

Draft

ER-84/S18



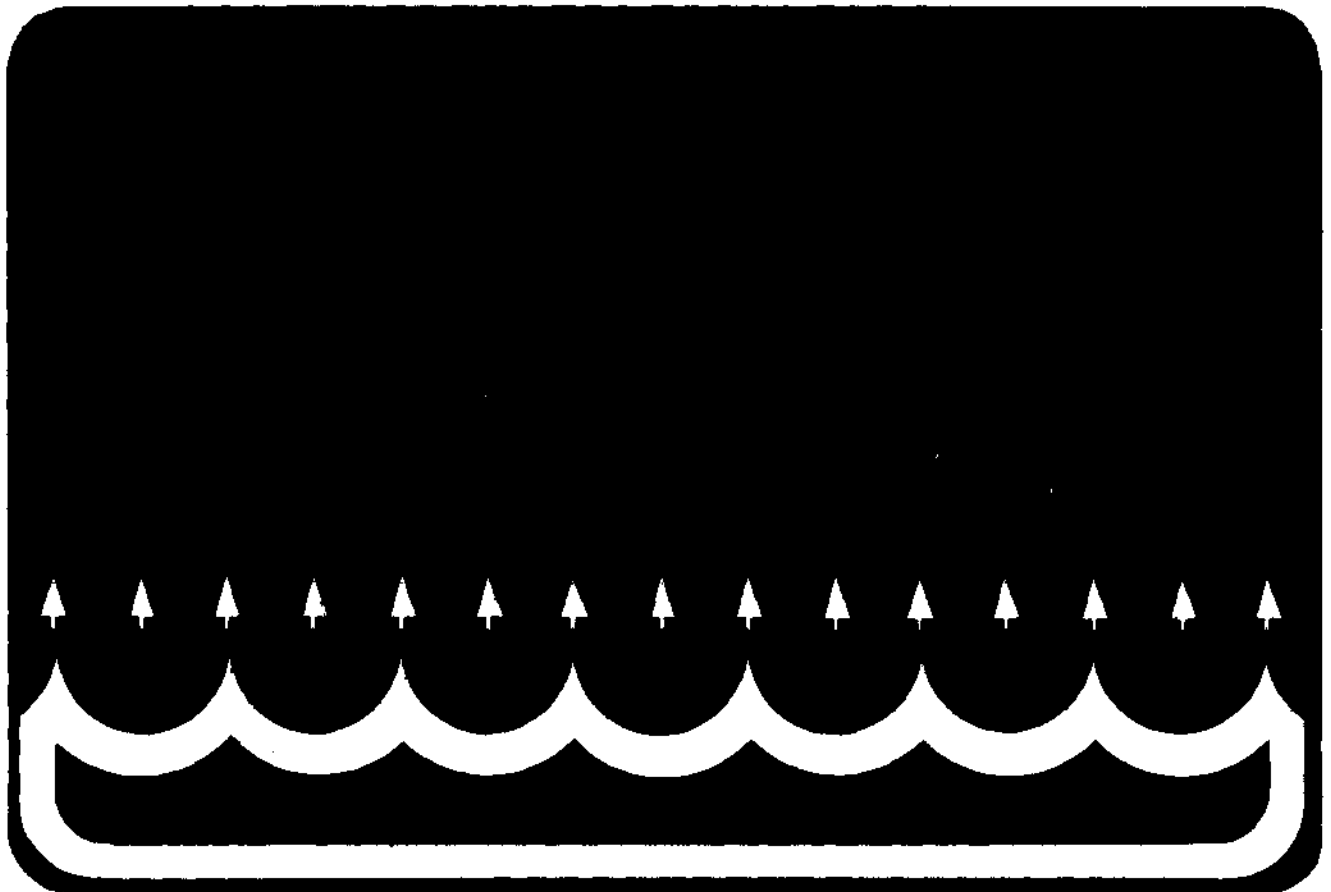
United States
Department of
Agriculture

Forest Service

National Forests
in Mississippi



Black Creek Wild and Scenic River Draft Environmental Impact Statement and Study Report



ER-84/518



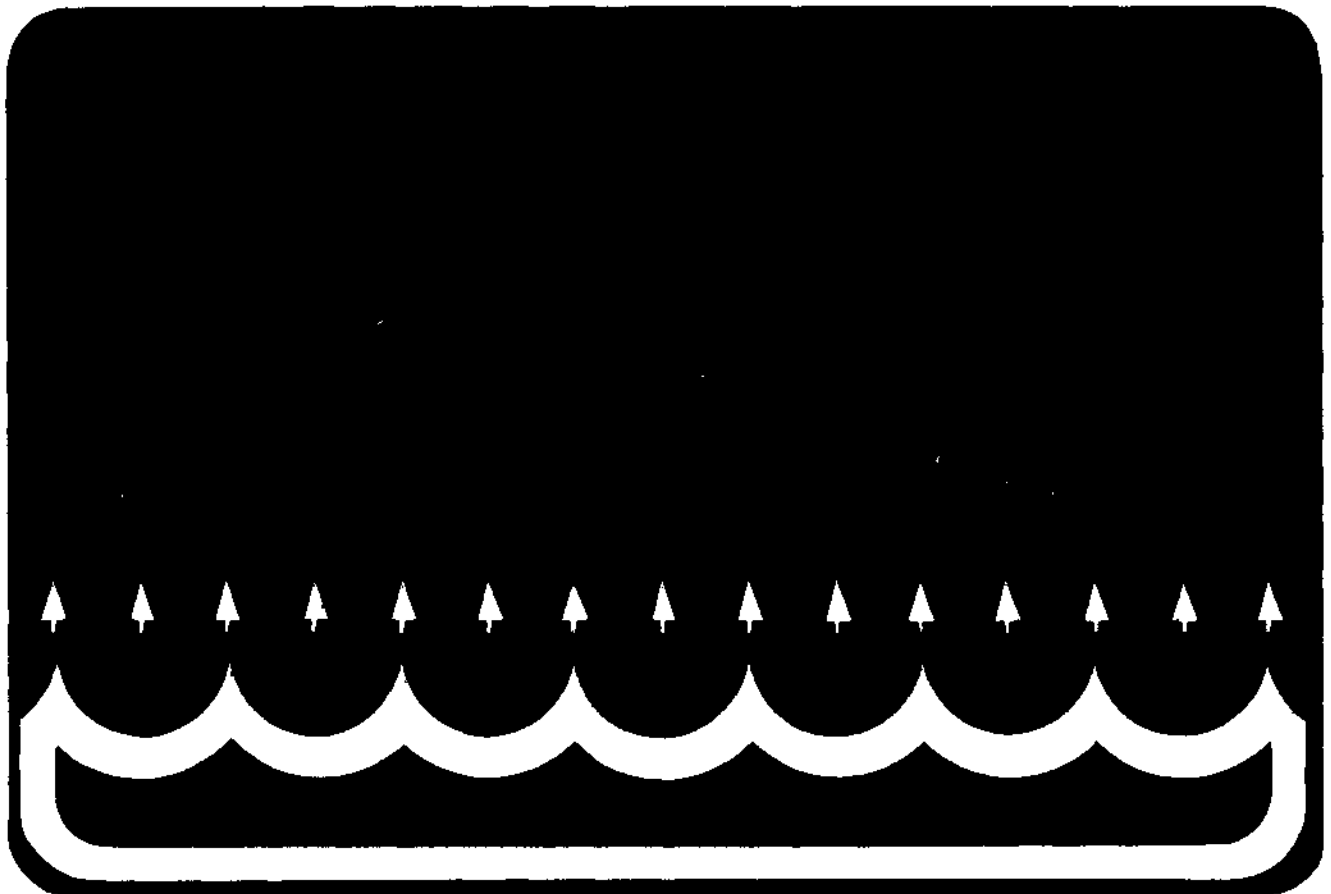
United States
Department of
Agriculture

Forest Service

National Forests
in Mississippi



Black Creek Wild and Scenic River Draft Environmental Impact Statement and Study Report



90316-211

DRAFT ENVIRONMENTAL IMPACT STATEMENT

and

WILD AND SCENIC RIVER STUDY REPORT

BLACK CREEK
Forrest, Perry, and Stone Counties
Mississippi
De Soto National Forest

Legislative Action

Lead Agency:	USDA Forest Service
Responsible Official:	R. Max Peterson Chief, Forest Service USDA
For Further Information:	Lewis J. Beyea, Forest Planner National Forests in Mississippi 100 W. Capitol St., Suite 1141 Jackson, MS 39269 (601-960-5504)

ABSTRACT

The Draft Environmental Impact Statement describes five alternatives for the addition of all or part of Black Creek to the National Wild and Scenic Rivers System. The study area is located in Forrest, Perry, and Stone Counties, Mississippi. The statement discusses the eligibility of the river for inclusion in the National System and estimated effects of each alternative if it is implemented. The preferred alternative is III which would designate 19 miles of the river. Other alternatives considered are I, No designation; II, Designate the entire length; IV, Designate 31 miles in the upper portion; and V, Designate 29 miles in the lower end. All alternatives include a strip of land a minimum of 200 feet wide on each side of the creek.

Comments must be received by JUL 3 1984.

SUMMARY

Black Creek is located on the De Soto National Forest, Black Creek Ranger District, Forrest, Perry, and Stone Counties, Mississippi.

The entire study corridor (41 miles) qualified for Wild and Scenic River designation as a "Scenic River," but Alternative III is preferred because it meets the criteria for designation by having the least impact on private lands while preserving a portion of the river in a scenic condition at a minimum cost.

The other alternatives that include designation are not recommended because of the large amount of private land involved and the cost of purchasing scenic easements on this land.

Alternative III, the preferred alternative, is to designate 19 miles of Black Creek as a part of the National Wild and Scenic River System. This portion of Black Creek lies between Moody's Landing and a pipeline crossing in Section 28, Township 1 South, Range 10 West, in Perry County. Due to the flat terrain and the deep channel that the stream lies in, it is recommended that the width of the designated corridor be a minimum of 200 feet on each side of the creek and seldom exceed this distance.

The issues raised in the study process were:

Should Black Creek and its environment be preserved within natural forces or remain available for development?

If the river and its environment are designated, what will be the extent of condemnation for acquisition of land in fee title. Since more than 50% of the study area is public land there will be no condemnation authority for acquiring land in fee title.

If the river is designated, what will be the extent, provisions, and consequences of easements acquired on private land? The preferred alternative includes two miles of stream that is on private land. This will mean that zoning or scenic easements may be necessary along these stretches to protect river values. No access easements are anticipated.

Other concerns were: increased recreation use of the river caused by designation and associated impacts such as littering, vandalism, and trespass.

The reserved and outstanding mineral rights on 194 acres of National Forest land could result in activities that would not be compatible with enhancement of the river recreation values.

Because the river is designated, there will be some increased use, but it is anticipated the increase will be gradual. For some time the river

has been designated as a float trip and has become popular with canoeists; the new designation will probably have little immediate impact.

The following alternatives were considered in the course of doing the study:

Alternative I - A continuation of current management. The stream would be protected administratively as a float trip. No legislative stream designation.

Alternative II - Designate the entire length of the study area with a corridor which is a minimum of 200 feet wide on each side of the creek. (Total of 41 miles).

Alternative III - Designate segment B, that portion from Moody's Landing downstream to a pipeline crossing in Section 28, Township 1 South, Range 10 West. (Total of 19 miles).

Alternative IV - Designate segments A & B, from Big Creek Landing downstream to a pipeline crossing in Section 28, Township 1 South, Range 10 West. (Total of 31 miles).

Alternative V - Designate segments B & C from Moody's Landing to Old Alexander Bridge. (Total of 29 miles).

A comparison of alternatives is shown in the following tables:

TABLE I
COMPARISON OF ALTERNATIVES CONSIDERED

Resource	Alternative I No Action	Alternative II Designate 41 miles	Alternative III Designate 19 miles	Alternative IV Designate 31 miles	Alternative V Designate 29 miles
Range	No Effect	No Effect	No Effect	No Effect	No Effect
Water Yield & Quality	No Effect	Insignificant	Insignificant	Insignificant	Insignificant
Wildlife & Fish	No Effect	No Effect	No Effect	No Effect	No Effect
Threatened & Endangered Species	No Effect	No Effect	No Effect	No Effect	No Effect
Historic & Archaeologic	No Effect	No Effect	No Effect	No Effect	No Effect
Air Quality	No Effect	Insignificant	Insignificant	Insignificant	Insignificant
Timber	Insignificant - No change in regulated acres. Would produce 12,875 MBF over a 50 year period.	All acres would be unregulated. There would be no regulated volume produced.	Acres in Segment B would be unregulated. Would produce 5,235 MBF over a 50 year period in Segments A & C.	Acres in Segments A & B would be unregulated. Would produce 1,865 MBF over a 50 year period in Segment C.	Acres in Segments B & C would be unregulated. Would produce 3,405 MBF over a 50 year period in Segment A.
Recreation	No change: Would continue to manage the river as a float trip. Use would increase gradually. Administrative protection would be provided.	River Use would increase faster than I. River would reach capacity late in the 4th decade. Additional developed facilities would be required to accommodate use. Legislative protection provided.	River Use would increase and reach capacity in Segment B about the middle of the 4th decade. Some added developed recreation facilities would be required. Legislative protection to Segment B.	River Use would increase to capacity by the middle of the 4th decade in Segment B and the beginning of the 5th decade in Segment A. Additional developed facilities would be required in both segments. Legislative protection to Segments A & B.	River Use would increase to capacity by the middle of the 4th decade in Segment B but would not reach capacity in Segment C in 5 decades. Added developed recreation facilities would be required in both segments. Legislative protection to Segments B & C.

TABLE I (contd)

COMPARISON OF ALTERNATIVES CONSIDERED

Resource	Alternative I No Action	Alternative II Designate 41 miles	Alternative III Designate 19 miles	Alternative IV Designate 31 miles	Alternative V Designate 29 miles
Landownership	Continue present policy of land exchanges or purchase with willing owners.	Same as I, except purchase of scenic easements may be required. Cost of easements would be about \$300M.	Same as I, except purchase of scenic easements may be necessary in Segment B. Cost of easements would be about \$51M.	Same as I, except purchase of scenic easements may be necessary in Segments A & B. Cost of easements would be about \$161M.	Same as I, except purchase of scenic easements may be necessary in Segments B & C. Cost of easements would be about \$190M.
Minerals	Insignificant	Minerals would be leased, but with stipulations to protect the river quality.	Same as II.	Same as II.	Same as II.

TABLE II
OUTPUTS AND EFFECTS

		Alternative I No Action	Alternative II Complete Designation	Alternative III Designate Segment B	Alternative IV Designate Segments A&B	Alternative V Designate Segments B&C
<u>Potential Timber Harvest</u>						
NF Land only Ave.	(MMBF/Yr.)	.258	0	.105	.037	.068
<u>Recreation</u>						
Estimated use in the year 2032						
Dispersed--						
Swimming	(RVD)	19,133	77,084	56,388	66,736	66,736
Stream Fishing	(RVD)	24,600	99,108	59,785	78,412	80,481
Canoeing & Rafting	(RVD)	48,507	195,462	139,582	174,766	160,278
Other	(RVD)	2,050	8,027	3,887	5,957	5,957
	Sub-Total	94,290	379,681	259,642	325,871	313,452
Developed--						
Camping	(RVD)	64,233	241,844	241,844	241,844	241,844
Picnicking	(RVD)	15,717	63,318	59,178	63,318	59,178
Other	(RVD)	6,833	27,830	19,250	23,390	23,390
	Sub-Total	86,783	332,692	320,272	328,552	324,412
	TOTAL	181,073	712,373	579,914	654,423	637,864
<u>Addition to National Wild & Scenic Rivers System</u>						
Scenic River	(Miles)	--	41	19	31	29
	(Acres)	--	2,947	1,373	2,159	2,161
<u>Purchase by U.S. Scenic Easements</u>						
	(Acres)	--	886	183	494	575
<u>Needed Recreation Development by the Year 2032</u>						
Camping Units	(Each)	14	40	29	28	29
Picnic Units	(Each)	11	35	24	31	24
<u>Mineral Rights Reserved or Outstanding</u>						
	(Acres)	0	303	194	194	303

TABLE I (contd)

COMPARISON OF ALTERNATIVES CONSIDERED

Resource	Alternative I No Action	Alternative II Designate 41 miles	Alternative III Designate 19 miles	Alternative IV Designate 31 miles	Alternative V Designate 29 miles
Landownership	Continue present policy of land exchanges or purchase with willing owners.	Same as I, except purchase of scenic easements may be required. Cost of easements would be about \$300M.	Same as I, except purchase of scenic easements may be necessary in Segment B. Cost of easements would be about \$51M.	Same as I, except purchase of scenic easements may be necessary in Segments A & B. Cost of easements would be about \$161M.	Same as I, except purchase of scenic easements may be necessary in Segments B & C. Cost of easements would be about \$190M.
Minerals	Insignificant	Minerals would be leased, but with stipulations to protect the river quality.	Same as II.	Same as II.	Same as II.

TABLE II

OUTPUTS AND EFFECTS

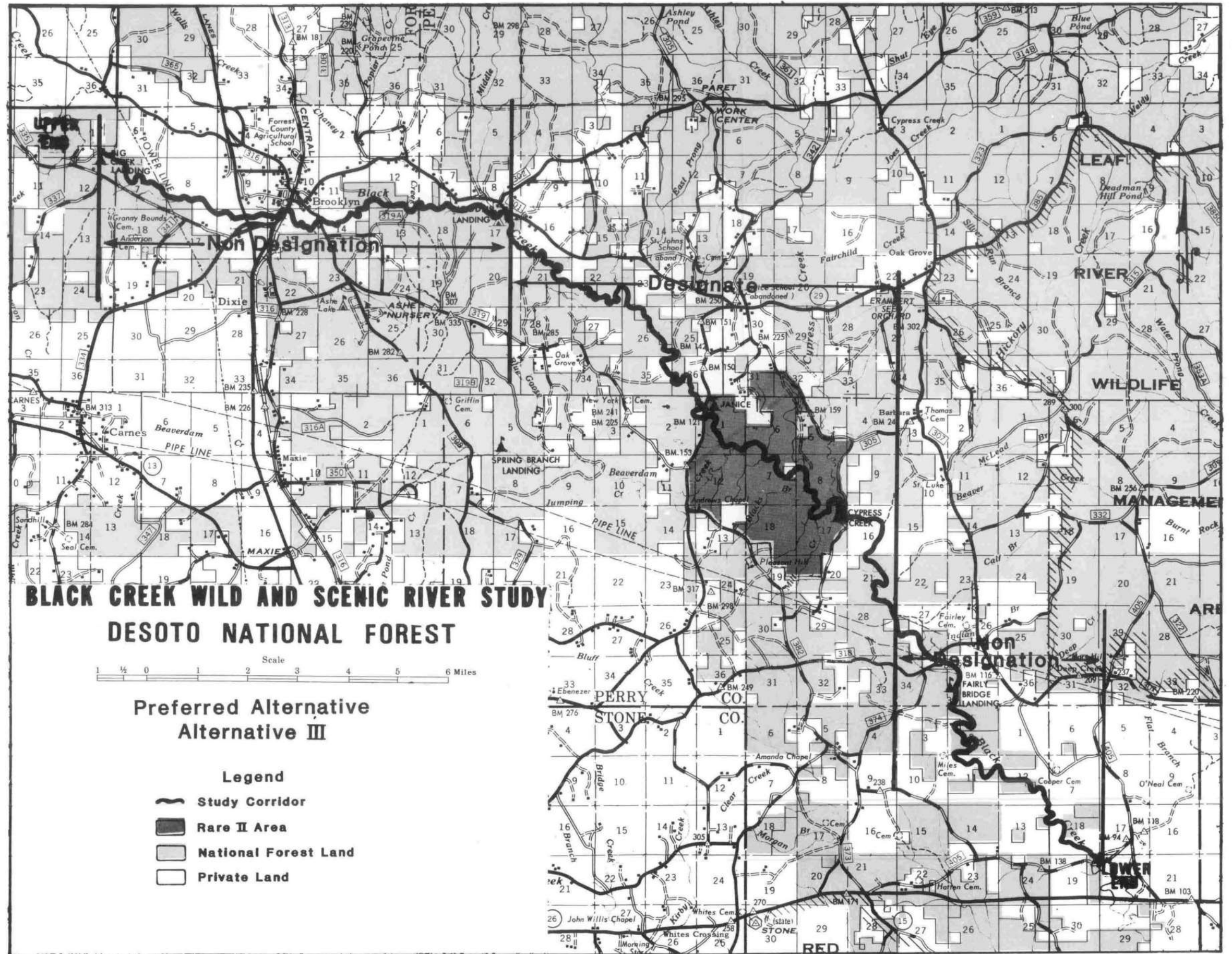
		Alternative I No Action	Alternative II Complete Designation	Alternative III Designate Segment B	Alternative IV Designate Segments A&B	Alternative V Designate Segments B&C
<u>Potential Timber Harvest</u>						
NF Land only Ave.	(MMBF/Yr.)	.258	0	.105	.037	.068
<u>Recreation</u>						
Estimated use in the year 2032						
Dispersed--						
Swimming	(RVD)	19,133	77,084	56,388	66,736	66,736
Stream Fishing	(RVD)	24,600	99,108	59,785	78,412	80,481
Canoeing & Rafting	(RVD)	48,507	195,462	139,582	174,766	160,278
Other	(RVD)	2,050	8,027	3,887	5,957	5,957
	Sub-Total	94,290	379,681	259,642	325,871	313,452
Developed--						
Camping	(RVD)	64,233	241,844	241,844	241,844	241,844
Picnicking	(RVD)	15,717	63,318	59,178	63,318	59,178
Other	(RVD)	6,833	27,830	19,250	23,390	23,390
	Sub-Total	86,783	332,692	320,272	328,552	324,412
	TOTAL	181,073	712,373	579,914	654,423	637,864
<u>Addition to National Wild & Scenic Rivers System</u>						
Scenic River	(Miles)	--	41	19	31	29
	(Acres)	--	2,947	1,373	2,159	2,161
<u>Purchase by U.S. Scenic Easements</u>						
	(Acres)	--	886	183	494	575
<u>Needed Recreation Development by the Year 2032</u>						
Camping Units	(Each)	14	40	29	28	29
Picnic Units	(Each)	11	35	24	31	24
<u>Mineral Rights</u>						
Reserved or Outstanding	(Acres)	0	303	194	194	303

TABLE III

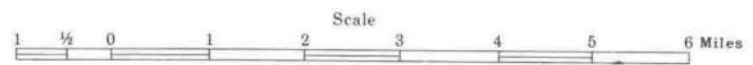
PRESENT NET VALUE COMPARISON OVER 50 YEAR PLANNING HORIZON

Costs and Benefits are 1978 Dollars Brought up to 1984 and Discounted at 4%

<u>Benefits</u>	<u>Alt. I</u>	<u>Alt. II</u>	<u>Alt. III</u>	<u>Alt. IV</u>	<u>Alt. V</u>
Developed Recreation	1,936,300	3,688,445	3,226,956	3,315,125	3,320,989
Dispersed Recreation	3,857,000	7,426,763	5,472,468	6,363,536	6,320,333
Timber	1,225,150	0	463,838	167,194	296,643
TOTAL	7,018,450	11,115,208	9,163,262	9,845,855	9,937,965
<u>Costs</u>					
Developed Recreation	604,525	990,185	879,554	1,011,153	1,087,763
Dispersed Recreation	161,294	269,503	198,789	266,115	264,305
Recreation Improvements	13,626	45,497	40,938	44,195	40,939
Timber	92,288	0	34,389	9,875	24,514
Easements	0	0	53,562	144,587	168,296
TOTAL	871,733	1,564,515	1,207,232	1,475,925	1,585,817
<u>PNV</u>					
Developed Recreation	1,331,775	2,698,260	2,347,402	2,303,972	2,233,226
Dispersed Recreation	3,695,706	7,157,260	5,273,679	6,097,421	6,056,028
Recreation Improvements	- 13,626	- 45,497	- 40,938	- 44,195	- 40,939
Timber	1,132,862	0	429,449	157,319	272,129
Easements	0	- 259,330	- 53,562	- 144,587	- 168,296
TOTAL	6,146,717	9,550,693	7,956,030	8,369,930	8,352,148



**BLACK CREEK WILD AND SCENIC RIVER STUDY
DESOTO NATIONAL FOREST**



**Preferred Alternative
Alternative III**

- Legend**
- Study Corridor
 - Rare II Area
 - National Forest Land
 - Private Land

TABLE OF CONTENTS

SUMMARY

TABLE OF CONTENTS

	<u>Page</u>
I. PURPOSE AND NEED	1
A. Introduction	1
B. Location	1
C. Issues	2
D. Relationship of This Study to RARE II	2
II. ALTERNATIVES INCLUDING THE PROPOSED ACTION	7
A. Eligibility Criteria	7
B. Classification Criteria	9
C. Criteria for Alternative Evaluation	9
D. Eligibility Determination	10
E. Potential Classification	11
F. Alternative Formulation	12
G. Description of Alternatives	17
H. Rationale for Selection of the Preferred Alternative	18
III. AFFECTED ENVIRONMENT	19
A. Regional Description	19
Location and Physiography	19
Climate	19
B. Black Creek Description	19
Corridor Width	21
Stream Segments	21
Water Resources and Development	27
Soils	33
Geology and Minerals	37
Fish and Wildlife	37
Vegetation	38
Archaeology and History	38
Scenery	39
Recreation	39
Economy	40

	<u>Page</u>
IV. ENVIRONMENTAL CONSEQUENCES	42
Timber	42
Recreation Tables	43
Minerals	52
Purchase of Easements and Land	52
Preservation of Natural Characteristics or Values	53
Soil Loss	53
Compatibility with State and Local Governments	53
Health, Safety, and Social Well-being	54
Visual Quality Objectives	54
Vegetation	54
Irreversible or Irrecoverable Commitment of Resources	54
Relationship Between Short-Term Uses and Long-Term Productivity	55
Energy Requirements	55
Environmental Effects Which Can Not be Avoided	55
 LIST OF PREPARERS	 56
 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM COPIES WERE SENT	 57-59
 INDEX	 60-64
 APPENDIX	 65-115
A. Letter from Mississippi Natural Heritage Program	65-67
B. Summary of Public Participation	68-70
C. Water Quality Parameters for Black Creek	71-79
D. Detailed Maps of Each Segment Showing Proposed Boundaries	80-96
E. List of Vertebrate Fauna within the Black Creek Watershed	97-108
F. State Water Quality Criteria for Black Creek	109-113
G. Soils Data	114-115

I. PURPOSE AND NEED

A. Introduction

In 1968, Congress passed the Wild and Scenic Rivers Act (P.L. 90-542) and, by doing so, redirected the water policy of this nation. Congress declared that:

"... the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes."

In 1978 an amendment to the act directed that Black Creek "... from Big Creek Landing in Forrest County downstream to Old Alexander Bridge in Stone County ..." be studied and the report submitted to the President and Congress.

