

final wild and scenic river study

august 1983

619/D-2

BLUESTONE RIVER



WEST VIRGINIA

ON MICROFILM

PLEASE RETURN TO:
TECHNICAL INFORMATION CENTER
DENVER SERVICE CENTER
NATIONAL PARK SERVICE

Color Scans

7/27/2004

UNITED STATES DEPARTMENT OF THE INTERIOR/NATIONAL PARK SERVICE



As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U. S. administration.

FINAL REPORT

BLUESTONE RIVER
WILD AND SCENIC RIVER STUDY
WEST VIRGINIA

August 1983

Prepared by:

Mid-Atlantic Regional Office
National Park Service
U.S. Department of the Interior

CONTENTS

- I. SUMMARY OF FINDINGS / 1
- II. CONDUCT OF THE STUDY / 5
 - Purpose / 5
 - Background / 5
 - Study Approach / 5
 - Public Involvement / 6
 - Significant Issues / 7
 - Definitions of Terms Used in Report / 8
- III. EVALUATION / 9
 - Eligibility / 9
 - Classification / 11
 - Suitability / 12
- IV. THE RIVER ENVIRONMENT / 13
 - Natural Resources / 13
 - Cultural Resources / 22
 - Existing Use / 24
 - Status of Land Ownership and Use / 30
- V. A GUIDE FOR RIVER CORRIDOR PROTECTION / 33
 - River Management Approaches / 33
 - Preparation of a River Management Plan / 34
 - Implementation of a River Management Plan / 38
 - Consideration for the National System / 44
- VI. LIST OF STUDY PARTICIPANTS AND CONSULTANTS / 47

MAPS/CHARTS

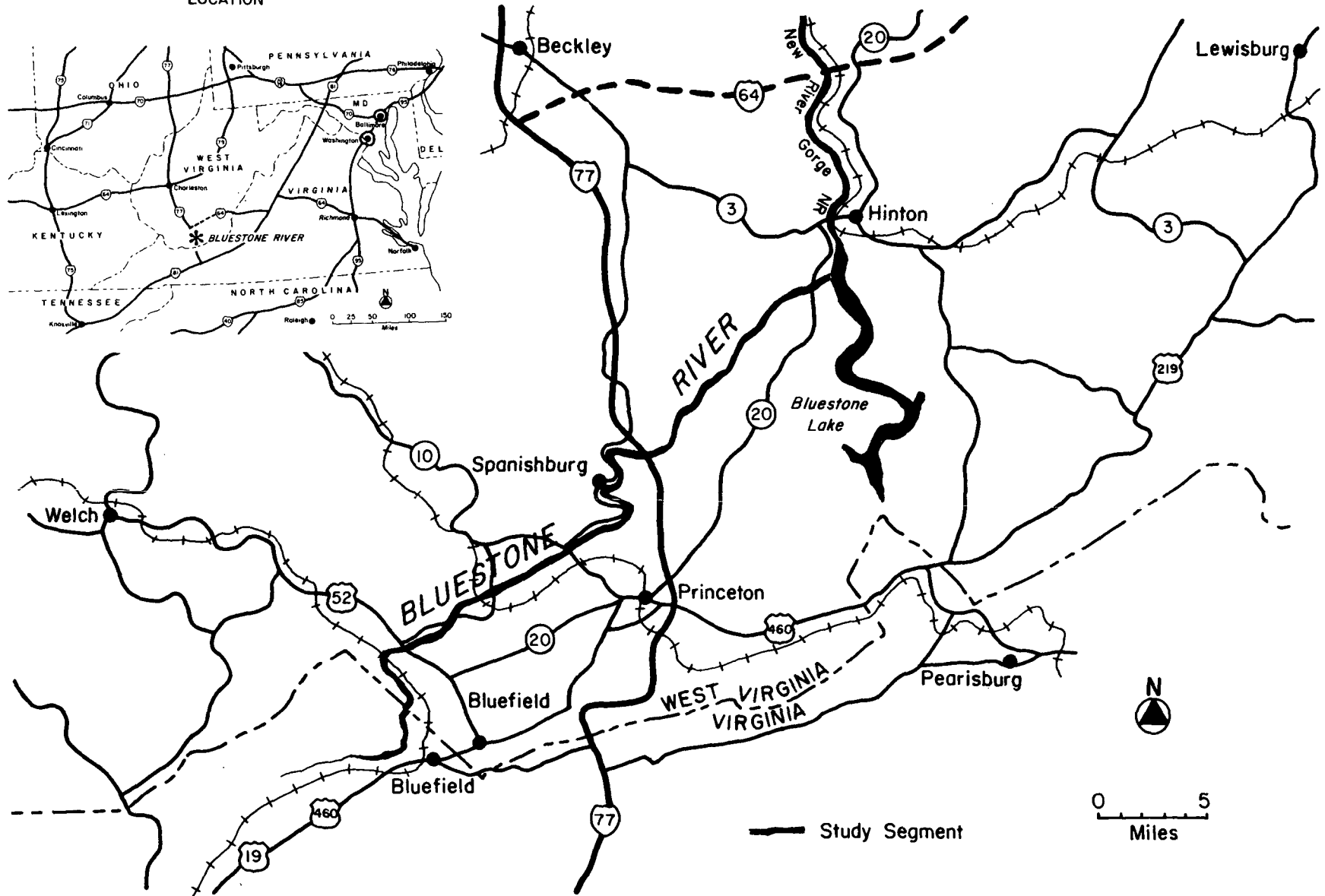
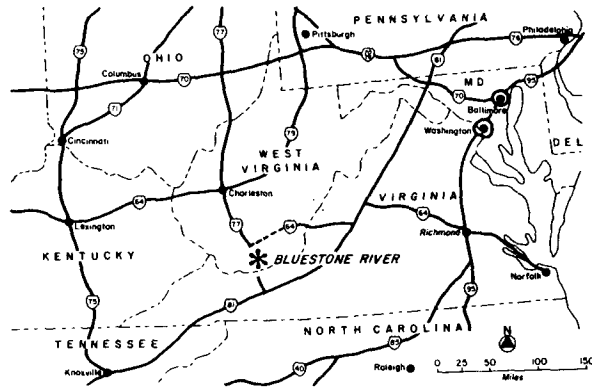
- Vicinity / iii
- Study Area / 3
- Profile of Bluestone River / 14
- Mean Monthly Stream Flow / 16
- Mineral Resources / 19

TABLES

- Summary of River Characteristics / 14
- Population / 23
- Recreation Facilities / 26
- Boating Conditions / 26

VICINITY BLUESTONE RIVER

LOCATION



111

I. SUMMARY OF FINDINGS

1. THE 25.5-MILE SEGMENT OF THE LOWER BLUESTONE RIVER, BETWEEN THE BREACHED DAM AT SPANISHBURG IN MERCER COUNTY AND THE NORMAL POOL ELEVATION OF BLUESTONE LAKE IN SUMMERS COUNTY, QUALIFIES FOR INCLUSION IN THE NATIONAL WILD AND SCENIC RIVERS SYSTEM.

The upper 17.5 miles of the eligible segment is in a free-flowing condition all of the time and the lower eight miles almost all of the time. A portion of the stretch between normal pool elevation and maximum pool elevation is subject to occasional inundation for short periods of time but normally this does not interfere with boating during the recreation season. Maximum flood pool has never been reached. The river and its immediate environment possesses outstandingly remarkable scenic, recreational, and fish and wildlife values. Flow and level are sufficient for boating during the spring and after heavy rains. Water quality is generally suitable for primary contact recreation. The river is of sufficient length to provide a meaningful, high quality recreation experience.

2. THE ENTIRE ELIGIBLE SEGMENT QUALIFIES FOR SCENIC RIVER CLASSIFICATION.

A short upper stretch of the eligible segment generally is accessible by road, while the remaining stretch generally is not. The shoreline is generally free of development. The water quality generally meets the minimum criteria for desired types of recreation and is capable of supporting the propagation of aquatic life normally adapted to the stream. The segment is considered to be in a free-flowing condition.

3. ALTHOUGH THE LOWER BLUESTONE RIVER IS ELIGIBLE FOR INCLUSION IN THE NATIONAL WILD AND SCENIC RIVERS SYSTEM, PUBLIC INTEREST AND SUPPORT ARE NOT SUFFICIENT TO CONSIDER IT SUITABLE FOR INCLUSION AS A FEDERALLY ADMINISTERED COMPONENT AT THIS TIME.

Following a determination of eligibility, a determination of suitability for a river and its immediate environment is made taking into consideration such factors as the significance of the resource values present, threats to those values, and extent of public lands in the river area; costs required for acquisition, development, management and operation; public, local or State interest in acting to protect and manage the river; and the feasibility and timeliness of such actions.

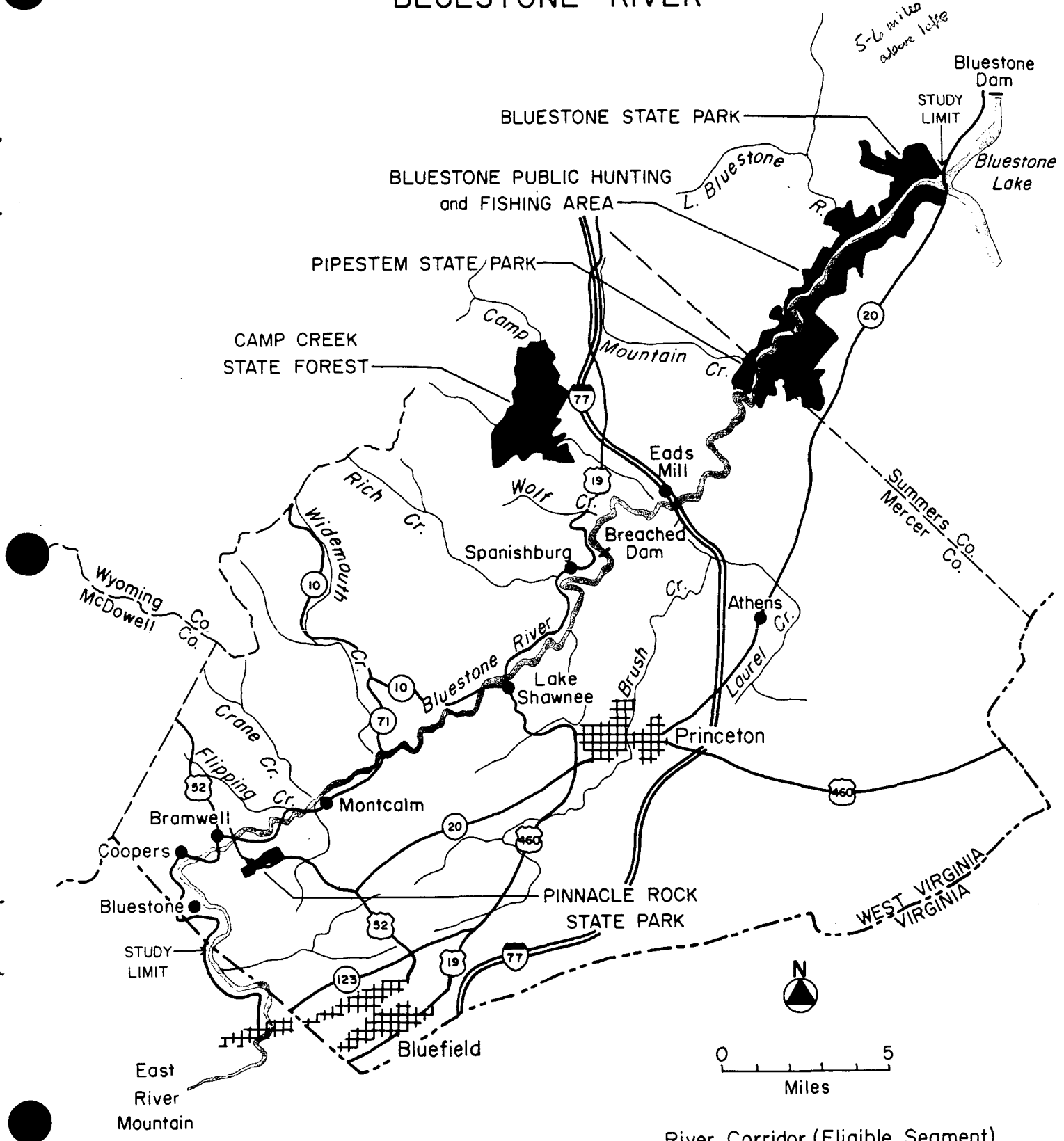
Approximately one-half of the eligible segment and its immediate environment are under public control. Most ownership is by the State, while the Corps of Engineers has shoreline to shoreline control of the river to maximum pool elevation of Bluestone Lake. However, there has been almost no support for designation with Federal administration.

4. STATE AND/OR LOCAL MANAGEMENT OF THE ELIGIBLE SEGMENT IN THE NATIONAL SYSTEM MAY BE SOUGHT THROUGH PROVISIONS OF SECTION 2(a)(ii) OF THE WILD AND SCENIC RIVERS ACT.

If State and/or local governments should ever wish to administer the eligible river segment as a component of the National System, application can be made by the Governor to the Secretary of the Interior under provisions of Section 2(a)(ii) of the Wild and Scenic Rivers Act, which authorizes the Secretary to add eligible river segments to the National System if certain conditions are met. As a prerequisite, a river corridor plan involving State or State/local management entities would have to be adopted to protect the natural values of the river. (Section V. D of this report discusses the procedure for including a river in the National System under Section 2(a)(ii) of the Act).

STUDY AREA

BLUESTONE RIVER



River Corridor (Eligible Segment)



Typical river scene



Quieter waters

II. CONDUCT OF THE STUDY

Purpose

The purpose of this study is to determine if the Bluestone River in West Virginia is free-flowing and possesses outstandingly remarkable values which make it eligible for addition to the National Wild and Scenic Rivers System, and to determine if eligible segments of the river are suitable for inclusion in the National System based on such factors as the significance of the resource values present, threats to those values, and extent of public lands in the river area; costs required for acquisition, development, management and operation; public, local or State interest in acting to protect and manage the river; and the feasibility and timeliness of such action.

This report on the Bluestone River was prepared under authority of the Wild and Scenic Rivers Act (Public Law 90-542) enacted in October 1968 which stated:

It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations.

Background

The Bluestone River was authorized for study as a potential component of the National Wild and Scenic Rivers System under Public Law 95-625, which amended Section 5(a) of Public Law 90-542 in 1978. It is one of four rivers in West Virginia which are being studied by the National Park Service; the others being the Gauley, Birch, and Cacapon. In addition, the Greenbrier River is being studied by the U.S. Forest Service.

Study Approach

The study of the Bluestone River to determine its potential for addition to the National Wild and Scenic Rivers System was a cooperative effort led by the National Park Service.

On-site inspections and data collection were accomplished by an interagency study team composed of the following:

Federal Energy Regulatory Commission
Division of River Basins

U.S. Department of Agriculture
Forest Service

U.S. Department of Defense
Army Corps of Engineers

U.S. Department of the Interior
Bureau of Mines
Fish and Wildlife Service
Geological Survey
National Park Service

U.S. Environmental Protection Agency
Water Quality Office

Ohio River Basin Commission

State of West Virginia
Department of Natural Resources

In addition, Mercer County agreed to serve on the team as an observer.

A field trip was conducted in October 1979 to evaluate the study area. The study team was assisted by local individuals on the evaluation trip. The study team then met to discuss whether the river was eligible for inclusion in the National System and, if so, how it should be classified.

The study team has determined the eligibility of the Bluestone River for inclusion in the National System and has prepared other information required by Congress.

Public Involvement

An initial public meeting to discuss the purpose of and plans for conducting the study was held near Princeton on October 1, 1979. Other public meetings were held near Princeton on December 16, 1981 and at Hinton on December 17, 1981 to discuss findings of the study and possible alternative actions to protect the segment eligible for the National System.

