Type	Data Window	Use Assessed
Biological (Benthic Community)	Winter Index Period 2001 and 2002	Aquatic Life Use
Fish Tissue Advisories	1999 - 2002	Fish Consumption Use (Non-Attainment Only)

Biological data include the community structure of aquatic insects, other benthic macroinvertebrates, fish or algae as well as the condition of the biological habitat on the water body. The biota of a water body reflects the physical, chemical, and biological integrity of the system and are considered to be direct indicators of Aquatic Life Use Support. For this §305(b) assessment, benthic macroinvertebrate community structure data were used to determine aquatic life use support.

The Fish Consumption Use was assessed only for non-attainment based on whether MDEQ and the Mississippi Department of Health had issued a Fish Tissue Advisory for a water body in the Big Black River Basin. If an advisory for restricted or no consumption was in place and was supported by water body specific fish tissue monitoring, the water body would be assessed as not attaining this use. No advisories are in place for fish tissue in the Big Black River Basin. Due to the lack of data at the time of this assessment, these water bodies also could not be assessed as attaining. Thus, no water body was assessed for fish consumption use support in this report.

No surface waters in the Big Black River Basin are designated for drinking water supply use; therefore, this use was not assessed. Contact recreation use was also not assessed in the basin due to no bacteria monitoring data meeting the minimum criteria for assessment established for the 2002 §305(b) water quality assessment and §303(d) listing methodology.

A detailed description of the assessment methodology used by MDEQ for the 2002 §305(b) Assessment and Listing process is provided in Appendix A. This methodology, Mississippi CALM (Consolidated Assessment and Listing Methodology), Data Requirements and Assessment and Listing Methodology to Fulfill the Requirements of Sections 305(b) and 303(d) of the Clean Water Act (CWA) for the 2002 Assessment and Listing Cycle, describes the minimum data quantity and quality needed to meet data sufficiency requirements for assessment. Decision criteria for assessment for each designated use is also presented in this document.

Monitoring and Assessment of §303(d) Listed Wadeable Streams and Rivers of Mississippi and Development of an Index of Biological Integrity (IBI) Project

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

The monitoring project, initiated in 2001, involved sampling of 455 perennial streams, statewide with the exception of streams in the Mississippi Alluvial Plains Ecoregion (Delta). Teams consisting of MDEQ personnel and private contractors collected biological (benthic communities), physical (habitat assessment, Wohlman pebble count, flow), and chemical (in-situ measurements, nutrients, solids) data from all stations. Data analyses were completed for this data set in April 2002.

As a result of this sampling effort, a regionally calibrated multimetric IBI was developed for five "bioregions" in the state exclusive of the Mississippi Alluvial Plains Ecoregion. Reference conditions were defined for each of these "bioregions" and summarized using a suite of metrics found to discriminate between sites of different ecological integrity. Results of this IBI development were compiled in a report written by MDEQ's contractor, Tetra Tech, Inc., entitled "Development and Application of the Mississippi Benthic Index of Stream Quality (M-BISQ)" in October 2002. These IBI results are being used to assess the status of §303(d) listed water bodies as well as future biological monitoring and assessment activities focused on wadeable streams and rivers. As stated earlier, these M-BISQ results were used in the formulation of the Big Black River Basin §305(b) Report.

Assessment Summary – Big Black River Basin

In the following section, a brief description of the hydrology and the general water quality of the Big Black River Basin is given. In addition, permitted major NPDES wastewater sources and special water body classifications in the basin are also identified. Use support status for the basin is summarized by water body type with causes and sources of impairment presented. In addition, maps geo-referencing land use coverage, basin ecoregional delineations, M-BISQ bioregions with Big Black River Basin overlay, and a map showing major NPDES-permitted wastewater outfalls (Figures IV through VII) are also provided.

Basin Description

The Big Black River Basin lies totally within Mississippi and is composed of 3,400 square miles. The basin is 155 miles long, averages 22 miles in width and has approximately 6,630 linear miles of river and streams. This basin originates in north-

central Mississippi and flows southwesterly to the Mississippi River. The Big Black River itself enters the Mississippi River just south of Vicksburg after flowing approximately 300 miles. Major tributaries to the Big Black River include Big Bywy Ditch, Zilpha Creek, Apookta Creek, Doaks Creek, Bear Creek, Bogue Chitto Creek and Fourteen Mile/Bakers Creek. The basin is sparsely populated, hilly, and largely forested with significant amounts of cattle ranching and farming present. Also, oil and gas production is a major industry in the area. The Big Black River Basin does not have large scale development and most of its tributaries are wild and undeveloped, and thus are in a relatively natural condition. However, the historically rural nature of this basin is beginning to change with the siting and development of the Nissan Automotive Facility near Canton, Mississippi, and the resulting economic growth that this facility is bringing to the basin.

Generally, the Big Black River and most of its tributaries, especially in the northern part of the basin, carry large amounts of suspended sediment and are very turbid most of the time. Some of the streams in the basin are muddy and slow-flowing, while others have relatively clear water and are swift with sandy bottoms. Overall, the water quality in the basin is rated as fair.

Permitted Major Wastewater Sources

Facility	Permit Number	Receiving Stream	City
Canton HCR Site	MS0042455	Bear Creek	Canton
Winona POTW	MS0021024	Hays Creek	Winona
Canton Municipal Facilities (Includes Nissan Discharge)	MS0057517	Big Black River	Canton

Special Water Quality Criteria Designated Use Classifications

None.