This report has been prepared by the USDA, Forest Service, National Forests in Mississippi, with the help of other agencies, State and Federal, in order to present to the public and Congress the classification arrangement preferred. This report documents the selection of a preferred alternative from among five alternatives considered. The public will have an opportunity to comment on the preliminary recommendation in this draft environmental impact statement (DEIS). A final recommendation based on the DEIS and public comment will be documented in a Final Environmental Impact Statement (FEIS) which will be made public, filed with EPA, sent to the President, and subsequently to Congress. At that point, Congress may accept or modify the recommendation when considering Black Creek for possible inclusion in the National Wild and Scenic Rivers System.

B. Location

Black Creek lies in Forrest, Perry, and Stone Counties, Mississippi, in the southern portion of the State (see Figure I-1). Black Creek is a tributary of the Pascagoula River, which flows into the Gulf of Mexico. The entire creek is about 80 miles long, of which 41 miles are considered for inclusion in the system. The upstream end of the study area is located in Section 1, T1N, R13W in the St. Stevens Meridian and about 15 miles south of Hattiesburg, Mississippi. The study area continues downstream, without including any tributaries, to Section 19, T1S, R10W. The downstream end of the study area is about 13 miles east of Wiggins. Most of the study area is National Forest System land (66%) within the Black Creek District of the De Soto National Forest with headquarters in Wiggins, Mississippi.

C. Issues

The primary issue is evident from the policy statement in the Wild and Scenic Rivers Act; that is, should Black Creek and its environment (corridor) be preserved or remain available for development? This concern was expressed from three viewpoints during the study: The private sector, local representation, and national representation (Wild and Scenic Rivers Act). It is the primary issue addressed in this study.

Other concerns, expressed during the public meetings, are:

- (1) If the river and its environment (corridor) are designated, what will be the extent of condemnation for acquisition of land in fee title?

This concern is not an issue in this study. More than 50% of the Black Creek Study area is public land, and as a result there is no condemnation authority for acquiring private land in fee title for wild and scenic river purposes.

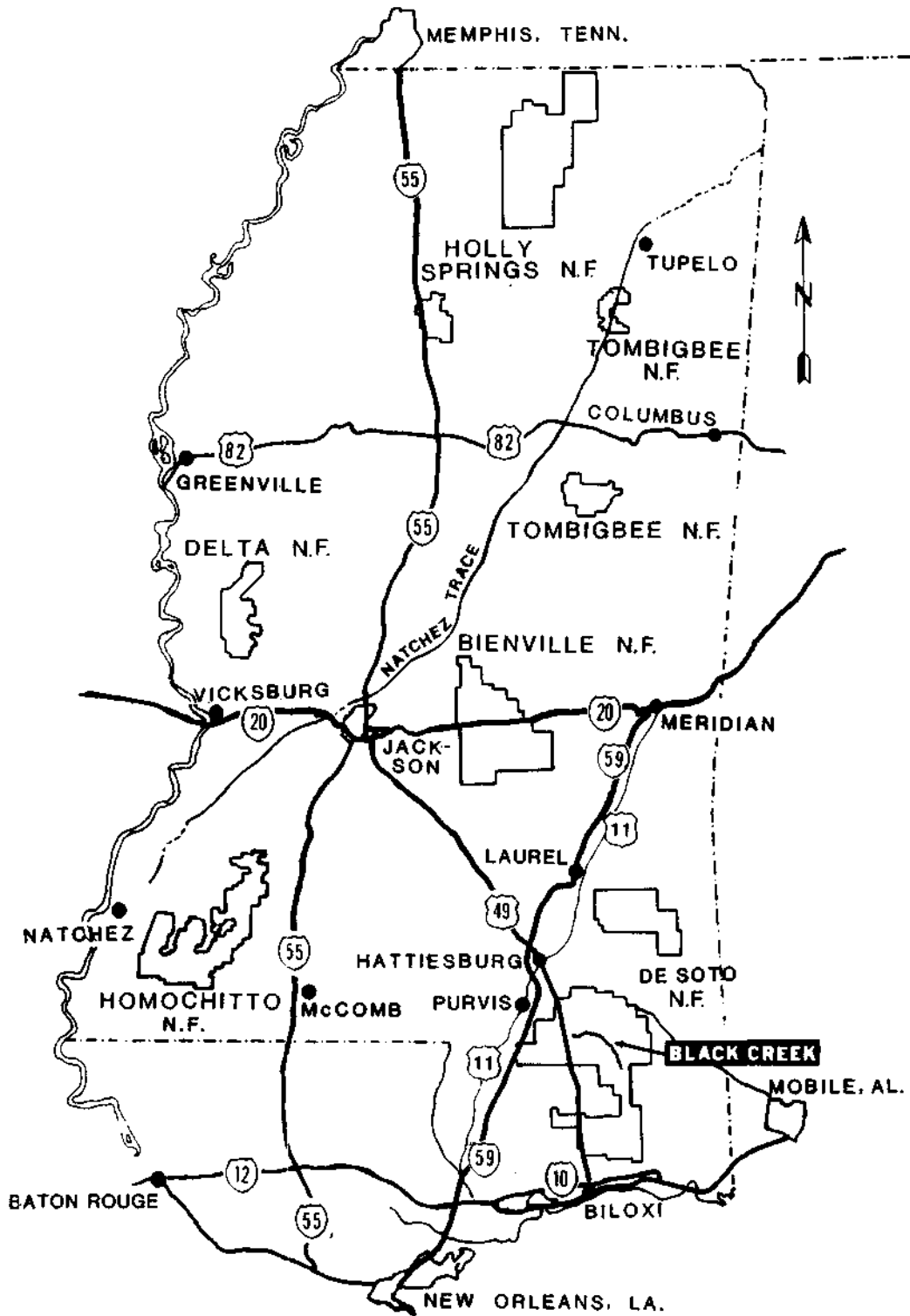
- (2) If the river and its environment (corridor) are designated, what will be the extent, provisions, and consequences of easements acquired on private land?

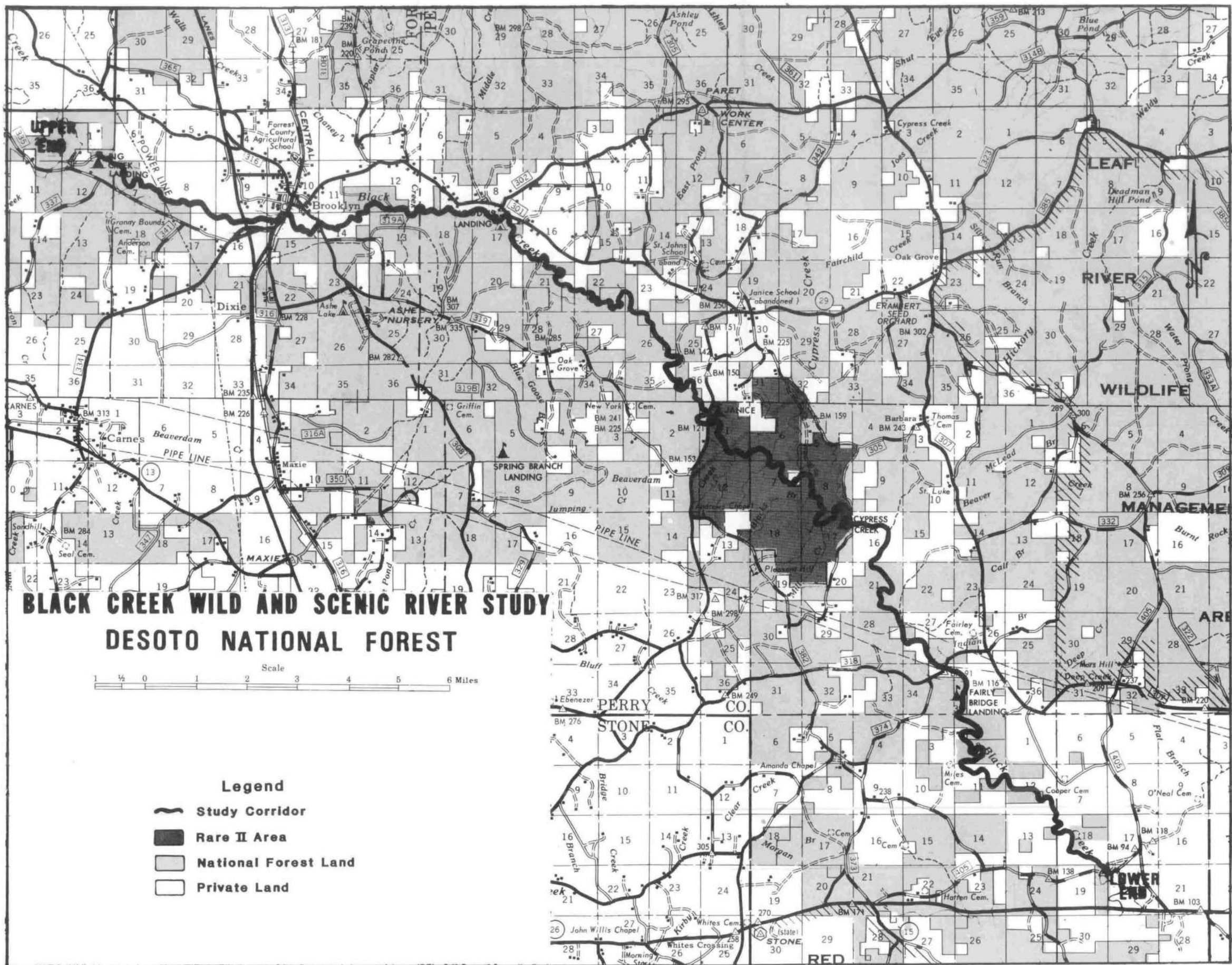
This is a prime issue in this study. The extent and consequences of easements, based upon typical provisions for wild and scenic river purposes, are addressed in Chapter IV of this report. In the preferred alternative 183 acres of scenic easements are proposed for purchase. Specific provisions of easements would be addressed in a river management plan and, thus, are not appropriate for this document.

D. Relationship of this Study to RARE II

A Final Environmental Statement (FES) has been filed on the second Roadless Area Review and Evaluation (RARE II). Portions of the Black Creek Roadless Area (08311), in the RARE II FES, are contained in the river corridor (See Figure I-2). If this roadless area is designated as Wilderness, any direction conflicting with wild and scenic river purposes will be resolved by applying the more protective direction.

State of Mississippi Location Map





II. ALTERNATIVES INCLUDING THE PROPOSED ACTION

A. Eligibility Criteria

During the study of a river for possible inclusion in the Wild and Scenic River System, the first step is to determine if the river is eligible for inclusion. In order to make this determination it is necessary to be familiar with Section 2, subsection (b), which states that a river to be eligible must possess one or more of the following values: "outstandingly remarkable scenic, recreational, geologic, historic, cultural, fish and wildlife, or other similar values."

To evaluate whether the river is outstandingly remarkable, eligibility criteria were developed that reflect the intent of the Wild and Scenic Rivers Act as it applies to streams in the Mississippi Gulf Coastal Plain. These criteria are definitions of the terms "outstandingly remarkable" scenic, recreational, geologic, fish and wildlife, and historic and cultural values.

Since the scenic value is highly subjective criteria it was established and reviewed by a panel of professionals in that field. All eligibility criteria were reviewed by others involved in land classification.

Scenic Value

Landform - Over 25% slopes with distinct uneven, sharp exposed ridges or large dominant features. Terrain is highly varied and heavily dissected bluffs of clay or rock.

Vegetation - High degree of pattern in vegetative cover. Strongly defined patterns. Large old growth trees evident. Unusual or outstanding diversity in plant species; healthy functioning riparian ecosystem.

Streams - Drainage with numerous or unusual flow characteristics, pool meanders, or large volume of water. High degree of water clarity, color is acceptable, streams with small rapids, cascades, or large white sandbars. Distinct shoreline vegetation. Viewing from the stream is restricted.

Recreational Value

There is a large variety of use; the amount of use or quality of recreation use on or adjacent to the river is high. The river is of at least statewide, and may be of regional or national, significance.

Geologic Value

Formations and structures carved by wind and water erosion are unusual and worthy of study or observation. They are unusually old

or show many periods and variety or unusual geologic features; e.g., fossils, faults, etc.; and rocks are either rare or uncommon, or exposed minerals are unusual or distinctive, or outcrops are colorful and of different forms or shapes.

Fish and Wildlife Values

Fish populations are self-sustaining and abundant, distinctive or highly visible; threatened and/or endangered species are self-supporting; isolated species are found away from their main geographic ranges; wildlife and fish communities show unique associations, symbiosis, competition or unusual food chains; abundance and/or variety of wildlife and/or fish is unusual for the area.

Historic and Cultural Values

Sites are easily viewed or interpreted; are geographically important; show distinct characteristics of time period, construction, or workmanship; are associated with significant events in the nation's state or local history or pre-history.

The following points were considered in determining eligibility of the river and its segments. These are as listed in the "National Wild and Scenic Rivers System; Final Revised Guidelines for Eligibility, Classification and Management of River Areas" published in the Federal Register on September 7, 1982.

- The Wild and Scenic Rivers Act provides that rivers must be in a free-flowing natural condition, i.e., a flowing body of water or estuary or a section, portion, or tributary thereof, including rivers, streams, creeks, runs, kills, rills, and small lakes which are without impoundment, diversion, straightening, rip-rapping or other modification of the waterway. However, low dams, diversion works, and other minor structures will not automatically preclude the river unit from being included in the National Wild and Scenic Rivers System, providing such structures do not unreasonably diminish the free-flowing nature of the stream and the scenic, scientific, geological, historical, cultural, recreational, and fish and wildlife values present in the area.

A river segment is of sufficient length if, when managed as a wild, scenic, or recreational river area, the outstandingly remarkable values are protected. Flows are sufficient if they sustain or complement the outstandingly remarkable values for which the river would be designated.

B. Classification Criteria

If the river is found to be eligible, classification criteria are used to classify the river segments.

The Act defines these classifications in Section 2(b) --

-- "(1) Wild river areas - Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

(2) Scenic river area - Those rivers or section of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

(3) Recreational river areas - Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past."

C. Criteria for Alternative Evaluation

This set of criteria is used to evaluate alternatives and select one which will be recommended to Congress for a final decision. The following criteria were identified from legislation, regulations, and public input relating to this Wild and Scenic River study. Because some of the criteria conflict with others, no alternative will satisfy them all.

-- Comply with intent of the Wild and Scenic Rivers Act by preserving free-flowing conditions and outstandingly remarkable characteristics of the river and its immediate environment.

Source: Wild and Scenic Rivers Act, Section 1.b.

Comment: The act identifies a national policy of river preservation that is intended to complement a national policy of river development.

- Emphasize and facilitate opportunities to know and experience nature.

Source: A Recommended Renewable Resources Program, Final Environmental Statement, 1980.

Comment: After evaluating five alternative goals for Forest Service outdoor recreation programs, this one was selected.

- Display a high degree of compatibility with the desire and recommendations of State and local governments.

Source: Wild and Scenic Rivers Act, Section 5c.

Comment: Local governments bear a large portion of the effects, both positive and negative, of Federal designation and management, therefore they should receive special consideration of their input.

- Minimize safety hazards.

Source: Public meetings.

Comment: This concern was expressed concerning the safety of the canoe or user on the water course.

- Minimize impacts on private rights.

Source: Public meetings.

Comment: This concern was expressed with particular reference to the incidence of trespass and vandalism on private lands, and control of rights by easement on private land.

- Conform to availability and suitability of those lands involved.

Source: National Forest System Land and Resource Management Planning Regulations.

Comment: Lands must not only be available for particular resource management, but must also be well suited, i.e., the intended management activities must be appropriate to apply, without unacceptable adverse environmental effects.

D. Eligibility Determination

Before alternatives were formulated it was necessary to determine if the river qualified for Wild and Scenic River status. This

determination was made using the eligibility criteria established. (Pages 7 and 8).

The study team first tried to determine if the river met any of the criteria that had been established to judge if the river was "outstandingly remarkable."

First consideration was given to scenic value. According to the Forest Service Visual Management System the Black Creek was rated as having distinctive scenery when compared with other streams in the region. The stream meets the criteria for most of its entire length.

The entire length of the study corridor is used fairly heavily as a float trip for fishing, canoeing and camping on the sandbars. There are several developed landings and a few picnic areas. One area is developed for camping. Recreationists come from adjoining states to enjoy the experience. The river is considered to have outstandingly remarkable recreation values.

The geologic, fish and wildlife, and historic values were not considered to be outstandingly remarkable.

In order to qualify the creek must meet the next four criteria:

1. Be in a free-flowing natural condition. There has been no effort at any time to channel, rip-rap, or use other methods to control the flow of the creek. There are six bridge crossings, five being highways, and one railroad. There are three abandoned bridge crossings. None of these restrict the creek's flow.
2. The 41 miles of river in the study area or any of the three segments is sufficient for a meaningful recreation experience.
3. Water volume is sufficient to meet recreation needs during the driest part of the year. The experience of floating the river will vary from a rushing river in the spring to a low quiet river in late summer. During low water it is sometimes necessary to pull the boat over a down tree, but in normal years the entire length can be floated at the driest time.
4. The water quality as shown in Appendix C is high and is suitable for most recreation uses.

E. Potential Classification

A river is found eligible based on its natural values and past activities of man. Classification is based on present development by man. The three classifications are Wild, Scenic, or Recreational, which are described on page 9.

Because the river has varying characteristics over its length it was divided into three (3) segments which were considered

separately for classification. The most isolated segment of the river is B, from Moody's Landing to the pipeline in Section 28, T1S, R10W, which meets the criteria for wild classification except that water quality cannot be guaranteed due to the chance of industrial accidents occurring upstream; there also are two road crossings. Due to these facts it was dropped to scenic. This segment traverses the Black Creek RARE II area and has three access points. There is a canoe landing at the upper end and another about two miles downstream from the lower end.

Somewhat more developed are segments A and C. The portion of the creek in segment C, from the pipeline in Section 28, T1S, R10W to Old Alexander Bridge, has one bridge at State Highway 15 and four gas or oil pipelines crossing it. The pipelines have little scenic impact but do provide a travel route to the creek; one gas line makes a thumping noise. Near the lower end of the creek there is a camp visible from the river.

Segment A is a 12 mile section with 5 miles being private lands. Big Creek Landing is the upper end, and the lower end is at Moody's Landing. This section has two boat landings, five bridges near the town of Brooklyn, and a parallel road in several areas which is not visible from the water, but might provide easy access.

Segments A and C qualify for a "scenic" classification.

Table II-1 shows the segment locations and the potential classifications. See Appendix D for a detailed segment map.

F. Alternative Formulation

Alternatives that were originally considered but not studied in detail were:

1. The stream was divided into five segments and various combinations studied. These segments were then evaluated based on the amount of private ownership.
2. A $\frac{1}{4}$ -mile corridor was considered but was determined to cause a greater impact on the resources and private rights than was necessary for protection of the river environment.
3. An alternative to include Beaverdam Creek was considered based on public concerns and rejected due to the stream characteristics.
4. Consideration was given to including a portion below the study area, but was dropped because it was outside the Forest boundary and included considerable private land.

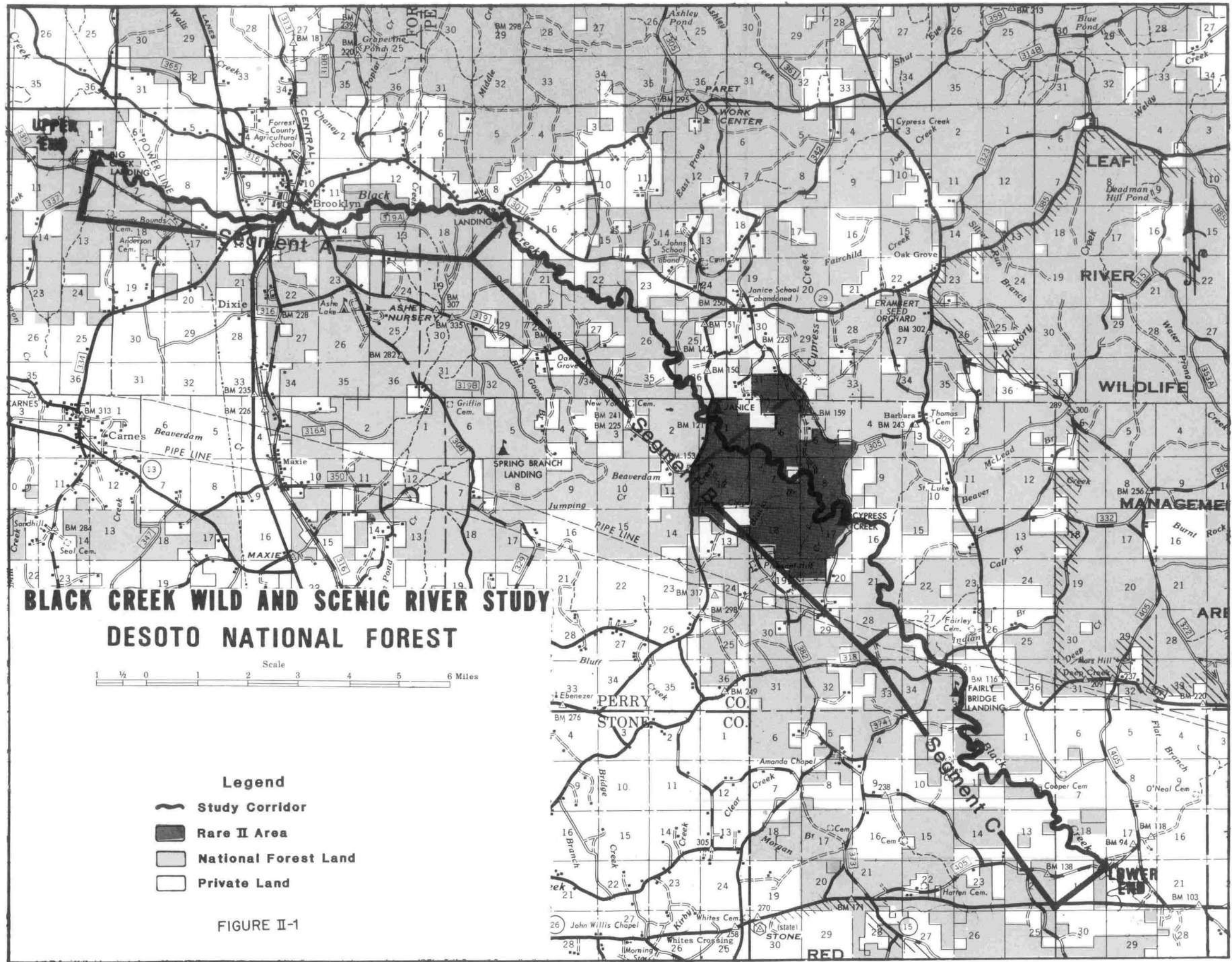
In order to evaluate the effects of implementing an alternative it is necessary to establish a base of comparison. Alternative I provides the base by depicting current management for Black Creek. This alternative shows no designation for the river.

As discussed in Chapter III, it was decided that 200 feet was adequate distance on each side of the creek to protect the aesthetic and water quality. All alternatives discussed in detail are limited to 200 feet.

TABLE II-1

CORRIDOR SEGMENTS
 LOCATION AND CLASSIFICATION BLACK CREEK WILD AND SCENIC RIVER STUDY

<u>Segment</u>	<u>From</u>	<u>To</u>	<u>Most Restrictive Classification</u>
A	Big Creek Landing Upper Terminus	Moody's Landing	Scenic
B	Moody's Landing	Pipeline in Section 28, T1S, R10W	Scenic
C	Pipeline in Section 28, T1S, R10W	Old Alexander Bridge	Scenic



G. Description of Alternatives

The map shown in Figure II-1 depicts each river segment within the study area. Detailed mapping of the river and corridor is in Appendix D. Each alternative is made up of one or more of the segments shown.

Alternative I - No action, current management.

This alternative includes segments A, B, and C, and shows no designation of Black Creek. This is a continuation of current management. The river and adjacent land would continue to be managed under current plans. Management emphasis is dispersed and developed recreation, scenery, and maintenance of water quality. Intensive timber management is allowed to the stream bank, with consideration given to aesthetics. The stream is being used as a float trip.

Under this alternative, future management of the National Forest lands would be directed and controlled by the National Forest Land and Resource Management Plan scheduled for completion in 1984, and environmental assessments prepared for various proposals. The private land would be managed as it is now under State and local laws.

This alternative would allow development along the river and would place minimal constraints on existing uses and activities.

Alternative II - Designate segments A, B, and C from Big Creek Landing to the Old Alexander Bridge.

This alternative shows designation of the entire length of the study area. Management of the creek and corridor emphasizes dispersed river recreation. Developed recreation is given secondary emphasis. Scenery and water quality are also emphasized.

Alternative III - (Preferred Alternative). Designate segment B from Moody's Landing to pipeline in Section 28, Township I South, Range 10 West.

Under this alternative only segment B would be designated. Management of the balance of the stream would be continuation of current management on National Forest lands.

Alternative IV - Designate segments A and B from Big Creek Landing to pipeline in Section 28, Township I South, Range 10 West.

Under this alternative, segments A and B would be designated. The balance of the stream would be managed under current management.

Alternative V - Designate segments B and C from Moody's Landing to Old Alexander Bridge.

This alternative would designate segments B and C and leave the upper segment to be managed as in current management.

H. Rationale for Selection of the Preferred Alternative

Based on the "Criteria for Alternative Evaluation" on pages 9 and 10, Alternative III was chosen as the preferred alternative.

To comply with the intent of the Wild and Scenic Rivers Act the entire stream could be chosen, however Segment B best represents outstandingly remarkable characteristics found along the river.

While Alternative III doesn't give the maximum increase in recreation use over current management, there is a considerable increase.

The county government did not directly express their desires in this matter, but they are generally opposed to federal government controls. By choosing the alternative with the least private land there will naturally be less control of private lands necessary. This alternative will also minimize the impact on private rights.

There are few safety hazards on this stretch of river other than down trees. Generally, the stream is wide enough to avoid the trees.

The land and water area are both available and suitable for this use. Designation is very compatible with the float trip as presently used.

III. THE AFFECTED ENVIRONMENT

A. Regional Description

Location and physiography -

The study segment of Black Creek is located in Forrest, Perry, and Stone Counties in Mississippi, and lies in the Lower Gulf Coastal Plain. The area is in the southeastern part of the state in the Pascagoula River Basin. The eastern end of the study area is about 50 miles northwest of Mobile, Alabama, and the western end is about 15 miles south of Hattiesburg, Mississippi. Generally, the study area is about 40-50 miles north of the Mississippi Gulf Coast. U.S. Highway 49 crosses the study segment about 4 miles from the western end. Interstate 59 and U. S. Highway 11 cross Black Creek upstream from the study area.

Developments are located in the watershed above the segment of Black Creek being studied and could affect the water quality.

Elevations in the drainage range from 75 to 375 feet. Typical landforms are low dissected rounded hills with a few large streams in wide flat valleys, relief is gentle. Streams have meandering channels and broad floodplains.