A series of workshops were held in cooperation with the State to obtain the views of private interests in the study area. The first, with coal and timber interests, was held at Hawks Nest State Park on December 15, 1981. The second was held at Pipestem State Park on December 17, 1981 with conservationists and white water recreation outfitters. A follow-up workshop was held on January 27, 1982 for the outfitters who were unable to attend the earlier meeting.

There has been informal consultation with county and local government officials, conservation groups, private individuals and landowners in the river area since the study was initiated.

State agencies were contacted with the assistance of the State Department of Natural Resources. The State Historic Preservation Officer (SHPO) prepared a short report on the cultural resources of the study area under contract with the National Park Service.

Significant Issues

The issues outlined below were identified by the study team through contacts with concerned public agencies, organizations, and individuals.

Reservoir Development - Project purposes of Bluestone Dam, built in 1946, were to provide hydroelectric power, flood control, and recreation. Electric generators were not installed at the time of construction, but the Corps of Engineers is now studying the possibility of doing so in the future. The Corps' study will consider different ways of timing discharges through the dam, different volumes of discharges, and minor changes in the water level behind the dam. However, the Corps must continue to provide at least as much flood protection, and as much water in the river below the dam as it does now. Overall, the Corps is studying the reservoir to determine the best use of the resource.

Coal - There is some coal production upstream from the eligible segment and on the plateau west of the Bluestone River. Coal production runoff has created a water quality problem in the past. Designation of the river would not affect coal production outside of the river area if mining and reclamation regulations were rigidly enforced.

Timber - Currently there is no commercial logging within the entire study area. As the existing growing stock matures and as logging techniques improve, logging within the gorge will become more profitable. Timber harvest activities present a potential adverse effect on other natural resource values, but if conducted in accord with existing State regulations, would not affect the outstandingly remarkable values.

Gas Exploration - Recent gas exploration in the upper Bluestone area could lead to gas extraction. It could affect the eligible segment by increasing erosion and sedimentation unless appropriate safeguards are taken.

Landowner Concerns - Some landowners in the river area are concerned that designation of the river would lead to the acquisition of their properties. Currently there is no proposal to designate the Bluestone River as a component of the National System, and designation would not require such acquisition.

Limited Access - Access to much of the study area is limited. Private lands border most of the upstream access points. There would have to be agreements with landowners in order to permit access to the river.

Definitions of Terms Used in Report

Study Area: The portion of the Bluestone River authorized for study (entire main stem in West Virginia) and its immediate environment, which, in this study, is the area extending one-quarter mile from each river bank.

River Area: That part of the study area and its immediate environment eligible for inclusion in the National System.

Study Segment: The river itself between the Virginia-West Virginia boundary and Bluestone Lake.

Region: The surrounding environment of the study area, extending for several miles or more, which affects and is used to describe the river for study purposes. The boundary is indefinite (e.g. Mercer and Summers Counties for population data, the watershed for stream flow data).

Designation: Inclusion of a river area in the National System either by act of Congress or by authority of the Secretary of the Interior.

Eligibility: Qualification of a river for inclusion in the National System through determination that it is free-flowing and, with its adjacent land area, possesses at least one outstandingly remarkable value.

Eligible Segment: The portion of the study segment which is eligible for the National System. (See River Area)

River Corridor: In preparing a river management plan the river corridor boundary may be more or less than one-quarter mile distance from each riverbank.

Classification: The determination of which of the classes outlined in Section 2(b) of Public Law 90-542 (wild, scenic, or recreational) best fit the river or its various segments.

Suitability: A determination as to whether an eligible segment should be included in the National System by weighing natural and cultural resource values and threats to those values with such factors as extent of public lands in the river area; costs required for acquisition, development, management and operation; public, local or State interest in acting to protect and manage the river; and the feasibility and timeliness of such action.

III. EVALUATION

The natural and cultural resource values of the Bluestone River are discussed in detail in Chapter IV of this report. They are summarized in this chapter in sufficient detail to establish the outstandingly remarkable values of the qualifying segment.

The lower 25.5 miles of the Bluestone River flow through a scenic, rugged V-shaped valley. The valley is a good example of a river gorge in a humid, mid-latitude climatic region with luxuriant vegetation. The gorge is a well-defined geologic feature. Its outstanding scenic quality is due chiefly to the canyon profile, white water up to Class IV, and heavy forest cover. The waters are of satisfactory quality and the air quality is high.

Archeologic, historic, and other cultural resources are limited.

The upper gorge is heavily forested with limited access and a few scattered agricultural lands. There are a few scattered summer homes but no mining or timbering within the visual corridor.

The lower 10 miles of the Bluestone River are bordered by two State parks and a public hunting and fishing area. Pipestem State Park provides a year-around resort type facility and Bluestone State Park offers the normal range of recreation facilities. The public hunting and fishing area is a fish and wildlife management area. Recreational activities include sightseeing from the rims, hiking along the gorge walls, and fishing and boating on the river.

Bluestone Dam, a flood protection facility, impounds 2.4 miles of the lower Bluestone River. An additional 8 miles of the river could be impounded at maximum pool elevation of Bluestone Lake.

Eligibility

It has been determined that the 25.5-mile segment of the Bluestone River between the breached dam at Spanishburg, West Virginia, and the normal pool elevation of Bluestone Lake is eligible for inclusion in the National Wild and Scenic Rivers System. The entire study segment is 60 miles long. The 34.5-mile segment of the river upstream from the breached dam did not qualify; it lacks outstandingly remarkable values, has poor water quality and low flow levels.

Eligibility of the lower Bluestone segment is based on the following:

1. The segment is in a free-flowing condition.

Although Bluestone Dam on the New River impounds the lowermost 2.4 miles of the Bluestone River, there is no constant slack

water between river mile 2.4 (elevation 1409 feet) and river mile 10.3 (elevation 1520 feet). This stretch is subject to inundation for short durations as water storage occurs in Bluestone Lake for flood control. Slack water extends approximately three miles upstream (1452 feet elevation) with a frequency of once a year, six river miles (1484 feet elevation) once every ten years, and eight river miles (1520 feet elevation, maximum flood pool) once every 100 years. Maximum flood pool has never been reached, however. Boating usually extends to normal pool elevation. The entire segment possesses a variety of natural flow conditions from fast white water (up to Class IV to deep calm pools).

2. The river area possesses outstandingly remarkable scenic, recreational, and fish and wildlife values. Its geologic values are also significant but may not be outstandingly remarkable.

The lively river course is framed by a gorge that ranks high in scenic quality and possesses a rich variety of vegetative types, including hemlocks and rhododendron thickets. Occasional bare rock faces add variety to an impressive landscape. The lack of development adds to the area's tranquility.

The segment is bordered by two state parks; Pipestem State Park is a unique recreation complex operated as a year-round resort, while Bluestone State Park's activities center around Bluestone Lake, which attracts fishermen, boaters, water skiers, and swimmers. Bluestone Public Hunting and Fishing Area is located along the river between the two parks. The river is a part of this recreation complex, offering opportunities to raft, kayak, canoe, camp, fish and sightsee.

The lower part of the eligible segment and the river arm of Bluestone Lake provide a very good warm water fishery. Practically all species of warm water game fish found in the State are present. The immediate river environment supports an abundant variety of forest-related large and small wildlife species which include black bear and wild turkey.

The gorge was formed over a long period of time. The exposed rocks consist of red, green, and gray shale and sandstone and a few limestone beds. It is a good example of a gorge (local relief up to 500 feet) located in a humid mid-latitude climatic region.

In addition, the segment normally has a water flow and level sufficient to permit full enjoyment of water-related outdoor recreation activities generally associated with comparable rivers. These include canoeing, kayaking, rafting, swimming, and fishing. Stream flows have seasonal variations, with high and medium-high flows during late winter and spring, which increase velocity and vary wave patterns. Summer and early autumn flows normally slacken, and boating activity decreases accordingly.

Water quality is generally suitable for primary contact recreation, even though in some cases it does not meet all of the criteria provided by the West Virginia Department of Natural Resources. It is adequate for swimming, wading, and fishing. However, a few communities upstream from the segment are currently discharging inadequately treated sewage and septic tank overflows into the river. The river is recovering from the effects of drainage from coal mines, but overall, the river has improved in its water quality during the past few decades.

The segment is long enough to provide a meaningful, high quality recreation experience.

In summary, 25.5 miles of the Bluestone River with its immediate environment is eligible for inclusion as a component of the National System. In addition, the Bluestone provides recreational opportunities which complement and supplement those provided by the New, Greenbrier and Gauley Rivers.

Classification

Following a determination that the Bluestone River qualifies for inclusion in the National Wild and Scenic Rivers System, the following criteria presented in Section 2(b) of the Act were utilized to determine the potential classification if the river were designated.

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.

Scenic River Areas - Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

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.

It was concluded that the entire eligible segment would be classified as SCENIC. The scenic classification is based primarily on the following factors:

1. It is free of impoundments.
2. The water quality generally meets the minimum criteria for river recreation and is capable of supporting the propagation of aquatic life native to the stream habitat. It does not meet the "unpolluted" requirement for wild classification.

3. The shoreline is generally free of development.
4. A short upper stretch is accessible by road, while the remaining gorge segment is not.

Suitability

If a river and its immediate environment is found eligible for addition to the National Wild and Scenic Rivers System, the Secretary must determine whether it is suitable for addition to the National System. A determination of suitability is based on such factors as the significance of resource values present, threats to those values, and extent of public lands in the river area; costs of acquisition, development, management and operation; public, local or State interest in acting to protect and manage the river; and the feasibility and timeliness of such action.

The lower Bluestone River has been found nonsuitable due to insufficient State and local interest in the addition of the river as a federally managed component of the National System. In addition, although some of the public land within the river area is federally administered by the Corps of Engineers, most of the public land is administered by the State.

The Secretary of the Interior has authority, under Section 2(a)(ii) of the Wild and Scenic Rivers Act, to include the lower Bluestone in the National System if certain conditions are met. (See Section V. D of this report, Consideration for the National System.)

IV. THE RIVER ENVIRONMENT

This chapter provides a description of the natural resources, cultural resources, existing public use, and status of land ownership and use.

Natural Resources

The Bluestone River watershed is located in Mercer and Summers Counties in southern West Virginia and Tazewell County in southwestern Virginia. It drains a total of 460 square miles; the West Virginia portion of the watershed drains 374 square miles and the Virginia portion 86 square miles. The largest tributaries of the Bluestone River, in descending order of size, are: Brush Creek, Camp Creek, Little Bluestone River, Widemouth Creek, Laurel Fork, Rich Creek, and Mud Fork. There are 16 other smaller tributaries. (See Study Area Map on page 3.)

The River and its Immediate Environment - The source of the Bluestone River is the northern slope of East River Mountain near Springville, Virginia. It flows in a northeasterly direction and converges with the New River at Bluestone Lake. The river is 77 miles in length; 60 miles of it are in West Virginia.

The Bluestone River has a steep gradient. The elevation of the river at its source is approximately 3500 feet above mean sea level (MSL) and drops an average of 27 feet/mile to 1409 feet MSL, which is normal pool elevation of Bluestone Lake.

From Bluefield to Montcalm, West Virginia, the river has cut into the grain of the linear mountains of the folded Appalachians through a succession of fairly wide bottom lands and narrow gorges about 400 feet or more deep. Throughout this reach, the river is flanked by highways and a railroad and by both grouped and scattered houses. Trash and junk are abundant in the riverbed and choke it in some places. A sewage treatment plant is located by the river just below Bluefield. The stream is very shallow, and even the flat reaches are too shallow to float any but the lightest boats.

From Montcalm to Spanishburg the river follows the boundary between the Allegheny Plateau and the folded Appalachians almost to Spanishburg. River bottom lands widen from 500 feet or so near Montcalm to as much as one-half mile at Spanishburg. Steep slopes on the outside of meander loops near Montcalm are as high as 500 feet. Near Spanishburg similar slopes reach 200 feet. The reach between Montcalm and Spanishburg is rural and predominantly in farms. The Norfolk and Western Railroad diverges from the river about five miles downstream from Montcalm, but roads and highways follow the river fairly closely. Trash and junk diminish and dark algal mats on the river bottom disappear before the river reaches Spanishburg.

TABLE 1. SUMMARY OF RIVER CHARACTERISTICS

The Bluestone River Basin

Located in: Mercer and Summers Counties, West Virginia and Tazewell County, Virginia

460 square miles in area; 374 square miles in West Virginia and 86 square miles in Virginia

Bluestone

Located in: Mercer and Summers Counties, West Virginia (study segment) and Tazewell County, Virginia

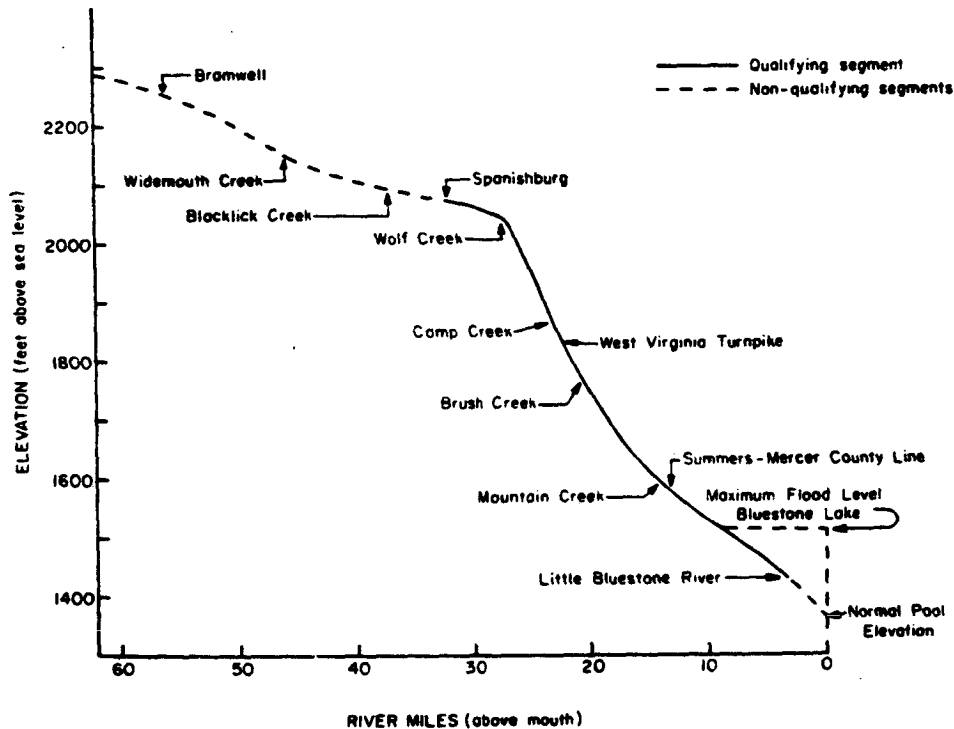
77 miles overall river length; 60 miles in West Virginia (study segment)
25 1/2 miles in qualifying segment (scenic)

3500 feet elevation at source
2290 feet elevation at VA-WV border
2000 feet elevation at Spanishburg (breached dam)
1520 feet maximum elevation at mouth
1409 feet normal elevation at mouth

27 feet/mile gradient between source and mouth
71 feet/mile gradient between source and VA-WV border
8 feet/mile gradient between VA-WV border and Spanishburg
23 feet/mile gradient between Spanishburg and normal pool elevation of Bluestone Lake

177 cfs average discharge at Bramwell
218 cfs average discharge near Spanishburg
429 cfs average discharge near Pipestem
472 cfs average discharge near Lilly

PROFILE OF BLUESTONE RIVER IN WEST VIRGINIA



The floodplain narrows from about a half mile in width at Spanishburg to practically nothing at Eads Mill as the river enters its gorge. Above the breached dam at Spanishburg, the river moves very slowly and the riffles are wide and shallow. Below the dam, where the valley walls begin to close in and the river becomes narrow and swift, the riffles become a little deeper, and some rapids occur. The wooded hills rise to as much as 500 feet above the river. Below Spanishburg, there are no houses directly on or visible from the river. Highway traffic noise begins to intrude near the mouth of Wolf Creek. Below that there is no disturbance, and the water quality improves. About a half mile above the lower bridge at Eads Mill, the river flows rapidly over a wide flat ledge.