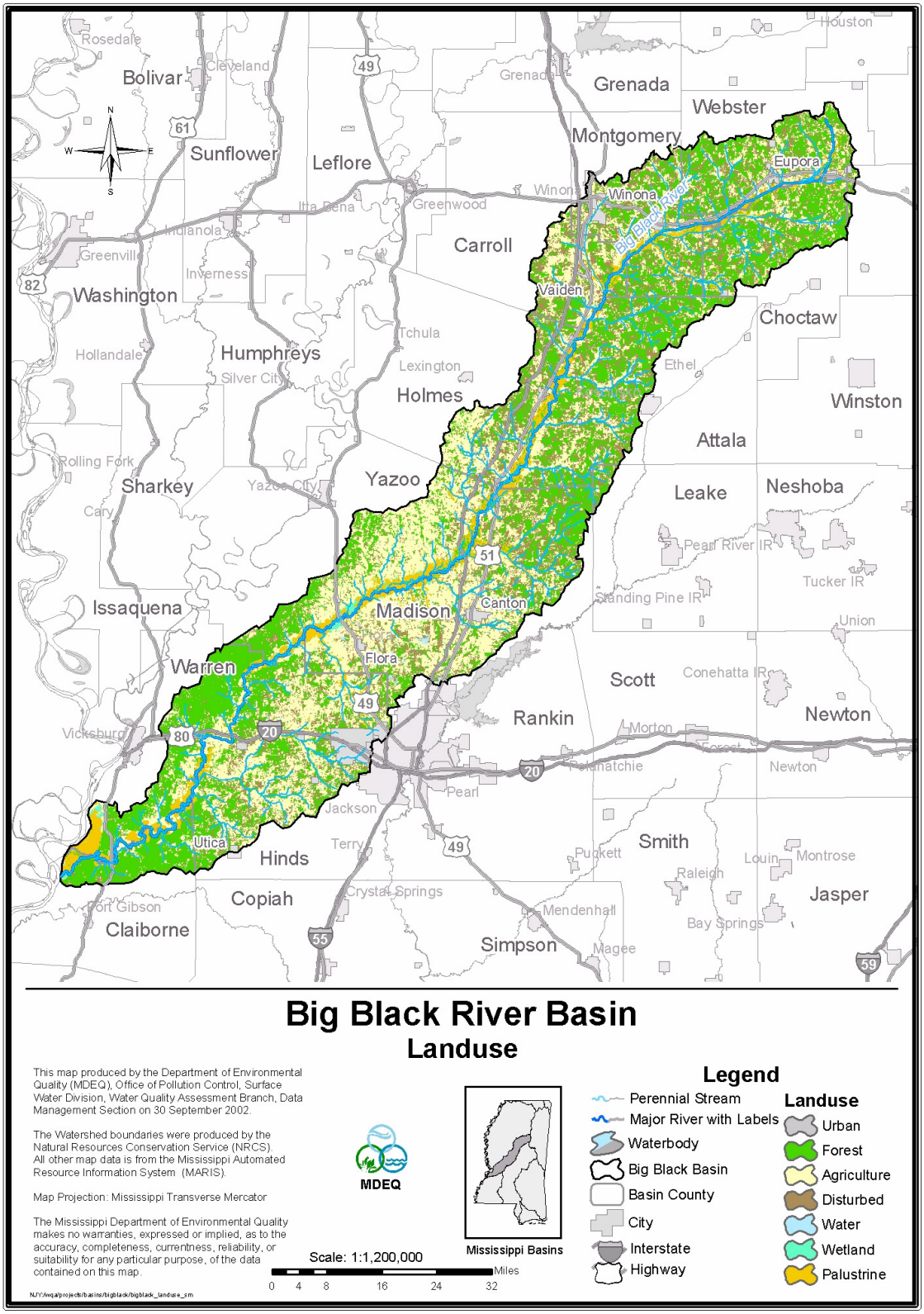


Figure IV: Landuse Map

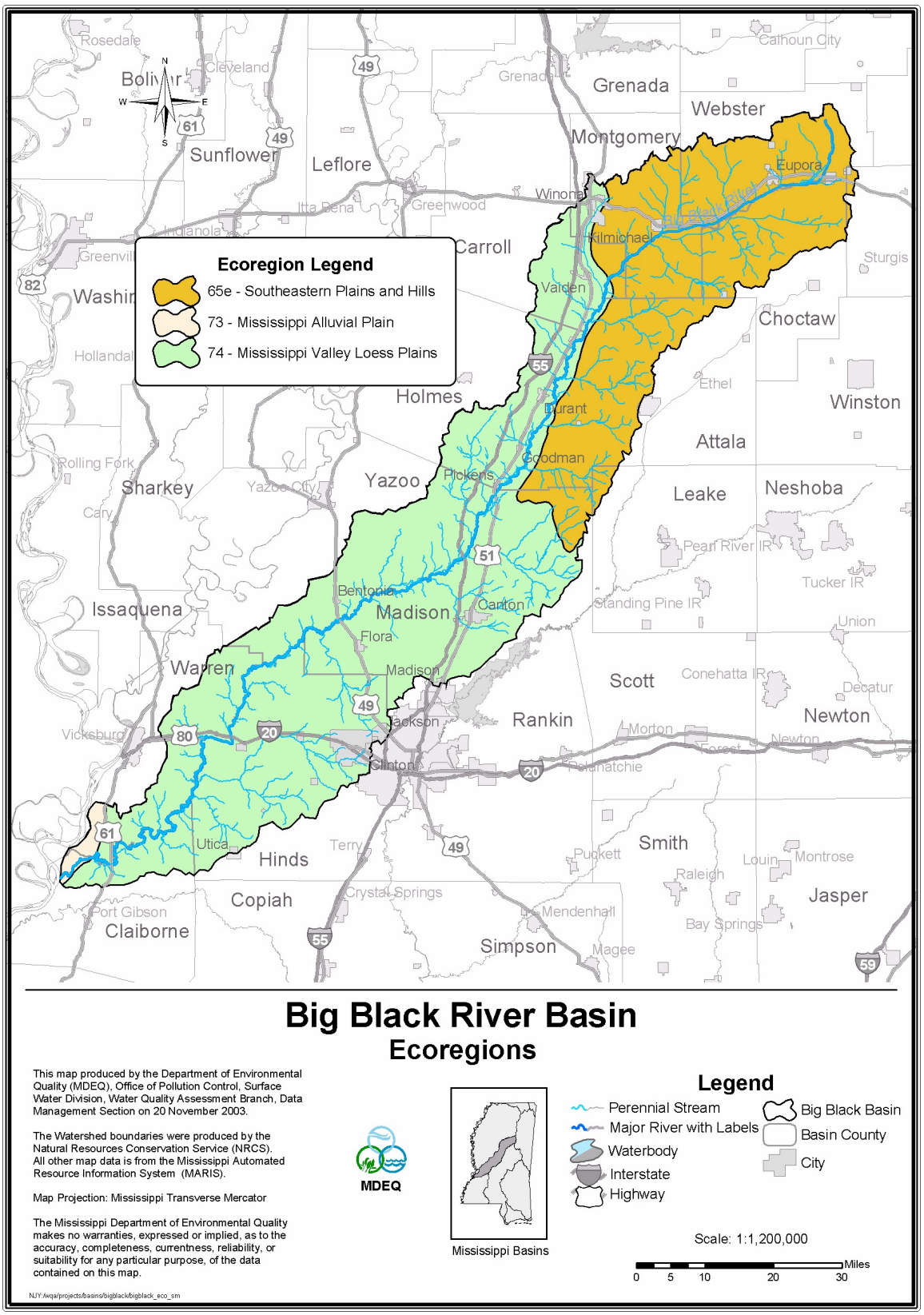


Figure V: Ecoregions Map

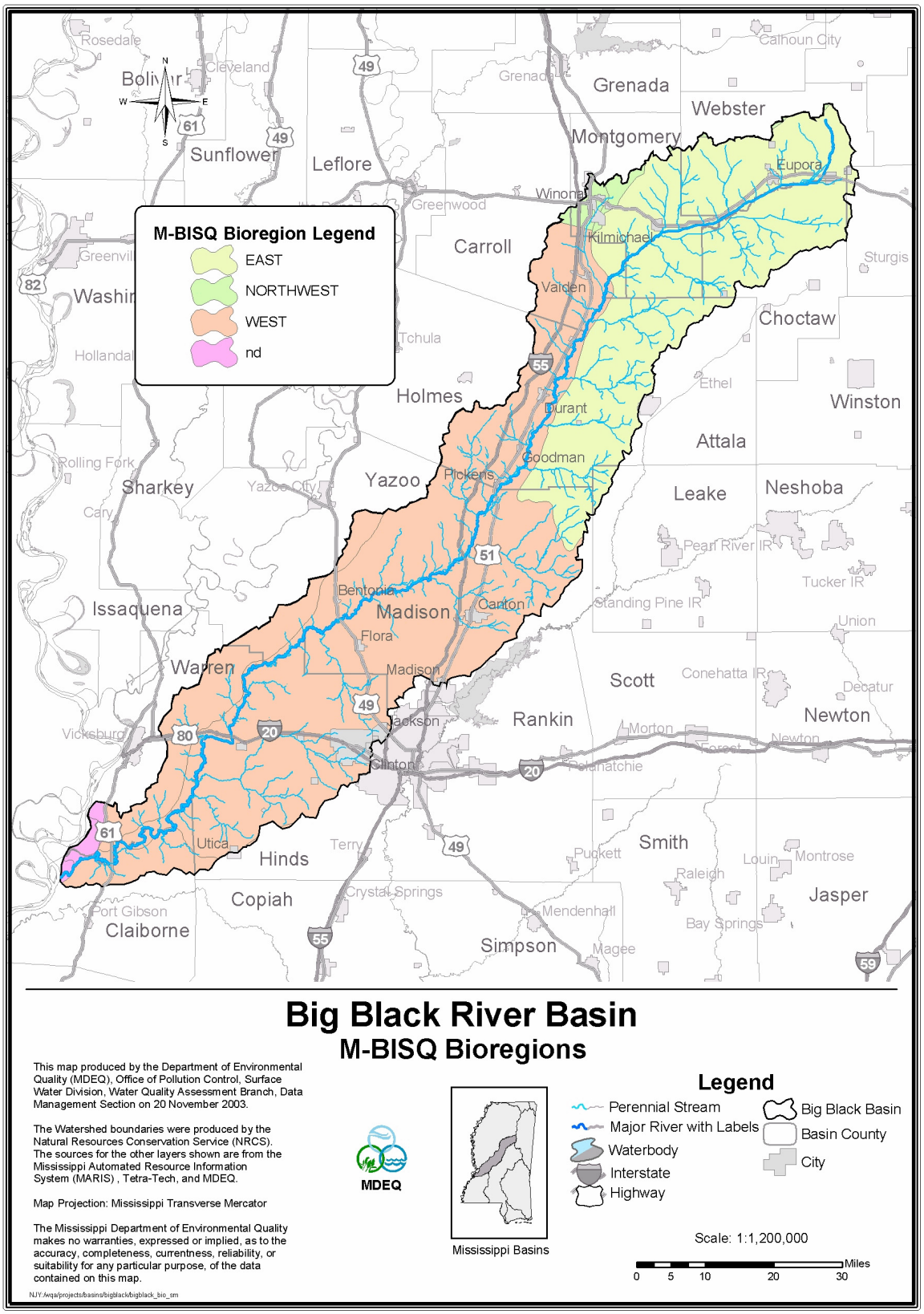


Figure VI: M-BISQ Bioregions Map

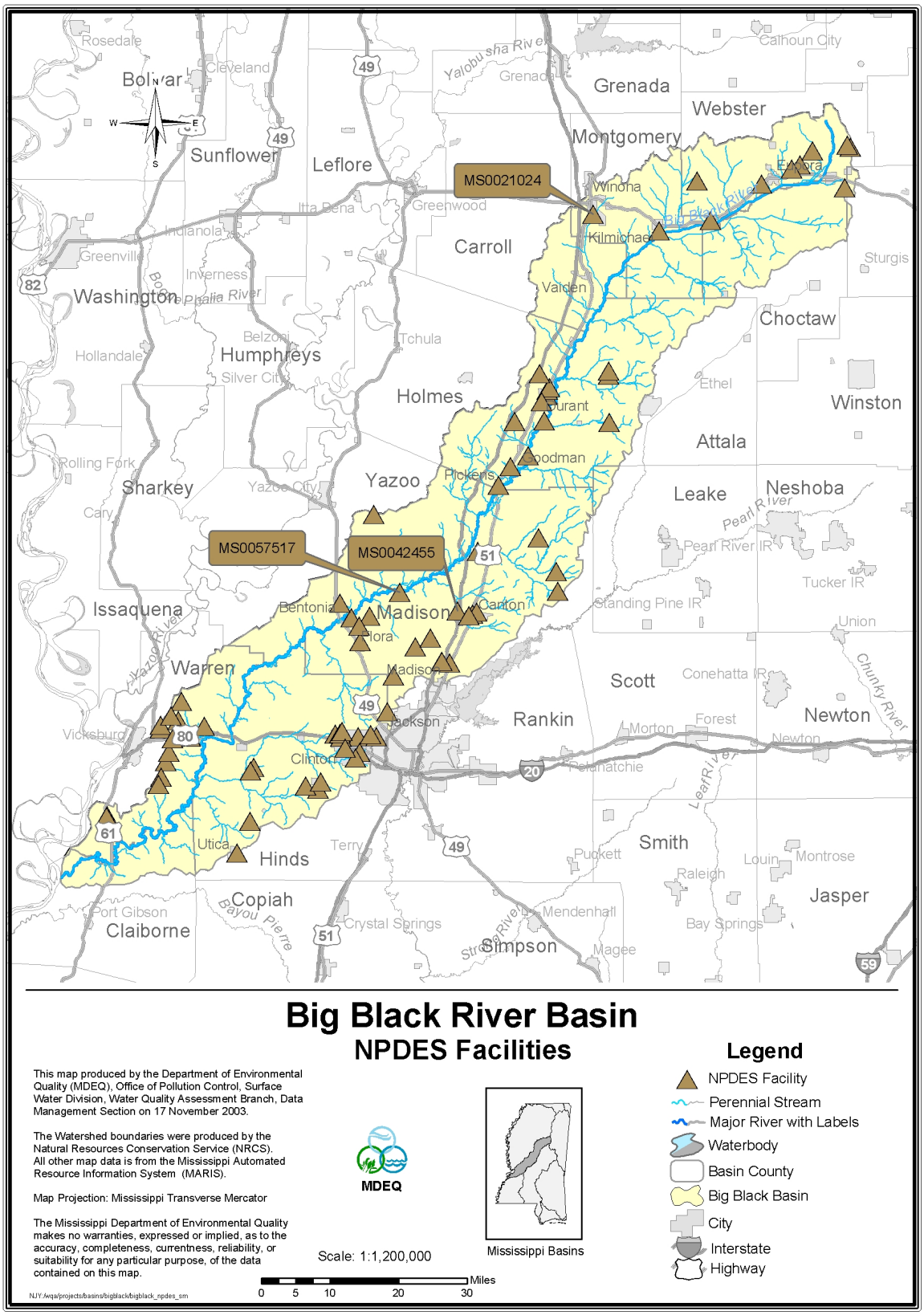


Figure VII: NPDES Facilities Map

Designated Use Support

The assessments for the Big Black River Basin consisted of a total of 42 sampling locations in streams and rivers across the basin sampled as part of the §303(d)/IBI wadeable streams project. The perennial streams where the monitoring stations were located represented the mainstem drainage for each 11-digit watershed in the basin. Use support status for the basin is presented and summarized with causes and sources of impairment. No lake acreage was assessed in this report due to the lack of lake monitoring data available for assessment in the basin during this reporting period. A map showing the use support status for the affected water body reaches is presented (Figure VIII) as well as the locations of the monitoring stations that were used in this assessment (Figure IX).

MDEQ assessed approximately 29% (477 miles) of the total 1657 perennial miles of streams and rivers in the Big Black River Basin. The status of water quality on the remaining 71% (1180 miles) of the basin's perennial rivers and streams is unknown. All of the assessments were based on biological monitoring data collected as part of the development of Mississippi's IBI process, M-BISQ. The majority of stream miles (76%) in the Big Black River Basin are composed of intermittent streams and therefore are not readily assessable. There are currently no fish advisories on the waters in the Big Black River Basin nor are there any waters that are designated for primary contact recreation.

A summary of use support for the basin's assessed rivers and streams is found in Table I. As explained in the §305(b) assessment methodology section earlier in this report, the only assessments made in the Big Black River Basin for the 2002 §305(b) assessment are for Aquatic Life Use Support. Of the Big Black River Basin's assessed stream and river miles, approximately 42% of the streams are attaining their aquatic life use, while the remaining 58% are not attaining and are considered impaired. These impaired water bodies can be found listed in Section A (Water Bodies with Monitoring Data) in the Big Black River Basin section of the Mississippi 2002 Section 303(d) List.

TABLE I
Summary of Big Black River Basin Use Support Assessments
Rivers and Streams

(All size units are in miles)

Degree of Use Support	Assessment Basis		Total Size
	Intermittent	Perennial	
Category 1: Attaining All Uses	0	0	0
Category 2: Attaining Some Uses but Unknown for Other Uses	0	200	200
Category 3: Unknown/Insufficient Data for Assessment	4971	1180	6151