Climate -

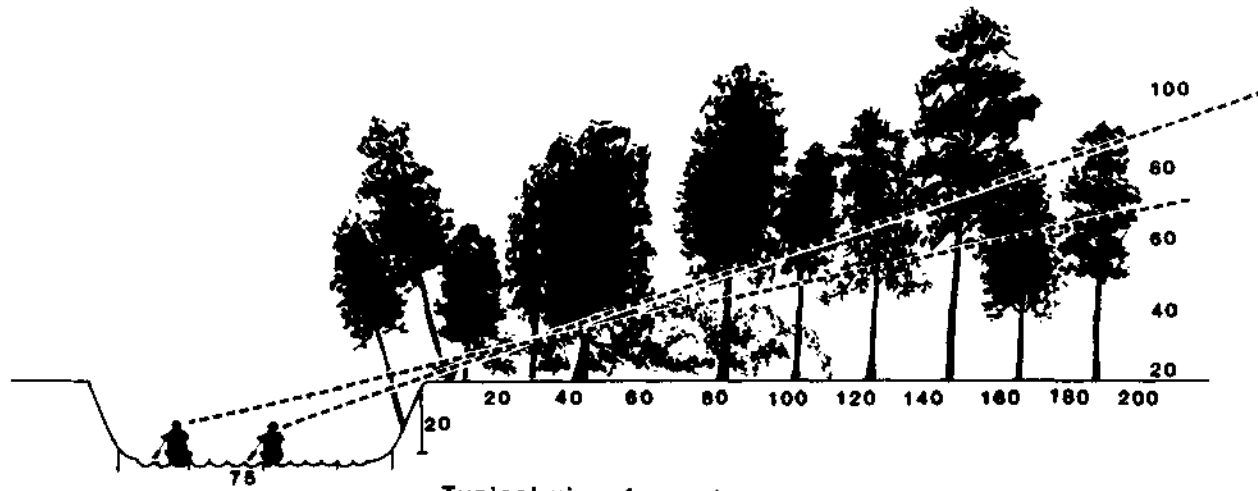
The weather is affected by the proximity of the Gulf of Mexico. Warm summer nights are tempered by Gulf breezes. A prevailing southerly wind brings moist air which favors sporadic thunderstorms. Occasional pressure distribution alterations bring westerly or northerly winds, and periods of hot, dry weather, which when prolonged, result in drought. In winter the weather shifts between cold, dry, and warm, moist periods. Cold periods seldom last over three to four days. The average date of the last killing frost in the spring is around March 10. The first killing frost in the fall is around November 15. The growing season ranges from 238 to 275 days.

Average annual temperature is about 66 degrees F. The winter average is about 52 degrees, and the summer average is about 81 degrees F. Average annual precipitation is about 61 inches. Rainfall associated with hurricanes, tropical storms, and tropical depressions is generally not extremely intense, although there are large accumulations over a period of one to several days.

Black Creek Description

During the study several trips were made down the river by canoe to determine the minimum width needed for a protective corridor.

Generally it was felt that to preserve the aesthetic quality along the river, a 200 foot strip would provide adequate protection since



Typical view from stream

Figure III-1

the entire length of the creek is set into a depression from 15 to 30 feet deep. Where clearcutting has been done to the creek bank on private land it is impossible to tell from the water if it was an act of nature or man that caused the opening. (See Figure III-1 for a typical cross section).

In addition to the aesthetic values being protected by the 200 foot strip on each side of the river it would be adequate as a filter strip to protect the soil and water values. The flat floodplain along the creek would slow water movement to allow it to drop any soil particles and most water would infiltrate into the sandy soils.

Because of this evaluation it was determined that all alternatives considered in detail would include only a 200 foot corridor on each side of the creek.

Corridor Width -

To meet Federal register guidelines dated 9/7/82 a 1/4-mile wide corridor was studied. However, only a 200' corridor was subsequently determined to be needed for protection.

Stream Segments -

For ease in discussing various portions of the creek it has been divided into segments. The segments are designated A, B, and C, with A being the portion farthest upstream, and C the portion farthest downstream.

"Segment A" - Big Creek Landing to Moody's Landing

The stream channel is fairly narrow at Big Creek Landing (75'). The environment is peaceful until Highway 49 is reached. Here the impact of heavy traffic can be heard (Average Daily Traffic 4400-plus). There are two bridges on the 4-lane road. There are two other county road bridges, a railroad bridge, and a powerline crossing in this segment.

Characteristic of this segment are scattered bleached cypress stumps along the creek's edge that have long endured the river current, plus other evidence of man, such as trash dumping, step building, and excavation in and around Brooklyn. The stream in this segment is about half on private land and half on National Forest and state owned (16th section) lands.

"Segment B" - Moody's Landing to pipeline crossing in Section 28, Township 1 South, Range 10 West

The creek widens considerably below Moody's Landing to the end of this segment with larger tributaries such as Beaverdam Creek and Cypress Creek, adding to the water flow. Characteristic of this segment is white sandbars, overhanging vegetation, and steep

Table III-1

STUDY CORRIDOR SEGMENTS: AREA, LAND STATUS, AND MILES OF
BLACK CREEK WILD AND SCENIC RIVER STUDY

<u>Segments</u>	<u>* Acres within Corridor</u>				<u>Miles of River in Corridor</u>			
	<u>Total</u>	<u>Private</u>	<u>State</u>	<u>U.S.</u>	<u>Total</u>	<u>Private</u>	<u>State</u>	<u>U.S.</u>
A	786	311	81	394	12	5	1	6
B	1,373	143	201	1,029	19	2	2	15
C	788	392	0	396	10	6	0	4
Total	2,947	846	282	1,819	41	13	3	25
Percent	100	28	10	62	100	32	7	61

* Represents acreage in stream plus about 200 feet on each side. The water acreage is about 745.

bluffs, moss covered banks, and colorful red vertical bluffs. Little evidence of man is noticeable along this portion of the creek except for a temporary bridge where the National Guard crosses in Section 16, where Highway 29 crosses near Janice Landing, one pipeline crossing below Cypress Creek Landing, and landings at Janice and Cypress Creek.

Except for a few short stretches this segment is on public land all the way and passes through a RARE II proposed wilderness area for about six miles.

"Segment C" - Pipeline Crossing in Section 28, Township 1 South, Range 10 West to Old Alexander Bridge

This is the widest, slowest moving portion of the creek. There is a high percentage of private land and more activity in the way of logging and private camps along the creek. There is a pipeline crossing and a bridge in addition to the other activity. Anyone floating the river here will have plenty of time to fish or just enjoy the laziness of the scene.

Table III-1 describes segments in terms of the area of the corridor (200 feet), land status, and length of river. Figure II-1 shows location of the segments.

There are values that are common to all segments. Some of these are that there is private land in all segments, the type of vegetation is similar, the age of vegetation and past treatment will vary. There are no distant views from the creek. The entire length is floatable by canoe or flat-bottom boats. Small outboard motors are used on many stretches. The entire length of the creek channel is set in a depression from 15 to 30 feet deep, in no place are any views of hills or mountains available.

Figure III-2

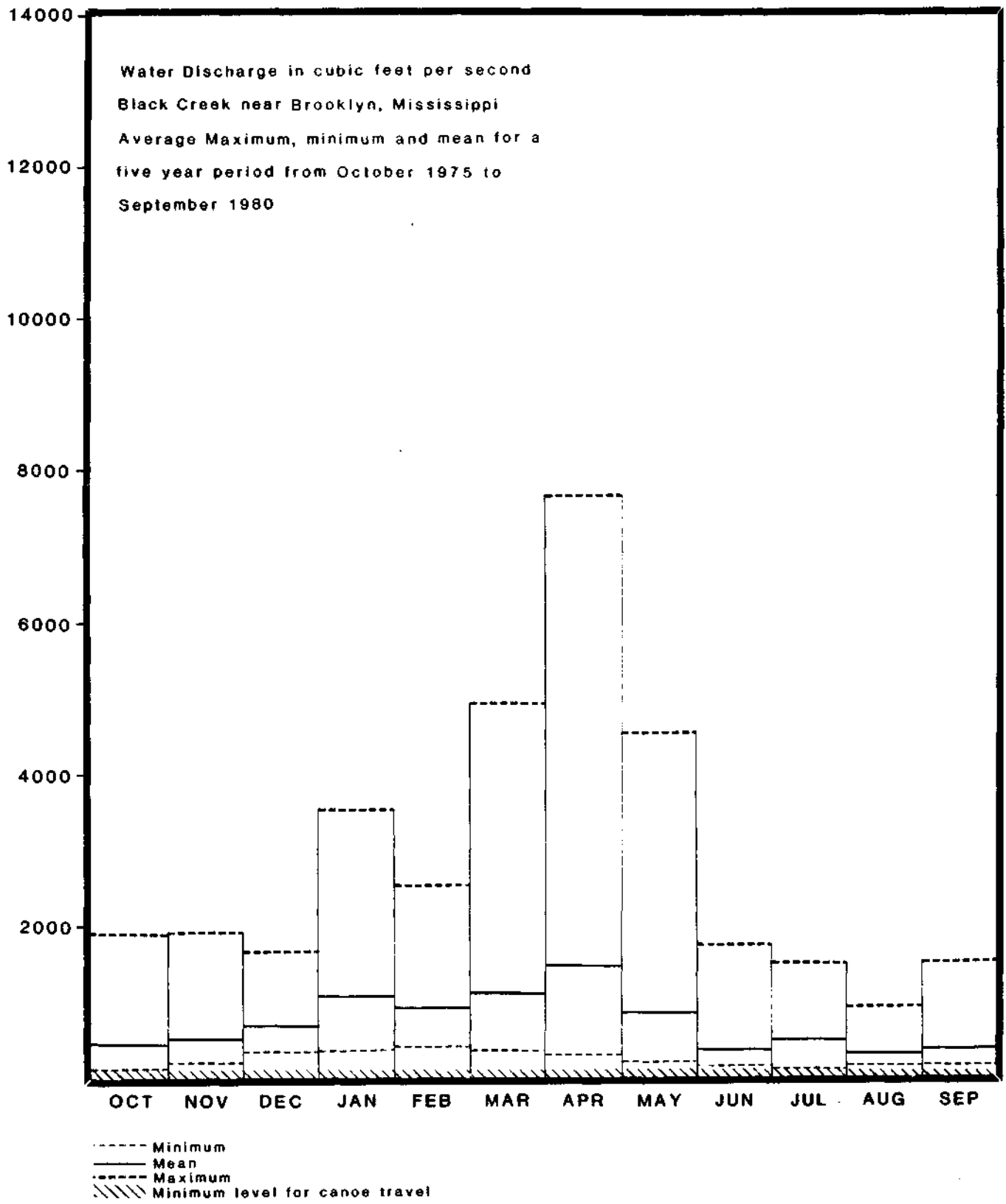
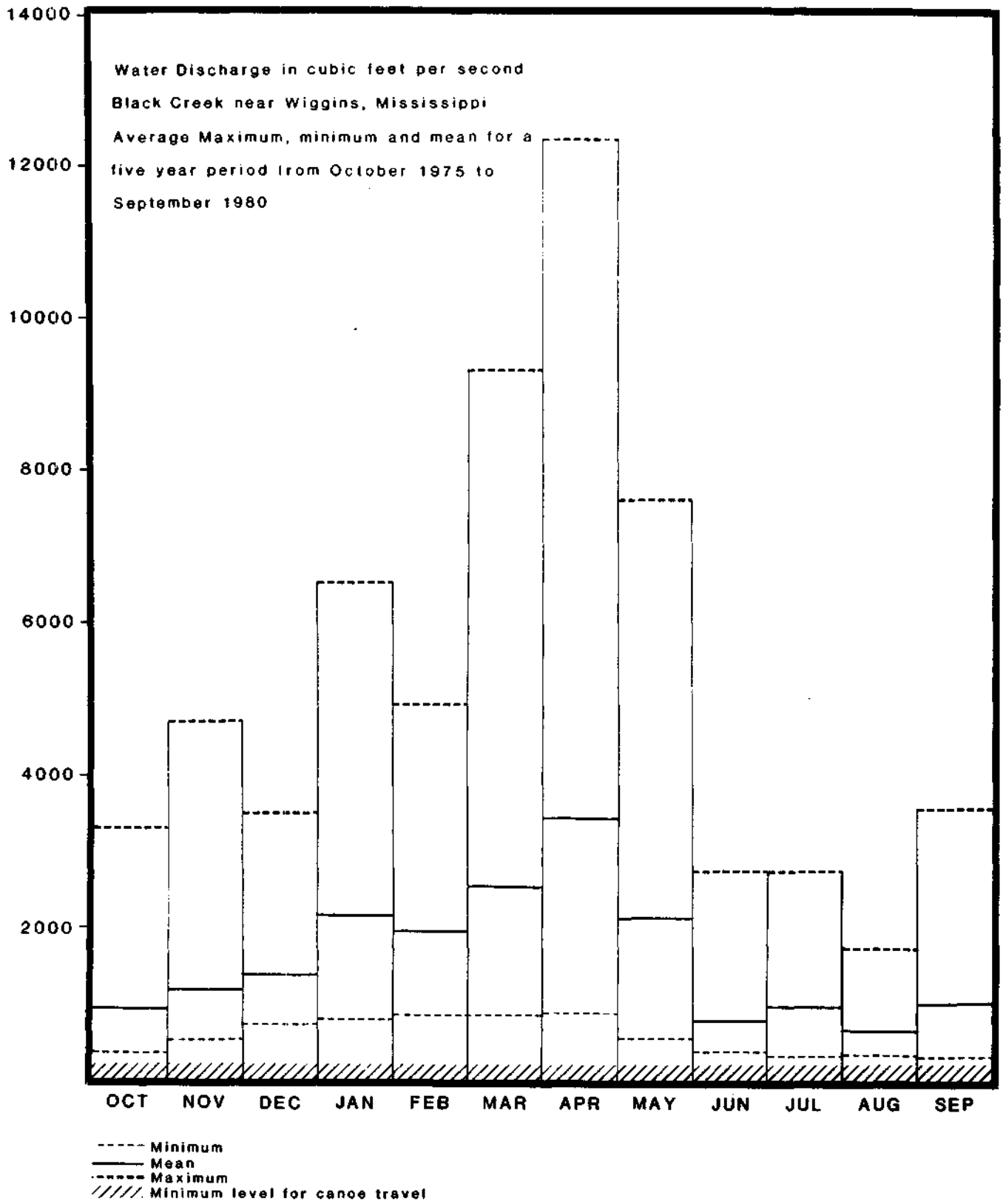


Figure III-3





FARMLAND
SOURCE OF BLACK CREEK

Water Resources & Development

There has been no development of the water resources within the study corridor. There has been some impoundment upstream in the form of farm ponds and two recreation lakes, one of these is in Paul B. Johnson State Park south of Hattiesburg on Route 49, and the other is on Little Black Creek and is run by the Pat Harrison Waterway District. Both areas have similar facilities for boating, swimming, camping, and picnicking. There is a large oil refinery and a coal fired electrical generating plant upstream. The refinery uses large quantities of water and returns it to the Creek while the electric generating plant removes the water from wells and disposes of it into the creek, actually increasing the flow. See Figures III-2 and -3, Water Flow Charts).

Water rights in Mississippi are controlled by the Mississippi Department of Natural Resources. The Department has the authority to permit appropriation of water of any stream only in excess of established average minimum flow as based upon records or computations. Exceptions may be made for domestic and municipal users. Average minimum flow is the average of the minimum daily flow occurring during each of the five lowest years in the period of the preceding twenty consecutive years. No appropriation of water shall be authorized that will impair the effect of stream standards set under the pollution control laws of the state based upon a minimum stream flow.

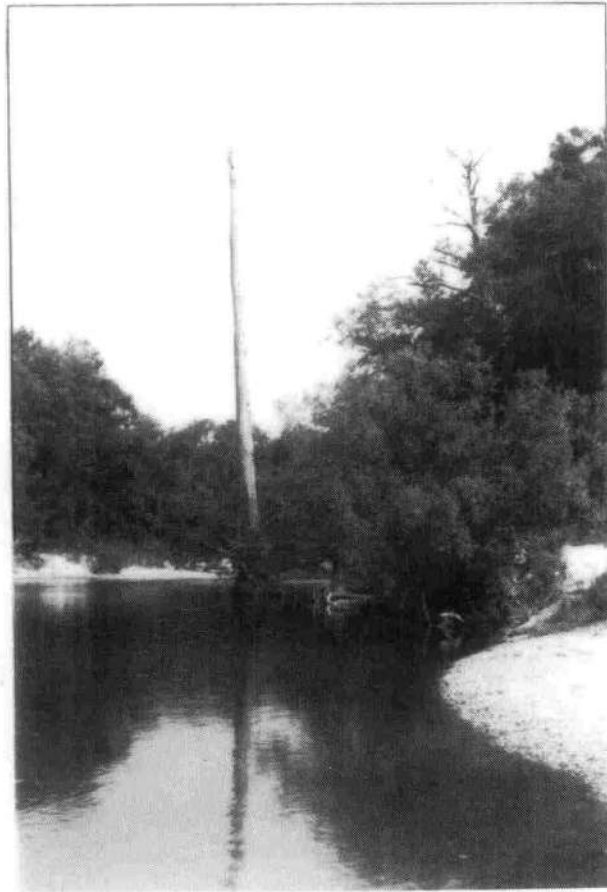
In addition to the above uses in the watershed that might affect water quality, the Camp Shelby maneuver area has a potential for causing silt to enter Cypress Creek and flow into Black Creek. The area accommodates tanks, armored personnel carriers, bombing ranges, artillery ranges, and other types of facilities for practicing military operations. Close inspection and monitoring by the Forest Service and Military has prevented any significant downstream damage in the past. Water monitoring data for Cypress Creek near Janice is in the Appendix.

In accordance with Section 10 of the Rivers and Harbors Act of 1899, Black Creek is designated as a navigable river from the mouth of the river to a point 30 miles upstream. This designation does not include any of the study area. Under Section 404 of the Federal Water Pollution Control Act of 1972 the entire stream within the study area is classed as waters of the United States which permits free public access on the water, but, depending on state law, does not allow access to the land under the water or on the banks. A determination has not been made by the state that would classify the river as navigable under state law; therefore, an assumption has been made that the banks belong to the adjoining landowner.

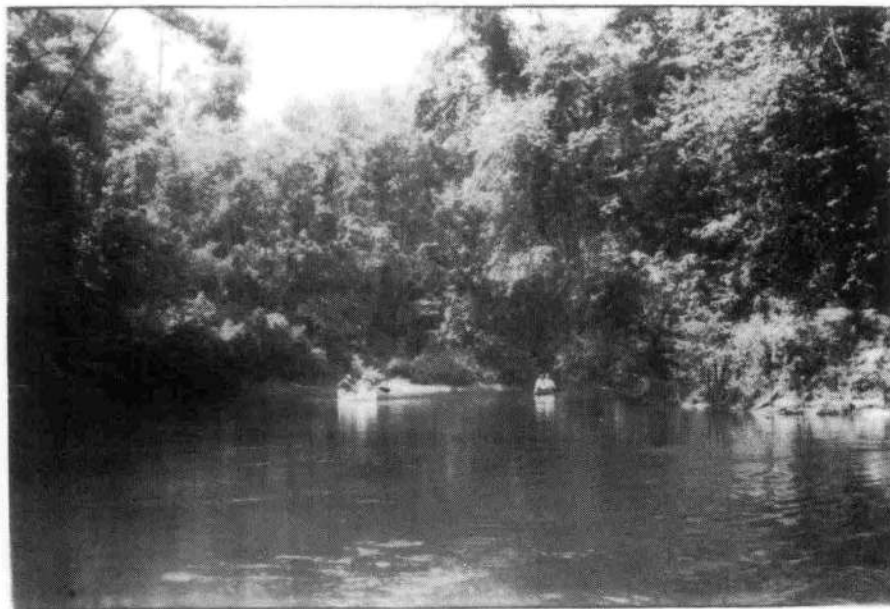
Under Chapter IV of "State of Mississippi Water Quality Criteria for Intrastate, Interstate and Coastal Waters" adopted April 12,



RAIL BRIDGE BELOW U. S. 49
SEGMENT "A"



THE STREAM
SEGMENT "A"



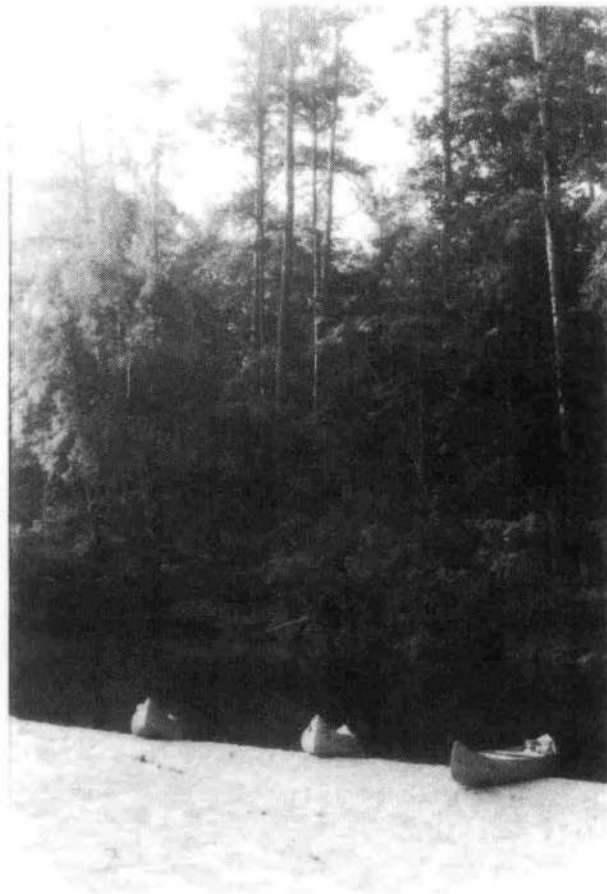
STREAM SEGMENT "B"



SEGMENT "B"



TRIBUTARY OF BLACK CREEK IN SEGMENT "B"



SEGMENT "B" OF BLACK CREEK



SEGMENT "C" OF BLACK CREEK

1977, Black Creek has been classified as "Recreation" water. This classification set by the Mississippi Air and Water Pollution Control Commission, now the Pollution Control Bureau, requires that the quality of waters so classified be suitable for recreational purposes, including such water contact activities as swimming and water skiing. The waters shall also be suitable for use for which waters of lower quality will be satisfactory. This classification applies to the portion of Black Creek from Highway 11 to the Pascagoula River, including the entire study area. (See Appendix F).

The Mississippi Pollution Control Bureau is responsible for issuing permits allowing for disposal of waste into the creek. The Bureau is also responsible for maintaining the water quality in the creek to no less than the standards set for "Recreation" waters.

Water quality in Black Creek is generally good. The samples collected from Cypress Creek near Janice by the U.S. Geological Survey are the only measurements of quality that have been taken over a prolonged period beginning in 1975. These records show some erratic readings for fecal coliform in 1976 and 1977, but for 1978-1980 all readings are below the 200 colonies per 100 ml. set as a standard for recreation streams in the State of Mississippi. (See Appendix C).

The pH varies from a low of 4.7 to a high of 7.2. The low is below the 6.0 as set in the state standards, but it is felt that this is a background pH occurring through natural causes

In the Pascagoula River Comprehensive Basin Study prepared in 1968 by the Mobile District, Corps of Engineers, Department of the Army, a reservoir site was selected on Black Creek in the N.E. corner of Stone County. This site was located near the lower end of the study area and at flood elevation would reach almost to U. S. Highway 49. This was listed as a potential hydroelectric generating site. Since then the Pat Harrison Waterway District Board of Directors have gone on record as being opposed to any impoundments on Black Creek in the study area which coincides with the current Black Creek Float Trip.

Soils

The following Soil Series are present within the 200 foot corridor on each side of the river: Bassfield, Benndale, Bibb, Bigbee, Eustis, Harleston, Latonia, McLaurin, Pamlico, and Treldoc. The majority of the use anticipated will be on the water, sandbars, and in and adjacent to the developed sites. Since most soils flood at some time during most years, developments need to be designed to withstand floods. Drainage in the form of grassed ditches, culverts, and concrete ditches should be incorporated as a result of soil compaction to drain off surface water with a minimum of damage. Where possible, any developments should be placed on well-drained sites. Any developments that will receive heavy

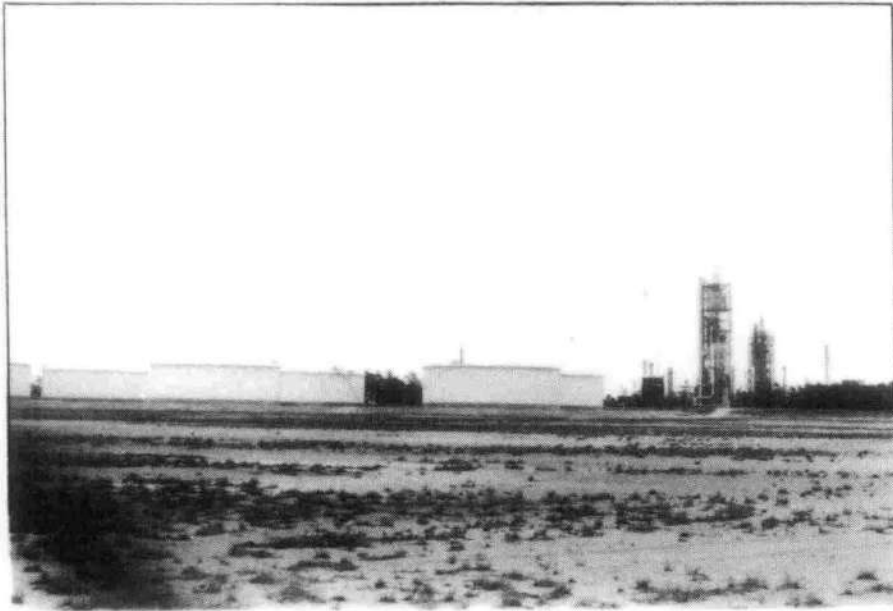
traffic will require reinforcement to compensate for expected compaction. (See Appendix G for soils data).



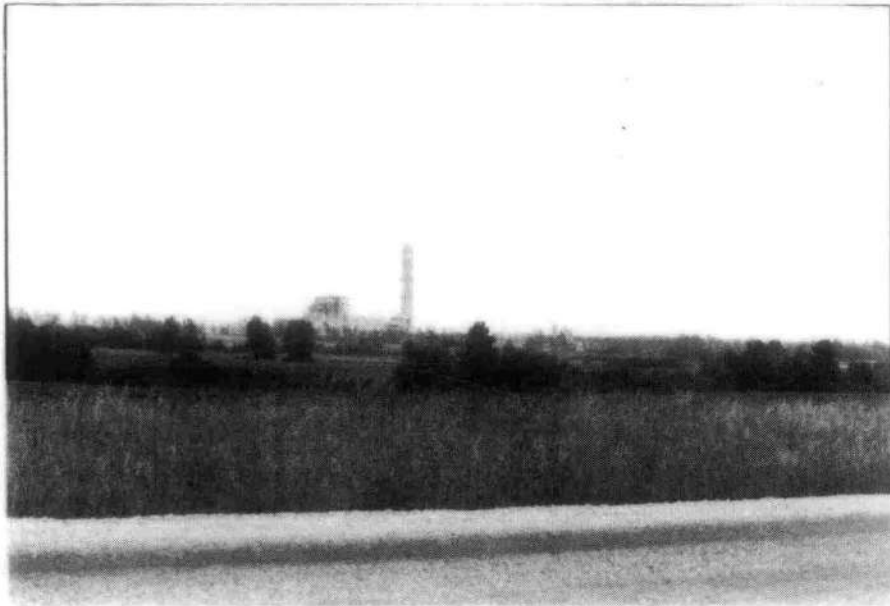
LITTLE BLACK CREEK WATER PARK



CAMP SHELBY MANEUVER AREA



OIL REFINERY



ELECTRIC GENERATING PLANT

Geology and Minerals

The Wild and Scenic River Study Area is located in the southeastern portion of the Mississippi Salt Basin. The Mississippi Salt Basin is bounded on the north by the Pickens-Gilbertown Fault Zone and on the south by the Wiggins arch. Located within the salt basin are many deep-seated salt structures. These structures are very important in the entrapment of petroleum.