At Eads Mill, the river flows over a rapid generated in part by bedrock outcrops but also, under the Interstate 77 bridge, by sharp edge boulder rubble blasted from the sandstone at the rim of the gorge during bridge construction. Just below the interstate highway bridge, a small county road bridge crosses the river over quieter water. Eads Mill is the only convenient river access point between Spanishburg and Pipestem State Park.

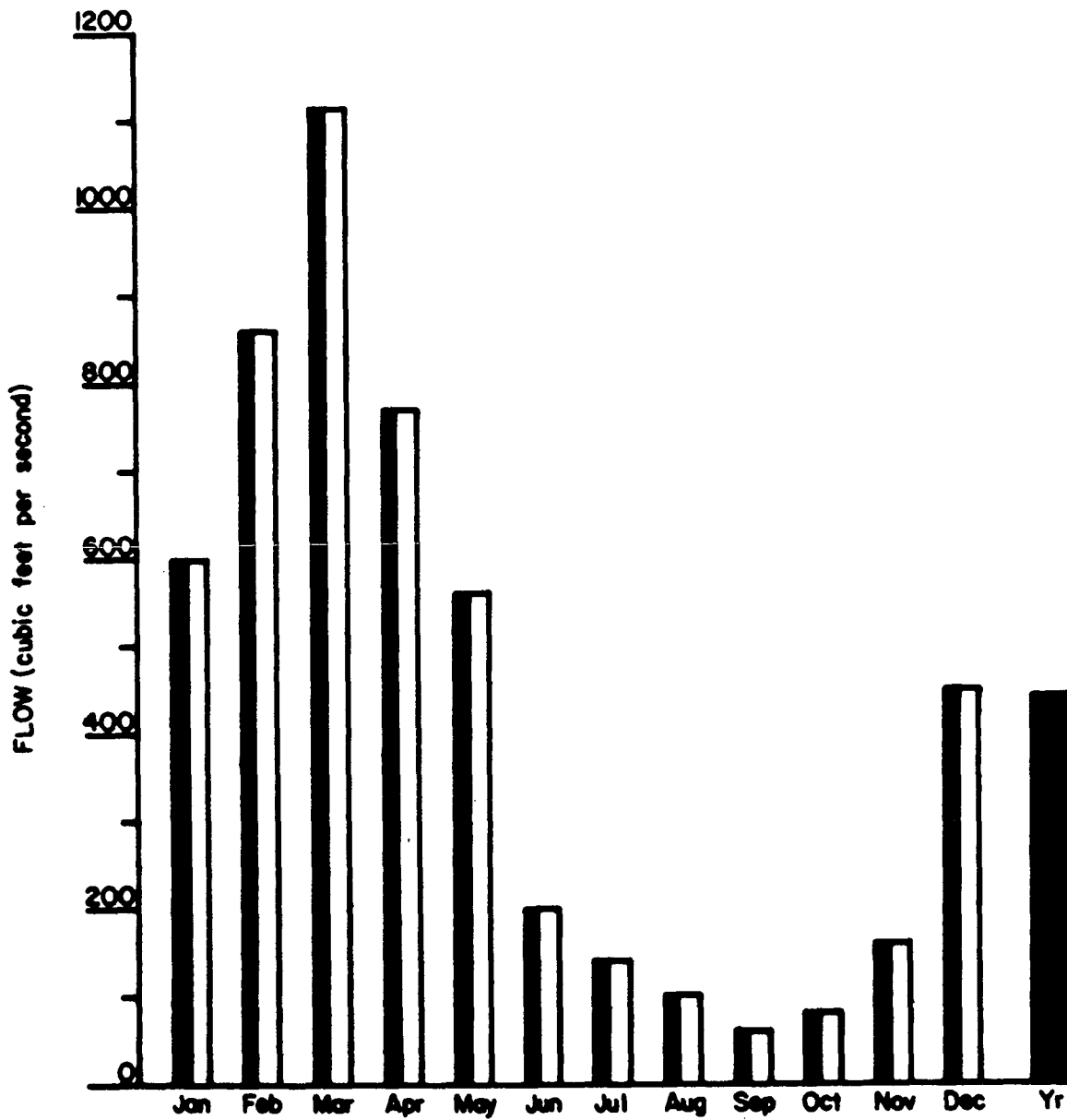
Below Eads Mill to the tramway at Pipestem State Park, the river flows through a gorge about 300 feet deep at the upper end and 1200 feet deep in two steps at the lower end. An abandoned roadway grade follows the river, but is blocked in some places and cut at others by landslides, rockfalls, and washouts. A mixed forest of hardwoods and conifers covers both sides of the gorge except at the top where a sandstone cliff crops out. The river flows on coarse gravel and bedrock, and large boulders are abundant in the river. The water is clear and the flow is rapid.

At Bluestone State Park the bottom of the gorge is inundated by Bluestone Lake. Highwater leaves mud and dust on grass when it recedes. The old floodplain of the river, approximately 1500 feet wide at Bluestone Park, is partly flooded by Bluestone Lake. Mud flats visible in the lake near the upper end of the park appear to be recent silt deposits on the old floodplain. The gorge is about 800 feet deep, and its slopes are wooded.

Hydrology - The lowermost 2.4 miles of the Bluestone River are inundated by Bluestone Lake, whose dam is located on the New River several miles downstream from the mouth of the Bluestone River. The mean monthly flow of the river in late winter and early spring (approximately 825 cubic feet per second (cfs)) is much greater than in late summer and early autumn (approximately 40 cfs). The high flows recorded from January through April are due to storms and melting snow and ice. The lowest flows usually occur in August, September, and October when evapo-transpiration exceeds runoff from precipitation. The mean average flow of the Bluestone River near Spanishburg is 218 cfs; at Pipestem gaging station, 429 cfs; and at

MEAN MONTHLY STREAM FLOW

(Bluestone River at Pipestem; 1950 to present)



Source : USGS, Water Resources Data for West Virginia and Surface Water Supply of U.S. W. Va. Department of Natural Resources

Lilly, 472 cfs. The greatest flows ever recorded were 6,920 cfs (18.4 feet) on the gage at Spanishburg in January 1946, 16,100 cfs (14.5 feet) at Pipestem in January 1957, and 16,600 cfs (11 feet) at Lilly in March 1935 and February 1948. The high flow of January 1957 caused more damage than any flood in the basin's history. Table 1 gives the mean monthly stream flow since 1950.

As illustrated in the river profile on page 14, in the 33-mile stretch from the Virginia - West Virginia border to Wolf Creek the river drops only 6 feet per mile. In the 25 miles from Wolf Creek to the normal pool level of Bluestone Lake, the river drops at a rate of 26 feet per mile.

Water Quality - Notwithstanding water quality problems upstream from Spanishburg, the overall water quality of the eligible segment is satisfactory for boating and fishing. Acid mine runoff, coal fines, domestic sewage, and sedimentation are the major sources of water quality problems in upstream stretches and can cause fish kills and rapid eutrophication downstream.

More than 60% of the population of the Bluestone River watershed is served by waste treatment plants. Secondary waste treatment plants in municipalities include Bluefield, Matoaka, Princeton, and Athens, while those in public service districts include Bluewell and Glenwood. Of the eight public service districts, three are without any type of waste treatment facilities. However, studies are being conducted and there are plans to install the systems. For approximately 40% of the population sewage is either dumped directly into the streams or treated by cesspools and septic tanks. This contributes to the high coliform count in the upstream segment. During the period 1967-76, 89% of the coliform tests at Bramwell exceeded the State criterion of 2400 per 100 ml for total coliform. At Camp Creek Station, 54% of the tests indicated a violation.

Coal mining in upstream areas and on the plateau in the western portion of the watershed has caused water quality problems due to mine drainage. Widemouth Creek, a tributary of the Bluestone River, is seriously affected by mine drainage, while the main stem is affected to a lesser degree. The lack of pyrite and marcasite in the coal seams and adjacent rock strata lessens the acidity associated with mine drainage in other parts of the State.

The amount of suspended sediment deposited in Bluestone Lake by the Bluestone River ranges from 57 to 84 tons per square mile of watershed annually. Most sedimentation can be attributed to strip mines, farmland, forest fires, and construction. The two-thirds of the basin which is in woodlands yields only 20 tons of sediment per square mile annually.

The West Virginia Water Quality Standards are being violated by the presence of excessive amounts of several pollutants from upstream industrial and domestic sources in the Bluestone River as measured at Bramwell and near Camp Creek. The average (mean) readings for

bacteria, fecal coliform, cadmium, chromium, barium, lead, phenol, arsenic, cyanide, selenium and silver exceed the parameters set by the State. Also, the maximum readings for chlorides and fluorides are in violation of the standards. However, the dissolved oxygen in the river is sufficient to support aquatic life and break down the organic wastes dumped into it and the pH falls within the acceptable range.

Air Quality - There are no major industrial pollution sources in or near the eligible segment of Bluestone River and the air quality is generally good. The small concentrations of industrial pollutants in the upper river area normally do not affect the environment of the eligible segment because of the prevailing westerly winds.

In the region, stagnation conditions involving poor dispersion lasting four days or more occur once or twice a year, while a seven day stagnation occurs once in five to seven years. The transport and diffusion of pollutants may vary sharply over short distances.

The region is generally unclassifiable because of a lack of air quality data. Nevertheless, it appears that the National Ambient Air Quality Standards are generally met in the lower watershed.

Geology and Mineral Resources - The Bluestone River flows through rocks (which are about 320 million years old) of Pennsylvanian and Mississippian Periods of the Paleozoic Era. Quaternary sand and gravel deposits in narrow strips along the stream are less than a million years old and may be as recent as the most recent flood.

Mineral resources are associated with the Pottsville, Mauch Chunk, Greenbrier Groups. In the Pottsville Group coals in the Pocahontas Formation, with seam thickness of 12 to 60 inches, are of good quality and continuous enough to be mined. All Coalbeds in the Pottsville Group are low volatile bituminous and crop out along the upper Bluestone River, between the hamlet of Bluestone and Bramwell, and are exposed along the tributaries to the northwest between Bramwell and Spanishburg. Other coals of the Pottsville Group mined include Fire Creek, Beckley, and Welch. Coalbeds in the Mauch Chunk Group are too impure, thin, and discontinuous for commercial development at this time but have been mined for domestic supply. In 1976, estimated coal reserves for Mercer County exceed 100 million tons.

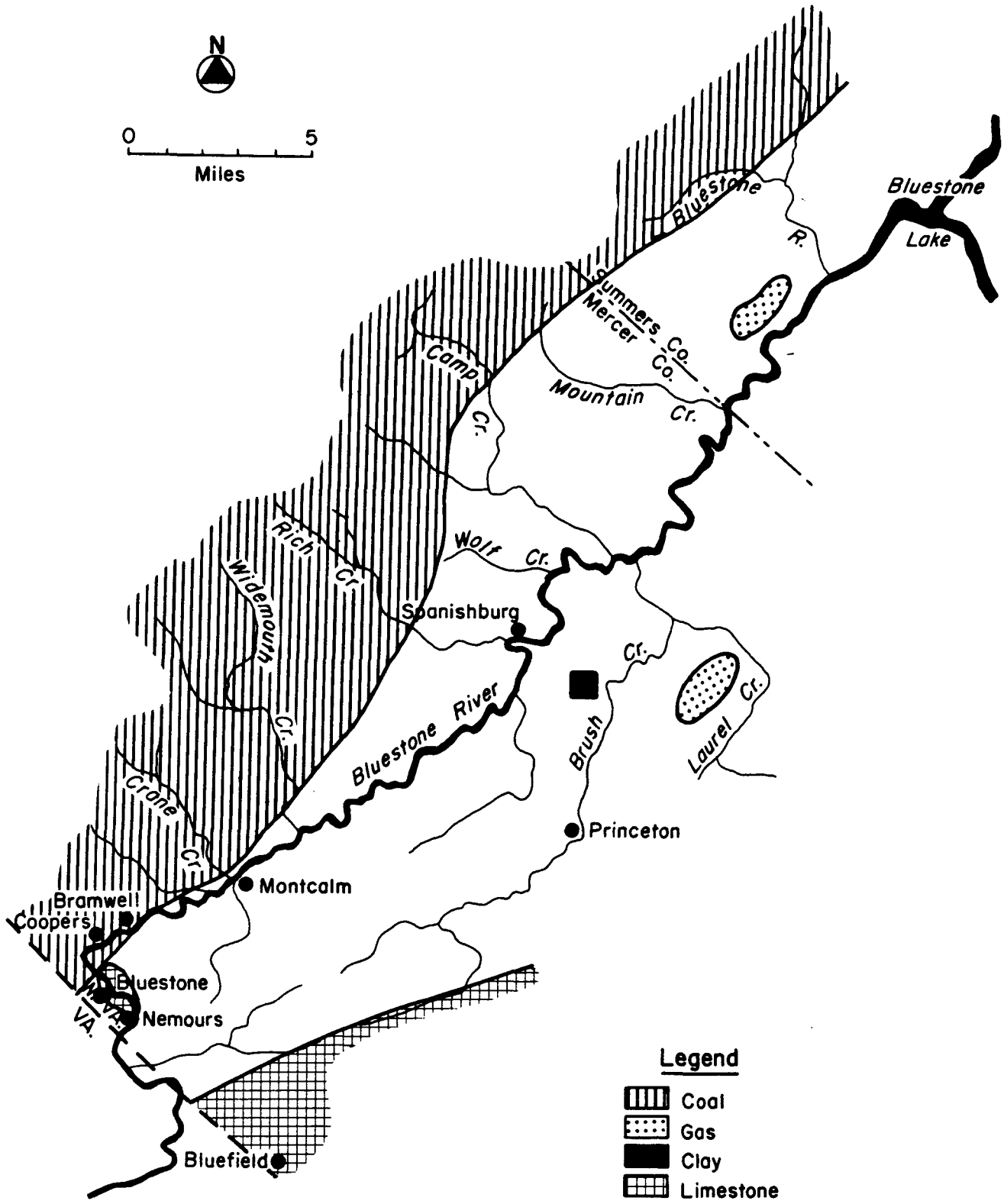
The Mauch Chunk Group, which crops out in the valley walls along the Bluestone River, is composed mostly of red and green shales, sandstones, and lenticular limestones. Locally the shales may be suitable as raw materials for local structural clay products. Some of these shales are potential lightweight aggregate resources.

Pottsville sandstones have been quarried in the past for dimension stone; Mauch Chunk sandstones were quarried as a high-silica source. Several other sandstones may also be suitable sources for lower-quality glass sands. Presently Greenbrier limestone is quarried between the hamlet of Bluestone and Nemours. It is suitable for agricultural use and road materials.





Natural gas has been produced from Mauch Chunk sandstones in Mercer County. However, no recent drilling activity has been reported in the region.

MINERAL RESOURCES

BLUESTONE RIVER REGION



Legend

-  Coal
-  Gas
-  Clay
-  Limestone

Soil Associations - Calvin-Teas-Berks-Gilpin Association (located throughout most of the river area): Moderating deep to shallow silty soils on dissected uplands underlain by acid limy red and gray shales. Soils in this association are mostly moderately steep or steep with smaller gently and strongly sloping areas. They are moderately deep to shallow reddish brown and yellowish brown silty soils over acid or limy shales. These soils are low to average in natural fertility and ability to supply moisture for crops. They erode rather easily. Pasture is extensive and general crops are grown on the more favorable slopes. The steeper areas are mostly in woods. These are fair to good soils for tree growth. Narrow areas of deep, fertile colluvial soils occur on foot-slopes and along drainageways.