Category 4: Not Attaining – No TMDL Needed			
A. TMDL Completed	0	28	28
B. Impairment Caused by Pollution	0	0	0
C. Expected to Attain Use before Next Assessment	0	0	0
Category 5: Not Attaining – TMDL Needed			
A. Pollutant Identified	0	0	0
B. Biological Impairment- Cause Unknown	0	249	249
Total Miles	4971	1657	6628

Total River/Streams Miles in Basin	6628
Size Not Assessed	6151
Total Perennial Miles	1657
Perennial Miles Assessed	477

Causes and Sources of Impairment of Designated Uses

Causes and sources of impairment were evaluated for streams and rivers having one or more uses impaired. Total assessed sizes of streams and rivers affected by various cause categories are given in Table II. For the majority of miles of assessed rivers not meeting their designated uses, impairment is caused by unknown pollutants or other factors contributing to biological impairment. In these cases, actual monitoring has detected biological impairment but the exact pollutant cause has yet to be determined. For these impaired waters, the next step in the State's water quality management process will be to conduct stressor identification analyses to identify the stressor(s) causing the impairment. Once the stressor(s) are identified, the Total Maximum Daily Load (TMDL) process where applicable can proceed. For stressors identified that are not applicable to the TMDL process, other water quality management actions will be needed.

Total sizes of rivers and streams affected by various source categories are given in Table III. As above, the majority of impairment was determined to be biological and therefore sources of the impairment are yet to be determined.

TABLE II
Summary of Impairment Causes for Big Black River Basin
Rivers and Streams
(All size units are in miles)

Cause Categories	Total Size
Other (Bio Impairment)*	249

* Note: Definitive cause identification is not possible at the time of assessment. Category used to relate to waters where biological indicators (macroinvertebrates) were used and impairment was indicated but further investigation needed to quantify pollutant.

TABLE III
Summary of Impairment Sources for Big Black River Basin
Rivers and Streams
(All size units are in miles)

Source Categories	Total Size
Source Unknown*	249

* Note: Definitive source identification is not possible at the time of assessment. Category used to relate to waters where biological indicators (macroinvertebrates) were used and impairment was indicated but further investigation needed to quantify source.

Figure VIII depicts a geo-referenced coverage of the Aquatic Life Use Support assessments for the Big Black River Basin and Figure IX shows the monitoring locations where data were collected for this assessment. Table IV provides a list of the monitoring stations depicted in Figure IX.