The lowest formation cropping out in the study area is the Hattiesburg Formation. This formation contains interbedded sands and sandy clays in the lower part, thick massive clays in the middle, and silty sands and clays in the upper portion. The uppermost Miocene is the Pascagoula formation, which is mostly gray-green or gray-blue clay and silty clay, locally fossiliferous.

The Citronelle formation, including the high terraces, are the youngest sediments on the surface in the area, except for very local areas of recent alluvium. Citronelle sands and gravels are very red in color with occasional white clay.

Within the 200' corridor there are 303 acres of reserved or outstanding rights. These mineral rights are mostly for oil and gas only, but in some cases include all minerals.

The only mineral production in the area now is oil and gas and a few gravel pits for road surfacing.

Fish & Wildlife

Black Creek is not known for its fighting sport fish, but is known as a stream where you can get a good mess of catfish in the spring. Several incidents of accidental spills of chemicals or oil have hurt the fish populations and habitat, but restocking and habitat improvement measures after the spills restored the populations.

The Mississippi Natural Heritage Program has identified the species Graptemys flavimaculata, Yellow-blotched Sawback Turtle on Mississippi's list of threatened reptiles, as being in the study corridor. Obuvaria unicolor, a species of Mussel, has been collected downstream from the study area.

Species that have been found in the vicinity but not specifically in the study corridor are: Glossy Water Snake, Golden Eagle, Southern Coal Skink, Gopher Tortoise, Southern Hognose Snake, Eastern Coral Snake, and Black Pine Snake.

Species that are believed to be in the watershed and possibly the study corridor that are on the Federal list of Endangered or Threatened Species are the American Alligator, Black Bear, and Red-cockaded Woodpecker.

Hunting is good for deer, turkey, and gray squirrel. The oxbow lakes and sloughs provide suitable woodduck habitat with huntable populations. Wildlife habitat varies along the river from predominately pine forest to bottomland hardwood. Hunting pressure is heaviest in the bottomland types where winter food supplies are greatest. Nongame species are evident throughout the length of the river with cavity users most abundant in the bottomland community.

Vegetation

The bottomland hardwood species include yellow poplar, magnolia, sweet gum, red and white bay, sycamore, cypress, white oak, black gum, water oak, willow oak, tupelo gum, cottonwood, white ash, cow oak, southern red oak, beech, box elder, hickory, ironwood, blue beech, titi, and others. Most of the pine lands are somewhat open stands with a dense understory of shade tolerant deciduous species.

Archaeology and History

The south Mississippi Piney Woods form a distinct vegetational, geological and cultural setting in which people have interacted for at least 9,000 years. Black Creek is in the northern half of the Piney Woods.

The majority of the holdings of National Forest lands on the Black Creek Ranger District of the DeSoto National Forest are drained by Black Creek and its tributaries. Cultural resource investigations of various intensities have been conducted on these Federal lands in the Black Creek drainage during the previous few years, and investigations are increasing in the area generally. The involvement of the U. S. Forest Service in developing public recreational facilities, which focus on Black Creek, provides the opportunity to assemble the cultural heritage of the area in the form of an overview, as a management tool for the interpretation and enhancement of cultural values in which recreational features are a part.

The earliest positive evidence for occupancy in the Black Creek drainage is tied to that period of time known as the "Archaic" Period, or "Meso-Indian Era," lasting from around 8500-4000 years ago. Distinctive side and corner notched, broad based and stemmed projectile points, with an associated tool kit suggesting plant food procurement and processing, are indicative of the Archaic Period.

Artifacts attributable to Archaic occupations are commonly found throughout the Black Creek basin; however sites indicating long-term occupations are lacking. In the study area, Archaic sites are represented by artifact scatters of limited areal extent, consisting usually of fragments of diagnostic artifacts, and quantities of lithic debitage from the manufacture of stone tools.

Archaic peoples existed in an environment similar to modern times, although it was somewhat moister and cooler. In the Piney Woods

environment, particularly in the Black Creek area, Archaic settlements appear to have an upland orientation in contrast to directly focusing on the floodplains. Sites are commonly found along the margins of streams which drain the uplands and feed into Black Creek. Often sites are located on ridge tops adjacent to branch-heads or former springs. Benches or small level shelves cropping out from side slopes were also preferred locations, particularly if a spring was nearby.

Large villages or base camps are unknown for the area, attesting to the transient nature of the pattern of prehistoric occupation.

The early settlement of the Black Creek area, excepting the brief colonial efforts of the French along the coast, stemmed from the Treaty of Mount Dexter and the subsequent public land surveys and establishment of the land office in Augusta during the turn of the 19th century. Settlers entered the newly opened lands from the older settlements in Georgia and South Carolina via the Three Chopped Way, or the Natchez to Fort St. Stephens Road, and by the old Federal Road between Mobile and New Orleans. By this time the old Natchez District to the west of the Piney Woods had attracted numerous settlers desiring to farm the fertile lands. The sandy soils of the Piney Woods did not support profitable agriculture, however the extensive open, unbroken pine forest with its blanket of coarse grasses and cane brakes supported extensive cattle raising. Thus, a distinction was made early between those people who chose to settle in the Piney Woods over farming regions.

Scenery

The Black Creek corridor is characterized by meandering pools and occasional rapids during lower water volume seasons. Water clarity is somewhat restricted by the high concentration of tannic acid which gives a dark brown or black cast. This feature is the origin for the name of the creek. Steep vertical banks with varying differences in elevation of up to 30', and overhanging branches give an occasional sense of enclosure. Differing stream widths and numerous large white sandbars give good visual variety.

Recreation

For over ten years the portion of Black Creek that is being studied has also been a designated float trip (canoes and flat-bottom boats). During 1982 about 26.5 thousand visitor days were spent on the Black Creek Float Trip and related facilities. About 13.8 thousand visitor days were spent floating the creek and 12.7 thousand visitor days at the three developed sites along the creek, and two boat ramps with no other development.

No concessionaires or commercial facilities have been developed for the float trip. There are several suppliers of canoes in Hattiesburg and Brooklyn, and arrangements can be made for pickup and delivery to facilitate the trip.

There are two major developed recreation sites upstream from the study area; these are Little Black Creek operated by the Pat Harrison Waterway District and Paul B. Johnson State Park.

In 1980 construction began on a hiking trail that parallels Black Creek from Fairley Bridge to Big Creek Landing. This trail is now completed and at 10 or 12 points comes out onto the creek bank. The creek is a major attraction along the trail which has been designated a National Recreation Trail.

FACILITIES AT EACH DEVELOPED RECREATION SITE

	Boat Ramps							
	Concrete	Sand	Stair Type	Parking	Picnicking	Camping	Toilets	Water
BIG CREEK	●				●	●		
CYPRESS CREEK	●				●	●	●	●
FAIRLEY BRIDGE	●				●	●		
JANICE				●	●	●		●
MOODY			●		●	●		●

TABLE III-2

Economy

Generally, the immediate area of Black Creek is rural with small farms and industrial landholdings. The number of agricultural workers has been declining gradually with the number of employees in establishment-based employment increasing. Government and the wholesale and retail trade have been the biggest gainers.

Hattiesburg is the largest city in the three county area, but the Biloxi-Gulfport area is only a short distance to the south.

See selected economic data in Table III-3.

TABLE III-3

Economic Data - Black Creek Counties and Mississippi

	<u>Population of Counties (1980) ^{1/}</u>			
	<u>Forrest</u>	<u>Perry</u>	<u>Stone</u>	<u>State</u>
White	47,719	7,712	7,463	1,615,190
Black	17,695	2,141	2,195	887,206
Other	604	11	58	18,242
Total	66,018	9,864	9,712	2,520,638
Per Capita Income (1979) ^{1/}				
	6,817	4,844	7,479	6,200
Unemployment (Annual Average 1975-1980) ^{1/}				
	1,430	330	310	76,000
Percentage	4.7	7.4	9.8	7.4
1981 Returns to Counties from the Forest Service				
Total	\$195,386	\$641,175	\$159,970	\$5,781,473
Per Acre	\$3.97	\$3.97	\$3.97	\$2.69

^{1/} Handbook of Selected Data for Mississippi, September 1981,
Mississippi Research and Development Center.

IV. ENVIRONMENTAL CONSEQUENCES

This chapter forms the scientific and analytic basis for comparison of the alternatives. Environmental consequences are the result of activities scheduled to implement the plan and vary as a result of the area that will be affected by the alternative. Table IV-1 is designed to show the total effect of implementation, while Table IV-2 is designed to show how the quantitative effects differ from Current Management.

There is no change in some activities between alternatives. These are:

1. Range
2. Water Yield & Quality
3. Wildlife
4. Fisheries
5. Threatened or Endangered Species
6. Historic & Archaeologic
7. Air Quality

Timber

A 200 foot strip along each side of the river is currently designated to protect and enhance aesthetic quality. These acres are included in the regulated forest land and can be harvested with special consideration being given to aesthetic quality.

Present net value and volumes harvested are based on current management techniques on the acres that would have timber harvested on a regulated basis. This data is obtained from a FORPLAN run over a 50 year planning horizon.

Volumes that would be harvested from National Forest lands under each alternative are displayed below over a 50 year planning horizon.

TABLE IV-1
TIMBER VOLUMES
(In thousand board feet)

Alternative	I	II	III	IV	V
Volume ^{1/} LL.	1,115	0	825	0	825
Hdwd.	4,430	0	2,190	1,030	1,165
Y.P.	6,270	0	1,430	835	625
Slash	<u>1,060</u>	<u>0</u>	<u>790</u>	<u>0</u>	<u>790</u>
TOTAL --	12,875	0	5,235	1,865	3,405

^{1/} Does not include any acquisition through exchange.

Table IV-2
RECREATION USE IN THE 200-foot CORRIDOR IN 1982

		Entire Corridor	A	Corridor Segments		
				B	C	
<u>Dispersed Activities</u>						
-- Swimming	(RVD)	2,800	500	1,800	500	
-- Stream Fishing	(RVD)	3,600	900	1,700	1,000	
-- Canoeing & Rafting	(RVD)	7,100	1,700	4,400	1,000	
-- Other	(RVD)	300	100	100	100	
		SUB-TOTAL	13,800	3,200	8,000	2,600
<u>Developed Site Activities</u>						
-- Camping	(RVD)	9,400	0	9,400	0	
-- Picnicking	(RVD)	2,300	200	2,100	0	
-- Other	(RVD)	1,000	200	600	200	
		SUB-TOTAL	12,700	400	12,100	200
		GRAND TOTAL	26,500	3,600	20,100	2,800

PROJECTED RECREATION USE IN THE 200-foot CORRIDOR IN THE YEAR 2032
WITH AND WITHOUT BEING DESIGNATED A WILD AND SCENIC RIVER

		Entire Corridor	A	Corridor Segments		
				B	C	
<u>Dispersed Activities</u>						
-- Swimming	(RVD)	19,133	3,417	12,299	3,417	
-- Stream Fishing	(RVD)	24,600	6,150	11,616	6,834	
-- Canoeing & Rafting	(RVD)	48,507	11,617	30,056	6,834	
-- Other 1/	(RVD)	2,050	683	684	683	
		SUB-TOTAL	94,290	21,867	54,655	17,768
<u>Developed Site Activities</u>						
-- Camping	(RVD)	64,233	0	64,233	0	
-- Picnicking	(RVD)	15,717	1,366	14,351	0	
-- Other 1/	(RVD)	6,833	1,366	4,101	1,366	
		SUB-TOTAL	86,783	2,732	82,685	1,366
		GRAND TOTAL	181,073	24,599	137,340	19,134

1/ Other is primarily launching boats.

TABLE IV-2 (contd)

PROJECTED RECREATION USE IN THE 200 FOOT CORRIDOR
IN THE YEAR 2032 WITH DESIGNATION

		Entire Corridor	A	Corridor Segments	
				B	C
<u>Dispersed Activities</u>					
-- Swimming	(RVD)	77,084	13,765	49,554	13,765
-- Stream Fishing	(RVD)	99,108	24,777	46,801	27,530
-- Canoeing & Rafting	(RVD)	195,462	46,801	121,131	27,530
-- Other	(RVD)	8,027	2,753	2,521	2,753
SUB-TOTAL		379,681	88,096	220,007	71,578
<u>Developed Site Activities</u>					
-- Camping	(RVD)	241,844	0	241,844	0
-- Picnicking	(RVD)	63,318	5,506	57,812	0
-- Other	(RVD)	27,530	5,506	16,518	5,506
SUB-TOTAL		332,692	11,012	316,174	5,506
GRAND TOTAL		712,373	99,108	536,181	77,084