Pope-Philo-Monongahela Association (located in the vicinity of Spanishburg): Deep, well and moderately well drained acid soils on nearly level bottoms and stream terraces. This association is small in total extent, but is important to the agriculture of the area. They are developed along streams in material washed from acid sandstone and shale uplands. The gentle slopes are attractive for building or other development sites. However, the flood hazard on the Pope and Philo soils and the seasonal high water table on the Monongahela soils present severe limitations on building construction.

Overall, the soils within the river area are usually too steep, shallow, or erosive for extensive development. Flooding is also a hazard on soils in the Spanishburg area. Their best use appears to be for tree growth and recreation.

Vegetation - The vegetation found along the Bluestone River is diverse and abundant because of extremes in topography, elevations and microclimatic conditions. Northern hardwood type forest, including some of the southernmost extension of the northern hardwood forest type, grow at higher elevations (above 2,000 feet). Tree species found here are mainly sugar maple, red maple, beech, yellow birch, basswood and white pine. The lower elevations (below 2,000 feet) contain the central hardwood forest type (red oak and white oak, yellow poplar, ash, hickory, silver maple, elm, box elder, sycamore, white pine, Virginia pine, and pitch pine) and an abundant understory composed of flowering dogwood, witch hazel and spicebush.

This part of West Virginia was originally logged around the turn of the century; since that time there has been selective cutting. While few facts about the timber harvested from this area were found it is known that the quality of timber now found in the area is above average when compared with the nearby Appalachian Highland Region. Site index, a measure of production, averages between 80-85 for the area.

Plant species of interest found within or near the river corridor include the purple cliff brake, putty root, (bulbiferous) bladderfern, yellow root, southern loosestrife, southern arrowwood, Canby's mountain lover, and the Allegheny cliff fern. The State champion sycamore grows in the Spanishburg area.

There are no known threatened or endangered plant species in the study area.

Fish and Wildlife - The Bluestone River is classified as a High Quality Warmwater Stream by the State. The lower eligible segment and Bluestone River arm of Bluestone Lake provide a good warmwater fishery. Practically all species of warmwater game fish found in the State are present - smallmouth bass, largemouth bass, spotted bass, muskellunge, walleye, white bass, rock bass, crappie, several species of sunfish, channel catfish, and flathead catfish. In addition, Bluestone Lake has high populations of flathead catfish, channel catfish, and black and white crappie. Carp are also present. Striped bass and striped bass hybrids have been successfully introduced in the reservoir. The lower eligible segment does not support a trout fishery, however, Camp Creek and Marsh Fork of Camp Creek are stocked with trout on a "put-and-take" basis, while the headwaters of Little Bluestone River and Mountain Creek are managed on a "put-and-grow" basis for brown trout.

Due to the diversity of habitat and high productive water quality, diverse populations of non-game fishes also occur. These include suckers, dace, minnows, chubs, shiners, stonerollers and sculpins.

With the significant improvement in the water quality of the Bluestone River during the past few years, the West Virginia Department of Natural Resources has stocked a section of the river between Spanishburg and Bramwell with muskellunge at a rate of 300 fingerlings per year over the past four years. These fish are reported to be surviving and growing. There are no known threatened or endangered species of fish in the study area.

The mixed hardwood and conifer forests support a variety of wildlife species common to southern West Virginia. The rugged terrain, numerous denning areas, and limited access make this an ideal protective habitat for many wildlife species. White-tailed deer, ruffed grouse, gray and fox squirrel are plentiful in most forest areas of the watershed. A limited number of wild turkey and black bear also inhabit the river area. The cottontail rabbit is common in fringe areas. Other species hunted or trapped to a lesser degree include woodchuck, raccoon, red and gray fox, woodcock, muskrat, beaver, mink, weasel, skunk, and opossum. Other mammals include the mole, shrew, bat, coyote, bobcat, chipmunk, mouse, rat and vole.

Rattlesnakes and copperheads may be encountered in the river area. Turtles, lizards, skinks, salamanders, toads, frogs, and a number of nonpoisonous snakes also inhabit the area.

Bird species known or expected to inhabit the river area, at some season of the year, include Canada and snow geese and various ducks, including mallard, black duck, gadwall, pintail, teals, American widgeon, shovelers, wood duck, redhead, canvasback, ring-necked duck, scaups, goldeneye bufflehead, oldsquaw, ruddy duck, merganser, wood warblers and other song birds. Other birds include loon, grebes, herons, bitterns, whistling swan, rail, coot, gulls, terns, pigeon, dove, cuckoo, owl, hawks, vultures, osprey, falcon, golden eagle and bald eagle.

The osprey, Pandion haliaetus, golden eagle, Aquila chrysaetas, southern bog lemming, Synaptomys cooperi, red-bellied turtle, Chrysemys rubriventris, and Florida cooter, Chrysemys floridana are considered rare by the State of West Virginia and are referred to as "species of scientific interest." There are no known threatened or endangered species of wildlife in the study area. A newly found form of river cooter, Pseudemys concinna, has been found in Bluestone Reservoir and may be present in the river area.

Cultural Resources

Archeology and History - Investigation of prehistoric remains in most of the river area has been minimal. There is scant evidence along the river for the nomadic paleo-indian culture (13000 to 7000 B.C.) but near the mouth, where most of the exploration has been, there are two sites. Archaic (7000 to 1000 B.C.) remains are likewise found at Bluestone Lake. One has LeCroy points and other Early Archaic features, while four others have associations extending from Early Archaic through Woodland (1000 B.C. to 1000 A.D.). In this vicinity, Archaic remains in rock shelters, very sparse Woodland, and more Armstrong and Fort Ancient sites were found. One site found at Lake Shawnee reveals traces of Woodland features with a large Fort Ancient component.

An Indian trail started at the mouth of the Bluestone and skirted the precipitous New River Gorge. The New River itself was a trail from the south. Indians appear to have left this area c.1700. It would appear that the New River formed a boundary between the Iroquois and Cherokee, and that this was a buffer zone. However, one early explorer, Gabriel Arthur, may have seen a Fort Ancient village in 1674. Exploration of the Bluestone began in the mid-1700's, probably by Dr. Walker of the Loyal Land Company. Christopher Gist of the Ohio Company arrived about 1750 and followed the Bluestone to its source. The Indian wars caused the end of migration and the construction of forts, such as in Bluefield. Raids were common into the 1790's and growth following the Indian wars slow.

For most of its history subsistence agriculture has been the primary occupation of the Bluestone River area. Major industries have been coal mining and logging (most of the area was cut over in small local operations during the early 1900's). Coal and the railroad have been the largest impetus to growth. When the Norfolk and Western Railroad put in a spur line along the upper Bluestone to transport coal, there were no towns at all and labor had to be imported.

The Bluestone valley had only a slight involvement with the Civil War. Confederate General Loring passed through the area in 1862 on his way to capturing Charleston and Union General George Crook passed through in 1864 on his way to disrupt the Virginia and Tennessee Railroad. The major event was the burning of the Mercer County Courthouse in Princeton in May 1862 to prevent Confederate stores from falling into Union hands. Colonel Rutherford Hayes, later President, confined the fire and prevented destruction of the town.

One site near the lower Bluestone, Jordan's Chapel near Pipestem, has been selected for the National Register of Historic Places. Lake Shawnee and Log House at Lake Bottom, along the Bluestone just upstream from the qualifying segment, is on the State inventory identified for further study and possible nomination to the National Register.

Population - The Northeast megalopolis lies within two hundred miles to the northeast and the Pittsburgh-Cleveland complex within two hundred miles to the north. Within a 250-mile radius of the river there are more than 25 million people.

The basin counties, Mercer and Summers, contained 89,817 people in 1980, a density of 116 persons per square mile. The area is primarily rural, with only one-third of the people living in urban centers.

The population of the two-county region increased 18% in the period between 1970 and 1980. Between 1980 and 1990 the population is projected to increase 14 percent.

TABLE 2. POPULATION

County	Population		%	Project Population			Population Density(1980)	
	1970	1980		Change	1985	1990	1995	Land Area (sq. mi.)
Mercer	63,706	73,942	+17	79,000	84,000	89,000	417	177
Summers	13,213	15,875	+20	17,000	18,500	20,000	358	44
Total or Average	76,419	89,817	+18	96,000	102,500	109,000	775	116

*Source: Bureau of Census, U.S. Department of Commerce, 1980 Census of Population and Housing, March 1981.

Economy - The total number of employed persons in the two-county region is estimated at 25,000. Most of the labor force is engaged in retail trade (grocery stores, hardware stores), services (hotels, laundries, hospitals), and manufacturing (electronic and electrical equipment, mine machinery, food processing). Wholesale trade, contract construction, finance-insurance-real estate, mining, transportation and other public utilities and agricultural services are major employment categories.

The 1980 per capita income of residents in the two-county region was rising (\$5,517), but was still below the State average (\$6,174). In the region, the percentage of income below poverty level is greater than the State average. More than 536 million dollars was earned in 1980 by residents of the two counties. Income and number of households in the two-county region is projected to increase through 1985. Total employment is projected to increase steadily through 2000.

Unemployment has been increasing in the region recently. The unemployment rate in the two-county region in 1980 was 4.9%, which exceeded the statewide rate of 4.4%. Employment in Summers County is based on tourism, and fluctuates according to the tourist season.

Much of the land in the river area is too steep and too confined to meet the extensive needs of industrial development. The absence of a large labor force, adequate industrial sites, highway facilities and immediate access to market areas are additional deterrents to the location of heavy industry. While some light industry might be attracted to the Bluestone River area, opportunities for substantial outstanding economic growth appear to be in the development of the outstanding recreation and unique scenic qualities.

The economy of the region is heavily dependent on its natural resources, principally coal and timber. There does not appear to be any coal in the river area, but it is strip-mined extensively to the northwest of the Bluestone River.

Forests in the study area contain an average of 3,000 board feet of timber per acre. The young age of the existing growing stock and the steep slopes found along the river make logging a marginal economic operation. However, as present stands mature, volumes increase and log quality improves, the present status will change to a profitable operation. It is anticipated that by 2010 most of the timber will again be ready for harvesting.

Existing Use

Recreation - Outdoor recreational opportunities in the eligible segment of the Bluestone River include boating (kayaking, rafting, and canoeing), fishing, hunting, picnicking, and hiking. Bluestone

Lake, which produces slack water in the lowermost 2.4 miles of Bluestone River, offers a variety of water-oriented recreation activities, particularly fishing and boating. The U.S. Army Corps of Engineers maintains a visitor center at Bluestone Dam. There are more than 31,000 acres of land dedicated to recreation, much of it in scenic, wooded hills and valleys. Approximately 60% of the recreation land in the two-county region is in Federal ownership, 39% in State ownership, and 1% in local ownership. Within the Bluestone River area, approximately one-half of the land is in public ownership and annual visitation is approaching 1.5 million.

State-Owned Recreation Facilities - West Virginia administers three parks, one forest, and one public hunting and fishing area within the watershed. A summary of the facilities is given in Table 3 and location of recreational areas by the map on page 3.

Pipestem State Park (4,073 land acres), which borders the lower Bluestone River, is operated as a year-round resort with a wide range of recreation facilities and accommodations, including a conference center. There is a seven-story lodge situated above the Bluestone River Gorge and Mountain Creek Lodge, located deep in the gorge. The park also maintains cottages, campsites, restaurants, and a gift shop. There are two golf courses, indoor and outdoor swimming pools, camping, fishing, game courts and playgrounds, stables, and trails. Overnight pack trips take place in the park. Since 1973, the park has led all West Virginia parks in annual attendance. In 1979, attendance exceeded one million visitors and lodge, cottage, and campground occupancy exceeded 37,000. One-third of the visitors were from outside of the State.

Bluestone State Park (2,145 land acres) centers on Bluestone Lake, one of the largest bodies of water in the State. The lake attracts fishermen, boaters, water skiers, and swimmers. The park maintains cottages and facilities for tent and trailer camping and picnicking. Boat launching ramps, rental rowboats, canoes, motor boats, and water skiing equipment are available to the public. The 1979 attendance exceeded 305,000 and cottage and campground occupancy exceeded 3,000, one-tenth of whom were nonresidents.

Pinnacle Rock State Park (245 land acres) is a day-use park located a few miles north of Bluefield. The park features Pinnacle Rock, a unique geological formation which resembles the ruins of an ancient castle. Trails lead to vantage points on the rock. Recreation at this day-use park includes hiking and picnicking. The attendance in 1979 was approximately 73,000, one-third of which were from outside the State.

Camp Creek State Forest (5,897 acres) is primarily a day-use recreational area. Nevertheless, a campsite for 12 tents or trailers is maintained. Picnic areas, hiking trails, and a playground are among the facilities in the forest. Camp Creek is one of the better trout streams

in the area. There are also many species of game, including the native wild turkey. The attendance in 1979 was nearly 57,000, 3% of which was nonresidential.

The Bluestone Public Hunting and Fishing Area occupies 17,642 acres on both sides of the Bluestone River between Bluestone and Pipestem State Parks. It is maintained by the State as a primitive area for nature lovers, fishermen and hunters; however, the land is controlled by the Corps of Engineers to the maximum pool elevation of the Bluestone River arm of Bluestone Lake. There is one primitive camping site in the area. Angler use exceeds 24,000 annually and angler days exceed 154,000.

TABLE 3. RECREATION FACILITIES

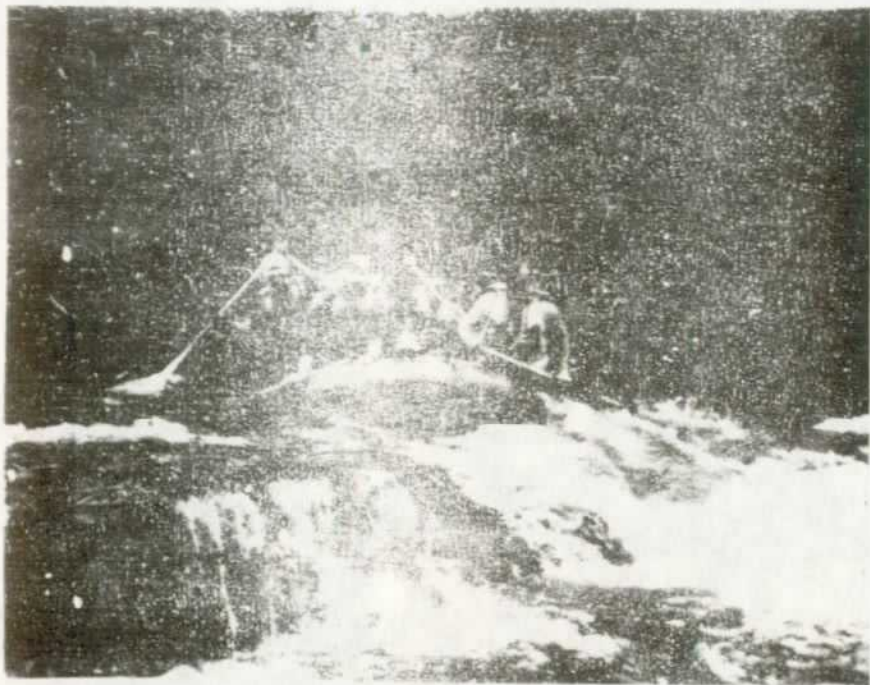
	Campsites (tent/trailer)	Cabins (deluxe)	Lodge rooms	Restaurant	Refreshments	Groceries	Souvenir shop	Swimming pools	Boating	Boat docks	Water sports	Winter sports	Picnicking	Playgrounds	Game courts	Golf courses	Hiking trails	Equestrian trails	Horse rental	Aerial tramway	Motorlift	Scenic views	Fishing	Hunting
Pipestem State Park	50	25	143	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Bluestone State Park	81	25		X	X	X	X	X	X	X		X	X	X	X						X	X	X	
Pinnacle Rock State Park											X					X						X		
Camp Creek State Forest	12										X	X	X		X							X	X	X
Total number of recreation facilities in two-county area	255	50	-	-	-	-	4	-	-	2	1	10	3	16	5	1	-	1	-	-	-	55	3	

Other Recreational Facilities and Activities - Canoeing, rafting and kayaking activities have been increasing and are possible downstream from Spanishburg in the spring or after heavy rains throughout the recreation season. A few outfitters provide canoeing and rafting rental and guidance. This segment of the river offers challenging conditions, but has been described as "challenging with penalties." Table 4 estimates the degree of difficulty and type of craft most suitable for the river.