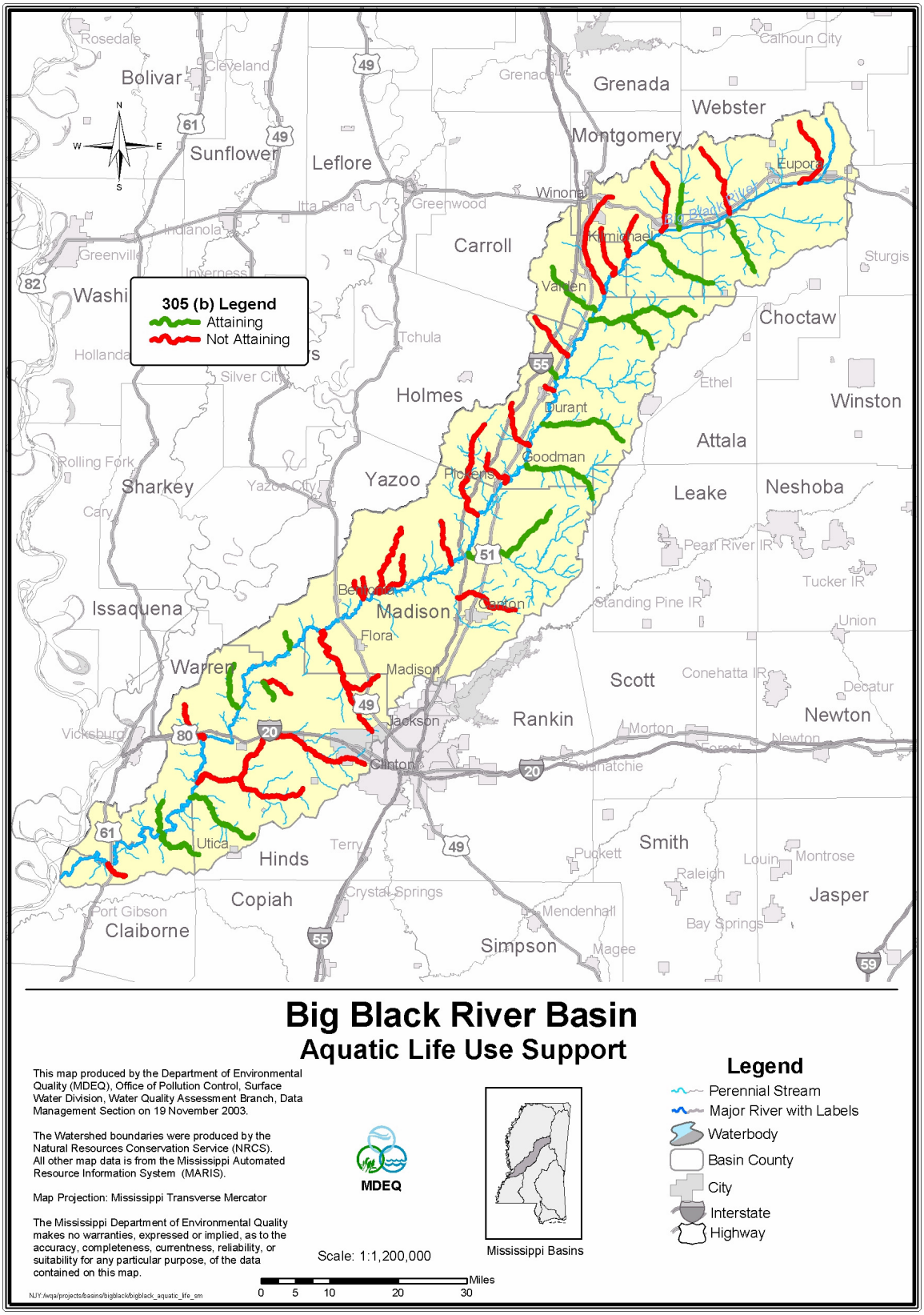


Figure VIII: Aquatic Life Use Support Map

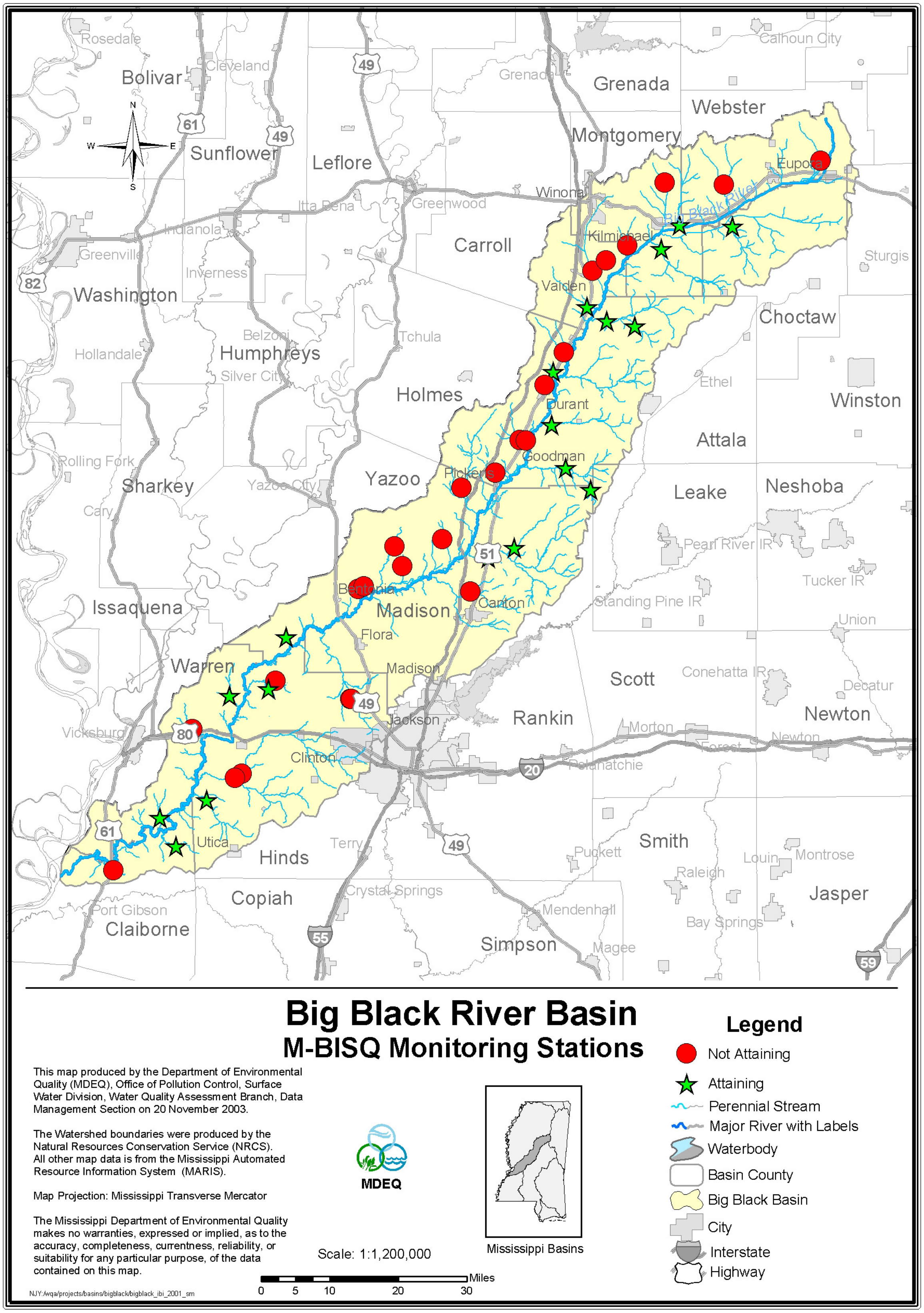


Figure IX: M-BISQ Monitoring Stations

Table IV
Monitoring Stations, Locations, and Attainment Status
Results from Mississippi 303(d)/IBI M-BISQWadeable Streams Project
Big Black River Basin
2001