Projected Recreation Use

Alternative I

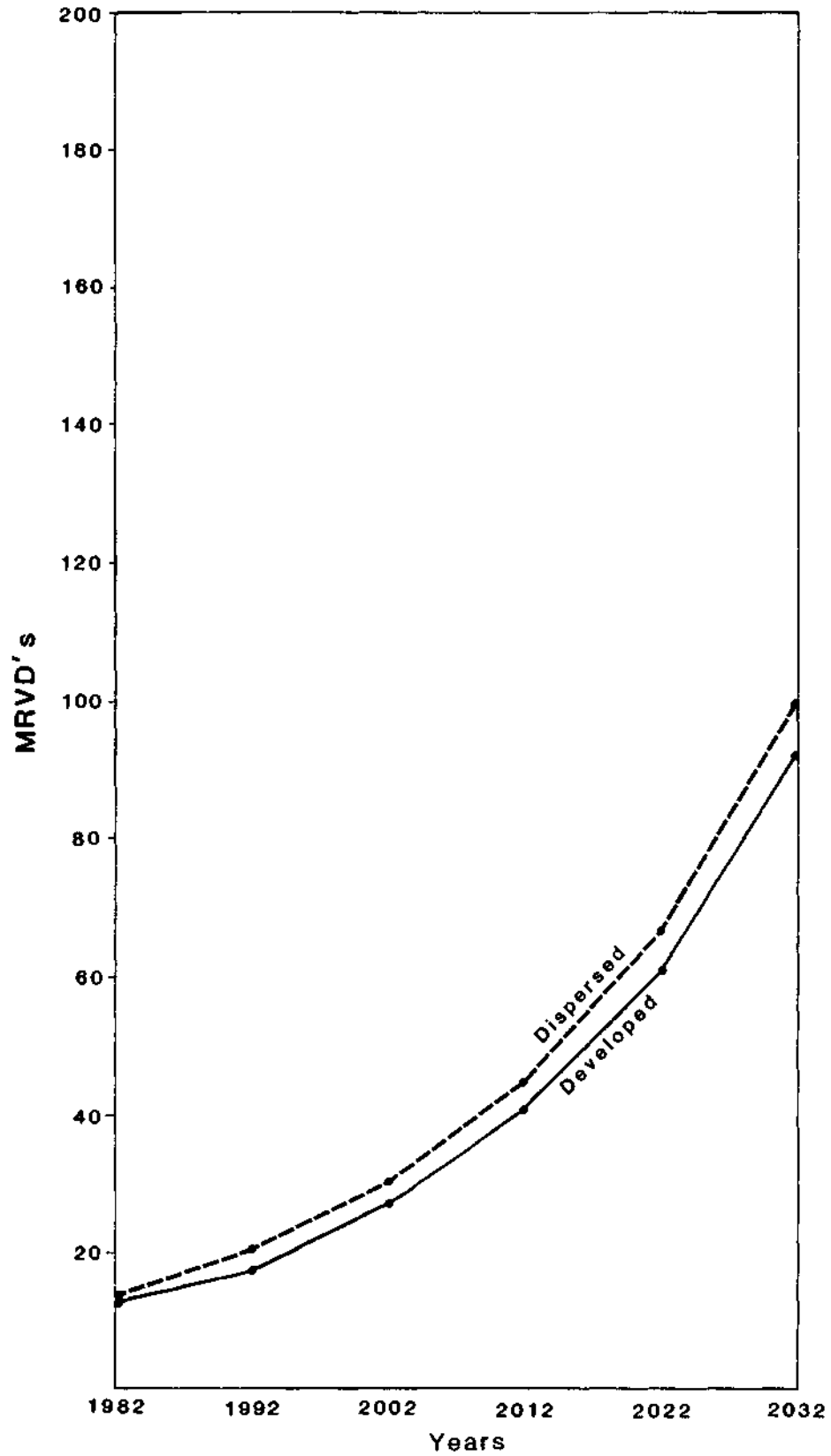


Figure IV-1

Projected Recreation Use

Alternative II

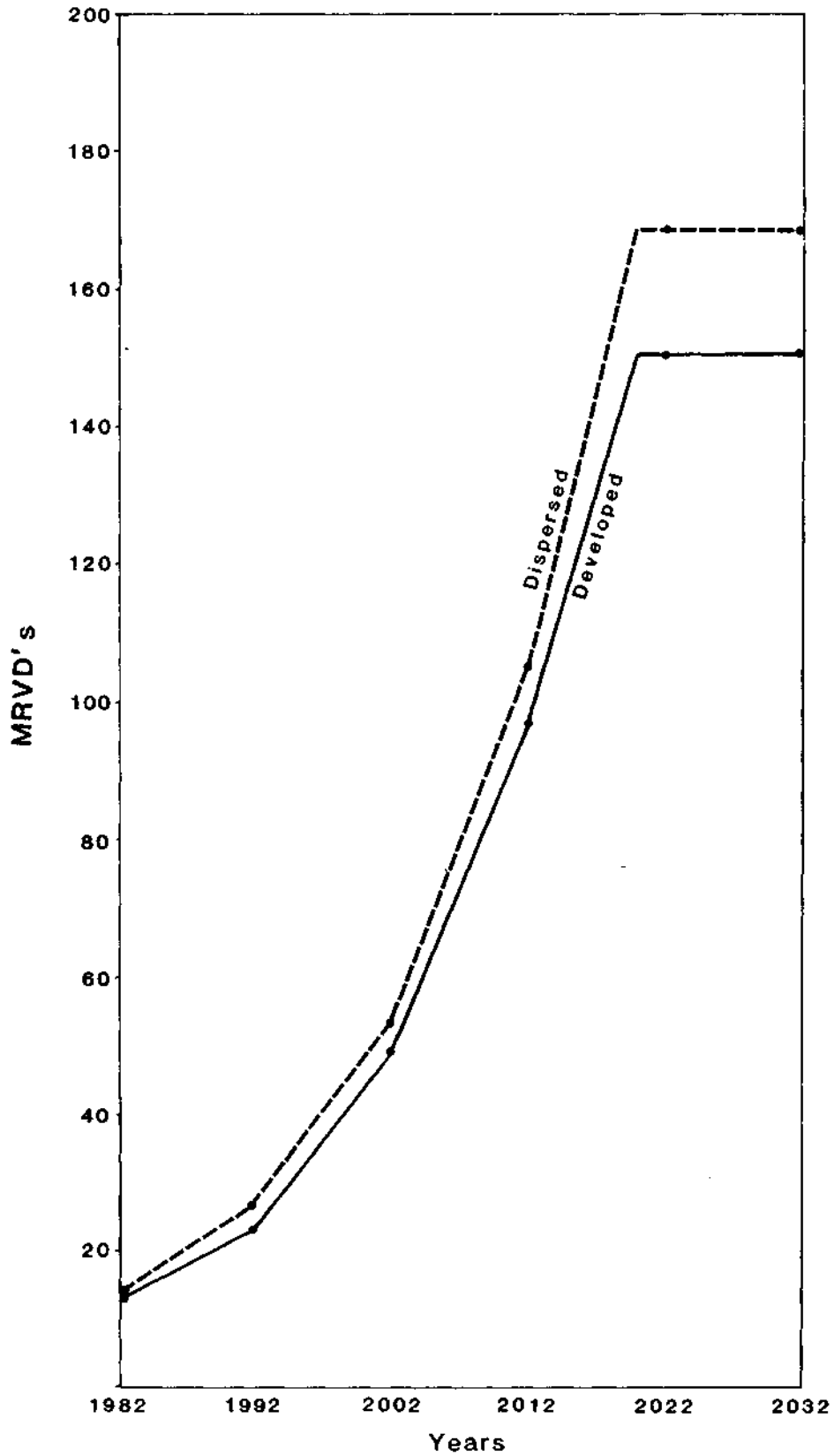


Figure IV-2

Projected Recreation Use

Alternative III

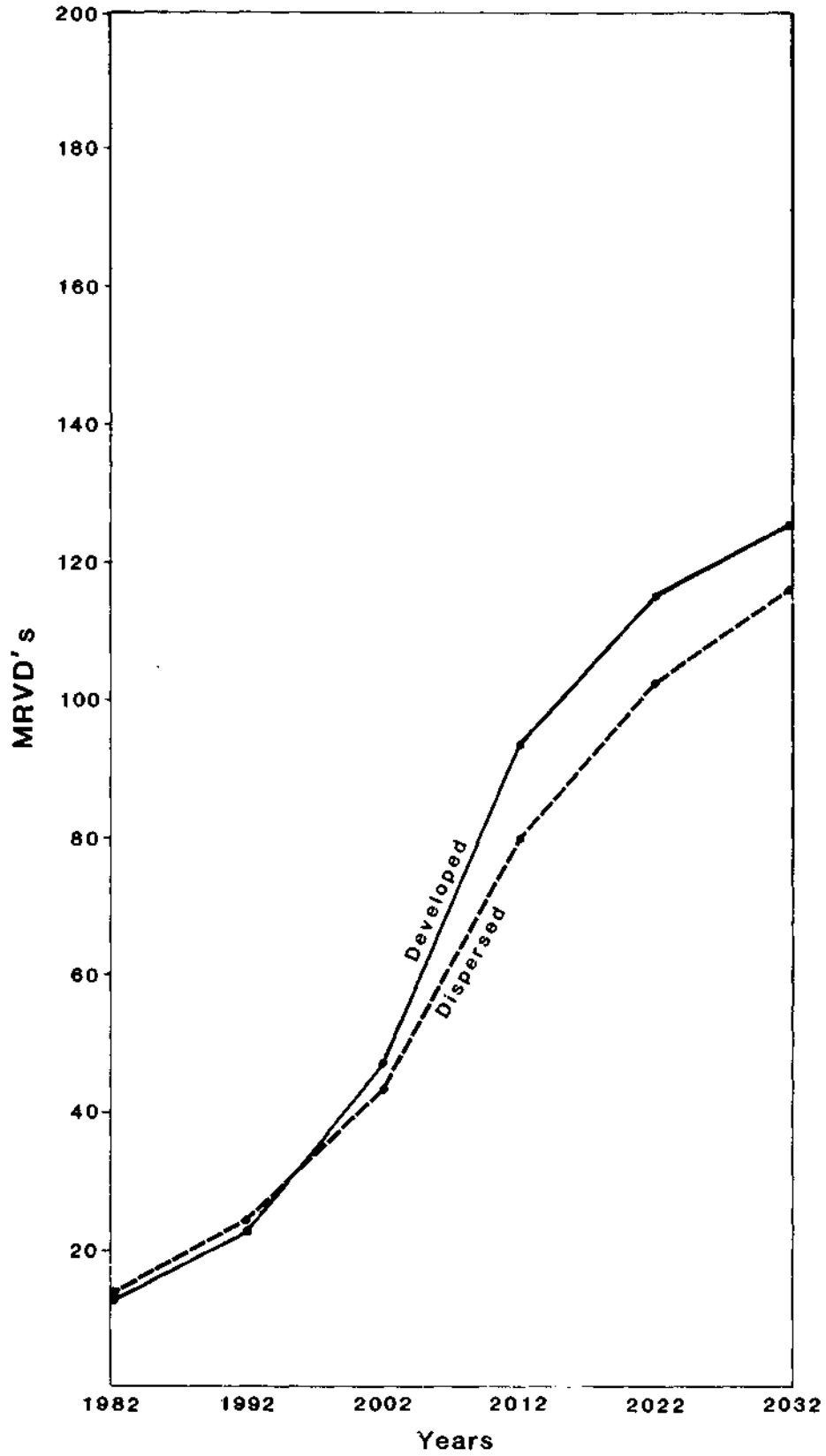


Figure IV-3

Projected Recreation Use

Alternative IV

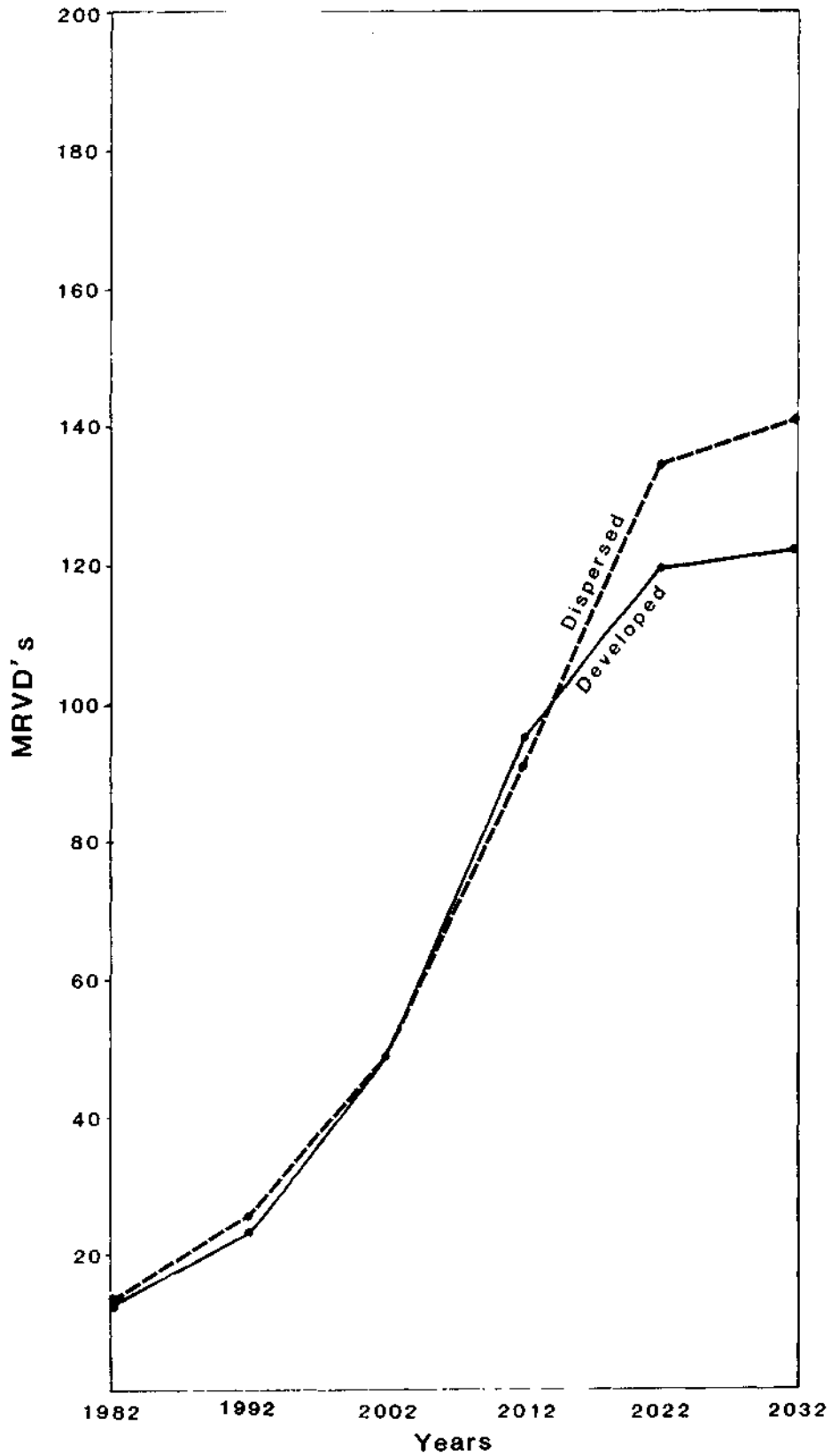


Figure IV-4

Projected Recreation Use

Alternative V

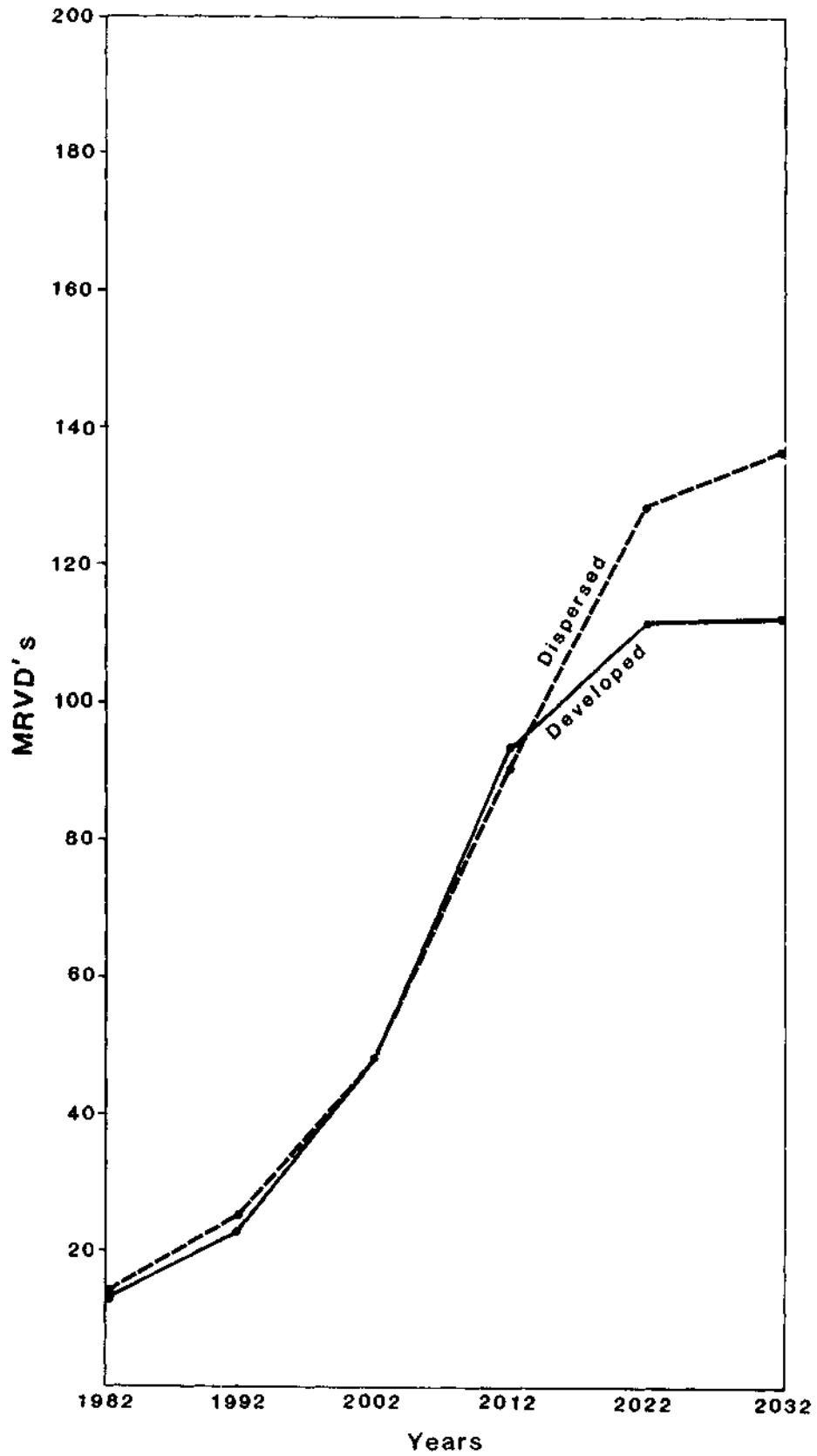


Figure IV-5

TABLE IV-3

PROJECTED CAPITAL EXPENDITURES (50 yr. period)Thousand dollars (1984) ^{4/}

Period ^{1/}	1	2	3	4	5	Total
Alternative I						
Land Acquisition ^{2/}	0	0	0	0	0	0
Scenic Easements ^{3/}	0	0	0	0	0	0
User Facilities ^{3/}	0	0	8	14	40	62
Alternative II						
Land Acquisition ^{2/}	0	0	0	0	0	0
Scenic Easements ^{3/}	300	0	0	0	0	300
User Facilities ^{3/}	0	11	51	81	0	143
Alternative III						
Land Acquisition ^{2/}	0	0	0	0	0	0
Scenic Easements ^{3/}	51	0	0	0	0	51
User Facilities ^{3/}	2	11	53	53	2	132
Alternative IV						
Land Acquisition ^{2/}	0	0	0	0	0	0
Scenic Easements ^{3/}	161	0	0	0	0	161
User Facilities ^{3/}	2	12	53	59	7	133
Alternative V						
Land Acquisition ^{2/}	0	0	0	0	0	0
Scenic Easements ^{3/}	190	0	0	0	0	190
User Facilities ^{3/}	2	11	52	53	2	120

^{1/} Periods shown are 10 years.^{2/} No land acquisition is required. Land will be purchased on a willing seller basis or exchanged for when available.^{3/} User facility costs include costs of roads, sanitary, facilities, etc., needed to service added visitors.^{4/} 1982 dollars have been converted to 1978 dollars and brought forward to 1984.

TABLE IV-4
PROJECTED OPERATION AND MAINTENANCE COSTS
 (50 year period)

Thousand 1984 \$

Period	1	2	3	4	5	Total
Alternative I	189	279	413	612	906	2,399
Alternative II	185	393	717	1,380	1,678	4,353
Alternative III	182	348	669	1,113	1,186	3,498
Alternative IV	215	415	812	1,378	1,488	4,308
Alternative V	309	416	810	1,363	1,505	4,403

Costs used were:

Camping	\$1.04	These are 1982 costs including overhead.
Picnic	\$1.41	
Other Developed	\$1.47	
All Dispersed	\$0.23	

Values were determined for recreation based on recreation values shown in A Recommended Renewable Resources Program - 1980 Update.

Because the use is nearly all recreational the value of \$3.00 per visitor day was used for developed sites and \$5.50 for dispersed use. Table IV-5 shows dollar value projections for recreation benefits.

TABLE IV-5
PROJECTED DOLLAR VALUES FOR RECREATION BENEFITS
 (Thousand dollars 1984)

Period	1	2	3	4	5	Total
Alt. I	1,410	2,088	3,084	4,571	6,771	17,924
Alt. II	1,623	3,192	6,301	12,150	14,899	38,165
Alt. III	1,560	2,866	5,338	8,546	9,680	27,990
Alt. IV	1,594	3,037	5,848	9,991	11,427	31,897
Alt. V	1,592	3,013	5,781	9,753	11,799	31,938

Increased use by floaters will create more disturbance for fishermen, especially those using trotlines and set-hooks. This type of fishing is common practice with local residents. The conflict between these user groups is not expected to become significant since trotline fishing is primarily conducted during night hours.

Minerals

The only minerals presently being extracted anywhere in the vicinity are oil and gas. Due to the nature of these minerals and methods of extraction it would not be necessary to disturb the surface within the 200-foot strip along the creek. Some sand and gravel have been extracted in the area, but this could be controlled by the acquisition of scenic easements and by working with the mineral owners to prevent damages to the corridor.

Drilling for oil and gas can be controlled by Bureau of Land Management lease stipulations on National Forest land owned in fee. On National Forest lands where minerals are not in federal ownership the deed conditions and state law will govern mineral removal. Impacts on private land may have an adverse effect on the river recreation values.

Alternatives II and V include the entire 303 acres on which minerals are reserved or outstanding, while Alternatives III and IV contain 194 acres.

Purchase of Easements and Land in Fee Title

Since more than 50% of the corridor is in public ownership, condemnation is not a viable alternative for purchasing land. To consolidate ownership along the river, lands will be exchanged or purchased when made available by willing owners. It is not anticipated that scenic or access easements will be required along the river. If conditions develop which are incompatible with scenic river classification it may be necessary to purchase or condemn a scenic easement. In the preferred alternative, 143 acres are proposed for scenic easements. A scenic easement will provide the right to control the use of land (including the air space above it) within the authorized boundaries of a component of the Wild and Scenic Rivers System, for the purpose of protecting the natural qualities of a designated wild, scenic, or recreational river area. As a general rule, a scenic easement of this type will cost about 80% of the fair market value for the land.

TABLE IV-6

SCENIC EASEMENT NEEDS BY ALTERNATIVE

Alternative	1	2	3	4	5
Acres	0	846	143	454	535
Value M\$	0	300	51	161	190

The assumption is that all scenic easements would be purchased in the first 10 years after designation.

Preservation of Natural Characteristics or Values

Table IV-7 shows the miles and acres of outstandingly remarkable scenic and recreation values preserved. Alternative III contains the lowest percent of private lands and the highest percent of State lands. In Alternative I protection and preservation of the river and its environs will be administratively controlled on Forest Service lands.

TABLE IV - 7

PRESERVATION OF NATURAL CHARACTERISTICS

Alternative	1	2	3	4	5
Miles	-	41	19	31	29
Acres	-	2,947	1,373	2,159	2,161
% State Land	-	9.6%	14.6%	13.1%	9.3%
% Private Land	-	28.7%	10.4%	21.0%	14.8%
% National Forest	-	61.7%	75.0%	65.9%	75.9%

Soil Loss

All alternatives will result in a base level soil loss of 375 tons per year since no development or vegetative manipulation is anticipated within the corridor.

Compatibility with State and Local Governments

The proposed incorporation of Black Creek into the Wild and Scenic Rivers System displays a high degree of compatibility with the desire and recommendations of state and local governments. The Mississippi Forestry Commission has expressed disfavor of any action that would limit their ability to manage 16th section land to its fullest capability and reduce the property rights of private landowners. (16th section lands - lands contained in the 16th section of each township, owned by the State and managed primarily to support public schools).

With State regulatory authority, Pat Harrison Waterway District has policy to maintain free-flowing conditions of Black Creek throughout its length within the study area.

The Mississippi Natural Heritage Program has expressed an interest in expanding the area of study to include Beaverdam Creek and the lower portion of Black Creek to the Pascagoula River Bottom area now owned and managed by the State.

Health, Safety, and Social Well-Being

Alternatives II-V designating all or a portion of the river will result in increased traffic on narrow country roads in the proximity of the river. The present road system, featuring both paved and gravelled surfaces, will effectively support projected increases in traffic.

Along with increased use on the river is an expected increase in littering, vandalism, and trespass incidence on private lands. Alternative III would have the least impact on private lands, conversely to Alternative II (complete designation). Present use of the river as a float trip causes a certain amount of trespass, but it seems to generally be tolerable to the landowners along the river.

High water and flooding is not uncommon to the river during the spring months, generally March and April. This portion of Black Creek responds rather quickly to heavy rains in the upper watershed. Overhanging or partially submerged trees and extreme water turbulence create a very hazardous situation for canoeists during high water. Every effort will be made to communicate hazardous conditions to the user.

Inherent swimming hazards along the river and at developed recreation sites are a natural condition of the river system. Common sense and good judgment in swimmer use is needed to recognize hazardous situations and activities.

Visual Quality Objectives

Under current management direction visual quality would be retained in the classification "retention" on Forest Service land (Alternative I), and on Designated lands (Alternatives II, III, IV, & V). Degradation of visual quality may occur on private lands adjoining the river where not designated (Alternatives III, IV, & V), or under Alternative I.

Vegetation

No appreciable change in vegetation will be introduced along the river resulting from designation. However, potential for vegetative alteration exists on private lands in Alternatives I, III, IV, & V outside of designated segments.

Irreversible or Irretrievable Commitment of Resources

All alternatives focus on retaining the land and resources in a natural condition. There would be no irreversible commitment of resources under any of the alternatives. Irretrievable loss of forest products would result in all alternatives due to necessary development of additional picnic and camping facilities.

Relationship Between Short-Term Uses and Long-Term Productivity

None of the proposed short-term activities would affect long-term productivity.

Energy Requirements

The major energy use resulting from designation will be in mass transportation to and from Black Creek. Consumption will increase with long distance travelers using the river. However, a decrease in consumption may occur within close proximity due to increased awareness and reduced need for long distance recreational travel.

Energy consumption will be greatest in Alternatives II and IV due to necessary construction of additional camping and picnicking facilities.

Environmental Effects Which Can Not Be Avoided

Increased disturbance along the river will accompany increased use. The greatest impact will probably be associated with the immediate lands adjoining the river and the large broad sandbars where overnight camping will occur. Alternative II will cause the greatest impact and Alternative III the least, from designation of Wild and Scenic Rivers.

Also associated with people use is the unavoidable impact of environmental degradation. Projected use is within the carrying capacity of the river and should not result in overcrowding and overuse. User education through various means of information transfer will reduce this impact.

LIST OF PREPARERS

Portions of this study were prepared after consultation with the Mississippi Natural Heritage Program. Those involved from the Natural Heritage Program were:

Joseph W. Jacob, Jr.	-	Program Coordinator/Curator, Mississippi Natural Heritage Program
John Burris	-	Wildlife Biologist III, Mississippi Natural Heritage Program
Barry McPhail	-	Protection Planner, Mississippi Natural Heritage Program

NATIONAL FORESTS IN MISSISSIPPI PREPARERS

	<u>Professional Discipline</u>	<u>Experience (Years)</u>	<u>Expertise</u>
Mark DeLeon	Archaeology	9	Forest Archaeologist
Bill Lucas	Geology	18	Geologist
Joe Clayton	Forestry	9	Lands Staff Officer
Gene Jackson	Forestry	9	Recreation Staff Officer
John White	Forestry	13	Silviculturist
Dan Ebert	Fisheries Biology		Fisheries Biologist
Joe Duckworth	Forestry	25	District Ranger
Brian Knowles	Wildlife Biology & Management	10	Wildlife Biologist
Dave Johnson	Landscape Architecture	6	Landscape Architect
Clurin B. Reed	Surveying	15	Land Surveyor
Doug Williams	Forestry	5	Public Information
Lew Beyea	Forestry	10	Forest Planner
Bruce Macko	Forestry	5	Planning Staff Officer
Jim Covington	Forestry	20	Resource Management
Donald Holzer	Soils	18	Soils
Melvin Butler	Commercial Art.	6	Illustrator
R'Edna Farnam	Typing	12	Typist

LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS
TO WHOM COPIES WERE SENT

Federal Agencies:

Department of Defense
Department of the Army
Department of Energy
Department of Commerce
Environmental Protection Agency
Department of Health and Human Services
Department of the Interior
Department of Housing and Urban Development
Fish and Wildlife Service
Federal Energy Regulatory Commission
Department of Transportation
Water Resources Council

Department of Agriculture
 Rural Electrification Administration
 Soil Conservation Service
 Forest Service (Southern Forest Experiment Station)

Federal Power Commission
Federal Highway Administration
Federal Railroad Administration

State and Local Agencies:

Governor's Office
A-95 Coordinator
Mississippi State University
University of Southern Mississippi

State and Local Agencies (contd):

University of Mississippi
Mississippi Natural Heritage Program
Bureau of Marine Resources
Pat Harrison Waterway District
Southern Mississippi Planning and Development District
Recreation and Parks Bureau
Department of Wildlife Conservation
Mississippi State Highway Department
Mississippi Military Department
Mississippi Forestry Commission
Department of Natural Resources
Bureau of Land and Water Resources
Gulf Coast Research Lab
South Delta Planning and Development District
Department of Archives and History
Museum of Natural Science
Research and Development Center
Mississippi Geological Survey

Boards of Supervisors:

Forrest County
Perry County
Stone County

Other Organizations:

Sierra Club
Audubon Society

Other Organizations (contd):

Mississippi Forestry Association

Mississippi Association of Supervisors

Congressional Delegations:

Senator John Stennis

Senator Thad Cochran

Representative Trent Lott

INDEX

A

	<u>Page</u>
Abstract	i
Access	ii,5,12 27,52
Agency, Lead	i,1
Alternatives,	
Analysis and Effects On,	
Energy	55
Fisheries Habitat	42
Grazing	42
Health and Safety	54
Historic and Archaeological Sites	42
Landownership	52
Minerals	52
Recreation	43,52
Scenic Qualities	52-53,54
Timber Management	42
Vegetation	54
Water Quality	42,63-71
Water Yield	42
Wildlife Habitat	42
Comparison	iv-vii
Considered,	
I, Description	iii,17
II, Description	iii,17
III, Description	iii,17
IV, Description	iii,17
V, Description	iii,17-18
Formulation Considerations	12
Irreversible or Irretrievable Commitment of Resources	54
Map	5,15
Preferred	i,ii,2 17,18
Relation Between Short-Term Use & Long-Term Productivity	55
Summary of Unavoidable Adverse Environmental Effects	54
Army Corps of Engineers	33

B

C

Classification, Potential	11-12
Consultation with Others	57-59
Counties	i,ii,1

C (continued)

Criteria,	
Alternative Evaluation	9
Classification	9
Eligibility	7,9
Evaluation	9-10

D

Description of Proposed Action	ii
Designated River Study Segment	1
Diversions/Dams/Reservoirs	27

E

Easements	
Scenic	ii,2,52
Access	ii,2,52
Economy	40
Economic Data	41
Endangered Species	37
Energy Requirements	55
Environmental Setting,	
Climate	19
Fish & Wildlife	37
General Setting	19-23
Geology & Minerals	37
Historic & Archaeologic	38,39
Landownership	22
Recreation	39-40
Vegetation	38
Visual (Scenery)	39
Water	27

F

Fish & Wildlife,	
Species, Special Interest	37,38,42

G

Geology	37
Grazing	42

<u>H</u>	
Historic and Archeologic	38,39
Hydroelectric Power	33
<u>I</u>	
Income	41
Instream Flow Requirements	27
Introduction	1
Issues & Concerns	ii,2
<u>J</u>	
<u>K</u>	
<u>L</u>	
Land, Private	ii,2,10
	22,53
Location, Description	1,19
Map	3
<u>M</u>	
Maps,	
Detailed	80-97
Location	3
RARE II	5
River Segments	15
Minerals	52
Mississippi,	
State of	10,22,27
	53,57-58
Natural Heritage Program	37,53,58
	65-67
Air & Water Pollution Control Commission	33
	109-113
<u>N</u>	
National Forest,	1,38
System Lands	10,22
<u>O</u>	
Outstandingly Remarkable Values	11

P

Photos,

Camp Shelby Maneuver Area	35
Electric Generating Plant	36
Farmland, Source of Black Creek	26
Little Black Creek Water Park	35
Oil Refinery	36
Stream Segments,	
A	28
B	29,20,21
C	32
Population	41
Public Involvement	9,10
Purpose of Report	1

Q

R

RARE II	2
Recreation	10,41-52
Developed Use	39
River, Defined	9
Trail	40
Value, Visitor Day	iv
Reservoirs, See Diversions/Dams	
Responsible Agency & Official	i
Returns to County	41
River	
Corridor	12-13,14 19-21
Scenic, Definition	9
Segments,	
, Description	21-23
Location	14-15 21-23
Map	15
Wild, Definition	9
Roadless Area, See RARE II	

S

Safety & Health	10
Scenic Easement	ii,2,52
Sixteenth (16th) Section	53
Study Area, Designated	1
Summary, Report	ii,iii

I

Tables,

Alternative, Effects of	iv,v
Alternative, Effects Compared to Current Management	iv,v,20
Comparison of Alternatives	iv,v
Economic Data	41
Outputs and Effects	vi
Present Net Value	vii
Recreation Facilities	40
Recreation Use	43,49
Capital Expenditure	50
Cost	51
Dollar Values	51
Segment, Location & Classification	11-14
Segments, Landownership	22
Timber Volumes	42
Water,	
Flow	24-25
Quality	71-79
Temperature, Daily	19
Timber Production	vi

U

V

Vegetation	54
----------------------	----

W

Water	
Quality	9,33,42 71-79
Quantity	8,24,25 27,42
Rights	27
Wild and Scenic Rivers Act	1
Wildlife, See Fish & Wildlife	

X

Y

Z

APPENDIX A

LETTER FROM MISSISSIPPI NATURAL HERITAGE PROGRAM

Kenneth Henderson
United States Dept. of Agriculture
Forest Service
100 W. Capitol St. Suite 1141
Jackson, MS 39201

Dear Kenneth,

This letter is in reply to your request for Mississippi Natural Heritage Program inventory data on the Black Creek Wild and Scenic River Study corridor. Enclosed is a computer printout of pertinent data, a key to our stream code system to aid you in interpreting that information, element abstracts giving more detailed information about each special species listed, and a User Request Form which we ask you to fill out and return to us for our records.

The results of our search can be summarized as follows:

- * One special species was found in our data base for the 1/4 mile study corridor-
Graptemys flavimaculata Yellow-blotched Sawback Turtle.
I am including a copy of the title page and portions of the conclusions of a paper dealing with this species.
- * One special species was collected in Black Creek downstream of the study area-
Obovaria unicolor Sp. of Mussel.
Further collection is necessary to establish its range in Black Creek. Its range when established may include parts of the study corridor.
- * Several species have been found in the general vicinity of the Creek for which habitat exists within the study corridor. In the past the corridor has not been thoroughly surveyed and it is probable that many of these species may be found in the corridor upon careful search-
 - LOWLAND/WATER ANIMALS-
Natrix rigida sinicola Glossy Water Snake
 - UPLAND AND SEASONAL ANIMALS-
Aquila chrysaetos Golden Eagle (winter)
Eumeces anthracinus pluvialis Southern Coal Skink
Gopherus polyphemus Gopher Tortoise
Heterodon simus Southern Hognose Snake
Micrurus fulvius fulvius Eastern Coral Snake
Pituophis melanoleucus lodingi Black Pine Snake
 - PLANT SPECIES-
Gordonia lasianthus Loblolly Bay

PLANT SPECIES continued-

Ilex amelanchier Juneberry Holly

Macranthera flammea

Myrica inodora Odorless Wax Myrtle

Stewartia malacodendron Silky Camellia

Juncus gymnocarpus Naked-fruited Rush

Pinguicula planifolia Sp. of Butterwort

Xyris scabrifolia Sp. of Vase-goldies

Some general notes on a variety of concerns:

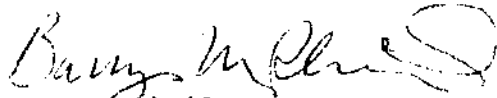
Populations of Graptemys flavimaculata are marginal in Black Creek. The Heritage Program would urge that the corridor be managed to protect and enhance this species and its habitat. For example, the turtles tend to congregate their egg-laying sites. Modification of these areas in the wrong season would cause a decrease in population. This applies to all reptilian species which reproduce on the sandbars.

One tributary, Beaverdam Creek, (J-11-03-17) appears to have a number of records associated with it. It is a stream with high water quality and a lack of encroachment. The Study Team should consider noting in its recommendation to Congress that the stream is an important part of the Black Creek system and an extension of Wild and Scenic status to it would be entirely appropriate, though beyond the mandated scope of the current study.

On the printout, the stream code J-11-03 refers to the portion of the Black Creek watershed which drains directly into the Creek. An additional number (example-J-11-03-17) refers to the portion of the Black Creek watershed which flows into a named tributary of the Creek (stream code key enclosed).

We hope that we have satisfied your information needs. Please do not hesitate to call on us if you need further help.

Sincerely,



Barry McPhail
Mississippi Natural Heritage Program
111 N. Jefferson St.
Jackson, MS 39202

APPENDIX B

SUMMARY OF PUBLIC PARTICIPATION

The Black Creek Wild and Scenic Rivers Study was officially begun in January 1980. The first public meetings were held on March 13, 1980 after mailing out informational brochures to landowners and other individuals and groups that were thought to have an interest in the project.

Public Meetings

Two public meetings were held in Hattiesburg, Mississippi with the first meeting being in the afternoon and the second meeting being in the evening. Twenty-nine people attended the afternoon session and fifteen the evening session. These people represented the following: landowners, individuals, forest practices and industry, industrial water users (oil refinery and power company), state (planning district, wildlife and fisheries, forestry, outdoor recreation, heritage), Bartram Trail, conservation groups (Sierra Club, Audubon, canoeists), student at University of Southern Mississippi.

Results of Public Meetings

Approximately 11 statements were made, and active question and answer periods followed. Some of the concerns were as follows:

Landowners: possibility of condemnation of land in fee and in scenic easements.

Landowners and timber industry: continued use of timber management practices and continued use of fences, pastures, camps, and other present and future right of the landowners.

Conservation groups: continued free flow characteristics of Black Creek for fishing, study, recreation, canoeing, and aesthetics.

Timber and water using industries: continued use and increased use of Black Creek waters for industry.

Sierra Club: possibility of expansion of the study area to include a tributary, Beaverdam Creek, the lower portion of Black Creek to the Pascagoula River and the upper portion of Black Creek to the Forest Service purchase boundary.

Mississippi Forestry Association: effect designation will have on future economic and industrial growth.

Landowner: is there a need for Federal designation?

Other Public Participation

Letters were sent to all Federal, State, and local government agencies that were thought to have an interest in or might be affected by a designation of the creek.

The results were that we confirmed the fact that no agencies are planning water resource developments on the creek with the exception of

a highway crossing planned by the Mississippi Highway Department near the lower end of the study area, and that an impoundment to produce hydroelectric power had been proposed for this stretch of the river at one time, but had been dropped about ten years ago.

During the process of developing criteria some informal contacts have been made to obtain critiques on the criteria development. The Mississippi Natural Heritage Program has been the primary contact for this work.