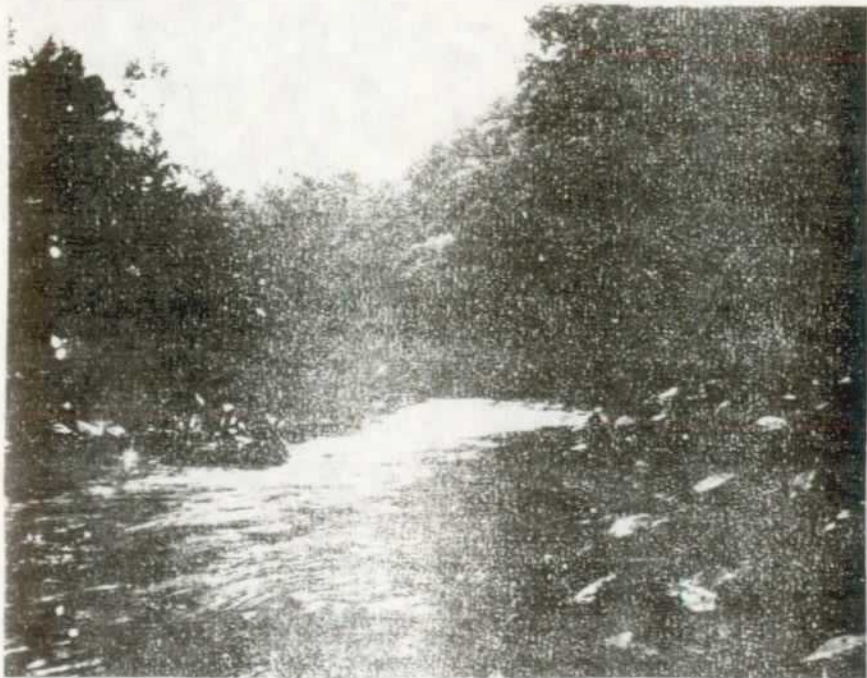
TABLE 4. BOATING CONDITIONS

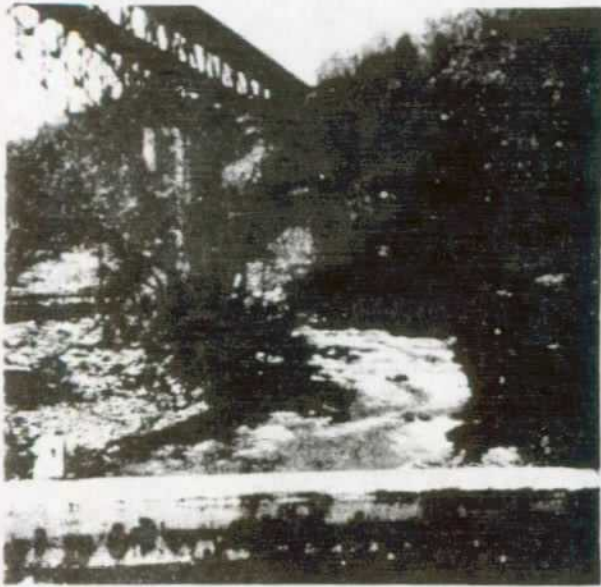
SEGMENT OF RIVER	DISTANCE (MILES)	DROP (FEET)	GRADIENT (FT/MI)	DEGREE OF DIFFICULTY	TYPE OF CRAFT	EXPERIENCE NEEDED BY USERS
Spanishburg bridge to Wolf Creek	6	81	13½	Easy Medium	Canoe	Beginner
Wolf Creek to Brush Creek	5½	182	33	Medium Difficult Very Difficult	Kayak	Intermediate Experienced
Brush Creek to Maximum Pool	10	267	27	Medium Difficult	Canoe Kayak Raft	Intermediate Experienced
Maximum Pool to W. Va. Route 20 bridge	10	111	11	Easy Medium	Canoe	Beginner Intermediate

*Adopted from information provided by W. F. Burmeister's Appalachian Waters



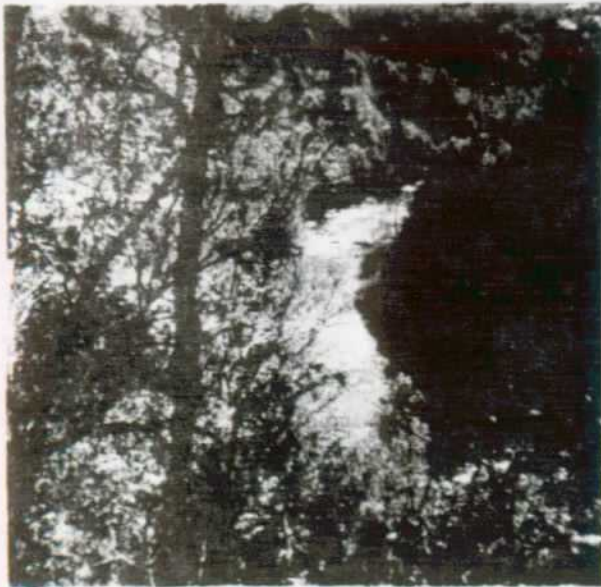
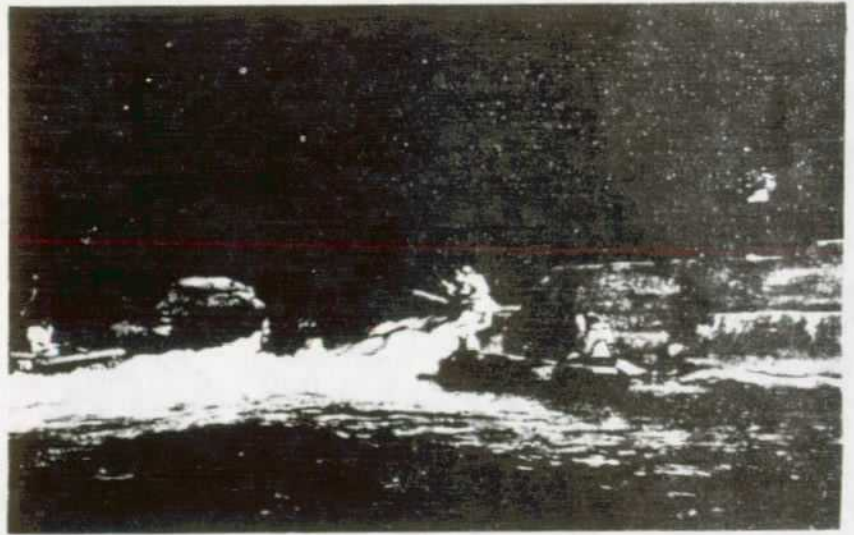
Rafting waters





I-77 Bridge near Eads Mill

Breached dam at Spanishburg



Bluestone River near Eads Mill

Hunting is popular in the two-county region for both big and small game. More than 1,000 white-tailed deer are harvested, almost half during the bow season. Squirrel, rabbit, and ruffed grouse are hunted in the area along with woodchuck, raccoon, woodcock, fox, and wild turkey.

Fishing in the Bluestone, although limited by pollution, is primarily for bass, bluegills, and muskellunge; the latter has been recently introduced. The Little Bluestone River, Marsh Fork, and Camp Creek provide trout fishing. In 1975 the estimated number of fishermen using the main stem of the Bluestone was 3,500, while the estimated number of days fished totaled 41,600. This represents a 30% increase from 1970.

Sightseeing and hiking activities are centered in Pipestem and Bluestone State Parks. The canyon tramway and lookout points in Pipestem provide excellent sightseeing opportunities. Canyon Rim Trail descends 500 feet from the visitor's center to Heritage Point Overlook. River Trail descends 1,000 feet from the lodge to the Bluestone River and then on to an overnight horseback camping site. Some trails are also available for cross-country skiing during the winter months.

Water Supply and Water Resources Development - The water supplies of the Bluestone River basin are tapped by seven privately-owned utilities, four public service districts, and seven cities and towns. Approximately 75% of the people living in the basin are served by these sources.

Sources of water include wells, stream impoundments, and water from abandoned mines. The availability of groundwater in the upper river area is generally less than 250,000 gallons a day per square mile, while in the lower river corridor it exceeds 500,000 gallons a day. Maximum yield of wells along the upper Bluestone is 300 to 600 gallons per minute (GPM) and 100 to 300 GPM along the lower Bluestone.

The largest water resource development in the basin is Bluestone Lake and Dam. Bluestone Dam, built by the U.S. Army Corps of Engineers, has been in operation since 1950. The 165-foot concrete gravity-type structure is located on the New River, 2.5 miles below the mouth of Bluestone River. It impounds 12 miles of the New River, 2.4 miles of Bluestone and controls the runoff from a drainage area of 4,565 square miles. Although the main purpose of the dam is flood control, the land surrounding the reservoir has been leased to the West Virginia Department of Natural Resources for recreation purposes. The annual visitation is now in excess of one million people. Hydropower is an authorized project purpose and provisions for it were made during construction of the dam. However, the generating facilities were never constructed, and the pool has been maintained at present levels because of the need for flood control in the Kanawha Basin. A study is currently underway to determine the present day feasibility of operating the project for hydropower generation.

The Soil Conservation Service has built a series of impoundments for flood protection in the Brush Creek watershed - the large sub-watershed in the Bluestone River basin. The Corps of Engineers has snagged and cleared about 3 miles of Bluestone River in the Montcalm area and another 3 miles in the Bramwell area for flood protection purposes. This action was also taken on Brush Creek in the Princeton area. In addition, the Soil Conservation Service is presently constructing a local flood protection project on Brush Creek near Princeton. The project entails extensive channelization (straightening and widening) of approximately 4.2 miles of Brush Creek.

Water resources projects planned in the study area include the Upper Bluestone River Project for flood damage abatement (storage and land stabilization). Aquatic waste treatment plants (effluent system) are planned for the upper Bluestone near Bramwell and Cumberland. There are two modification projects planned for Brush Creek, one in Rich Creek at Princeton, and one at Hinton for water quality control.

Status of Land Ownership and Use

Land Use and Ownership - The current land uses within the Bluestone River corridor are divided as follows:

<u>Use</u>	<u>Acres</u>	<u>Percent</u>
Forest Land	7,500	75
Crop and Pasture Land	1,500	15
River Surface	700	7
*Other	300	3
	<u>10,000</u>	<u>100</u>

*Includes town, roads and railroads

Public land in the river area is owned primarily by two agencies and totals 5,260 acres. The State of West Virginia manages the Pipestem State Park, Bluestone State Park, and Bluestone Public Hunting and Fishing Area. The U.S. Army Corps of Engineers has a management area on the Bluestone River Lake arm.

While most of the river corridor is forested, approximately 15 percent is open and in some type of farming. Most of this open farmland is being used to produce hay and for pasture, and very little for row crops. The visual corridor averages nearly 400 acres per mile. Most of the river frontage along the upper half of the river is in private ownership, while almost all of the frontage along the lower half of the river is in public ownership.

Water Rights and Ownership - Under the West Virginia Constitution, Article XIII, ownership and control of the beds of navigable streams, such as the Bluestone River is by the State through the Public Land Corporation of West Virginia.

Sand, gravel, and coal lying between low watermarks on the bed of a navigable stream in West Virginia are considered minerals. The title to, and the right to develop and exploit these minerals, are vested in the Public Land Corporation of West Virginia, which may license individuals or private corporations to extract them.

Transportation and Access to the River - Two major east-west highways and four major north-south highways traverse or lie within close proximity of the Bluestone River. These are:

- West Virginia Route 3 to the north
- U.S. Route 460 near its headwaters
- U.S. Route 219 to the east
- West Virginia Route 20 near its junction with New River
- U.S. Routes 19 and 21 to the west
- West Virginia Turnpike (I-77) crosses the middle section of the river

Bluefield is the major hub of highway transportation in the region. Appalachian Corridor "Q", a four lane highway currently being constructed, will replace U.S. Route 60 which links Bluefield with Princeton and points east. Except for the West Virginia Turnpike (8,000) and U.S. Route 460 (7,000), daily traffic counts in the study area are low. West Virginia Route 20 receives only 1,500 vehicles and U.S. Route 19 only 1,000 vehicles each day. Several northbound and several southbound buses serve Bluefield and Princeton daily. Many secondary and unpaved roads reach or parallel much of the upper stretch. The lower stretch is relatively free of road access, and no roads or railroads parallel the lower Bluestone.

Most of the upper Bluestone River is paralleled by Norfolk and Western Railroad tracks. Freight trains infrequently move coal and timber out of the region. Amtrak passenger service is available at Hinton, with one daily eastbound train and one daily westbound train. Several northbound and several southbound buses serve Bluefield and Princeton daily.

Mercer County Airport, a small commercial and general aviation facility near Bluefield, provides the only air transportation for the region, but another airport may soon be constructed in the True area near Pipestem State Park. Air transportation is also available at Beckley and Greenbrier.



Lower Bluestone pool



Lower Bluestone gorge

V. A GUIDE FOR RIVER CORRIDOR PROTECTION

A. River Management Approaches

The following management approaches discuss how one or more public and private interests might work together to protect the natural resource values of the Bluestone River. These approaches are not mutually exclusive but can be combined and changed to provide the best possible management approach. They are presented to stimulate interest in how best to plan and manage the river corridor. If requested, and subject to the limits of its resources, the National Park Service is willing to provide technical assistance for State/local river planning interests.

Public Agency - Administration would be exercised through a land managing agency at the State and/or local level. State or local management as a national scenic river component would require application by the Governor, concurrence by the State legislature and approval of a comprehensive management plan by the Secretary of the Interior. Management as a State or locally administered area would be subject to appropriate laws.

There could be a bi-county agreement where the two counties could jointly design parallel regulations and controls, taking into account each jurisdiction's own development goals and needs, existing land use, and natural and scenic features deserving attention. This would create uniform standards for the preservation, management, development, and use of the river corridor.

Interagency Authority - An intergovernmental organization, composed of a combination of concerned State or local agencies could be set up to manage the river. This could be a River Corridor Commission composed of representatives from the two counties, representative private landowners, local interest groups, the regional planning and development councils, and the State of West Virginia.

The Commission would administer the corridor and be empowered to adopt, prepare and implement a river management plan; establish a planning and zoning commission; levy taxes and/or user fees; enter into contracts and agreements and accept all funds; acquire, dispose of and encumber real and personal property; participate in Federal/State loan and grant programs; operate and maintain areas and facilities to serve the purposes of the commission; appoint citizen advisory committees; control erosion and water pollution; approve, implement and enforce land use controls such as zoning and ordinances and subdivision regulations; and hire and retain employees and consultants.