Station Number	Stream Name	Location	Bioregion	Status
163	Hays Creek	nr Vaiden	West	Impaired
164	Peachahala Creek	nr Vaiden	West	Unimpaired
173	Calabrella Creek	nr Pellez (200 m from CR 65 crossing)	East	Impaired
174	Lewis Creek	nr Winona	East	Impaired
175	Mulberry Creek	nr Sibleyton (~100m US from Salem Rd crossing)	East	Impaired
176	Wolf Creek	nr Sibleyton (350 m DS of Hwy 82 Rd crossing)	East	Unimpaired
178	McCurtain Creek	nr Eupora (150 m nr. Eupora)	East	Unimpaired
179	Poplar Creek	nr Poplar Springs (150m US from Watson Rd. crossing)	East	Unimpaired
184	Spring Creek	nr Sapa (200m US of CR 132)	East	Impaired
222	Cypress Creek	nr Myrleville	West	Impaired
223	Deer Creek	nr Scotland	West	Impaired
226	Indian Creek	nr Dover	West	Impaired
227	Walesheba Creek	nr Dover	West	Impaired
233	Howard Creek	nr Durant	West	Unimpaired
235	Jourdan Creek	nr Durant	West	Impaired
236	Indian Creek	nr Vaiden	West	Impaired
237	Box Creek/Green's Creek	nr Goodman	West	Impaired
238	Long Creek	nr Sallis	East	Unimpaired
239	Tackett Creek	nr Pickens	West	Impaired
240	Senesha Creek	nr Goodman (@CR 4002)	East	Unimpaired
241	Big Cypress Creek	at Hwy 432	West	Impaired
242	Rambo Creek	nr Madison/Leake Co. Lin	East	Unimpaired
243	Ellison Creek	at Fowler Road	West	Impaired
244	Hobuck Creek	at Stump Bridge Road (150m US of bridge)	West	Unimpaired
247	Scoobachita Creek	nr Hwy 35	East	Unimpaired
248	Zilpha Creek	nr Vaiden	East	Unimpaired
292	Clear Creek	nr Bovina	West	Impaired
293	Hamer Bayou	nr Vicksburg	West	Unimpaired
295	Big Sand Creek	at Nathcez Trace	West	Unimpaired
296	Beaver Creek	nr Mechanicsburg	West	Unimpaired
297	Bogue Chitto Creek	nr Nevada	West	Impaired
299	Cox Creek	nr Edwards	West	Impaired
300	Porter Creek	nr Edwards	West	Unimpaired
301	Bear Creek	nr Youngton	West	Unimpaired
303	Bakers Creek	nr Edwards	West	Impaired
304	Fourteen Mile Creek	nr Edwards	West	Impaired
306	Five Mile Creek	nr Newman	West	Unimpaired
309	Tilda Bogue Creek	nr Canton (US from bridge on Hwy 16)	West	Impaired
356	Kennison Creek	nr Willows	West	Impaired
557	Betsy Creek	nr Vaiden	East	Impaired
703	Doaks Creek	At Way Road	West	Unimpaired
763	Unnamed Tributary in Greens Creek	Near Goodman at Powerline Clearcut	West	Impaired

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Appendix A

MISSISSIPPI CALM
(Consolidated Assessment and Listing Methodology)

2002 Assessment and Listing Cycle

Data Requirements and Assessment and Listing Methodology to Fulfill the Requirements of Sections 305(b) and 303(d) of the Clean Water Act (CWA)

INTRODUCTION

This document represents the Mississippi Department of Environmental Quality's (MDEQ) initial efforts to develop a CALM process. While this document is Mississippi's CALM for the 2002 reporting cycle, it is subject to revision in subsequent reporting cycles.

A primary goal of surface water quality assessments, as required by Section 305(b) of the CWA, is to describe the condition of the state's surface waters to EPA and the public. A secondary goal of the §305(b) assessment process is to provide the necessary assessment information for use in the development of the state's CWA Section 303(d) List of Water Bodies. To achieve these goals, it is necessary to have requirements and guidelines for how water quality data are collected, analyzed, and assessed. The purpose of this document is to specify MDEQ's data requirements and assessment guidelines for the 2002 §305(b) assessment and §303(d) listing cycle. In addition to using its own data, MDEQ solicits and considers all readily available data and information collected by other agencies and the public for the most recent five years prior to the assessment. For the 2002 Section 305(b) Report, the data window was from 1997-2002. This data solicitation effort is facilitated through Mississippi's Basin Management Approach. In addition, MDEQ will contact federal and state resource agencies that have contributed data in previous assessment and listing cycles. In addition, the public may submit water quality data for consideration through the §303(d) public participation process. All data used to make formal assessments of the quality of the state's waters, regardless of its source, will be evaluated in keeping with the requirements and guidelines contained herein. These assessments involve comparing data to the state's Water Quality Standards (State of Mississippi Water Quality Criteria for Intrastate, Interstate and Coastal Waters) {WQS} to make decisions on whether a water body is attaining or not attaining its designated use(s). These uses include aquatic life support, contact recreation, fish/shellfish consumption, and drinking water uses. Where data and information of appropriate quality and quantity indicate non-attainment of a designated use or uses for an assessed water body, the water body will be placed on Mississippi's 2002 Section 303(d) List of Water Bodies.

All data and information collection activities may not meet the quality, quantity, and sampling frequency requirements given below. However, these data and information collection activities serve a useful purpose. Consequently, MDEQ will not disregard these data in the §305(b) assessment process. Data and information that do not meet the requirements stated in this methodology will be used for a listing decision when those data demonstrate compelling evidence of the water quality condition of a water body (i.e.,

catastrophic or obvious environmental or public health impacts). In addition, these data and information may be used in other MDEQ programs (e.g., permitting, nonpoint source, complaint response and resolution, etc.).

MDEQ will utilize the following guidelines for Data Quality, Data Quantity, and Data Assessment for data used in the §305(b) assessment and §303(d) listing process. These guidelines apply, as appropriate, to rivers, streams, lakes, estuaries, and coastal waters.

MDEQ's ability to make meaningful and scientifically defensible statements about the overall water quality of a water body depends directly on the vigor and quality under which the water quality data are collected, analyzed, and reported. Data generated by MDEQ, other agencies, and individuals should be of the quality necessary to make credible and realistic assessment decisions on the condition of the state's waters. Whenever possible, data need to be of the highest quality and developed using sampling and analytical protocols and standard operating procedures recognized by state and EPA quality assurance (QA) program plans. However, no data will be assessed from data-reporting entities that do not provide information or documented SOPs or procedures, if requested.

AQUATIC LIFE USE SUPPORT (ALUS)

The aquatic life designated use is indicative of healthy aquatic life for such organisms as fish, benthic macroinvertebrates, and periphyton (algae). Indicators appropriate for use in ALUS determinations include biological, chemical, physical, and toxicological data. Biological community surveys are the most desirable for ALUS determinations since they directly measure the overall biological or ecological condition of a water body. MDEQ will give greater weight to biological community data when making ALUS use support determinations. For 2002, ALUS determinations will be primarily based on benthic macroinvertebrate data.

Biological Community Data

Data Quantity:

1. Minimum of one benthic macroinvertebrate community (i.e., bottom-dwelling aquatic insects, worms, clams, etc.) survey within the applicable 5-year §305(b) reporting period.

2. Sample collection methods, and lab processing, taxonomy and enumeration methods are compatible with MDEQ SOPs used to develop the Mississippi Benthic Index of Stream Quality (M-BISQ).

Assessment Methodology:

MDEQ recently developed M-BISQ to provide the state with a sound scientific methodology for accurately monitoring and assessing the overall ecological condition of most of the state's wadeable streams (streams in the Delta are not presently included)

using benthic macroinvertebrates. The detailed assessment methodology based on M-BISQ for Aquatic Life Use Support and used for the 2002 §303(d) list is found in Appendix A.

Attaining:

Sites where the M-BISQ score is at or above the 25th percentile of the bioregional reference condition.

Not Attaining:

Sites where the M-BISQ score is below the minimum score of the bioregional reference condition.

Note: See Appendix A for clarification of the methodology used to assess waters with M-BISQ scores that fall between the 25th percentile and the minimum score of the bioregional reference condition.

Water Chemistry

Only data for parameters for which Mississippi has adopted numeric water quality criteria in Mississippi's WQS will be used for making a water body §305(b) use support determination and/or a §303(d) listing. Other parameters for which numeric criteria have not been adopted (e.g., nutrients) will be shown as impairment causes only if there is an identified association with violations of a parameter for which the state has a numeric criterion (e.g., elevated nutrients causing violations of the dissolved oxygen criterion). In addition, where data indicate only a slight variation from a criterion, the magnitude of the variation, as well as other site-specific natural influences (e.g., low pH in geographic regions with natural acidic soils and blackwater streams), will be taken into consideration. Professional judgment will be used for making use support determinations in these cases. Furthermore, no monitoring location will be assessed as not attaining water quality standards based on the results of a single chemical sampling event. This is due to the possibility of an anomalous environmental condition. No water body will be assessed as attaining ALUS using a set of water chemistry data that does not include dissolved oxygen (DO) data, a critical piece of environmental information for ALUS in the absence of biological community data.