APPENDIX C

WATER QUALITY PARAMETERS FOR BLACK CREEK

WATER QUALITY PARAMETERS FOR BLACK CREEK

Samp Period - 12/5/79

PARAMETERS/STATIONS

	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>	<u>#7</u>
Air Temperature	13 ⁰ C	13 ⁰ C	13 ⁰ C	14 ⁰ C	14 ⁰ C	14 ⁰ C	14 ⁰ C
Water Temperature	7 ⁰ C	6 ⁰ C	7 ⁰ C	7 ⁰ C	6 ⁰ C	6 ⁰ C	7 ⁰ C
Dissolved Oxygen (ppm)	12.5	11.0	12.0	13.0	11.0	11.0	10.0
Free Co ₂ (ppm)	10.0	7.5	10.0	7.5	10.0	10.0	10.0
Alkalinity (Total) (ppm)	26.0	24.0	25.0	27.0	22.0	22.0	26.0
pH	6.9	6.5	6.0	7.0	6.5	6.5	6.9
Hardness (ppm)	20.0	15.0	10.0	15.0	10.0	10.5	11.3
Nitrates (ppm)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Phosphates (ppm)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sulphates (ppm)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Conductivity (UMhos/cm)	28	24	24	20	24	24	22
Turbidity (JTU)	21	23	21	20	22	23	21

WATER QUALITY PARAMETERS FOR BLACK CREEK

Sample Period - 1/16/80

PARAMETERS/STATIONS

Air Temperature	15 ⁰ C	15 ⁰ C	16 ⁰ C	16 ⁰ C	16 ⁰ C	16 ⁰ C	16 ⁰ C
Water Temperature	11 ⁰ C	11 ⁰ C	11 ⁰ C	10 ⁰ C	10 ⁰ C	11 ⁰ C	11 ⁰ C
Dissolved Oxygen (ppm)	10.0	9.6	10.2	10.0	9.8	9.8	9.6
Free Co ₂ (ppm)	7.1	7.2	7.0	7.5	7.1	7.0	6.9
Alkalinity (Total) (ppm)	17.3	18.0	19.0	18.0	19.0	18.0	20.0
pH	5.4	5.8	5.8	5.5	5.6	5.8	5.7
Hardness (ppm)	30.0	28.0	32.0	30.0	31.0	29.0	29.0
Nitrates (ppm)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Phosphates (ppm)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sulphates (ppm)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Conductivity (Umhos/cm)	25	22	22	20	20	22	21
Turbidity (JTU)	26	27	26	30	26	33	34

Weather: Rain, cloudy, cool. Rain began approximately 9 hours pre-sampling and was continuous throughout period.

Station locations for water quality measurement of Black Creek, 1979-1980.

- Station 1 - Intersection of Geiger Road and Creek, $\frac{1}{2}$ mile southwest of Lake Geiger at bridge. T2N, R13W, Section 22.
- Station 2 - Big Creek Landing. T1N, R12W, Section 1.
- Station 3 - Highway BM 282 bridge in Brooklyn. T1N, R11W, Section 14.
- Station 4 - Moody's Landing - West of intersection 302 and 301. T1N, R11W, Section 14.
- Station 5 - Janice Landing, near BM 121.
- Station 6 - Cypress Creek Landing. T1S, R10W, Sections 16 and 17.
- Station 7 - Fairley Bridge Landing, South of BM 91. T2S, R9W, Section 35.

PASCAGOULA RIVER BASIN

02479155 CYPRESS CREEK NEAR JANICE, MS--Continued
(Hydrologic bench mark station)

WATER QUALITY RECORDS

PERIOD OF RECORD--Water years 1967 to current year.

REMARKS...Samples are collected by a local observer.

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE MICRO- MOHS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	FFCM- COLI- FORM (COL. PER 100 ML)	STREP- TOCOCCI (COL. PER 100 ML)
OCT								
11...	1145	56	32	6.5	19.5	8.1	1300	980
DEC								
14...	1400	25	20	7.2	15.5	8.0	33	60
FEB								
16...	1545	41	23	6.8	15.5	8.0	10	60
MAR								
23...	0909	40	31	6.0	14.0	10.2	--	--
APR								
24...	1800	24	30	6.4	20.0	8.2	20	93
MAY								
16...	1100	116	27	6.4	21.0	8.0	15	85
JUN								
20...	1500	42	27	5.8	25.5	7.4	160	490
JUL								
26...	1500	9.7	22	5.9	24.0	7.5	--	--
AUG								
27...	1700	14	25	5.8	24.5	7.4	95	290
SEP								
12...	1745	13	25	6.5	24.5	8.0	--	--

DATE	HAZAR- DNESS (CAL/G)	SODIUM CAR- BONATE (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT										
11...	4	0	1.1	.2	1.0	46	.4	.4	8	0
DEC										
14...	4	4	2.0	.1	1.9	42	.4	.3	2	0
FEB										
16...	2	2	.6	.2	2.0	41	.6	3.1	0	0
APR										
24...	9	9	2.4	.4	2.1	33	.3	.4	0	0
JUN										
20...	1	1	.1	.1	1.7	76	.4	.4	0	0
AUG										
27...	3	0	.4	.1	1.4	55	.5	.4	6	0

DATE	ALKAL- INITY AS CALCI- CARB (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SIO2) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 140 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTIT- UENTS) (MG/L)	DIS- SOLVED SOLIDS PER AC-FT)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)
OCT										
11...	7	2.6	3.1	.0	12	29	25	.04	.01	.00
DEC										
14...	2	1.6	5.3	.1	12	26	24	.04	.04	.01
FEB										
16...	0	2.2	3.1	.0	9.9	32	21	.04	.02	.01
APR										
24...	0	20	2.4	.1	10	56	39	.04	.03	.01
JUN										
20...	0	4.0	2.6	.1	11	43	20	.06	.01	.01
AUG										
27...	5	3.1	2.4	.1	10	30	22	.04	.03	.00

PASCAGOULA RIVER BASIN

02479155 CYPRESS CREEK NEAR JANICE, MS--Continued
(Hydrologic bench-mark station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to current year.

REMARKS.--Samples are collected by a local observer.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM PER 100 ML	FECAL COLIFORM (COL./100 ML)	FECAL STREPTOCOCCI (COL. PER 100 ML)
OCT 02...	1600	10	23	6.8	24.0	8.0	420	120	--
NOV 04...	1100	17	23	6.6	11.5	10.8	--	--	--
DEC 12...	1730	381	35	6.7	10.5	10.6	2300	550	1600
JAN 17...	1330	136	20	6.8	6.0	10.6	--	--	--
FEB 21...	0900	33	26	6.8	8.5	10.7	2100	500	1450
MAR 13...	1445	467	20	5.8	16.0	9.8	--	--	--
APR 10...	1430	64	25	5.9	19.0	8.8	1600	300	--
MAY 08...	1520	56	25	5.9	--	7.9	--	--	--
JUN 11...	1600	12	28	5.9	27.5	7.0	350	75	--
JUL 02...	1030	12	28	6.1	25.5	6.8	--	--	--
AUG 06...	1645	196	25	6.5	24.5	7.8	250	50	--
26...	1445	27	26	6.6	25.0	7.8	--	--	--

DATE	MARINESS (CA, MG)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (MCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CaCO3 (MG/L)
OCT 02...	4	0	1.4	.2	2.0	47	.4	.4	7	0	6
DEC 12...	12	10	3.2	1.0	5.5	46	.7	1.5	3	0	2
FEB 21...	3	0	.9	.3	1.8	50	.4	.3	6	0	5
APR 10...	190	180	--	--	--	5	.1	--	8	0	7
JUN 11...	3	0	.7	.4	2.2	54	.5	.5	6	0	5
AUG 06...	5	1	1.2	.6	2.0	42	.4	.5	5	0	4

DATE	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SiO2) (MG/L)	DISSOLVED IRON (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	TOTAL NITRATE PLUS NITRITE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)
OCT 02...	2.5	3.2	.1	11	34	24	.05	.92	.05	.01
DEC 12...	4.8	3.0	.2	8.0	40	29	.05	41.1	.05	.05
FEB 21...	2.5	2.9	.0	10	34	22	.05	3.03	.02	.01
APR 10...	2.6	3.3	.0	9.4	34	100	.05	5.88	.05	.01
JUN 11...	1.6	8.7	.0	9.4	38	26	.05	1.23	.07	.01
AUG 06...	4.7	3.4	.0	10	53	25	.07	28.0	.01	.04

PASCAGOULA RIVER BASIN

02479155 CYPRESS CREEK NEAR JANICE, MS--Continued
(Hydrologic bench-mark station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to current year.

REMARKS.--Samples are collected by a local observer.

WATER QUALITY DATA, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH	TEMPER- ATURE (FEG C)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, TOTAL, 100 ML (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UMMF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF ALAR (CFU S, PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
10											
10	1530	24	26	5.9	16.5	9.2	440	60	180	4	0
10	1500	65	28	6.4	16.0	10.5	160	20	60	4	2
10	1500	116	22	7.0	6.0	10.0	150	10	60	3	0
11	1830	34	28	7.2	18.0	8.8	60	10	20	4	0
11	1100	68	38	6.5	22.5	7.7	80	15	25	4	2
10	1400	20	18	7.0	28.5	7.2	60	10	20	3	--

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SILICIUM, DIS- SOLVED (MG/L AS NA)	SILICIUM PERCENT	SULFATE AS SOLVED RATIO	PHOS- PHATE, DIS- SOLVED (MG/L AS P)	NITRA- TE, AS MG/L NO3(N)	CARBA- MATE AS MG/L AS C(N)	ALUMI- NUM (MG/L AS AL)	CARBON DIOXIDE DIS- SOLVED (MG/L AS C(2))	SULFATE DIS- SOLVED (MG/L AS S(4))
10											
10	1.9	1.4	3.0	59	1.7	1.5	5	0	4	10	3.1
10	1.8	1.4	2.7	50	1.5	1.5	2	0	2	1.0	3.2
10	1.7	1.4	2.0	52	1.5	1.5	0	0	3	1.6	2.2
10	1.8	1.4	4.1	70	1.9	1.1	8	0	7	1.0	3.1
10	1.9	1.5	2.2	49	1.5	1.6	--	--	2	--	4.1
10	1.4	1.4	2.0	57	1.5	1.5	--	--	--	--	2.4

DATE	CHLO- ROPHYL- LIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS S(02))	SOLIDS, RESIDUE AT 100 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (MG/L AS F(1))	SOLIDS, DIS- SOLVED (MG/L AS D(1))	VITRO- GEN, MUTAGEN TOTAL (MG/L AS M)	PHOS- PHORUS, TOTAL (MG/L AS P)	SEDIM- ENT, SUS- PENDED (MG/L)	SEDIM- ENT CHARGE, SUS- PENDED (T/DAY)
10											
10	3.6	1.0	13	31	27	1.04	2.01	1.07	1.01	4	1.26
10	4.3	1.2	9.5	29	22	1.04	5.09	1.04	1.01	8	1.4
10	3.7	1.0	8.4	28	20	1.04	5.77	1.05	1.01	6	1.1
10	4.4	1.0	8.8	38	26	1.05	3.49	1.06	1.00	10	1.92
10	3.1	1.0	9.4	41	22	1.06	7.53	1.05	1.01	16	3.3
10	3.7	1.0	11	30	--	1.04	1.62	--	--	20	1.1

PASCAGOULA RIVER BASIN

02479155 CYPRESS CREEK NEAR JANICE, MS--Continued
(Hydrologic bench-mark station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to current year.

REMARKS.--Samples are collected by a local observer.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS, PER 100 ML)	COLI- FORM, FECAL, 0.7 UMPF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, MF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CaCO3)
OCT 04...	1700	11	28	4.5	16.5	0.2	220	160	340	4
FEB 16...	1700	24	44	6.5	9.5	0.8	290	430	160	5
FEB 03...	1000	46	31	5.3	7.5	11.1	460	450	210	4
APR 06...	1100	159	25	5.7	14.0	0.6	250	44	190	3
JUN 09...	1330	29	26	6.5	26.0	7.4	230	430	160	3
AUG 03...	1400	136	28	6.3	23.0	7.8	240	430	4110	0

DATE	HARD- NESS, MEGAL- HEMALT (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SULFUR, DIS- SOLVED (MG/L AS S)	SODIUM AN- ION- CONTENT PERCENT	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKAL- INITY EMUL AS CaCO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	
OCT 04...	0	2.7	2.5	1.7	45	2.0	2.5	5	1.6	3.1
FEB 16...	0	2.9	2.6	2.7	52	2.5	2.6	5	2.6	3.9
FEB 03...	0	2.7	2.5	1.8	48	2.0	2.0	0	3.2	3.2
APR 06...	0	2.7	2.4	2.7	61	2.6	2.3	4	2.0	2.4
JUN 09...	0	2.5	2.4	1.7	53	2.0	2.3	6	2.8	3.4
AUG 03...	0	--	--	--	--	--	--	2	3.6	2.5

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SULFUR, DIS- SOLVED (MG/L AS S)	SULFUR, PENTOH AT 100 PER. (C DIS- SOLVED (MG/L)	SULFUR, SULFIDE SULFIDE (MG/L)	SULFUR, DIS- SOLVED (MG/L AS S)	SULFUR, DIS- SOLVED (MG/L AS S)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS, TOTAL (MG/L AS P)	SULFUR, PENTOH AT 100 PER. (C DIS- SOLVED (MG/L)	SULFUR, DIS- SOLVED (MG/L AS S)
OCT 04...	20	11	30	22	205	1,07	205	2010	42	1,2
FEB 16...	20	12	34	24	205	2,39	207	2000	24	1,7
FEB 03...	20	6.9	36	21	205	8,36	212	2010	20	4,6
APR 06...	20	6.9	28	18	204	15,0	203	2010	53	24
JUN 09...	20	10	24	23	204	2,10	207	2010	13	1,0
AUG 03...	20	--	30	--	206	41,7	206	2020	--	--

PASCAGOULA RIVER BASIN

02479155 CYPRESS CREEK NR JANICE, MS--Continued
(Hydrologic bench-mark station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

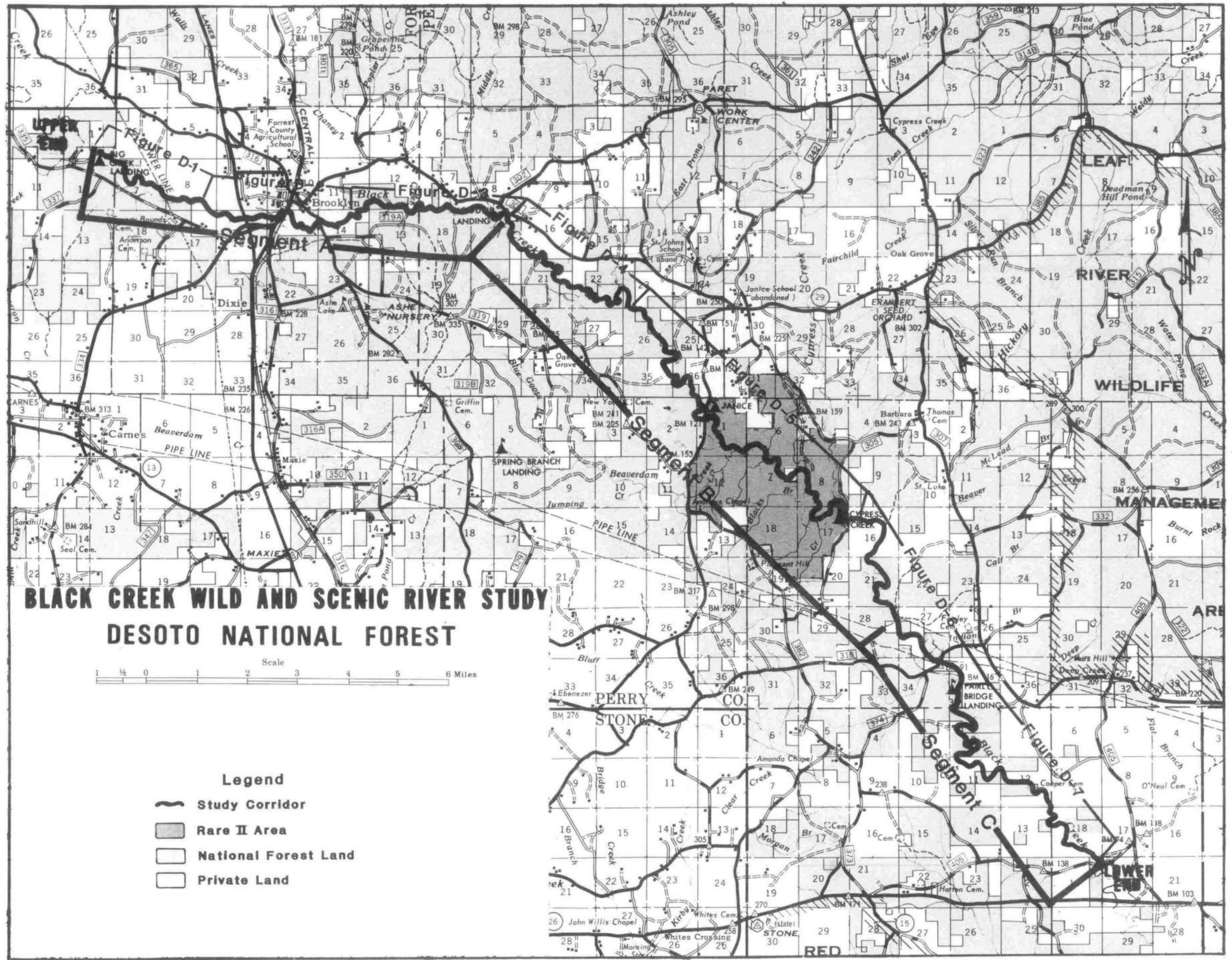
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- (FIC CON- DUCT- ANCE (MICRO- MHDS)	PH FIELD (UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCC FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT												
06...	1445	27	24	6.9	17.0	--	--	--	--	4	0	.8
DEC												
14...	1100	570	24	4.7	13.0	9.0	K35	K12	<5	3	1	.7
FEB												
12...	1730	99	21	5.6	8.0	10.8	K54	K49	K23	3	0	.6
APR												
02...	1400	752	20	4.8	15.0	8.6	150	200	K65	2	0	.6
JUN												
05...	1400	57	18	5.7	25.0	8.0	K64	K32	K6	3	0	.6
AUG												
06...	1500	27	22	5.6	28.0	7.7	K68	K58	K45	3	0	.7

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT											
06...	.4	3.3	63	.8	.5	3	2.3	3.4	.0	13	38
DEC											
14...	.4	1.4	56	.3	.5	2	3.4	2.7	.0	6.3	32
FEB											
12...	.3	2.0	70	.5	.3	6	2.1	3.0	.1	8.6	30
APR											
02...	.2	1.2	48	.4	.4	4	2.6	1.8	.0	4.9	--
JUN											
05...	.3	1.8	47	.5	1.3	4	1.8	4.1	.0	8.4	21
AUG											
06...	.4	2.2	54	.5	.5	3	1.5	3.1	.0	10	36

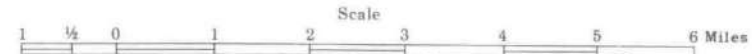
DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FY)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, TOTAL (MG/L AS PO4)	PHOS- PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P)	PHOS- PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)
OCT											
06...	24	.05	2.77	.04	.07	.010	.03	.020	.06	11	.80
DEC											
14...	17	.04	49.2	.05	.04	.010	.03	.000	.00	124	191
FEB											
12...	21	.04	8.02	.03	.03	.010	.03	.000	.00	17	4.5
APR											
02...	14	.02	27.7	.04	.08	.020	.06	.000	.00	68	134
JUN											
05...	21	.03	3.23	.06	.09	.010	.03	.000	.00	10	1.5
AUG											
06...	20	.05	2.62	.04	.05	.010	.03	.000	.00	35	2.6

APPENDIX D

DETAIL MAPS OF EACH SEGMENT
SHOWING PROPOSED BOUNDARIES



**BLACK CREEK WILD AND SCENIC RIVER STUDY
DESOTO NATIONAL FOREST**



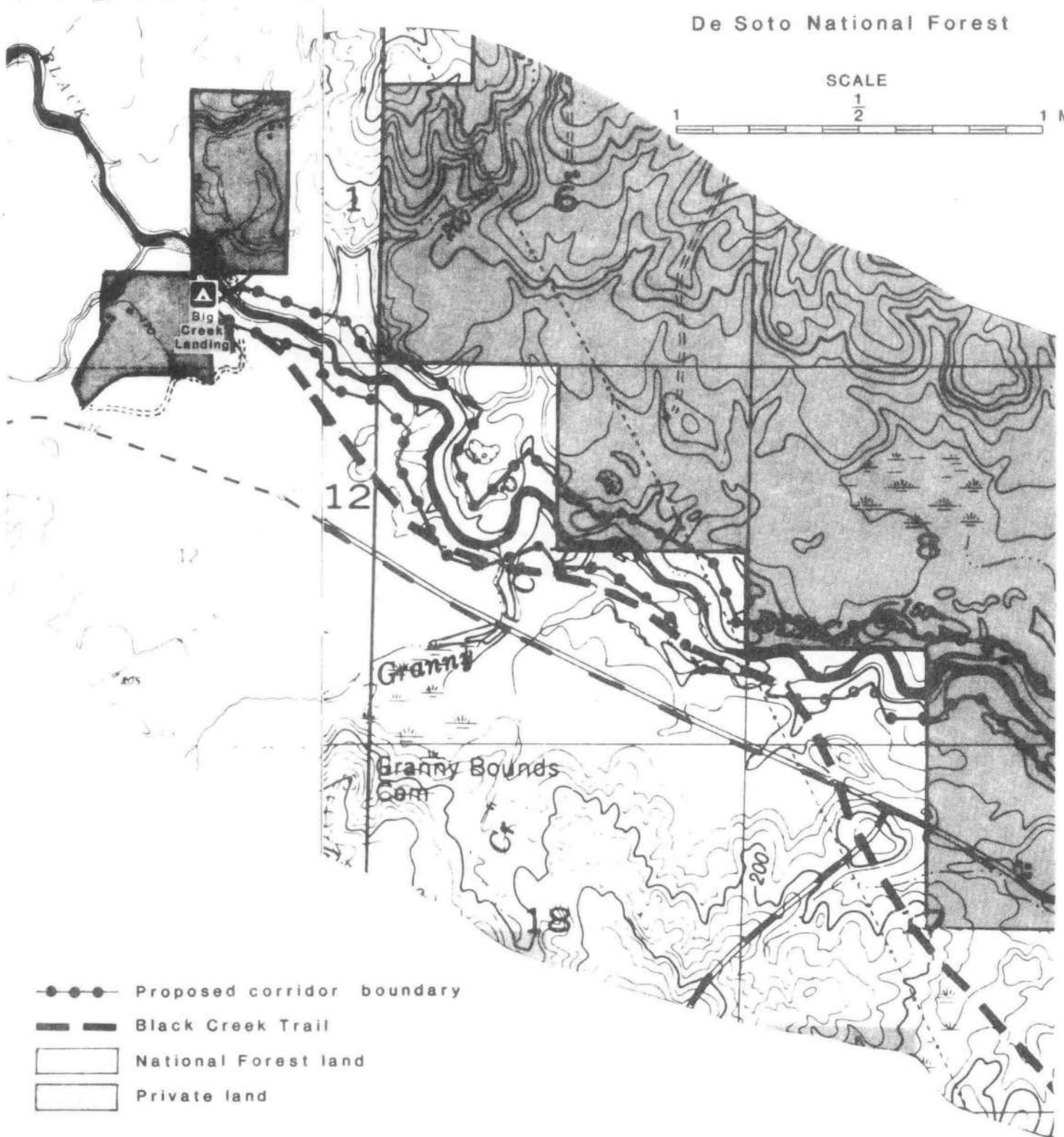
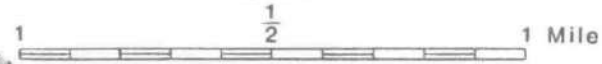
- Legend**
-  Study Corridor
 -  Rare II Area
 -  National Forest Land
 -  Private Land