Nonprofit Agency - A nonprofit management agency or similar organization would oversee and resolve problems or resource protection and development opportunities within the corridor and resolve conflicts. This could be a River Corridor Foundation, a nongovernmental, tax-exempt, nonprofit, private corporation organized and operated for the benefit of the general public. Generally a foundation is supported by donations, grants, gifts, loans, fund-raising efforts, and membership fees.

A foundation could offer permanent protection to selected areas along the river by accepting gifts of land or rights in land, offering tax benefits to those who donate land or rights in land, rendering technical assistance to landowners by helping them develop long-range plans for the conservation of part or all their property, accept gifts of land or rights in land, and then transfer them to a public managing agency, using gifts for matching purposes in obtaining grants, and setting up a revolving fund where the foundation purchases land, holds it for a time, and then sells it with certain restrictions.

Private Partnership - A compact between private interests in the river corridor would provide mutual notification of any resource protection or development actions. Concerned public officials would also be kept informed.

If there is enough interest, landowners and user groups could volunteer their time to clean-up the river. Any selling of second-home lots could have covenants designed to ensure that future development will be environmentally compatible. Homeowner associations could police development activities. Existing associations could tighten their codes and new associations could be formed.

B. Preparation of a River Management Plan

Management Objectives

Under any of the above management approaches, a management plan for the Bluestone River would be developed with specific objectives in mind. In order to take into consideration the outstandingly remarkable values which qualify the river for inclusion in the National System, the following objectives or goals for preservation, development, and use are suggested for the plan and its implementation.

1. To preserve the river and its immediate environment in its natural setting.
2. To preserve the free-flowing condition of the waters.
3. To maintain and upgrade water quality.

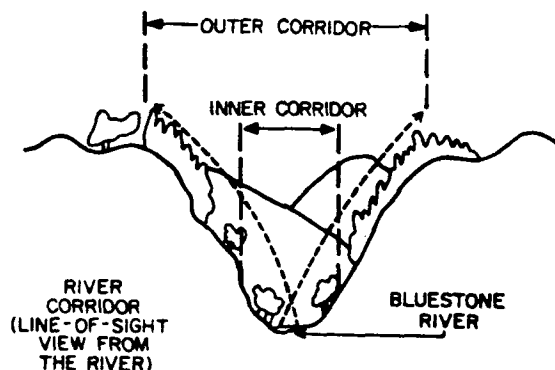
4. To provide high quality recreational opportunities for present and future generations.
5. To provide for a level of recreation use and distribution of use that minimizes deterioration of land and water resources and safeguards the rights of private landowners.
6. To assure the preservation of geologic features.
7. To maintain and enhance fish and wildlife resources.
8. To assure the effects of the management plan are in the interests of local residents.

Establishing a River Corridor

A river corridor or visual corridor is determined by line-of-sight from the river, in the case of the Bluestone to the immediate ridge tops. It consists of land on either side of the river, the river itself, and any islands that require protection to preserve natural, scenic, cultural, and recreational values. Specific boundaries should be mapped to document the major jurisdictional area of the plan. Some problems outside of this corridor could be addressed in the management plan, but most of the management approaches should be focused within the boundaries.

The most common means of boundary delineation is inclusion of all land that can be seen from viewpoints on and along the river. Where topography and distance permit, this boundary may be formed by the ridge line, based on line-of-sight from and near the river. In those flat to gently sloping areas where the line-of-sight is a great distance from the river, other boundary criteria should be considered, such as topography, jurisdictional or property lines, an approximately one-quarter mile setback from the river, and the inclusion of critical resource areas.

Within this boundary, an inner and outer corridor could be established. The inner corridor would encompass the river and adjacent lands that require a high degree of protection. This corridor could include the river, its banks, floodplain, unstable soils, and other lands critical to protection of its ecological function. Management strategies should prohibit new development; protect agricultural lands, forest lands, and other compatible land uses; and encourage the maintenance and enhancement of natural conditions. The outer corridor should prohibit visual intrusions and water, air, or noise pollution activities, protect and enhance agricultural lands, and provide visual and ecological guidelines for new development.



Inventory and Analysis of Critical Resource Values

The inventory is the "fact finding" stage of the management planning process, in which essential information regarding natural, scenic, cultural, and recreational resources is assembled. This information base should develop a clear picture of current river conditions, identify critical areas, and identify political actions affecting the river. The inventory should be conducted through careful study, mapping, fieldwork, and consultation with knowledgeable parties.

Critical areas are specific sites within the corridor requiring special attention and protection for their ecological, cultural, recreational, and economic values. Generally these critical areas include habitats of rare and endangered species, potential archeological sites, fragile ecological areas, potential sites of incompatible land uses, historical sites, public use areas, pollution sources, coal and timber resource areas, and areas of special interest.

Protection of the River Environment

Following the inventory the managing agency should prevent the destruction or deterioration of the river's critical resource values. Generally, the Bluestone River and its immediate environment should be protected from recreational overuse, air and water pollution, incompatible land uses, excessive vehicular traffic, unacceptable noise levels, or other threats to environmental quality.

Efforts should be made to maintain only compatible land uses. The good stewardship exercised in the past by private landowners suggests that voluntary efforts might continue to be an effective tool for protecting the river corridor's aesthetic appeal.

The State has laws and programs that provide some protection for the Bluestone River. It is unlawful to deposit any litter into or within 100 yards of a river or in a location where drainage conditions will cause any runoff of litter into a river. The Water Pollution Control Act authorizes the State to maintain and enforce reasonable standards of purity and quality of water consistent with public health and enjoyment and the propagation and protection of plant and animal life. The Division of Water Resources enforces a permit system to ensure that any development that discharges effluent into a river does not pollute the river above acceptable standards; water quality is monitored, and offenders are penalized according to the severity of their infraction.

Land Use Management

A land use management program should be designed to protect the land within the river corridor from activities that would alter its visual, ecological, and cultural values. Special attention should be given to maintaining natural conditions in the inner corridor, protecting critical areas from degradation, and preventing visual intrusions in the outer corridor. Management strategies for critical areas should protect their special values, prohibit overuse and degradation of the environment, and provide guidelines to maintain and enhance their natural condition. In addition, strategies for solving problems should call upon State, regional, and local decision makers to coordinate their activities with respect to the ecological and cultural values of the river corridor.

There are several legal and administrative tools that could be incorporated in this program to effectively protect and guide land use activities in the river corridor. Many of these tools are described in the following section dealing with river preservation techniques.

Land in the corridor would normally be protected by land use controls, agreements with landowners, and other less-than-fee acquisition measures. Normally, there would be only two situations where it might be necessary for a managing agency to acquire real property: (1) Where a specific parcel is threatened by development which would seriously threaten the river's special values and there is no other way to prevent development, and (2) where a specific parcel of land is needed for public access or use.

It is possible that there will be some areas along a river which cannot be protected from incompatible development through land use controls, agreements, or similar techniques. In such cases it may be necessary to acquire a scenic easement or full title to the land. A priority list for acquisition of lands or interests in lands may be desirable but there may be occasions

when less critical parcels of land become available for acquisition. An evaluation would then be needed to determine to what extent, if any, a parcel would help protect the river corridor.

The West Virginia Code, Chapter 8, Article 24, provides the legal basis for county and municipal planning, as well as land use controls such as subdivision zoning ordinances and regulations. These measures, when enforced, could provide a large degree of control over incompatible development.

Another useful means for resource protection is a requirement that proposals for construction activity, logging operations, etc. that may have an adverse impact on soil resources, water quality, and ecological values within the river corridor have a sediment and erosion control plan (subject to the review and approval by qualified local Soil Conservation District officials) that would make provisions for the installation of Best Management Practices (BMP's) needed to adequately protect these resources. It could be carried out through local ordinances and land use regulations.

Visitor Use

Natural limitations on recreation use are imposed by the relatively narrow river and valley floor. Nevertheless, recreational experiences are possible for canoeists, kayakers, fishermen, hikers, sightseers, swimmers, and others in a manner consistent with protection of the scenic values of the river. Therefore, the plan should call for securing appropriate, but limited areas of public use and access, but prevent the deterioration of natural resource values through overuse.

Canoe and kayak use on the Bluestone during the limited period of high water flows should be controlled by designation of access points to prevent trespass on private property.

Recreation management could also include educational efforts by the managing authority through instructional brochures and announcements of boating conditions by the local media.

Recreation facilities should be located with primary emphasis upon retention of existing environmental conditions at selected sites and should not disrupt the scenic values of the corridor. The local managing authority would establish a code of conduct for recreation use of the corridor and promote information on river conditions, safety equipment requirements, facilities, and the location of access points.

C. Implementation of a River Management Plan

1. River Preservation Techniques

There are a number of ways to protect the river's natural values while providing for residential, agricultural, and recreational uses. Methods selected will depend on the capabilities of local and/or State government; the natural, scenic, recreational, and

cultural values of the river area; and the degree of impact of proposed development within the river area. It is suggested that a variety of the following preservation techniques could be implemented by individual owners, land trusts, foundations, and local and State government.

Land Trust

A land trust is a nongovernmental, nonprofit, tax-exempt, private corporation organized and operated for the benefit of the general public. A trust can purchase, manage, accept gifts, sale or lease of property. It is administered by private citizens whose interest in this instance would be river preservation. Generally a foundation is supported by donations, grants, gifts, loans, fund-raising efforts, and membership fees. The foundation could work closely with the counties, the State, the Nature Conservancy, and/or an established river commission.

Factors to be Considered - A land trust could offer permanent protection of selected areas along the river by performing the following functions: accept gifts of land (fee-simple) or rights in land; through the Internal Revenue Service and tax codes offer tax benefits to those who donate land or rights in land; render technical assistance to landowners by helping them develop long-range plans for the conservation of part or all of their property; accept gifts or land or rights in land, and then transfer them to a public managing agency (county or State government, river commission, etc.); use gifts for matching purposes in obtaining grants; and set up a revolving fund whereby the foundation purchases land, holds it for a time, and then sells it to another party with certain restrictions, preferably at a profit. In addition, it can act quickly without red tape and can work effectively to coordinate complicated transactions. A land trust can help local landowners decide what types of land preservation would be most workable.

Easements

An easement is a limited or "less than fee" interest in property created by a conveyance. It can be acquired by purchase or donation. If one used the analogy that owning land is similar to holding a bundle of sticks, use of an easement would be setting aside or giving up some of the sticks. Easements do not affect basic ownership of the land -- the owner may sell or lease land with an easement at any time, subject to the terms of the easement. Depending upon the type of easement, no changes in right of access necessarily occur. Examples of easements are giving up the right to build structures taller than a given height or the right to put structures closer than a given distance to the water.

Factors to be Considered - An easement can be extremely flexible -- it may be written to particular specifications; reduce tax burdens; greatly increase the probability of long-term preservation of current use or preservation of open space; keep land under private control; and allow land to be sold, leased, or inherited and used in any manner consistent with the terms of the easement. Although an easement may restrict intense future development, it may also increase the marketability of the tract

by preserving its natural and scenic values if adjacent tracts are also protected.

Donations

Types - An outright donation occurs when the owner gives the land in fee-simple to a nonprofit organization or governmental agency for its use. Easements can also be donated outright.

A donation by the execution of a standard deed with the reservation of life estate allows the owner or members of his or her family to occupy and use the property during their lifetime with possession passing to the nonprofit organization or governmental agency at a later date.

The owner can donate land, money, or other valuables to the organization in his will.

Factors to be Considered - Donation offers potential for preserving land in a desired condition, when a donor no longer has the individual means to do so. This can be a tool for realizing substantial tax benefits. However, restrictions on the donation can limit the extent of the tax benefits. Donations can reduce estate taxes and provide significant savings if they qualify for deductions from taxable income.

Bargain Sale of Land

A bargain sale combines the advantages of a gift and a sale. Because the land is sold in fee-simple at a reduced price, the difference between the fair market value and the actual selling price to a nonprofit organization or public agency represents a charitable contribution.

Factors to be Considered - A bargain sale may allow the seller to realize a charitable tax deduction in addition to a cash return. Like donations, bargain sales can reduce estate taxes and provide other tax benefits. Restrictions written in the transaction, however, can limit the extent of the tax benefits.

Zoning

Zoning is a method of controlling the use and development of land so as to yield the greatest benefits to the people in a community. Its aim is to protect the community from haphazard and careless development that may destroy land values. A variety of zoning techniques include traditional zoning, subdivision ordinances, trailer park zoning districts, cluster zoning, performance standards, special natural area districts, and scenic view districts.

Types - Trailer park regulations dealing with design criteria/minimum and maximum density requirements and encouraging innovative site layouts could encourage development that would be beneficial to property values and the general welfare.

River-edge setback requirements could be useful for reducing damage from flooding and storm water runoff, as well as for providing a buffer zone from development along the river's edge. These setbacks would also ensure a certain amount of open space.

Cluster zoning is a variation of traditional zoning regulations that assigns a fixed number of dwelling units per acre in a particular land use classification. Through clustering, the same number of units is maintained, but the standard lot and yard size are reduced and sometimes eliminated; this leads to placement of dwelling units in a way that will maximize open space. The resulting open space is generally owned and shared by the homeowners. One type of clustering is the farm colony concept, intended to keep land in farming while using some for residential purposes.

Performance standards are another way to guide land use activity in environmentally sensitive areas along the river's edge and throughout a jurisdiction or watershed. They permit existing land use activities to continue up to the point at which they interfere with or begin to inhibit the functions of the natural process. Development of performance standards requires selection of natural resource areas and description of their key functions related to the public health, safety, and welfare. This approach offers greater flexibility to the landowner or developer, as long as the standards are met.

Special natural area districts can be delineated in conjunction with established zoning to protect and conserve high-value natural lands such as wetlands, woodlands, floodplains, and old fields along the river edge. These districts could focus on a specific natural resource such as wetlands in a wetland conservancy district. The use of these areas can be regulated through ordinance, in addition to existing zoning, and can focus on the unique qualities and functions of that resource. Uses compatible with the functions of the special area could be permitted, and density transfers (see next section) would allow landowners to shift their development rights from the special resource area to a less environmentally sensitive part of their land.

Factors to be Considered - Zoning regulations are locally decided and administered, can be designed to meet local needs, and are widely known and used. However, they require consensus in development and establishment, can sometimes be rigid and

inflexible, and can be used to promote undesired development if not properly administered. Zoning and subdivision regulations can be very useful in managing land along a river and provide a good basis for more complicated land management techniques.

Transfer of Development Rights

Transfer of development rights is based on the same idea as easements -- that landownership is a bundle of separable rights. Thus it is possible to separate development rights from any given parcel of land and apply them to another parcel of land. Under transfer regulations, the piece of land that has had its development rights transferred away will remain "undeveloped" while the piece receiving the development rights becomes eligible for higher density development than it would have been without those extra rights. This transfer is noted in the deeds to the respective parcels of land.

Factors to be Considered - A transfer of development rights offers the potential for preserving open space in desired areas while allowing higher density development in more suitable areas, thereby producing benefits for everyone -- the open space is protected, the landowner receives compensation for his loss of potential development, and the potential for expanded growth is allowed in another area. A transfer, however, is a rather complex concept to put into practice and requires strong public planning and zoning powers as well as a firm commitment by local officials to the objectives of the transaction. Also, a transfer may be more useful at a later stage of planning after some basic land management mechanisms are already functioning.

Agricultural District

An agricultural district, often a State-approved program, involves the creation of locally initiated districts designed to encourage agricultural operations and to discourage intensive nonfarm development, regulations hampering agriculture, and prohibitive taxation. It is designed to preserve and protect viable agricultural land by providing special tax relief to farmers. Agricultural districts are created in response to local initiative, whereby individual landowners who collectively own substantial acreage of agricultural land submit an application to the county legislative body for approval of the district.