Dissolved Oxygen (DO)

Mississippi's DO criterion is based on daily arithmetic (i.e., 24-hour) averages and an instantaneous minimum as defined in the state's water quality standards. In Mississippi streams, the minimum DO concentration is generally observed during the environmentally critical condition, which is near the sunrise hours in the summer/fall low-flow index period. Consequently, 24-hour or diel monitoring, conducted manually or using automated in-situ dataloggers or sondes, is the preferred means of data collection for dissolved oxygen in order to make a meaningful assessment. MDEQ realizes that the majority of ambient monitoring DO data are often collected instantaneously in the late morning to the early afternoon hours (i.e., 10:00 a.m. to 2:00 p.m.). Therefore, in the absence of diel monitoring data, MDEQ will compare DO data to the instantaneous minimum criterion of 4.0 mg/L when the data requirements (as outlined below) are achieved.

DO Data Quantity:

1. **Daily Average Measurements (i.e., <u>diel monitoring</u>):**
   A. A minimum of 3 sampling events distributed over a 2-year period within the 5-year §305(b) data window collected during the environmentally critical condition that generally occurs during a summer/fall index period (i.e., June 1 through October 1).
   B. A minimum of 24 consecutive hours of measurements per event. For events in excess of 24-hours, the time frame for the sampling event begins with the first measurement taken after deployment of the data sonde.
   C. Each 24-hour sampling event should be spaced at least 1 week apart. With the use of in-situ dataloggers or sondes, a minimum sampling interval of 1 measurement per hour is required. If monitoring is conducted manually, 1 measurement every 4 hours is the required minimum sampling interval.
   D. Measurements should include collection at the appropriate sample depth as specified for dissolved oxygen in Section II.7 of the state's WQS document.

2. **Instantaneous Minimum:** Instantaneous measurements of DO will be considered for use support determinations as follows:
   A. When data are collected during the environmentally critical condition which generally occurs during a summer/fall index period (i.e., June 1 to Oct 1) at the critical time of day (i.e., between 5:00 a.m. and 9:00 a.m.), and meet the following data requirements:
      1. Minimum of 20 data points within a 5-year period.
      2. No more than one-half (i.e., 10 measurements) of the data are collected in any one year.
   B. When data indicate a violation of instantaneous water quality criterion for DO at the non-critical condition (i.e., outside the summer/fall index period and time of day guidelines) and meet the following data requirements:
      1. More than 1 measurement is in violation of WQS.
      2. Measurements showing violations are spaced at least 1 week apart.
   C. Measurements should include collection at the appropriate sample depth as specified for dissolved oxygen in Section II.7 of the state's WQS document.

Assessment Methodology:

Daily Average: When assessing diel dissolved oxygen data against the daily average criterion, assessments for dissolved oxygen will be made as follows:

Attaining:

A daily average equal to or greater than 5.0 mg/L is met in 90% of the 24-hour sampling events.

Not Attaining:

A daily average of less than 5.0 mg/L is observed in greater than 10% of the 24-hour sampling events.

Instantaneous: In cases where only instantaneous DO data are collected during the critical condition, the instantaneous criterion of 4.0 mg/L will be used and assessments for dissolved oxygen will be made as follows:

Attaining:
Instantaneous criterion met in 90 percent of the samples.

Not Attaining:
Instantaneous criterion violated in greater than 10 percent of the samples. In addition, when a violation of the instantaneous criterion is observed during the non-critical time of day and a second violation is observed at a minimum of one week later, the monitoring location may be assessed as not attaining. The magnitude of the violation, as well as other site-specific natural influences (i.e., low DO in estuaries and naturally stratified waters), will be taken into consideration and professional judgment applied in making use support determinations.

Note: Where a variance or site-specific criterion exists, that criterion will be used for assessment.

Conventional Chemical Data Other Than DO

Some conventional parameters (i.e., temperature, pH, total dissolved solids, specific conductance, and chlorides) listed in the state's water quality standards do not have daily average criteria. These parameters may be measured instantaneously, but are often measured along with DO using automated equipment capable of recording diel measurements for extended periods of time. The assessment guidelines given below will be used for determining use support.

Data Quantity:

1. **Diel Measurements:**
   A. A minimum of 3 sampling events over a 2-year period within the 5-year §305(b) data window collected during the environmentally critical condition for the parameter of concern.
   B. A minimum of 24 consecutive hours of measurements per event. For events in excess of 24-hours, the time frame for the sampling event begins with the first measurement taken after deployment.
   C. Each 24-hour sampling event should be spaced at least 1 week apart. With the use of in-situ dataloggers or sondes, a minimum sampling interval of 1 measurement per hour is required. If monitoring is conducted manually, 1 measurement every 4 hours is the required minimum sampling interval.
   D. Measurements should include collection at the appropriate sample depth as specified for temperature in Section II.9 of the state's WQS document.

2. **Instantaneous Measurements:**
   A. Minimum of 20 total data points within a 5-year period.
   B. At least one-third of the data should represent the environmentally critical period for the parameter of concern.
   C. No more than one-half of the data should be collected in any one year.
   D. Measurements should include collection at the appropriate sample depth as specified for temperature in Section II.9 of the state's WQS document.

Assessment Methodology:

When assessing data for temperature, pH, TDS, specific conductance, and chlorides, use support will be assigned as follows:

Attaining:

Instantaneous criterion met in 90 percent of the samples.

Not Attaining:

Instantaneous criterion violated in greater than 10 percent of the samples. In addition, the magnitude of the violation, as well as other site-specific natural influences (i.e., low pH in naturally acidic waters, high conductivity in tidally affected freshwater streams), will be taken into consideration and professional judgment applied in making use support determinations.

Toxicants (i.e., Metals, Organics and Ammonia)

During most routine ambient monitoring, water column toxicants are measured using screening level (i.e., "unclean") sampling and analytical techniques. These data will not be used to make use support determinations for §305(b) assessments. However, these data will be reviewed as part of the §305(b) process. When concentrations above the state's water quality criteria are observed, follow-up sampling will be scheduled utilizing "clean" sampling and analytical procedures or techniques. Data for toxicants will be assessed when data requirements (as outlined below) are achieved. In addition, MDEQ does not routinely collect in-stream data on toxicants in a manner that is comparable with stated chronic criteria (i.e., four-day average); therefore, data for toxicants will only be assessed against acute criteria (i.e., one-hour average). However, if data are collected in a manner suitable for a computation of an average 4-day chronic concentration (minimum of one sample per day for four consecutive days) of the toxicant, that data will be assessed against the chronic standard.

Data Quantity:

Minimum of 10 data points within a three-year period within the 5-year §305(b) data window collected using clean techniques.

Assessment Methodology:

Assessments will be made as follows:

Attaining:

The acute or chronic criterion met in at least 90% of the samples.

Not Attaining:

Acute or chronic criterion is violated in more than 10% of the samples.

RECREATION USE SUPPORT

The recreation designated use is intended for the protection of waters suitable for recreational purposes including such primary water contact activities as swimming and water skiing as well as secondary incidental water contact activities as wading, fishing, and boating. Indicators appropriate for use in recreation use support determination include fecal coliform, enterococci, and E. coli bacteria. Fecal coliform bacteria is the bacteriological parameter for which the state has adopted numeric criteria and will be used for assessment in 2002.

Fecal Coliform Bacteria

Data Quantity:

1. A minimum of 4 sampling events distributed over a 2-year period within the 5-year §305(b) data window.
2. A sampling event consists of a minimum of 5 samples distributed over a 30-day sampling period with each sample spaced at least 12 hours apart.
3. In each year, a minimum of 1 sampling event will be taken in each of the contact and non-contact recreational seasons defined in the state's WQS.

Assessment Methodology:

When assessing sites with fecal coliform data with more than two years of data, greater weight may be given to more recent sampling events during the 5-year data window. Greater weight will also be given to geometric mean values over instantaneous measurements when making a use support determination for the water body. Assessments for Primary Contact Recreation or Secondary Contact Recreation will be assigned as follows:

Attaining:

Data indicate that both instantaneous and geometric mean criteria are met in 90% of the 30-day sampling events.

Not Attaining:

If the geometric mean criterion as given in the state's water quality standards is violated in greater than 10% of the 30-day sampling events; or, if monitoring data indicate that the instantaneous criterion for fecal coliform is exceeded more that 10 percent of the time in 2 or more 30-day sampling events.