Black Creek Wild & Scenic River Study

Figure D-1
Segment A

De Soto National Forest

SCALE



Black Creek Wild & Scenic River Study

Figure D-2
Segment A

De Soto National Forest

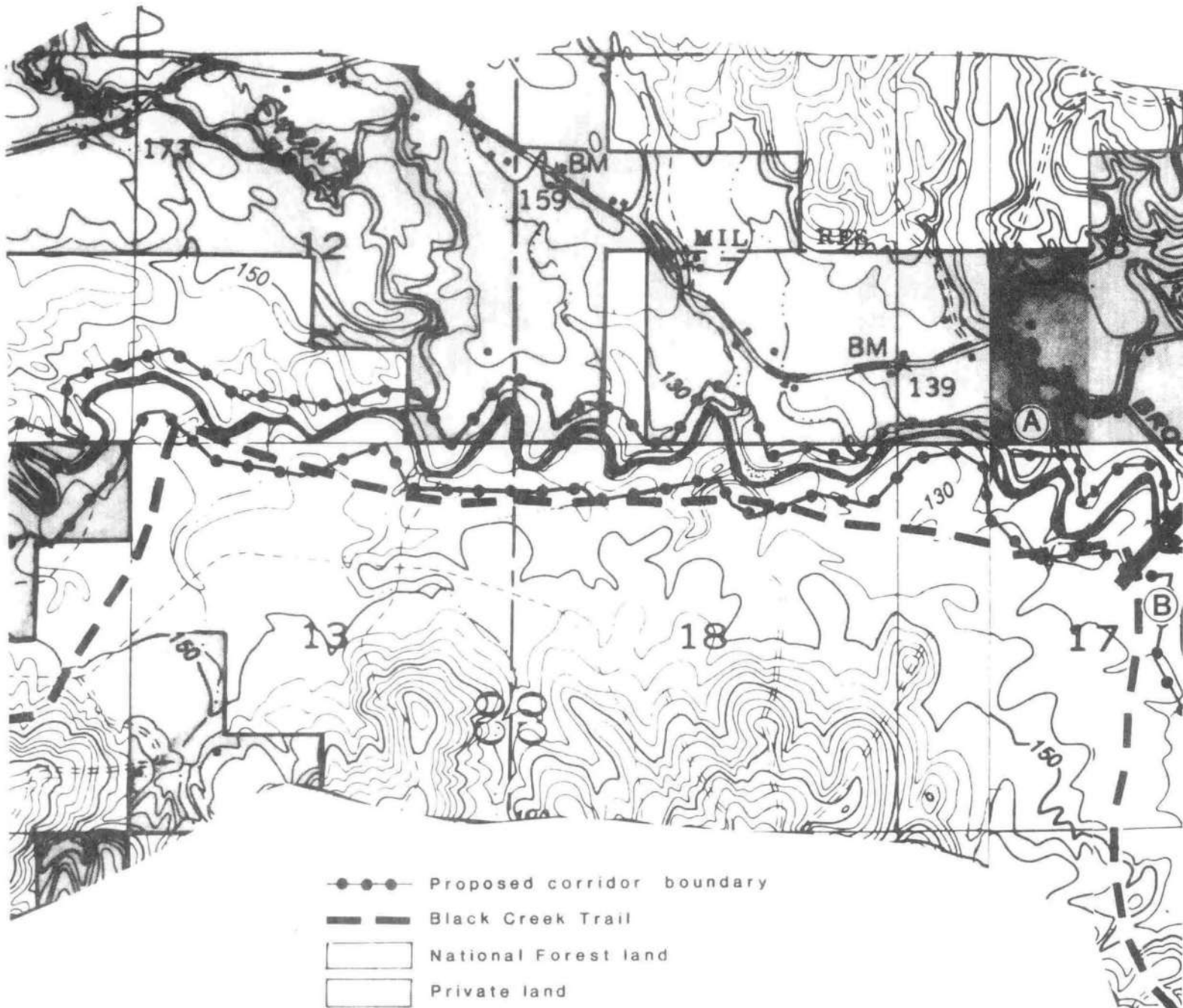


SCALE



Black Creek Wild & Scenic River Study

Figure D-3
Segment A and B
De Soto National Forest



Black Creek Wild & Scenic River Study

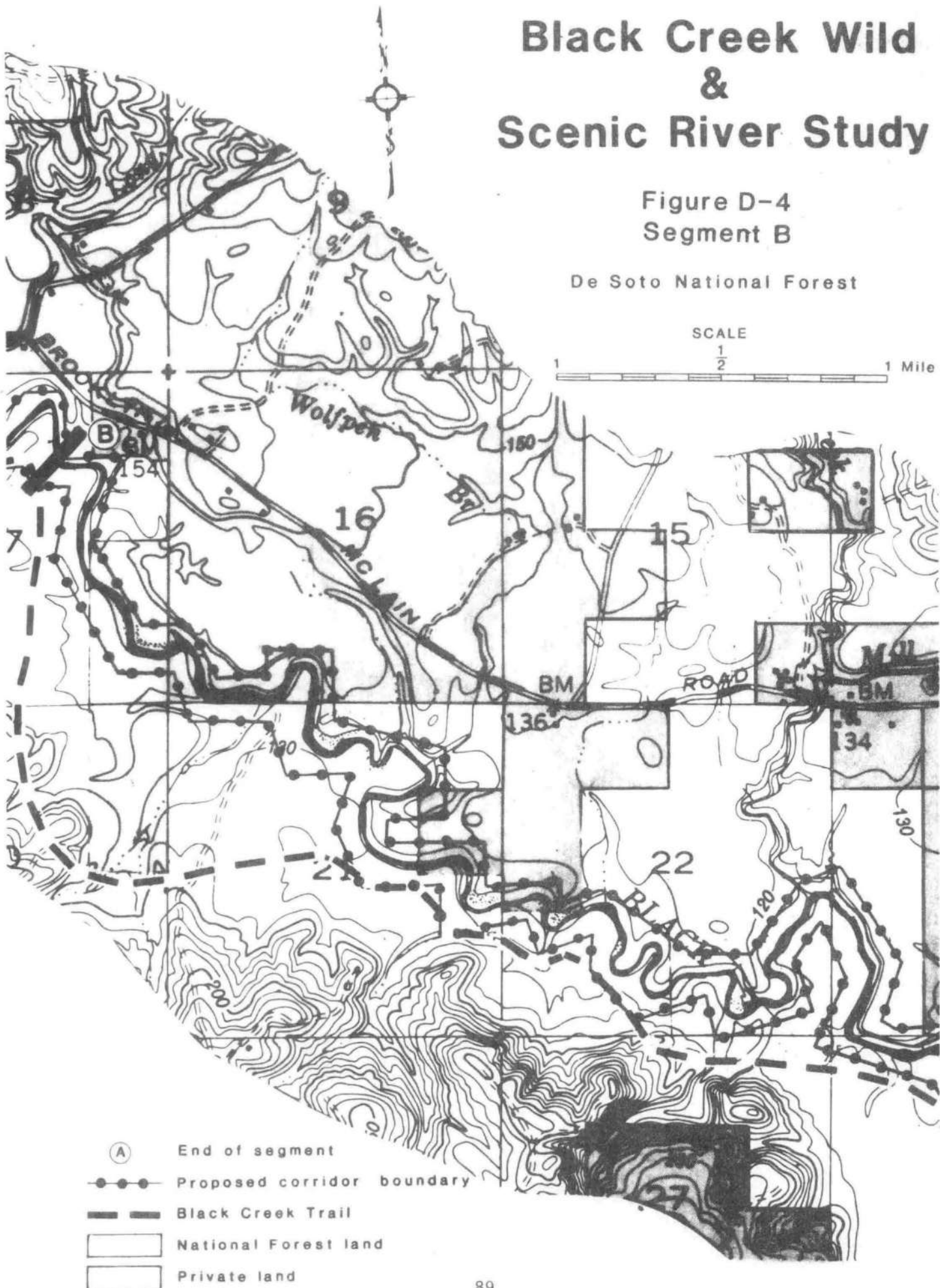
Figure D-4
Segment B

De Soto National Forest

SCALE

$\frac{1}{2}$

1 Mile



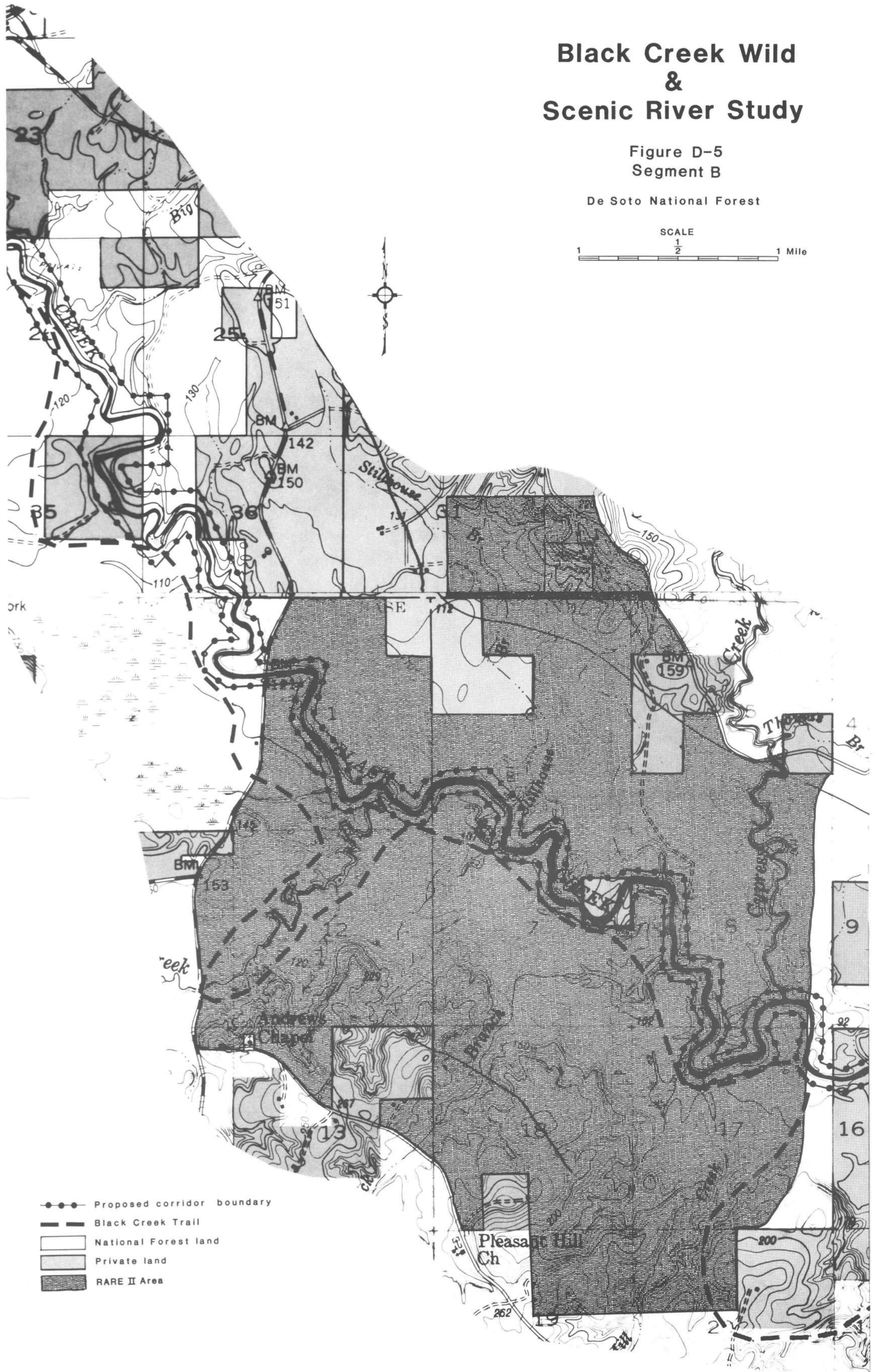
- (A) End of segment
- Proposed corridor boundary
- Black Creek Trail
- ▨ National Forest land
- Private land

Black Creek Wild & Scenic River Study

Figure D-5
Segment B

De Soto National Forest

SCALE
1 $\frac{1}{2}$ 1 Mile



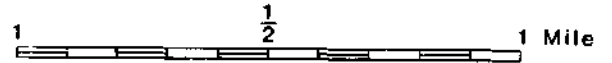
- Proposed corridor boundary
- Black Creek Trail
- National Forest land
- ▒ Private land
- RARE II Area

Black Creek Wild & Scenic River Study

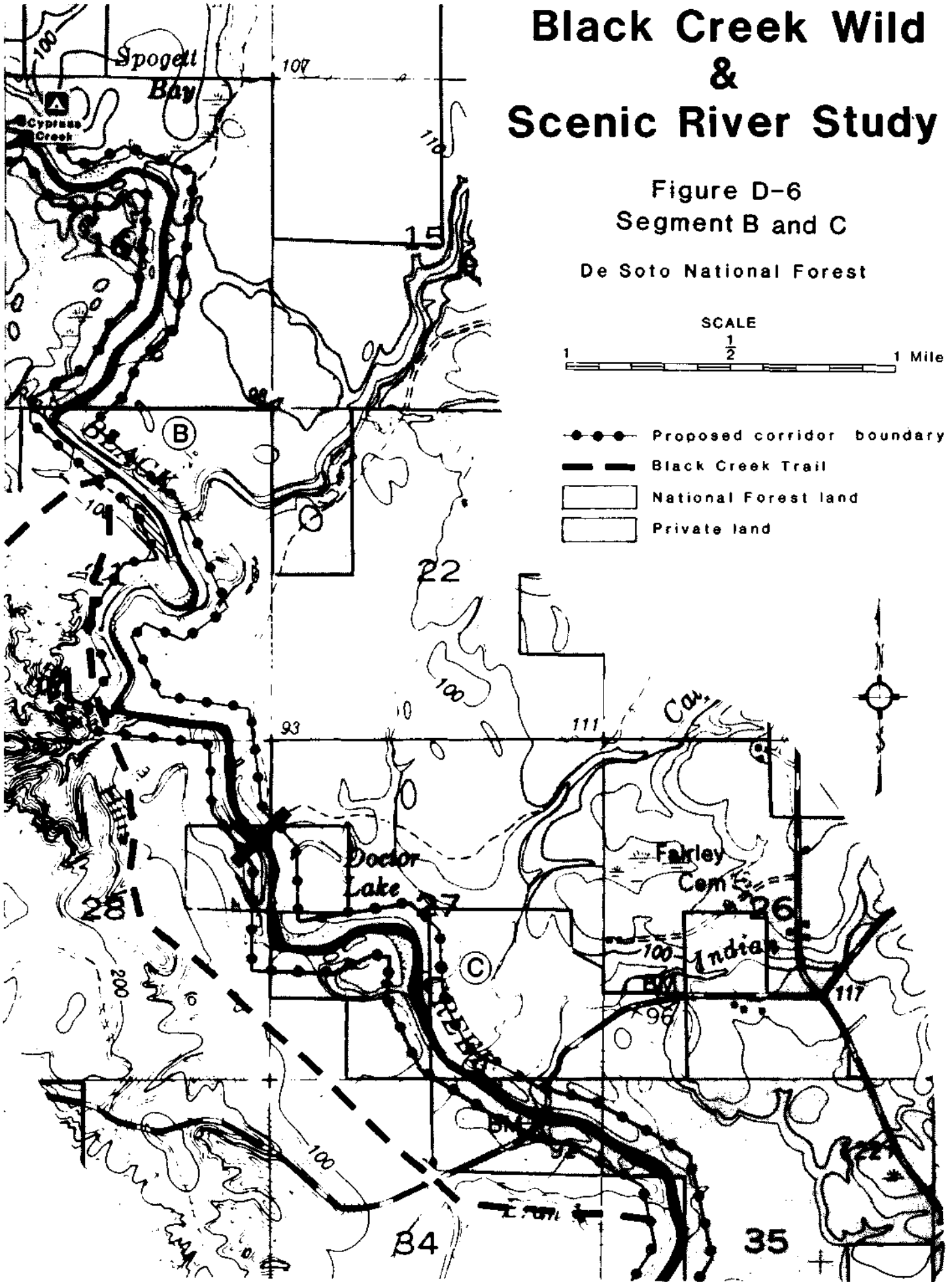
Figure D-6
Segment B and C

De Soto National Forest

SCALE



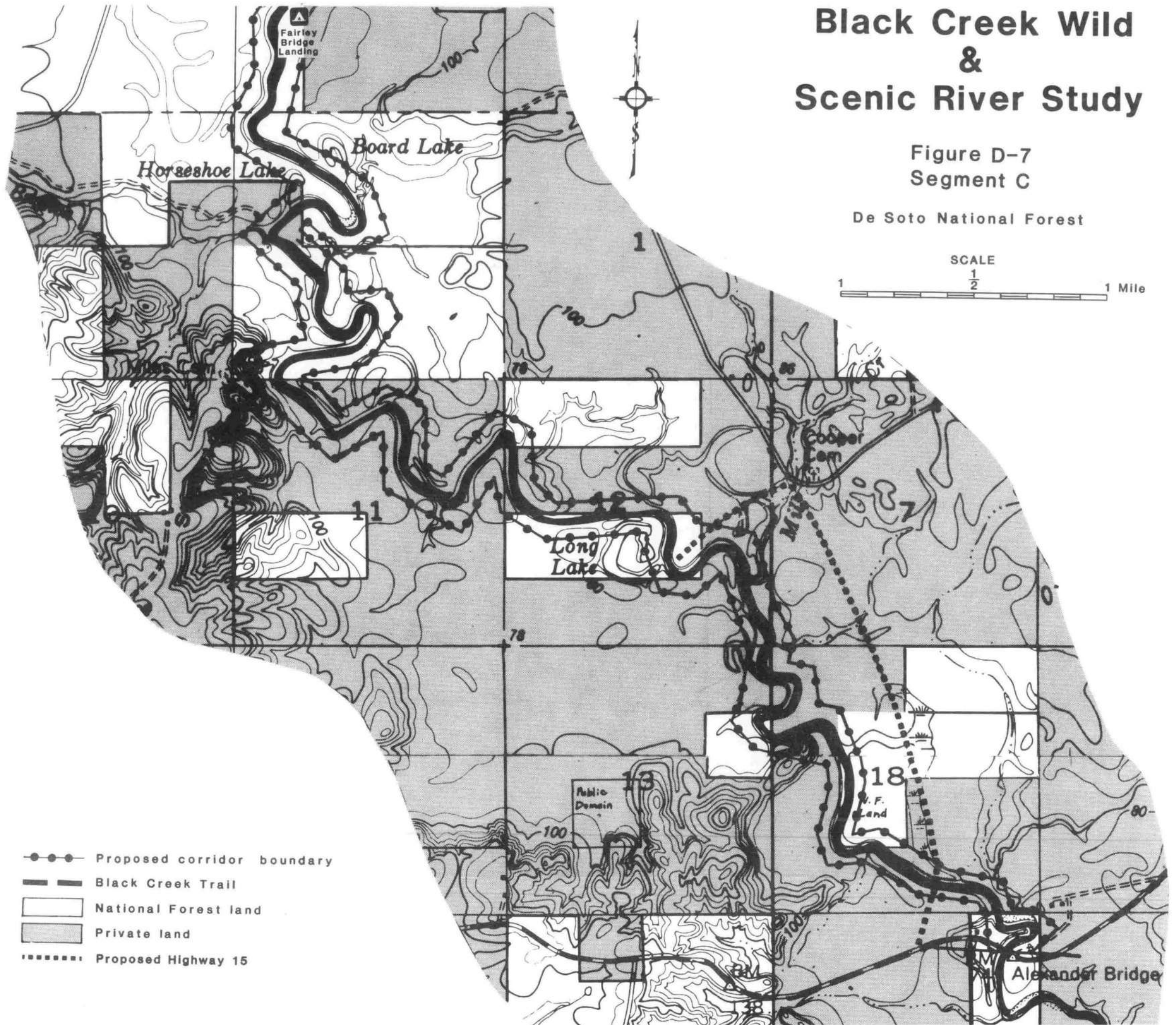
- Proposed corridor boundary
- Black Creek Trail
- National Forest land
- Private land



Black Creek Wild & Scenic River Study

Figure D-7
Segment C

De Soto National Forest



- Proposed corridor boundary
- Black Creek Trail
- National Forest land
- Private land
- - - Proposed Highway 15

APPENDIX E

LIST OF VERTEBRATE FAUNA
WITHIN THE BLACK CREEK WATERSHED

Bullfrog Rana catesbeiana
 Pig Frog Rana grylio

REPTILES

Alligator

American Alligator (E) Alligator mississippiensis

Turtles

Common Snapping Turtle Chelydra serpentina
 Alligator Snapping Turtle Macrochelys temmincki
 Stinkpot Sternotherus odoratus
 Striped-necked Musk Turtle Sternotherus minor peltifer
 Razor-backed Musk Turtle Sternotherus carinatus
 Eastern Mud Turtle Knoisternon subrubrum subrubrum
 Gulf Coast Box Turtle Terrapene carolina major
 Alabama Map Turtle Graptemys pulchra
 Alabama Red-bellied Turtle Pseudemys alabamensis
 Red-eared Turtle Pseudemys scripta elegans
 Yellow-bellied Turtle Pseudemys scripta scripta
 Mobile Cooter Pseudemys concinna mobilensis
 Missouri Slider Pseudemys floridana hoyi
 Eastern Chicken Turtle Deirochelys reticularia reticularia
 Gopher Tortoise Gopherus polyphemus
 Gulf Coast Smooth Softshell Trionyx muticus calvatus
 Gulf Coast Softshell Turtle Trionyx spinifer asper

Lizards

Green Anole Anolis carolinensis carolinensis
 Ground Skink Lygosoma laterale
 Five-lined Skink Eumeces fasciatus
 Broad-headed Skink Eumeces laticips
 Southeastern Five-lined Skink Eumeces inexpectatus
 Southern Coal Skink (T) Eumeces anthracinus pluvialis
 Six-lined Racerunner Cnemidophorus sexlineatus
 Eastern Slender Glass Lizard Ophisaurus attenuatus longicaudus
 Eastern Glass Lizard Ophisaurus ventralis

Snakes

Rough Earth Snake Holdea striatula
 Smooth Earth Snake Holdeai valeriae
 Southern Red-bellied Snake Storeria occipitomaculata obscura
 Midland Brown Snake Storeria dekayi wrightorum
 Banded Water Snake Natrix sipedon fasciata
 Midland Water Snake Natrix sipedon pleuralis
 Yellow-bellied Water Snake Natrix erythrogaster flavigaster
 Diamond-backed Water Snake Natrix rhombifera rhombifera
 Glossy Water Snake Natrix rigida sinicola
 Queen Snake Natrix septenvittata septenvittata

Eastern Phoebe	<u>Sayornis phoebe</u>
Eastern Wood Pewee	<u>Contopus virens</u>
Acadian Flycatcher	<u>Empidonax virescens</u>

Swallows

Tree Swallow	<u>Tridoprocne bicolor</u>
Rough-winged Swallow	<u>Stelgidopteryx ruficollis</u>
Barn Swallow	<u>Hirundo rustica</u>
Cliff Swallow (T)	<u>Petrochelidon pyrrhonota</u>
Purple Martin	<u>Progne subis</u>

Jays & Crows

Blue Jay	<u>Cyanocitta cristata</u>
Common Crow	<u>Corvus brachyrhynchos</u>

Chickadee & Titmouse

Carolina Chickadee	<u>Parus carolinensis</u>
Tufted Titmouse	<u>Parus bicolor</u>

Nuthatches

White-breasted Nuthatch	<u>Sitta carolinensis</u>
Red-breasted Nuthatch	<u>Sitta canadensis</u>
Brown-headed Nuthatch	<u>Sitta pusilla</u>

Creepers

Brown Creeper	<u>Certhia familiaris</u>
-------------------------	---------------------------

Wrens

House Wren	<u>Troglodytes aedon</u>
Winter Wren	<u>Troglodytes troglodytes</u>
Carolina Wren	<u>Thryothorus ludovicianus</u>
Long-billed Marsh Wren	<u>Telmatodytes palustris</u>

Mockingbirds & Thrashers

Mockingbird	<u>Mimus polyglottos</u>
Catbird	<u>Dumetella carolinensis</u>
Brown Thrasher	<u>Toxostoma rufum</u>

Thrushes, Solitaires, & Bluebirds

Robin	<u>Turdus migratorius</u>
Wood Thrush	<u>Hylocichla mustelina</u>
Hermit Thrush	<u>Hylocichla guttata</u>
Swainson's Thrush	<u>Hylocichla ustulata</u>
Gray-cheeked Thrush	<u>Hylocichla minima</u>
Veery	<u>Hylocichla fuscescens</u>

Eastern Bluebird Sialia sialis

Gnatcatchers & Kinglets

Blue-gray Gnatcatcher Polioptila caerulea
Golden-crowned Kinglet Regulus satrapa
Ruby-crowned Kinglet Regulus calendula

Pipits

Water Pipit Anthus spinoletta

Waxwings

Cedar Waxwing Bombcilla cedrorum

Shrikes

Loggerhead Shrike Lanius ludovicianus

Starlings

Starling Sturnus vulgaris

Vireos

White-eyed Vireo Vireo griseus
Yellow-throated Vireo Vireo flavifrons
Solitary Vireo Vireo solitarius
Red-eyed Vireo Vireo olivaceus
Philadelphia Vireo Vireo philadelphicus
Warbling Vireo Vireo gilvus

Wood Warblers

Black-and-White Warbler Mniotilta varia
Prothonotary Warbler Protonotaria citrea
Swainson's Warbler Limothlypis swainsonii
Worm-eating Warbler Helminthos vermivorus
Golden-winged Warbler Vermivora chrysoptera
Blue-winged Warbler Vermivora pinus
Tennessee Warbler Vermivora peregrina
Orange-crowned Warbler Vermivora celata
Parula Warbler Parula americana
Nashville Warbler Vermivora ruficapilla
Yellow Warbler Dendroica petchia
Magnolia Warbler Dendroica magnolia
Myrtle Warbler Dendroica coronata
Black-throated Green Warbler Dendroica virens
Cerulean Warbler Dendroica cerulea
Yellow-throated Warbler Dendroica dominica
Chestnut-sided Warbler Dendroica pensylvanica
Bay-breasted Warbler Dendroica castanea
Blackpoll Warbler Dendroica striata

Pine Warbler	<u>Dendroica pinus</u>
Prairie Warbler	<u>Dendroica discolor</u>
Palm Warbler	<u>Dendroica palmarum</u>
Ovenbird	<u>Seiurus aurocapillus</u>
Northern Waterthrush	<u>Seiurus noveboracensis</u>
Louisiana Waterthrush	<u>Seiurus motacilla</u>
Kentucky Warbler	<u>Oporornis formosus</u>
Blackburnian Warbler	<u>Dendroica fusca</u>
Yellowthroat	<u>Geothlypis trichas</u>
Yellow-breasted Chat	<u>Icteria virens</u>
Hooded Warbler	<u>Wilsonia citrina</u>
Canada Warbler	<u>Wilsonia canadensis</u>
American Redstart	<u>Stephaga ruticilla</u>
Wilson's Warbler	<u>Wilsonia pusilla</u>

Weaver Finches

House Sparrow	<u>Passer domesticus</u>
-------------------------	--------------------------

Meadowlarks, Blackbirds, & Orioles

Bobolink	<u>Dolichonyx oryzivorus</u>
Eastern Meadowlark	<u>Sturnella magna</u>
Red-winged Blackbird	<u>Agelaius phoeniceus</u>
Orchard Oriole	<u>Icterus spurius</u>
Baltimore Oriole	<u>Icterus galbula</u>
Brewer's Blackbird	<u>Euphagus cyanocephalus</u>
Common Grackle	<u>Quiscalus quiscula</u>
Brown-headed Cowbird	<u>Molothrus ater</u>

Tanagers

Scarlet Tanager	<u>Piranga olivacea</u>
Summer Tanager	<u>Piranga rubra</u>

Grosbeaks, Finches, Sparrows, & Buntings

Cardinal	<u>Richmondia cardinalis</u>
Rose-breasted Grosbeak	<u>Pheucticus ludovicianus</u>
Blue Grosbeak	<u>Guiraca caerulea</u>
Indigo Bunting	<u>Passerina cyanea</u>
Painted Bunting	<u>Passerina ciris</u>
Purple Finch	<u>Carpodacus purpureus</u>
American Goldfinch	<u>Spinus tristis</u>
Rufous-sided Towhee	<u>Pipilo erythrophthalmus</u>
Savannah Sparrow	<u>Passerculus sandwichensis</u>
Grasshopper Sparrow	<u>Ammodramus savannarum</u>
LeConte's Sparrow	<u>Passerherbulus caudacutus</u>
Henslow's Sparrow	<u>Passerherbulus henslowii</u>
Sharp-tailed Sparrow	<u>Ammodramus caudacuta</u>
Vesper Sparrow	<u>Poocetes gramineus</u>
Wachman's Sparrow	<u>Aimophila aestivalis</u>

Slate-colored Junco	<u>Junco hyemalis</u>
Chipping Sparrow	<u>Spizella passerina</u>
Field Sparrow	<u>Spizella pusilla</u>
White-throated Sparrow	<u>Zonotrichia albicollis</u>
Fox Sparrow	<u>Passerella iliaca</u>
Swamp Sparrow	<u>Melospiza georgiana</u>
Song Sparrow	<u>Melospiza melodia</u>

MAMMALS

Opossum

Opossum	<u>Didelphis marsupialis</u>
-------------------	------------------------------

Shrews & Moles

Short-tailed Shrew	<u>Blarina brevicauda</u>
Least Shrew	<u>Cryptotis parva</u>
Eastern Mole	<u>Scalopus aquaticus</u>

Bats

Southeastern Myotis	<u>Myotis austroriparius</u>
Eastern Pipistrelle	<u>Pipistrellus subflavus subflavus</u>
Big Brown Bat	<u>Eptesicus fuscus</u>
Red Bat	<u>Lasiurus borealis</u>
Seminole Bat	<u>Lasiurus seminolus</u>
Hoary Bat	<u>Lasiurus cinereus</u>
Florida Yellow Bat	<u>Dasypterus floridanus</u>
Evening Bat	<u>Nycticeius humeralis</u>
Rafinesque's Big-eared Bat	<u>Corynorhinus rafinesquii</u>
Brazilian Free-tailed Bat	<u>Tadarida brasiliensis</u>

Armadillo

Nine-banded Armadillo	<u>Dasybus novemcinctus</u>
---------------------------------	-----------------------------

Rabbits

Eastern Cottontail	<u>Sylvilagus floridanus</u>
Swamp Rabbit	<u>Sylvilagus aquaticus</u>

Squirrels

Gray Squirrel	<u>Sciurus carolinensis</u>
Fox Squirrel	<u>Sciurus niger</u>
Southern Flying Squirrel	<u>Glaucomys volans</u>

Beaver

Beaver	<u>Castor canadensis</u>
------------------	--------------------------

Mice, Rats, & Voles

Rice Rat	<u>Oryzomys palustris</u>
Eastern Harvest Mouse	<u>Reithrodontomys humulis</u>
Cotton Mouse	<u>Peromyscus gossypinus</u>
Golden Mouse	<u>Peromyscus nuttalli</u>
Hispid Cotton Rat	<u>Sigmodon hispidus</u>
Eastern Wood Rat	<u>Neotoma floridana</u>
Pine Vole	<u>Microtus pinetorum</u>
Muskrat	<u>Ondatra zibethicus</u>
Black Rat	<u>Rattus rattus</u>
Norway Rat	<u>Rattus norvegicus</u>
House Mouse	<u>Mus musculus</u>

Coyote & Fox

Coyote	<u>Canis latrans</u>
Red Fox	<u>Vulpes fulva</u>
Gray Fox	<u>Urocyon cinereoargenteus</u>

Bear

Black Bear (T)	<u>Ursus americanus</u>
--------------------------	-------------------------

Raccoon

Raccoon	<u>Procyon lotor</u>
-------------------	----------------------

Mustelids

Long-tailed Weasel	<u>Mustela frenata</u>
Mink	<u>Mustela vison</u>
Eastern Spotted Skunk	<u>Spilogale putorius</u>
Striped Skunk	<u>Mephitis mephitis</u>
River Otter	<u>Lutra canadensis</u>

Cats

Bobcat	<u>Lynx rufus</u>
------------------	-------------------

Deer

White-tailed Deer	<u>Odocoileus virginiana</u>
-----------------------------	------------------------------

REFERENCES

1. Bull, John, and John Farrand, Jr., 1977. The Audubon Society Field Guide to North American Birds - Eastern Region. Chanticleer Press, Inc., New York. 775 P.
2. Burt, William H., and Richard P. Grossenheider, 1964. A Field Guide to the Mammals. The Peterson Field Guide Series. Houghton Mifflin Co., Boston. 284 P.
3. Cliburn, J. William, 1970. A Key to the Amphibians and Reptiles of Mississippi. State Wildlife Museum. 63 P.
4. Conant, Roger, 1958. A Field Guide to Reptiles and Amphibians. The Peterson Field Guide Series. Houghton Mifflin Co., Boston. 366 P.
5. Douglas, Neil H., 1975. Survey of Endangered, Threatened, Peripheral, Status Undetermined and Unique Amphibians and Reptiles of the DeSoto National Forest, Mississippi. Northeast Louisiana University. Memo. 33 P.
6. Ernst, Carl H., and Roger W. Barbour, 1972. Turtles of the United States. University Press of Kentucky.
7. Hall, Raymond E., and Keith R. Kelson, 1959. Mammals of North America. Ronald Press Co., New York.
8. Lowery, George H., Jr., 1955. Louisiana Birds, Louisiana State University Press. 557 P.
9. Peterson, Roger Tory, 1947. A Field Guide to the Birds. Houghton Mifflin Co., Boston. 290 P.
10. Robbins, Chandler S., Bertel Brunn, and Herbert S. Zim, 1966. Birds of North America. Western Publishing Co., Inc., Racine, Wisconsin. 340 P.
11. State of Mississippi, 1977. An Order and Regulations Adopting an Official List of Endangered and Threatened Vertebrates in Mississippi. Mississippi Department of Wildlife Conservation, Public Notice No. 1916. 1 P.
12. U.S.D.I. 1979. List of Endangered and Threatened Wildlife and Plants. Federal Register: 3636 - 3654.