Factors to be Considered - Usually, an agricultural district limits nuisance ordinances that affect the right to farm, keep property taxes low, limit special service tax assessments, and restrict public funds for nonfarm development. It must be locally initiated and supported and would require an initial enabling act by State legislature and time and effort to pursue

through necessary steps. Agricultural districts could help preserve farmland in large sections by reducing development pressures.

Public Education and Information

Different methods such as the following, can facilitate intelligent land use and make alternative land use preservation techniques widely known to the public:

More informative signing concerning littering, trail use, and identifying private lands;

local land use workshops featuring topics that affect everyone;

technical assistance consisting of advice to landowners about the value of natural, scenic, and/or cultural resources, and sound management and construction practices;

registration program leading to formal recognition of natural or historic landmarks to encourage voluntary protection;

cooperative agreements consisting of formal or informal contracts for cooperation in management, maintenance, or operation of valuable resources.

2. Coordination

One of the most important functions of the river area management plan would be to establish a means of coordinating planning and various regulatory activities.

The management authority would develop positions on such issues as bridge crossings, road access, road improvements, mineral extraction, gas exploration, timbering, and landowner rights.

If the State should have an interest in having the Bluestone designated in the National System, local governments or groups may wish to assist the State in its management of the river and should be encouraged to do so. Management in the corridor outside of existing public lands would help to protect the entire qualifying segment and its immediate environment. Local management would most likely be in the 12-mile segment between the breached dam at Spanishburg and the upstream boundary of Pipestem State Park, while most of the State management would be a 13.5-mile segment from Pipestem to the normal pool elevation of Bluestone Lake. Any management authority should seek cooperation from all levels of government, including the U.S. Army Corps of Engineers who regulates the water levels of Bluestone Lake.

Environmental impact analyses would be prepared and reviewed to be certain that the direct and indirect impacts on the river environment are addressed, and appropriate mitigative measures are included.

D. Consideration for the National System

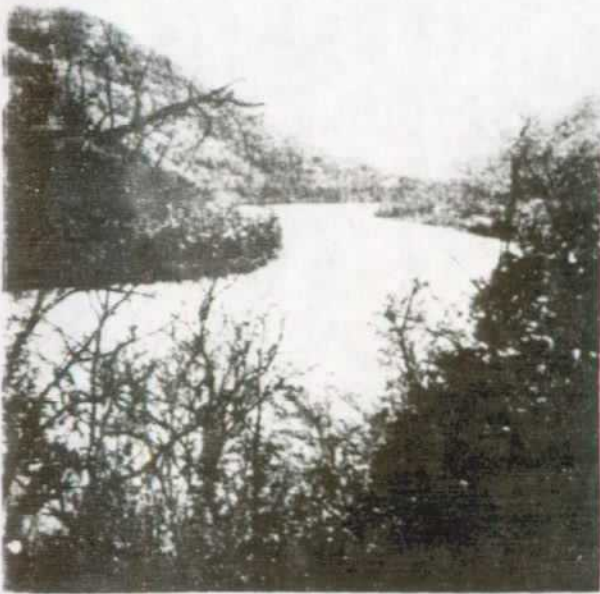
The State may at some future time decide to nominate the eligible 25.5-mile segment of the Bluestone for inclusion in the National Wild and Scenic Rivers System under Section 2(a)(ii) of Public Law 90-542. In the procedures for adding a river to the National System under State and/or local management, the following requirements should normally be met:

1. The outstandingly remarkable values which qualify the river for inclusion in the National System must be assured of permanent protection and management by or pursuant to State statute. As a means to this end, the State must adopt a program of action which will provide permanent protection for the natural and cultural qualities of the river and adjoining lands.
2. Protective devices for the river corridor may include, but need not be limited to, fee acquisition, scenic easements or other than fee acquisition, zoning, limitations on building permits and other regulations. The intent is to provide for regulation of the uses of private lands immediately abutting or affecting the river to preclude changes in use which would substantially alter the character of the river corridor. The State must prohibit adverse impacts on the river resources by its own agencies and programs and through its permitting and licensing requirements. If local zoning will be a major tool, it must either be in place or expressions of local intent must be included in the application.

The procedures for designation are as follows:

1. The Governor of the State must make application to the Secretary of the Interior requesting that the river be added to the National System and documenting the actions taken to comply with requirements 1 and 2 above. The application shall indicate the extent of public involvement in the decision to protect the river. The application should include sufficient environmental data to permit the Secretary to assess the environmental impact of adding the river to the National System.
2. The Secretary's determination as to whether requirements 1 and 2 above have been adequately met would be based on:
 - a. An evaluation of the program of action prepared by the State and a field reconnaissance of the manner in which the State is implementing its program, or

- b. If a Federal study has been completed, the extent to which the conceptual plan, as contained in that report, is being implemented.
3. The Secretary must determine that the river possesses outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values and that it qualifies for inclusion in the National System.
4. The Secretary must submit the proposal to the Secretaries of Agriculture and Army, the Chairman of the Federal Energy Regulatory Commission and the administrators of other affected Federal agencies for review and comment as required in Section 4(c) of the Act.
5. Finally, if the State's request is approved by the Secretary, the river would be added to the National System by publishing notice in the Federal Register.



Bluestone Lake



Picnic Area along Bluestone Lake



Boat access to Bluestone Lake

VI. LIST OF STUDY PARTICIPANTS AND CONSULTANTS

A. Principals

David Kimball, Chief, Division of Planning, National Park Service, Mid-Atlantic Regional Office
Edward Hay, National Park Service, Mid-Atlantic Regional Office
William Bock, National Park Service, Mid-Atlantic Regional Office
Robert Schenck, National Park Service, Mid-Atlantic Regional Office
Frank Pelurie, West Virginia Department of Natural Resources

B. Contributors

Federal Agencies

John Haubert, National Park Service, Washington Office
Jeff Chidlaw, National Park Service, Washington Office
Robert Gartner, National Park Service, Washington Office
Fred Bell, National Park Service, Washington Office
Anthony Conte, Regional Solicitor, Department of the Interior
William Cochran, Bureau of Mines
Gordon Leaf, Bureau of Mines
Richard Watkins, U.S. Geological Survey
William Outerbridge, U.S. Geological Survey
Chris Clower, Fish and Wildlife Service
William Tolin, Fish and Wildlife Service
Dave Harris, Fish and Wildlife Service
Roger Collins, Fish and Wildlife Service
Floyd Wiles, U.S. Forest Service
Gil Churchill, U.S. Forest Service, Monongahela National Forest
John Hazel, U.S. Forest Service, Monongahela National Forest
Toby Hastie, U.S. Forest Service
William Harris, Soil Conservation Service
William Goddard, Soil Conservation Service
Henry Brubaker, Environmental Protection Agency
John Pomponio, Environmental Protection Agency
Jerry Pollis, Environmental Protection Agency
Joe O'Neal, Environmental Protection Agency
Paul Montney, Environmental Protection Agency
Don Herndon, Corps of Engineers
Sutton Epps, Corps of Engineers
Jerry Baumgartner, Corps of Engineers
Tom O'Neal, Corps of Engineers
James Hebson, Federal Energy Regulatory Commission
Peter Valeri, Federal Energy Regulatory Commission

Federal/State Agency

I. Bernstein, Ohio River Basin Commission
Marc Keller, Ohio River Basin Commission

State Agencies

David Callaghan, Director of Natural Resources
Willis Hertig, Department of Natural Resources
H. G. Woodrum, Department of Natural Resources
Lewis Baxter, Department of Natural Resources
Bob Mathias, Department of Natural Resources
Harry Shaver, Department of Natural Resources
Fred Cutlip, Governor's Office of Economic and Community
Development
Larry Long, Governor's Office of Economic and Community
Development
Clarence Moran, Department of Culture and History
Michael Pauley, Department of Culture and History
Alan Cooper, Department of Culture and History
Neil Richardson, Department of Culture and History
Robert Erwin, Geological and Economic Survey
Kathleen Quinn, Geological and Economic Survey
Cyril Logar, University of West Virginia
Patricia Goeke, University of West Virginia

County Agency

Ward Ashford, Mercer County

Others

Chris Brown, American Rivers Conservation Council
Pat Munoz, American Rivers Conservation Council
Dave Conrad, Friends of the Earth
Laura Loomis, National Parks and Conservation Association
P. J. Kirk, Izaak Walton League
James Watkins, Izaak Walton League
Paul Brant, Mountain-Dominion RC&D
Oliver Johnson, Mountain-Dominion RC&D
Richard Smith, Save Our Mountains
Charles Carlson, West Virginia Highlands Conservancy
James McNeely, West Virginia Highlands Conservancy
Perry Bryant, West Virginia Citizen Action Group
Fred Ray, West Virginia Hills and Streams
Jeff Wartluft, West Virginia Wildwater Association
Richard Cantrell, Cantrell Canoe Sales and Rental
Jon Dragan, Wildwater Expeditions Unlimited
K. Christopher Dragan, New River Rafting Company
Chris Johnson, North American River Runners
Barry O'Mahony, New River Adventures
Doug Proctor, Class VI River Runners
E. J. Hodel, New River Travel Council
Terry Iden, West Virginia Coal Association
Bill Raney, West Virginia Surface Mining and Reclamation
Association
Dale Pike, Consolidation Coal Company
David Morrison, Mid Allegheny Corporation
Andrew Zettle, Mid Allegheny Corporation
Richard Grist, Georgia-Pacific Corporation

Larry Kemper, Georgia-Pacific Corporation
Daniel Bossart, Hamer Lumber Company
Greg Hutson, Hamer Lumber Company
Kenny Funderburke, Jr., Westvaco Corporation
Tony Mollish, Westvaco Corporation
Bruce Schick, Westvaco Corporation
Roger Sherman, Westvaco Corporation
Richard Waybright, West Virginia Forests, Inc.
W. C. Parker, Area Resident

C. Principal Cartographic and Clerical Support

Steve Kucheruk, National Park Service, Mid-Atlantic Regional
Office
Janice Smith, National Park Service, Mid-Atlantic Regional Office
Patricia Weldon, National Park Service, Mid-Atlantic Regional
Office
Bonnie Rogan, National Park Service, Mid-Atlantic Regional Office

D. Correspondence Received

The draft study report was available for public and agency review from March 24, 1983 to June 22, 1983. In addition to responses from the Governor of West Virginia, West Virginia Department of Natural Resources, West Virginia Geological and Economic Survey, the Mercer County Commission, Mountain Dominion Resource Conservation and Development Area, U.S. Department of Agriculture, Soil Conservation Service, Environmental Protection Agency, Federal Energy Regulatory Commission, and the U.S. Army Corps of Engineers, comments have been received from four Interior Department agencies and two conservation groups. The comments from the Governor, State agencies, county agencies, and Federal agencies are included in this report.

While many respondents provide comments on the background material on the draft report, few express either support or opposition to National designation. Generally, those who support designation prefer State and/or local public agency management. There is some interest in designation at the State and local government levels. A follow-up survey to elicit more input from the general public has been suggested.



STATE OF WEST VIRGINIA
OFFICE OF THE GOVERNOR
CHARLESTON 25305

May 31, 1983

JOHN D. ROCKEFELLER IV
GOVERNOR

Dear Mr. Arnett,

The State of West Virginia has completed its review of the draft Wild and Scenic River Study reports for the Gauley, Birch and Bluestone Rivers.

In general, we concur with the findings and believe that the river segments determined eligible would benefit by having Wild and Scenic River status. All have significant scenic, recreational, geologic and fish and wildlife values. It is felt that the National Wild and Scenic River concept would certainly assist the protection and management of the subject rivers and is a goal worth considering further. Therefore, in the future, should the people of West Virginia desire to support protection of some part of the rivers found to qualify, the state will initiate the appropriate action.

I have requested that our Department of Natural Resources submit specific comments to your Mid-Atlantic Region Office relative to each of the studies and these should be forthcoming in the near future.

The opportunity to review these studies is appreciated.

Sincerely,

A handwritten signature in cursive script that reads "John D. Rockefeller IV".

John D. Rockefeller IV

The Honorable G. Ray Arnett
Assistant Secretary for Fish and
Wildlife and Parks
United States Department of the Interior
Office of the Secretary
Washington, D. C. 20240



STATE OF WEST VIRGINIA
DEPARTMENT OF NATURAL RESOURCES
CHARLESTON 25306

JOHN D. ROCKEFELLER IV
Governor

May 26, 1983

DAVID C. CALLAGHAN
Director
WILLIS H. HERTIG, JR.
Deputy Director

Mr. James W. Coleman, Jr.
Regional Director
National Park Service
Mid-Atlantic Region
143 South Third Street
Philadelphia, Pennsylvania 19106

Dear Mr. Coleman:

The West Virginia Department of Natural Resources has reviewed the draft Wild and Scenic River studies for the Birch, Gauley and Bluestone rivers. This department supports the wild and scenic river concept and, in general, concurs with the findings of these studies. The establishment of river protection as embodied in the Wild and Scenic River Act is a goal worth considering further if in the future the State so desires to support protection of some segments of rivers found to qualify.

Comments relating to each of the individual studies are as follows.

Gauley River

The designation of the Gauley River as a wild and scenic river will enhance the recreational potential of the Carnifex Ferry Battlefield State Park. Conversely, the location of the park should be considered a positive factor in the final decision for the river receiving this designation.

It is a position of this department to encourage the protection of wetlands. The designation of the Gauley River as a Wild and Scenic river should include the protection of the large wetland area on the headwaters of the Meadow River.

The following are specific comments on the content of the document.

Page 21, Par. 5, Sent. 4 -- This inaccurate sentence indicates that the Gauley and Meadow Rivers are classified as acid-degraded streams. Although these basins have been mined extensively, acid mine drainage is not a significant problem.

Mr. James W. Coleman, Jr.

Page Two

May 26, 1983

Page 27, Par. 6 -- Fresh meadows, scrub swamps, etc. are wetland habitat types, not vegetation types.

Page 27, Par. 7 -- The three plant species referenced as being considered as federally endangered plants have been deleted from the list of petitioned species and are no longer under consideration by the Office of Endangered Species.

Page 28, Par. 1 -- The citation of goldenrod is nonspecific. A more exact common name should be used. Preferably, scientific names should be used for all species.

Page 28, Par. 2, Sent. 1 -- This sentence should be altered to read: "The lower main channel Gauley River supports a warmwater fishery...." This modification is necessary as there are native brook trout streams in the upper Gauley River.

Page 28, Par. 2, Sent. 7 -- "Perch" should be deleted from sentence as this species is rarely encountered in the drainage.

Page 28, Par. 2, Sent. 8 -- The Gauley River contains approximately 50 species of fish. Due to the number of species discussed here, it appears this review is restricted to the lake and lower Gauley River. However, it is unclear in the first part of this sentence whether the "21 species" were collected from either area.

Page 28, Par. 4 -- The first sentence should be altered to read, "Cranberry River offers a popular put-and-take coldwater fishery...."

Page 28, Par. 5 -- The finescaled saddle darter is not rare in West Virginia. However, this darter is unique and of special interest to the State since it is endemic to the New River (i.e., found only in West Virginia and a small portion of Virginia).

Page 29, Par. 4 -- This discussion is somewhat misleading. The eastern cougar (mentioned in paragraph 1 of this page, but not here), bald eagle, Kirtland's warbler and the Indiana bat should be discussed collectively or in a separate paragraph as they are all listed by the U. S. Department of the Interior as federally endangered species. Furthermore, the sentence regarding the Carolina parakeet should be deleted unless other extinct or extirpated species known from this area are discussed.

Birch River

This department concurs with the findings of the study that the 17.8 mile segment of Birch River has significant scenic and geologic values. Also, that including it in the National River System would best be done under local or state administration since the resources are chiefly of state/region importance. Since the Birch is a protected stream in the West Virginia Stream Preservation System, it already has some degree of protection and is not in

Mr. James W. Coleman, Jr.
Page Three
May 26, 1983

immediate danger of losing resource values. It is suggested that the National Park Service and the Department of Natural Resources continue working with local interests in pursuing further protection of this river for possible inclusion in the National System.