FISH CONSUMPTION USE SUPPORT

The fish consumption designated use is intended to provide for the protection of human health from fish tissue obtained for human consumption. Indicators appropriate for fish consumption use support determinations include the actual levels of bioaccumulative chemicals in fish tissue.

For the 2002 §305(b), the only assessment rendered will be that of nonattainment of the fish consumption use. This assessment will be based on the presence of a fish consumption advisory that is supported by water body specific fish tissue monitoring. These advisories are issued by MDEQ and the Mississippi Department of Health after consultation with a Fish Advisory Task Force made up of representatives from several state agencies. Waterbodies that have fish consumption advisories (i.e., restricted or no consumption advisories), based on actual data for the specific water body, will be assessed as not attaining the Fish Consumption Use Support designation.

SHELLFISH CONSUMPTION USE SUPPORT

The shellfish consumption designated use is applicable to coastal estuarine waters in Mississippi specifically identified for shellfish harvesting in the state's WQS. This use is intended to provide for the safe propagation and harvesting of shellfish for human consumption. The National Shellfish Sanitation Program (NSSP) determines these classifications. The Mississippi Department of Marine Resources administers this program for Mississippi coastal waters. Indicators appropriate for shellfish consumption use support determinations include the actual levels of pollutants in shellfish tissue and ambient waters.

Attainment of the Shellfish Harvesting Use is primarily assessed based on the Shellfish Classification system as defined under the NSSP and is supported by actual bacteria (fecal coliform) data for the water bodies being assessed. Waters classified as approved or conditionally approved will be assessed as attaining the shellfish consumption use. Waters classified as restricted or prohibited will be assessed as non-attaining. However, if a water body classified for shellfishing is restricted and/or prohibited solely because of its geographic location (i.e., proximity to a shoreline or a permitted wastewater discharge point), the water body will not be assessed.

DRINKING WATER SUPPLY USE

The drinking water supply designated use is applicable to surface waters in Mississippi specifically identified for public water supply in the state's WQS. This use is intended to provide for a safe source of raw water supply for drinking and food processing purposes. Waters that meet the drinking water supply criteria shall also be suitable for recreational uses. Indicators appropriate for use in drinking water supply use determination include chemical data. Chemical parameters as specifically denoted in the state's WQS document will be utilized for assessment. Data quantity and assessment methodology will follow the same requirements as for those parameters identified under Conventional Chemical Data Other Than DO.

APPENDIX A

Mississippi Benthic Index of Stream Quality (M-BISQ) Assessment Methodology

Mississippi's
2002 Section 303(d) Listing Process
For
Making Aquatic Life Use Support Decisions Using M-BISQ
April 16, 2003

Background

As of 1999, approximately 700 water bodies in Mississippi were listed as impaired; however, little or no quantitative data were used in establishing approximately 550 of these listings. Consequently, MDEQ initiated a project to assess many of the state's §303(d) listed streams using current biological data along with other physical and chemical information. All data were collected according to recently developed methodologies, based in large part on EPA guidance. Data from these streams were calibrated and compared to a threshold for attainment of aquatic life use support (ALUS). That threshold was determined by a process that projected a statistically based reference point, considered representative of a desired reference condition for a given biological region of the state. This effort resulted in development of the Mississippi Benthic Index of Stream Quality (M-BISQ). The M-BISQ was specifically designed for Mississippi's wadeable streams and their associated biology (benthic macroinvertebrate community), and provides the state with a sound scientific methodology for accurately assessing the overall ecological condition of recently monitored streams, as well as those streams scheduled for monitoring in the future. Specifically, macroinvertebrate assessment results from a sampled water body are used to generate a score that can be used to determine attainment or non-attainment of ALUS, and for identifying water bodies as impaired for §303(d) listing purposes. Macroinvertebrates (i.e., primarily aquatic insect larvae) are good indicators of stream health because of their responses to the presence of long-term chemical and physical pollutants and/or conditions. The design of the M-BISQ system addresses natural variability and certain historical, irreversible patterns of disturbance; and the approach allows for acceptable levels of current human disturbance (i.e., levels that do not impair the aquatic life use of the water). For a detailed discussion of the M-BISQ development effort see Development and Application if the Mississippi Benthic Index of Stream Quality (M-BISQ), Mississippi Department of Environmental Quality, June 2003.

Mississippi Benthic Index of Stream Quality (M-BISQ)

In 2000, MDEQ redesigned its biological monitoring and assessment program to develop a more defensible assessment methodology that would result in higher quality data. This included more rigorous training; field sampling; laboratory sorting, subsampling, and taxonomy; analytical methods; assessment protocols; and documentation. Also included were a comprehensive Quality Assurance Project Plan (QAPP) with detailed standard operating procedures (SOPs), revision of data entry and database management

procedures, and documentation of data quality characteristics throughout the entire data collection and assessment process. In 2001, approximately 450 wadeable stream sites were sampled statewide (with the exception of the streams in the Mississippi River Alluvial Plain Ecoregion) during a winter index period for benthic macroinvertebrates, physical habitat quality, substrate particle size distribution, and selected field and analytical chemistry. In 2002, another 80 wadeable stream sites were sampled across the state during a winter index period (again excluding the Mississippi River Alluvial Plain Ecoregion). Further sampling using this biological methodology was conducted earlier in 2003.

A separate effort is underway on a different schedule to develop appropriate methodologies to monitor and assess the waters of the Mississippi River Alluvial Plain Ecoregion.

One goal of the 2001 sampling effort was to identify sufficient stream sites that are representative of least disturbed conditions within unique site classes, or regions of the state. To do this, sites were identified across the state with high amounts of upstream forested land cover, relatively extensive upstream riparian buffer, low urban density in their watersheds, substantial distance away from upstream point source discharges of wastewater, and low concentrations of recently measured water chemistry parameters. These characteristics served as indicators, or surrogates, for likely "least disturbed" conditions, but did not directly imply, measure, or assess aquatic life use support. Using physical and chemical characteristics from these sites, the state was divided into areas of relative ecological similarity. Once samples were collected, and biological metric values (e.g., total taxa, Hilsenhoff Biotic Index, %EPT, etc.) calculated, multivariate analyses were used to document biological variability of the potential "least disturbed" sites, resulting in development of M-BISQ, a calibrated multi-metric index of biological integrity. Using multivariate analyses of the metric values, five site classes or bioregions (i.e., areas of biological similarity) were delineated: the (1) Black Belt; (2) East; (3) Northeast; (4) Northwest; and the (5) West (Figure 1). None of the sites used for site class delineation were specifically known to be impaired, i.e., the state had no previous monitored data indicating non-support of aquatic life use, though not all of these sites may have been previously monitored.

The "least disturbed" sites within each bioregion were considered as a comparison set for that bioregion. The numeric M-BISQ scores for each bioregion's comparison set made up a distribution from which a statistical reference point reflected the concept of "least disturbed" or "best attainable" conditions. The 25th percentile of the M-BISQ score distribution for each bioregional comparison set (Figure 2) was selected as the reference point or threshold of attainment and was considered to approximate the desired reference condition and served as a threshold of attainment of ALUS. Thereafter, this threshold of ALUS attainment for each bioregion was used for comparing biological data collected from the previously unmonitored §303(d) listed streams in each respective bioregion. It was also considered to capture and reflect the inherent certainty, and uncertainty, of the measurement process. To allow for the comparison to the ALUS attainment reference threshold, the biological data from each §303(d) wadeable site sampled were combined