APPENDIX F

STATE WATER QUALITY CRITERIA
FOR
BLACK CREEK

RECREATION

The quality of waters in this classification are to be suitable for recreational purposes, including such water contact activities as swimming and water skiing. The waters shall also be suitable for use for which waters of lower quality will be satisfactory.

In considering the acceptability of a proposed site for disposal of bacterially-related wastewater in or near waters with this classification, the Mississippi Air and Water Pollution Control Commission shall consider the relative proximity of the discharge to areas of actual water contact activity.

- a. Dissolved Oxygen: For diversified warmwater biota, including game fish, daily dissolved oxygen concentration shall be maintained at a minimum of not less than 4.0 mg/l during the low 7-day, once-in-ten-years flow. However, at all greater flows dissolved oxygen shall be maintained at not less than 5.0 mg/l, assuming there are normal seasonal and daily variations above this level; except that under extreme conditions, with the same stipulations as to seasonal and daily variations, the dissolved oxygen level may range between 5.0 mg/l and 4.0 mg/l for short periods of time, provided that the water quality is maintained in favorable conditions in all other respects.
- b. pH: The normal pH of the waters shall be 6.0 to 8.5 and shall not be caused to vary more than 1.0 unit; however, should the background pH be outside the 6.0 to 8.5 limits, it shall not be changed more than 1.0 unit unless after the change the pH will fall within the 6.0 to 8.5 limits and the Commission determines that there will be no detrimental effect on stream usage as a result of the greater pH change.
- c. Temperature: The maximum temperature rise above natural temperatures before addition of artificial heat shall not exceed 5^oF. in streams, lakes and reservoirs nor shall the maximum water temperature exceed 90^oF. In lakes and reservoirs there shall be no withdrawals from or discharge of heated waters to the hypolimnion unless it can be shown that such discharge will be beneficial to water quality. In all waters the normal daily and seasonal temperature variations that were present before the addition of artificial heat shall be maintained. The discharge of any heated waste into any coastal or estuarine waters shall not raise water temperatures more than 4^oF. above natural during the period October through May nor more than 1.5^oF. above natural for the months June through September. There shall be no thermal block to the migration of aquatic organisms. Requirements for zones of passage as referenced in Section I (8) shall apply. In addition to the general requirements Section I (2), the temperature shall be measured at a depth of 5 feet in wates 10 feet or greater in depth; and for those waters less than 10 feet in depth, temperature criteria will be applied at mid-depth.

In those specific cases where natural conditions elevate the temperatures in excess of the limits expressed herein, Section I (3) shall apply on a case-by-case basis.

- d. Bacteria: Fecal coliform not to exceed a geometric mean of 200 per 100 ml, nor shall more than ten (10%) percent of the samples examined during any month exceed 400 per 100 ml.
- e. Specific Conductance: There shall be no substances added to increase the conductivity above 1000 micromhos/cm for fresh water streams.
- f. Dissolved Solids: There shall be no substance added to the water to cause the dissolved solids to exceed 1500 mg/l at any time for fresh water streams.
- g. Toxic Substances, Color, Taste and Odor Producing Substances: There shall be no substances added, whether alone or in combination with other substances that will render the waters unsafe or unsuitable for water contact activities, or impair the use of waters requiring lesser quality. The concentration of toxic pollutants shall not exceed one-tenth (1/10th) of the 96-hour median tolerance limit based on available data. Available references to be used in determining toxicity limitations shall include, but not be limited to Quality Criteria for Water [Section 304(a)], Federal Regulations under Section 307, and Federal Regulations under Section 1412 of the Public Health Service Act as amended by the Safe Drinking Water Act (Pub L 93-523). The use of such information should be limited to that part applicable to the indigenous aquatic community found in the State of Mississippi.

WATER USES IN STREAMS

All of the streams not specifically listed below shall be classified as Fish and Wildlife. Streams carrying other Classification are:

<u>Waters</u>	<u>From</u>	<u>To</u>	<u>Classification</u>
<u>TOMBIGBEE RIVER BASIN</u>			
Chiwapa Reservoir		Pontotoc County	Recreation
Choctaw Lake		Choctaw County	Recreation
Davis Lake		Chickasaw County	Recreation
Lake Lamar Bruce		Lee County	Recreation
Lake Lowndes		Lowndes County	Recreation
Lake Monroe		Monroe County	Recreation
Lake Tom Bailey		Lauderdale County	Recreation
Luxapalila Creek	MS-AL State Line	Highway 50	Public Water Supply
Oktibbeha County Lake		Oktibbeha County	Recreation
Tombigbee State Park Reservoir		Lee County	Recreation
Yellow Creek	MS-AL State Line	Luxapalila Creek	Public Water Supply

<u>Waters</u>	<u>From</u>	<u>To</u>	<u>Classification</u>
<u>YAZOO RIVER BASIN</u>			
Arkabutla Reservoir		DeSoto-Tate Counties	Recreation
Chewalla Reservoir		Marshall County	Recreation
Enid Reservoir		Panola-Lafayette- Yalobusha Counties	Recreation
Grenada Reservoir		Grenada County	Recreation
Lake Dumas		Tippah County	Recreation
Lake Washington		Washington County	Recreation
Moon Lake		Coahoma County	Recreation
Sardis Reservoir		Panola-Lafayette Counties	Recreation
Percy Quinn Lake		Pike County	Recreation

COASTAL BASIN

Bangs Lake	Headwaters	Mississippi Sound	Shellfish Harvesting
Bayou Cumbest	Headwaters	Mississippi Sound	Shellfish Harvesting
Biloxi Bay	Highway 90	Mississippi Sound	Shellfish Harvesting
Davis Bayou	Headwaters	Biloxi Bay	Shellfish Harvesting
Graveline Bay	Headwaters	Graveline Bayou	Shellfish Harvesting
Graveline Bayou	Graveline Bay	Mississippi Sound	Shellfish Harvesting
Jourdan River	Confluent of Dead Tiger & Catahoula Creek	Highway 603	Recreation
Jourdan River	Highway 603	St. Louis Bay	Fish and Wildlife
Mallini Bayou	St. Louis Bay	St. Louis Bay	Shellfish Harvesting
Mississippi Sound	Contiguous	Mississippi Coastline	Recreation
Pass Christian Reef-Henderson Point			Shellfish Harvesting
St. Louis Bay	Harrison-Hancock Counties		Shellfish Harvesting

PASCAGOULA RIVER BASIN

Archusa Reservoir	Clarke County		Recreation
Black Creek	Highway 11	Pascagoula River	Recreation

APPENDIX G

SOIL DATA

COASTAL BASIN

Bangs Lake	Headwaters	Mississippi Sound	Shellfish Harvesting
Bayou Cumbest	Headwaters	Mississippi Sound	Shellfish Harvesting
Biloxi Bay	Highway 90	Mississippi Sound	Shellfish Harvesting
Davis Bayou	Headwaters	Biloxi Bay	Shellfish Harvesting
Graveline Bay	Headwaters	Graveline Bayou	Shellfish Harvesting
Graveline Bayou	Graveline Bay	Mississippi Sound	Shellfish Harvesting
Jourdan River	Confluent of Dead Tiger & Catahoula Creek	Highway 603	Recreation
Jourdan River	Highway 603	St. Louis Bay	Fish and Wildlife
Mallini Bayou	St. Louis Bay	St. Louis Bay	Shellfish Harvesting
Mississippi Sound	Contiguous	Mississippi Coastline	Recreation
Pass Christian Reef-Henderson Point			Shellfish Harvesting
St. Louis Bay	Harrison-Hancock Counties		Shellfish Harvesting

PASCAGOULA RIVER BASIN

Anchusa Reservoir	Clarke County		Recreation
Black Creek	Highway 11	Pascagoula River	Recreation

APPENDIX G

SOIL DATA

COASTAL BASIN

Bangs Lake	Headwaters	Mississippi Sound	Shellfish Harvesting
Bayou Cumbest	Headwaters	Mississippi Sound	Shellfish Harvesting
Biloxi Bay	Highway 90	Mississippi Sound	Shellfish Harvesting
Davis Bayou	Headwaters	Biloxi Bay	Shellfish Harvesting
Graveline Bay	Headwaters	Graveline Bayou	Shellfish Harvesting
Graveline Bayou	Graveline Bay	Mississippi Sound	Shellfish Harvesting
Jourdan River	Confluent of Dead Tiger & Catahoula Creek	Highway 603	Recreation
Jourdan River	Highway 603	St. Louis Bay	Fish and Wildlife
Mallini Bayou	St. Louis Bay	St. Louis Bay	Shellfish Harvesting
Mississippi Sound	Contiguous	Mississippi Coastline	Recreation
Pass Christian Reef-Henderson Point			Shellfish Harvesting
St. Louis Bay	Harrison-Hancock Counties		Shellfish Harvesting

PASCAGOULA RIVER BASIN

Archusa Reservoir	Clarke County		Recreation
Black Creek	Highway 11	Pascagoula River	Recreation

APPENDIX G

SOIL DATA

<u>Soil Series</u>	<u>Drainage</u>	<u>Setting</u>	<u>Range</u>	<u>Flooding</u>	<u>H₂O Table</u>	<u>Texture</u>
Bassfield	Well- (6 in. Avail. H ₂ O)	Terrace-	0-5%	V. brief	6.0 Ft.	<u>Sandy loam</u> <u>Sand (deep)</u>
Benndale	Well (11 in. Avail. H ₂ O)	Uplands & Terrace	0-12%	--	6.0 Ft.	Sandy Loam
Bibb	Poorly Slow runoff	Flood- plain	2.	Common Brief Dec.-May	0.5-1.5 Ft. Dec.-Apr.	<u>Sandy Loam</u> <u>Silt&Sand</u>
Bigbee	Excessive (V. rapid)	Low Terrace	0-2%	Brief	3.5-6.0 Ft. Jan.-Mar.	<u>Loamy Sand</u> <u>Sand</u>
<u>NOTE:</u> Blowouts & cutbank cave-ins a hazard. Also, revegetation problems. (See statement below).						
Eustis	Excessive (V. rapid)	Dissected uplands	0-12%	--	6.0 Ft.	<u>Sand</u> <u>Loamy Sand</u>
<u>NOTE:</u> This soil is very sensitive to severe erosion (blowouts & gullies) when disturbed. Also droughtiness hinders revegetation (must have organic matter added; fertilized & reseeded when enough rainfall is available. The organic matter additions will help hold moisture in seedbed.						
Harleston	Moderately Well (8 in. Avail. H ₂ O)	Uplands & Terrace	0-12"	(Low Areas) occas. V. Brief Nov.-Apr. (Low Terraces)	2-3 Ft.	Loam
Latania	Well to Excessive (8 in. Avail. H ₂ O)	Terrace	0-5%	Common V. Brief Nov.-Apr.	6.0 Ft.	<u>Sandy Loam</u> <u>White Sand</u>
<u>NOTE:</u> May have revegetation problems due to droughty conditions & erosion near stream/river bank, when cut.						
McLaurin	Well (6 in. Avail. H ₂ O) in 60" profile ^c	Uplands- Ridgetops	0-8%	--	6.0 Ft.	<u>Loamy Sand</u> <u>Sandy Clay</u> Loam
Pamlico	Very poorly - Acid organic soil	Flood- plains	0-1%	Frequent V. long Nov.-June Also - ponded.	0-1.0 Ft. (Swampy) Nov.-July	<u>Muck</u> <u>Loamy Sand</u>
Trebloc	Poorly V. slow runoff	Terrace	0-2%	Common V. brief Jan.-Apr.	0.5-1.0 Ft. Jan.-Apr. (ponding)	<u>Silt Loam</u> <u>Silty Clay</u> Loam

APPENDIX E

LIST OF VERTEBRATE FAUNA
WITHIN THE BLACK CREEK WATERSHED

A CHECKLIST OF TERRESTRIAL AND AVIAN VERTEBRATES
 WITHIN THE BLACK CREEK WATERSHED
 DeSOTO NATIONAL FOREST, MISSISSIPPI

Compiled by: Brian Knowles, Wildlife Biologist,
 Black Creek Ranger District,
 DeSoto National Forest
 1980

Endangered or threatened species as classified by the U. S. Government or State of Mississippi have been denoted by (E) or (T) respectively, following the common name.

AMPHIBIANS

Salamanders

Two-toed Amphiuma	<u>Amphiuma means means</u>
Alabama Waterdog	<u>Necturus punctatus alabamensis</u>
Eastern Lesser Siren	<u>Siren intermedia intermedia</u>
Central Newt	<u>Notophthalmus viridescens Louisianensis</u>
Spotted Salamander	<u>Ambystoma maculatum</u>
Marbled Salamander	<u>Ambystoma opacum</u>
Mole Salamander	<u>Ambystoma talpoideum</u>
Eastern Tiger Salamander	<u>Ambystoma tigrinum tigrinum</u>
Spotted Dusky Salamander	<u>Desmognathus fuscus conanti</u>
Southern Dusky Salamander	<u>Desmognathus auriculatus</u>
Southern Red Salamander	<u>Pseudotriton ruber vioscai</u>
Gulf Coast Mud Salamander	<u>Pseudotriton montanus flavissimus</u>
Three-lined Salamander	<u>Eurycea bislineato cirrigera</u>
Dwarf Salamander	<u>Manculus quadridigitatus</u>

Toads & Frogs

Eastern Spadefoot	<u>Scaphiopus holbrooki holbrooki</u>
Southern Toad	<u>Bufo terrestris terrestris</u>
Fowler's Toad	<u>Bufo woodhousei fowleri</u>
Oak Toad	<u>Bufo quercicus</u>
Pine Woods Treefrog	<u>Hyla femoralis</u>
Northern Spring Peeper	<u>Hyla crucifer crucifer</u>
Eastern Gray Treefrog	<u>Hyla versicolor versicolor</u>
Western Bird-Voice Treefrog	<u>Hyla avivoca avivoca</u>
Squirrel Treefrog	<u>Hyla squirella</u>
Green Treefrog	<u>Hyla cinerea cinerea</u>
Barking Treefrog	<u>Hyla gratiosa</u>
Eastern Narrow-Mouthed Toad	<u>Gastrophryne carolinensis</u>
Southern Cricket Frog	<u>Acris gryllus gryllus</u>
Northern Cricket Frog	<u>Acris crepitans crepitans</u>
Ornate Chorus Frog	<u>Psuedacris ornata</u>
Southern Chorus Frog	<u>Psuedacris nigrita nigrita</u>
Southern Leopard Frog	<u>Rana pipiens sphenoccephola</u>
Dusky Gopher Frog	<u>Rana aerolata sevosa</u>
Bronze Frog	<u>Rana clamitans clamitans</u>

Bullfrog	<u>Rana catesbeiana</u>
Pig Frog	<u>Rana grylio</u>

REPTILES

Alligator

American Alligator (E)	<u>Alligator mississippiensis</u>
----------------------------------	-----------------------------------

Turtles

Common Snapping Turtle	<u>Chelydra serpentina</u>
Alligator Snapping Turtle	<u>Macrochelys temmincki</u>
Stinkpot	<u>Sternotherus odoratus</u>
Striped-necked Musk Turtle	<u>Sternotherus minor peltifer</u>
Razor-backed Musk Turtle	<u>Sternotherus carinatus</u>
Eastern Mud Turtle	<u>Knoisternon subrubrum subrubrum</u>
Gulf Coast Box Turtle	<u>Terrapene carolina major</u>
Alabama Map Turtle	<u>Graptemys pulchra</u>
Alabama Red-bellied Turtle	<u>Pseudemys alabamensis</u>
Red-eared Turtle	<u>Pseudemys scripta elegans</u>
Yellow-bellied Turtle	<u>Pseudemys scripta scripta</u>
Mobile Cooter	<u>Pseudemys concinna mobilensis</u>
Missouri Slider	<u>Pseudemys floridana hoyi</u>
Eastern Chicken Turtle	<u>Deirochelys reticularia reticularia</u>
Gopher Tortoise	<u>Gopherus polyphemus</u>
Gulf Coast Smooth Softshell	<u>Trionyx muticus calvatus</u>
Gulf Coast Softshell Turtle	<u>Trionyx spinifer asper</u>

Lizards

Green Anole	<u>Anolis carolinensis carolinensis</u>
Ground Skink	<u>Lygosoma laterale</u>
Five-lined Skink	<u>Eumeces fasciatus</u>
Broad-headed Skink	<u>Eumeces laticeps</u>
Southeastern Five-lined Skink	<u>Eumeces inexpectatus</u>
Southern Coal Skink (T)	<u>Eumeces anthracinus pluvialis</u>
Six-lined Racerunner	<u>Cnemidophorus sexlineatus</u>
Eastern Slender Glass Lizard	<u>Ophisaurus attenuatus longicaudus</u>
Eastern Glass Lizard	<u>Ophisaurus ventralis</u>

Snakes

Rough Earth Snake	<u>Holdea striatula</u>
Smooth Earth Snake	<u>Holdeai valeriae</u>
Southern Red-bellied Snake	<u>Storeria occipitomaculata obscura</u>
Midland Brown Snake	<u>Storeria dekayi wrightorum</u>
Banded Water Snake	<u>Natrix sipedon fasciata</u>
Midland Water Snake	<u>Natrix sipedon pleuralis</u>
Yellow-bellied Water Snake	<u>Natrix erythrogaster flavigaster</u>
Diamond-backed Water Snake	<u>Natrix rhombifera rhombifera</u>
Glossy Water Snake	<u>Natrix rigida sinicola</u>
Queen Snake	<u>Natrix septemvittata septemvittata</u>

Eastern Garter Snake	<u>Thamnophis sirtalis sirtalis</u>
Eastern Ribbon Snake	<u>Thamnophis sauritus sauritus</u>
Rainbow Snake (E)	<u>Abastor erythrogrammus</u>
Yellow-lipped Snake	<u>Rhadinaea flavilata</u>
Western Mud Snake	<u>Farancia abacura reinwardti</u>
Eastern Hognose Snake	<u>Heterodon platyrhinos</u>
Southern Hognose Snake (E)	<u>Heterodon simus</u>
Midwest Worm Snake	<u>Corphophis amoenus helenae</u>
Mississippi Ringneck Snake	<u>Diadophis punctatus stictogenys</u>
Southern Black Racer	<u>Coluber constrictor priapus</u>
Eastern Coachwhip	<u>Masticophis flagellum flagellum</u>
Rough Green Snake	<u>Opheodrys aestivus</u>
Black Pine Snake (E)	<u>Pituophis melanoleucas lodingi</u>
Gray Rat Snake	<u>Elaphe obsoleta spiloides</u>
Corn Snake	<u>Elaphe guttata guttata</u>
Scarlet Snake	<u>Cemophora coccinea</u>
Scarlet King Snake	<u>Lampropeltis doliata doliata</u>
Mole Snake	<u>Lampropeltis calligaster rhombomaculate</u>
Speckled Kingsnake	<u>Lampropeltis getulus holbrooki</u>
Southeastern Crowned Snake	<u>Tantilla coronata coronata</u>
Eastern Coral Snake	<u>Micrurus fulvius fulvius</u>
Southern Copperhead	<u>Agkistrodon contortrix contortrix</u>
Western Cottonmouth	<u>Agkistrodon piscivorus leucostoma</u>
Dusky Pigmy Rattlesnake	<u>Sistrurus miliarius barbouri</u>
Western Pigmy Rattlesnake	<u>Sistrurus miliarius streckeri</u>
Canebrake Rattlesnake	<u>Crotalus horridus atricaudatus</u>
Eastern Diamondback Rattlesnake	<u>Crotalus adamentus</u>

BIRDS

Grebes

Pied-billed Grebe	<u>Podilymbus podiceps</u>
Anhinga	<u>Anhinga anhinga</u>

Hérons & Bitterns

Great Blue Heron	<u>Ardea herodias</u>
Green Heron	<u>Butorides virescens</u>
Little Blue Heron	<u>Florida caerulea</u>
Cattle Egret	<u>Bubuleus ibis</u>
Common Egret	<u>Casmerodius albus</u>
Black-crowned Night Heron	<u>Nycticorax lentiginosus</u>
American Bittern	<u>Botaurus lentiginosus</u>

Ibises

White Ibis	<u>Eudocimus albus</u>
----------------------	------------------------

Ducks

Mallard	<u>Anas platyrhynchos</u>
Black Duck	<u>Anas rubripes</u>
Green-winged Teal	<u>Anas carolinensis</u>

Blue-winged Teal	<u>Anas discors</u>
Wood Duck	<u>Aix sponsa</u>
Ring-necked Duck	<u>Aythya collaris</u>
Ruddy Duck	<u>Oxyura jamaicensis</u>
Hooded Merganser	<u>Lophodytes cucullatus</u>

Vultures

Turkey Vulture	<u>Cathartes aura</u>
Black Vulture	<u>Coragyps atratus</u>

Kites & Hawks

Swallow-tailed Kite	<u>Elanoides forficatus</u>
Mississippi Kite	<u>Ictinia mississippiensis</u>
Sharp-shinned Hawk	<u>Accipiter striatus</u>
Cooper's Hawk	<u>Accipiter cooperii</u>
Red-tailed Hawk	<u>Buteo jamaicensis</u>
Red-shouldered Hawk	<u>Buteo lineatus</u>
Broad-winged Hawk	<u>Buteo platypterus</u>
Marsh Hawk	<u>Circus cyaneus</u>

Falcons

Pigeon Hawk	<u>Falco columbarius</u>
Sparrow Hawk	<u>Falco sparverius</u>

Quail

Bobwhite	<u>Colinus virginianus</u>
--------------------	----------------------------

Turkey

Turkey	<u>Meleagris gallopavo</u>
------------------	----------------------------

Rails, Gallinules, and Coots

King Rail	<u>Rallus elegans</u>
Virginia Rail	<u>Rallus limicola</u>
Sora	<u>Porzana carolina</u>
Common Gallinule	<u>Gallinula chloropus</u>
American Coot	<u>Fulica americana</u>

Killdeer

Killdeer	<u>Charadrius vociferus</u>
--------------------	-----------------------------

Woodcock, Snipe, & Sandpipers

American Woodcock	<u>Philohela minor</u>
Common Snipe	<u>Capella gallinago</u>
Spotted Sandpiper	<u>Actitis macularia</u>
Solitary Sandpiper	<u>Tringa solitaria</u>

Gulls

Ring-billed Gull Larus delawarensis
Bonaparte's Gull Larus philadelphia

Pigeons & Doves

Rock Dove Columba livia
Mourning Dove Zenaidura macroura
Ground Dove Columbigallina passerina

Cuckoos

Yellow-billed Cuckoo Coccyzus americanus

Owls

Screech Owl Otus asio
Great Horned Owl Bubo virginianus
Barred Owl Strix varia

Goatsuckers

Chuck-will's-widow Caprimulgus carolinensis
Whip-poor-will Caprimulgus vociferus
Common Night Hawk Chordeiles minor

Swifts

Chimney Swift Chaetura pelagica

Hummingbirds

Ruby-throated Hummingbird Archilochus colubris

Kingfishers

Belted Kingfisher Megascops alcyon

Woodpeckers

Yellow-shafted Flicker Colaptes auratus
Pileated Woodpecker Dryocopus pileatus
Red-bellied Woodpecker Centurus carolinus
Red-headed Woodpecker Melanerpes erythrocephalus
Yellow-bellied Sapsucker Sphyrapicus varius
Hairy Woodpecker Picoides villosus
Downy Woodpecker Picoides pubescens
Red-cockaded Woodpecker (E) Picoides borealis

Tyrant Flycatchers

Eastern Kingbird Tyrannus tyrannus
Great Crested Flycatcher Myiarchus crinitus