Specific comments on the document are:

Page 17, Par. 1 -- The Birch River is not stocked with trout. Thus, the first sentence should be altered to read, "The Birch River supports a good warmwater fishery."

Page 17, Par. 6 -- This sentence should be altered to read, "Federally endangered or threatened species which may occur in the study area include the bald eagle, Kirtland's warbler and the Indiana bat." No other species discussed in this paragraph should be expected.

Bluestone River

The draft report is generally complete and addresses the issue of scenic river designation for the Bluestone River objectively and thoroughly for the present. However, a follow-up study should be conducted within the next five to ten years soliciting more input from the general public since the public meetings and workshops were not well attended and representative of the state citizenry. The untimeliness of the study may have had a negative impact on the public interest shown since the study was made during the time when the New River Gorge area was being studied for management purposes by the National Park Service. This management study for the New River considered acquiring large areas of property as one option. Of course, the proposed acquisition of private properties arouses the negative concern of local citizens who have voiced their objections vociferously.

With regard to the different management concepts presented in the study for the river corridor protection, this department favors management by a public agency, preferably state, since approximately one-half of the eligible segment is currently under public control by the state.

No appreciable impact is to be expected in the foreseeable future on the three state parks and one state forest within the watershed - Pipestem, Bluestone, Pinnacle Rock State Parks and Camp Creek State Forest - by the exclusion of the Bluestone River from Scenic River classification. However, inclusion of the river as a scenic river area in the National Wild and Scenic River System would most certainly enhance and complement the scenic and recreational potential of Pipestem and Bluestone State Parks.

The following are specific comments on the study.

Page 20 -- White pine is not noted as an important part of the vegetative cover in the river corridor. White Pine (*Pinus strobus*) is common in both cover types mentioned - Northern hardwood forest found at higher elevations; Central hardwood forest at lower elevations.

Mr. James W. Coleman, Jr.
Page Four
May 26, 1983

Page 21, Par. 3, Sent. 5 -- According to West Virginia Department of Natural Resources, pickerel and northern pike have never been taken from the Bluestone Lake or River. This sentence should be altered to read, "Carp are also present."

Page 21, Par. 5, Sent. 3 -- This sentence should be deleted, as neither fish species are presently considered rare.

Page 22 -- No mention is made of woodland song birds in the section on bird species inhabiting the area. The river corridor is good habitat for a high number of wood warblers and other song birds which are a very important part of the ecosystem in the river corridor.

The opportunity to review and comment on these studies is appreciated.

Sincerely,



David C. Callaghan
Director

DCC/hgw/sas

cc: Division of Parks and Recreation
Division of Water Resources
Division of Wildlife Resources
U. S. Fish and Wildlife Service



WEST VIRGINIA
GEOLOGICAL AND ECONOMIC SURVEY

Robert B. Erwin, Director
and State Geologist

P. O. Box 879
Morgantown, WV 265070879
304/594-2331

Offices at Mont Chateau
Mont Chateau Road
Exit 10 (Cheat Lake) off U.S. 48

April 27, 1983

IN REPLY REFER TO:
00-EV/14110/8630

Mr. James W. Coleman, Jr.
U. S. Department of the Interior
National Park Service
143 South Third Street
Philadelphia, PA 19106

Dear Mr. Coleman:

Our comments on the Gauley, Bluestone, and Birch wild and scenic river studies are listed below:

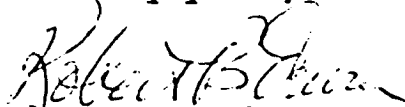
BIRCH RIVER, p. 14, 17: The prehistoric mound(s) in question are located on Diatter Run, more than two miles upstream from its junction with Birch River. Presence of the mound(s) would tend to indicate a Woodland Period occupation (1000 B.C.-A.C. 1000) rather than an Archaic (8000-1000 B.C.).

BLUESTONE RIVER: In addition to those mineral resources listed, some of the shale units within the Mauch Chunk Group are potential lightweight aggregate resources.

GAULEY RIVER: The draft report failed to list the sandstone conglomerates as aggregate, concrete sand and mortar sand resources and the shale units that are potential resources for building brick and lightweight aggregate.

The extraction and processing of the above listed resources would require volumes of water obtainable only from the rivers themselves. Would not the declaration of the Bluestone and Gauley Rivers prohibit water withdrawal for industrial use? Should this happen, the economic growth of the State and suitable housing development would be hampered.

Sincerely yours,


Robert B. Erwin

RBE:PL

*Mercer County
Commission*

*Princeton, West Virginia 24740
425-9571 & 325-9601*



JOE COBURN
BOX 337
ATHENS, W.VA. 24712

CLARENCE W. SIX
ROUTE 6, BOX 681
PRINCETON, W.VA. 24740

RAY BRAGG
P.O. BOX 1221
BLUEFIELD, W.VA. 24701

WILSON D. HARVEY, Clerk
FRED W. PARKER, Coordinator

May 12, 1983

Mr. James W. Coleman, Jr.
Regional Director
National Park Service
143 South Third St.
Philadelphia, PA 19106'

Dear Mr. Coleman:

Congratulation on preparing a very informative and interesting report on the "Scenic River Study" of lower Bluestone River.

We agree the river and its immediate enviroment possesses outstanding scenic, recreational, fish and wild-life values.

My contact with some property owners, the West Virginia Highland Conservancy, Pipestem Foundation, New River Travel Council and Garden Clubs indicated good interest in preserving the Bluestone River in its present state and having a management plan developed.

We hope you continue to expedite the study process.

Sincerely,

A handwritten signature in cursive script, reading "Ward J. Ashford".

Ward J. Ashford
Commissions Representative of
Parks

WJA:jb



RESOURCE CONSERVATION
& DEVELOPMENT AREA

AGRICULTURE SERVICE CENTER
114 GOTT ROAD
PRINCETON, WEST VIRGINIA 24740

COUNTIES: MCDOWELL, MERCER, MONROE, RALEIGH, SUMMERS, WYOMING
BLAND, GILES, TAZEWELL

May 6, 1983

Mr. James H. Coleman, Jr.
Regional Director, Mid-Atlantic Region
National Park Service
U.S. Department of the Interior
143 South Third Street
Philadelphia, PA 19106

Dear Mr. Coleman:

These comments apply to the "Draft Report - Bluestone River Wild and Scenic River Study - West Virginia - January 1983 - L7423 (MAR-PC)".

We find the report to be an excellent description of the area. We believe it to be in error, however, in assessing public support for the project.

Years ago, the Mountain-Dominion RC&D recognized the Bluestone Gorge as a valuable local resource and has been active in seeking its protection through contact with local organizations, landowners in the affected area, local county governments, and with representatives of various agencies. We feel strongly that a properly prepared and presented management plan would be supported by landowners and other local citizens.

Perhaps the Park Service has failed to properly assess the local support because of the following:

- (1) Public meetings were publicized, but held during periods of very bad weather, which kept people from attending. In fact, one meeting was rescheduled because of bad weather.
- (2) Information presented to the public was very general; presentations were on the "Wild and Scenic River" program more than on what was specifically being proposed for the Bluestone.

May 6, 1983

- (3) There is a general misconception even now that the "Wild and Scenic River" concept is the same as the "National River" concept. There is a suspicion that the government has changed the name just so they can sneak in and buy up all the land.
- (4) While the legal formalities of public meetings have probably been met, there has been no attempt to work with local organizations, such as the RC&D Area to counter misconceptions or to develop additional information to present to potentially affected landowners and other local citizens.

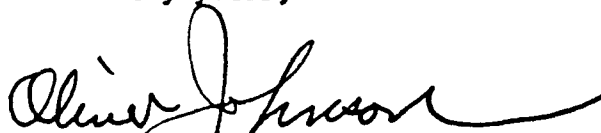
In summary, while the report itself might be a thorough review of the physical resource, the attempt at public participation was so poorly prepared, so hastily executed and with little or no attempt to address real local concerns, that there arises the suspicion that there is an attempt to quietly "kill off" the whole proposal.

May we request, therefore, that the Park Service work with interested local organizations to contact landowners, local county governments, and concerned citizens to discuss specific proposals, landowners' fears, governmental concerns and management plan requirements so that some consensus can be reached concerning support for the project.

In part IV D (page 44) of the Report, are procedures for designation which are utterly dependent upon action by the governor. Is there a deadline for such action?

Thank you for the opportunity to comment, we look forward to working with you in the future.

Sincerely yours,



Oliver Johnson
Co-Chairman



DEPARTMENT OF AGRICULTURE
OFFICE OF THE SECRETARY
WASHINGTON, D. C. 20250

May 12 1983

Honorable G. Ray Arnett
Assistant Secretary for Fish
and Wildlife and Parks
Department of the Interior
Washington, D.C. 20240

Dear Mr. Arnett:

Thank you for the opportunity to comment on your draft wild and scenic river studies for the Bluestone and Birch Rivers in West Virginia.

Although the studies found that segments of these rivers are eligible for inclusion in the national system, we agree with the conclusion that the rivers should not be recommended for designation with Federal administration. Lacking public support for such designation, Federal management would be infeasible. As the reports suggest, it would be more appropriate to provide for protection and management of eligible segments of the rivers through local initiatives.

Sincerely,

A handwritten signature in black ink that reads "John R. Block". The signature is written in a cursive style with a large initial "J".

John R. Block
Secretary



United States
Department of
Agriculture

Soil
Conservation
Service

Soil Conservation Service
207 W. Maple Avenue
Fayetteville, WV 25840

March 31, 1983

Subject: L7423(MAR-PC) Review and Comments

To: James W. Coleman, Jr. Regional Director
National Park Service, Mid-Atlantic Region
143 South Third Street
Philadelphia, PA 19106

Thank you for the opportunity to review and comment on the draft reports of the Birch, Bluestone, and/or Gauley Wild and Scenic River Studies. These comments may also be applicable to the New River Gorge National River.

One idea that might be given some careful consideration under the "Land Use Management" program for the protection of the soil resources, water quality, and ecological value within the river corridors, is the requirement (through local ordinances and land use regulations) that all persons proposing any kind of construction activity, logging operation, etc., that may have an adverse impact on the above, prepare and submit a sediment and erosion control plan (subject to the review and approval by qualified local Soil Conservation District officials), that would make provisions for the installation of Best Management Practices (BMP's) needed to adequately protect these resources.

Sincerely,

William Harris

William Harris
District Conservationist
Fayetteville Field Office

cc:

Southern Soil Conservation District, Beckley, WV





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
6TH AND WALNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106

APR 26 1983

Mr. James W. Coleman
Director
Mid-Atlantic Regional Office
National Park Service
US Department of Interior
Greene Building
6th and Arch Streets
Philadelphia, Pennsylvania 19106

Dear Mr. Coleman:

The staff of Region III, EPA has reviewed the Draft Wild and Scenic River Studies for the Gauley, Bluestone, and Birch Rivers in West Virginia. The comments appear below and we appreciate the opportunity to present them to you for your use in the decisions regarding the delegations.

All the studies mention mine drainage as a water quality problem with some areas more significant than others in terms of the water quality impacts. In areas where mining is currently going on, acid mine drainage should be under control and in compliance with the regulations covered by the NPDES permit in effect. Since the West Virginia Department of Natural Resources now administers the NPDES program, they should be contacted to assure that all active mines are in compliance.

However, the acid mine drainage problems often worsen after mining is completed and the mine is closed. The current state-of-the-art in reclamation leaves something to be desired in this regard and results are inconsistent in attempts to control the chemical reactions involved. The possibility exists that mine drainage will be a problem worthy of consideration into the future and this should be included in your deliberations.

Thank you for the opportunity to participate and review the studies. We have rated these documents LO-2 in EPA's Reference Category, which is attached for your information. If we can be of any further assistance, please contact Mr. Robert Davis of my staff at 215-597-4388.

Sincerely,

Henry P. Brubaker
Chief
Planning & Analysis Section

Enclosure

Definition of Codes for the General Nature of EPA Comments

Environmental Impact of the Action

LO--Lack of Objections

EPA has no objections to the proposed action as described in the draft impact statement or suggests only minor changes in the proposed action.

ER--Environmental Reservations

EPA has reservations concerning the environmental effects of certain aspects of the proposed action. EPA believes that further study of suggested alternatives or modifications is required and has asked the originating Federal agency to reassess these aspects.

EU--Environmentally Unsatisfactory

EPA believes that the proposed action is unsatisfactory because of its potentially harmful effect on the environment. Furthermore, the Agency believes that the potential safeguards which might be utilized may not adequately protect the environment from hazards arising from this action. The Agency recommends that alternatives to the action be analyzed further (including the possibility of no action at all).

Adequacy of the Impact Statement

Category 1--Adequate

The draft impact statement adequately sets forth the environmental impact of the proposed project or action as well as alternatives reasonably available to the project or action.

Category 2--Insufficient information

EPA believes that the draft impact statement does not contain sufficient information to assess fully the environmental impact of the proposed project or action. However, from the information submitted, the Agency is able to make a preliminary determination of the impact on the environment. EPA has requested that the originator provide the information that was not included in the draft statement.

Category 3--Inadequate

EPA believes that the draft impact statement does not adequately assess the environmental impact of the proposed project or action, or that the statement inadequately analyzes reasonably available alternatives. The Agency has requested more information and analysis concerning the potential environmental hazards and has asked that substantial revision be made to the draft statement.

If a draft impact statement is assigned a Category 3, ordinarily no rating will be made of the project or action, since a basis does not generally exist on which to make such a determination.

FEDERAL ENERGY REGULATORY COMMISSION
NEW YORK REGIONAL OFFICE
26 FEDERAL PLAZA, ROOM 2207
NEW YORK, NEW YORK 10278

April 4, 1983

Mr. James W. Coleman, Jr.
United States Department of the Interior
National Park Service
Mid-Atlantic Region
143 South Third Street
Philadelphia, Pennsylvania 19106

Re: Draft Wild and Scenic River Study Reports
Bluestone, Gauley, and Birch Rivers - West Virginia

Dear Mr. Coleman:

This is in reply to your memorandum dated March 24, 1983 requesting our review of the draft reports for the referenced studies.

At the present time, the Commission has only one jurisdictional project near the proposed study areas. The City of Summersville, WV has filed a major license application for construction of a hydroxpower plant at the existing Corps of Engineers' Summersville Dam on the Gauley River. It is noted that Summersville Dam forms the upper boundary for the Lower Gauley River segment which your draft study proposes to classify as a wild river.

If you have any further questions or require additional information, please contact Mr. Anton Sidoti, Chief - West Branch at telephone number (212) 264-1161.

Sincerely,


James D. Henson
Acting Regional Engineer



DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON, DC 20310

9 MAY 1983

Honorable G. Ray Arnett
Assistant Secretary for Fish
and Wildlife and Parks
US Department of the Interior
Washington, D.C. 20240

Dear Mr. Arnett:

This is in further response to your letters of March 22, 1983, which transmitted for Department of the Army review and comment your proposed reports on wild and scenic river studies of the Birch, Eluostone and Gauley Rivers in West Virginia.

While your proposed reports conclude that portions of all three of these rivers and several of their tributaries meet the criteria for inclusion in the National Wild and Scenic Rivers System, public interest and support are not sufficient to consider them suitable for inclusion in the system at this time.

In view of the above, the Department of the Army interposes no objection to submission of these reports.

The opportunity to review these proposed reports is appreciated.

Sincerely,

SECRET

William R. Gianulli
Assistant Secretary of the Army
(Civil Works)

Photo Credits:

West Virginia Department of Natural Resources, pages 4, 27, 28, and 32
National Park Service, pages 4, 27, 28, 32, and 46