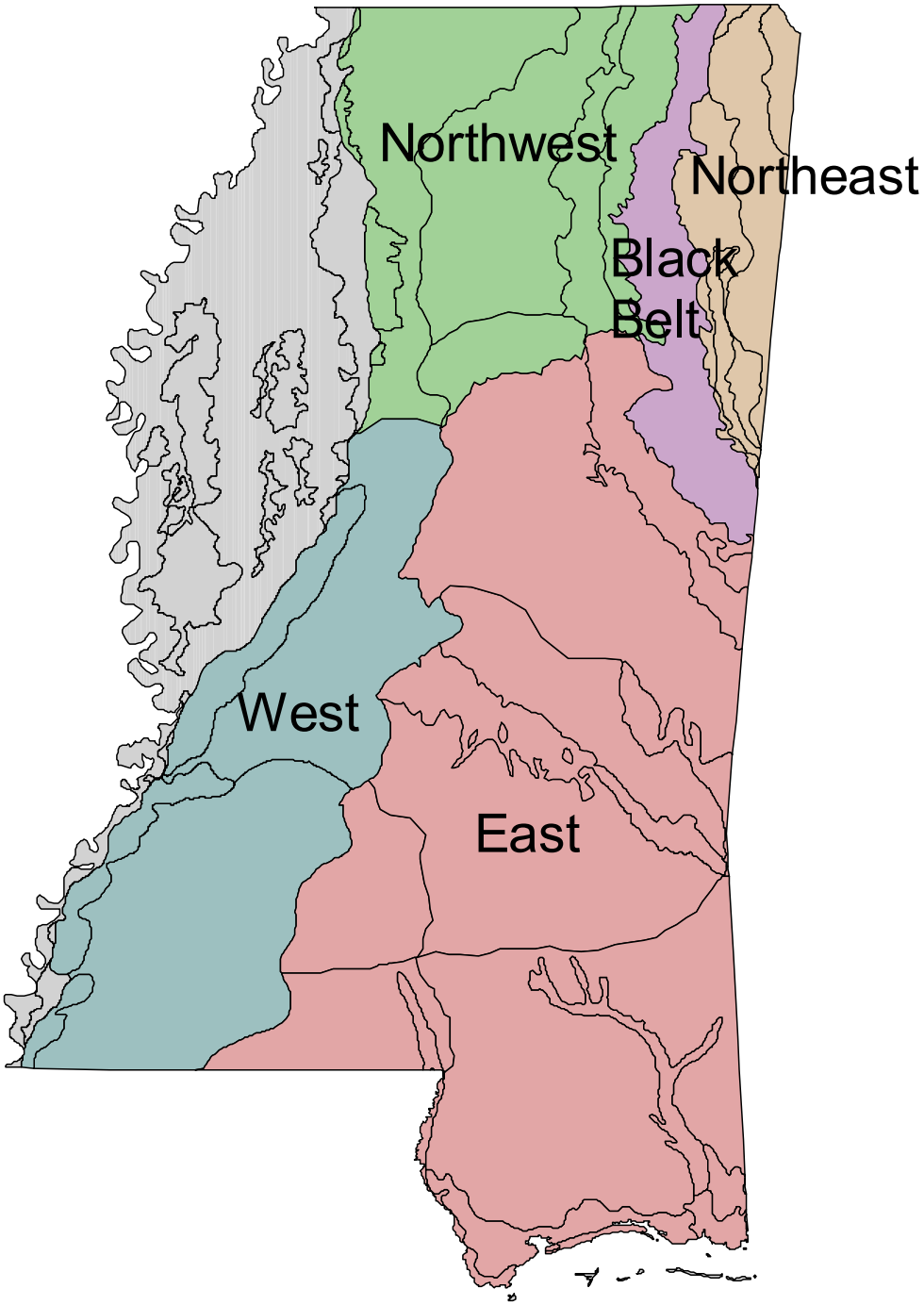

Figure 1. Mississippi's Five Bioregions

into the final multi-metric index score (M-BISQ) for each site. The relationship of the final score to the attainment threshold of the appropriate bioregion determined the assessment status for the site. A more detailed explanation of the 2002 §303(d) listing process is given below in the Assessment Guidelines section.

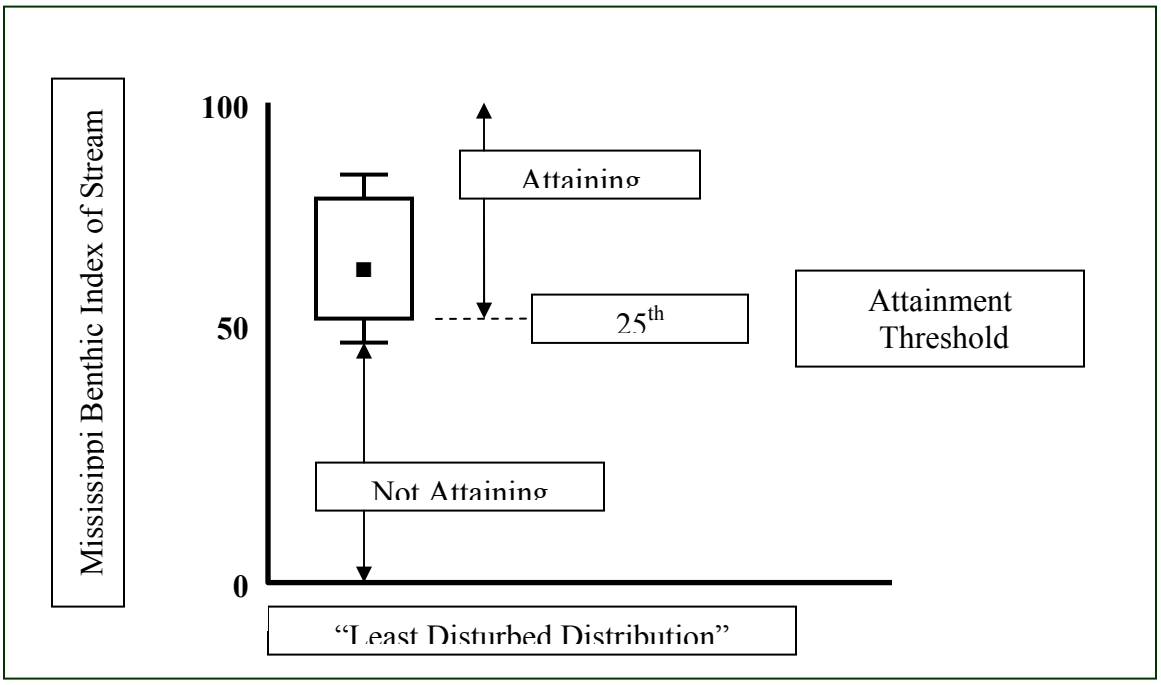

Figure 2. Sample M-BISQ Score Distribution for a Bioregional Comparison Set

M-BISQ Assessment Guidelines for the 2002 §303(d) Listing Process

1. Streams with M-BISQ site scores at or above the attainment threshold (25th percentile) score of the comparison set for their respective bioregion will be considered as ***attaining*** ALUS (not impaired) and will be removed from the §303(d) list, if previously listed.

2. Streams with M-BISQ site scores below the minimum score of the comparison set for their respective bioregion will be considered ***not attaining*** ALUS (impaired) and will remain on, or be added to the 2002 §303(d) list.

3. Streams with scores below the attainment threshold (25^{th} percentile) score, but within the lower quartile (i.e., between the attainment threshold score and the minimum score) of the comparison set for their respective bioregion, will be considered potentially impaired, but will be subject to re-sampling to confirm a score below the attainment threshold (25^{th} percentile) score.

a. Streams with M-BISQ site scores in the lower quartile of the comparison set for their respective bioregion, and currently on the state's 1998 §303(d) Impaired Waters List, will remain on the list. These streams will be re-sampled in the next round of M-BISQ sampling planned for 2003.

b. Streams with M-BISQ site scores in the lower quartile of the comparison set for their respective bioregion, and **not** on the state's 1998 §303(d) Impaired Waters List, will be placed on a "Watch List" (defined below). These streams will be re-sampled in the next round of M-BISQ sampling planned for 2003.

4. The purpose of re-sampling streams with M-BISQ site scores in the lower quartile of the comparison set for their respective bioregion is to confirm whether the streams are actually impaired, (i.e., whether or not they continue to score below the attainment threshold [25th percentile] for their respective bioregion). Additional technical and policy discussions with EPA are planned prior to the development of the state's 2004 §303(d) list regarding the interpretation of M-BISQ scores from re-sampled sites.

5. Definition of MDEQ's *Watch List.* MDEQ's *watch list* is a list of water bodies targeted for priority monitoring. The *watch list* includes water bodies with M-BISQ scores in the lower quartile of their respective comparison set (but not previously listed on the §303(d) list), which is an indication of potential impairment within the precision of the M-BISQ process. Before adding a water body from the *watch list* to the §303(d) list, the state intends to confirm a water's status and potential impairment with a re-sample to address the uncertainty of the original sampling event (not the uncertainty inherent in comparison set analysis).

   MDEQ recognizes that in the interim, prior to scheduled resampling, waters on the *watch list* will need sufficient protection in consideration of their potential impairment. Careful evaluation of new or expanding point source activities that could affect the water quality of a water body on the watch list will be conducted. In particular, permit actions related to water bodies on the *watch list* will be thoughtfully and carefully reviewed. Further policy discussions related to permitting activities on these water bodies are planned between the state and EPA to insure that the water quality of water bodies on the state's *watch list* is adequately protected.