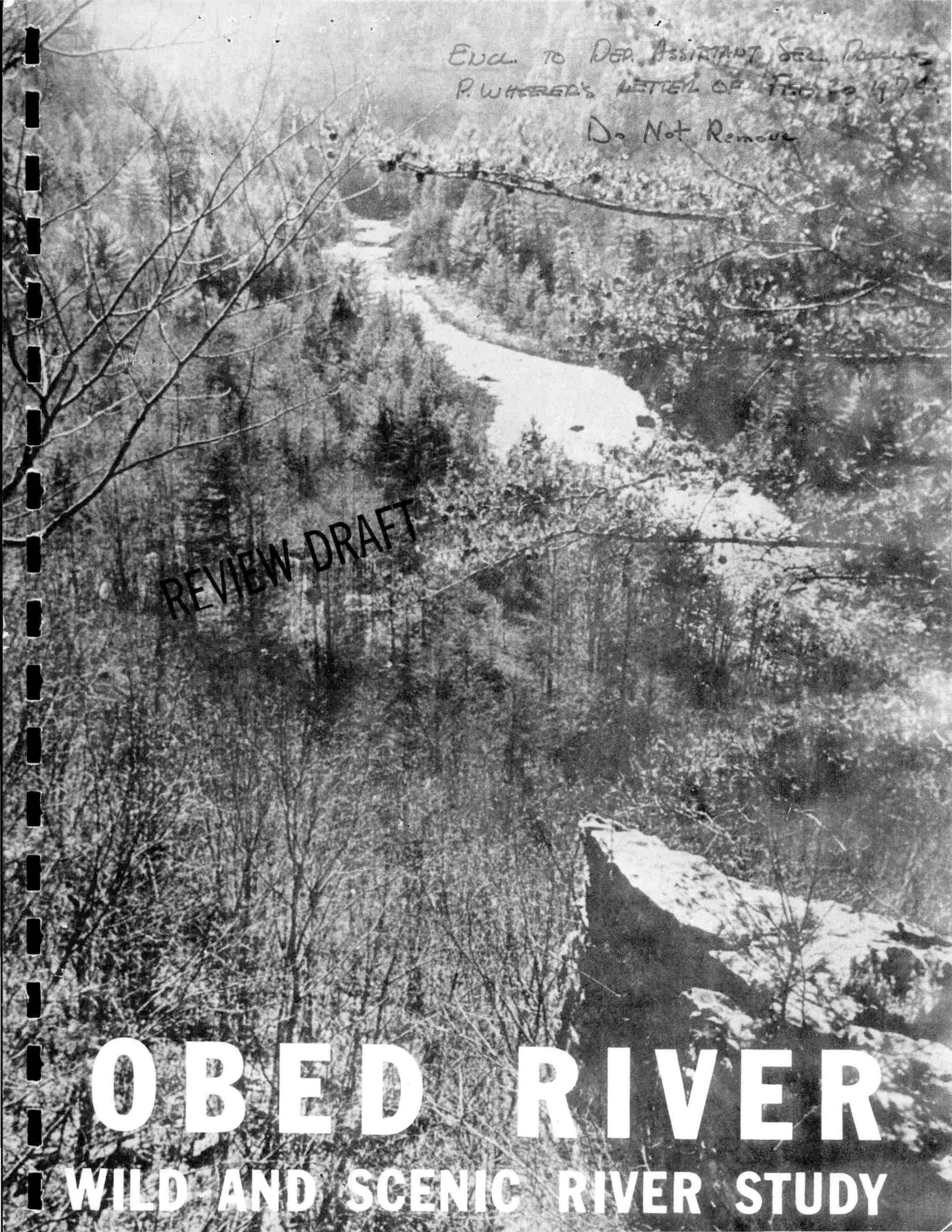

Encl. to Dep. Assistant Sec. Memo
P. Wheeler's letter of Feb. 29 1984.
Do Not Remove

OBED RIVER

WILD AND SCENIC RIVER STUDY

AS THE NATION'S PRINCIPAL CONSERVATION AGENCY, THE DEPARTMENT OF THE INTERIOR HAS BASIC RESPONSIBILITIES FOR WATER, FISH, WILDLIFE, MINERAL, LAND, PARK AND RECREATIONAL RESOURCES.

INDIAN AND TERRITORIAL AFFAIRS ARE OTHER MAJOR CONCERNS OF AMERICA'S "DEPARTMENT OF NATURAL RESOURCES."

THE DEPARTMENT WORKS TO ASSURE THE WISEST CHOICE IN MANAGING ALL OUR RESOURCES SO EACH WILL MAKE ITS FULL CONTRIBUTION TO A BETTER UNITED STATES NOW AND IN THE FUTURE.

DEPARTMENT OF THE INTERIOR

Rogers C. B. Morton, Secretary

Bureau of Outdoor Recreation

James G. Watt, Director

179/D-31

Obed River

OBED RIVER
TENNESSEE

WILD AND SCENIC RIVER STUDY

DECEMBER 1973

THIS REPORT WAS PREPARED PURSUANT TO PUBLIC LAW 90-542, THE WILD AND SCENIC RIVERS ACT. PUBLICATION OF THE FINDINGS AND RECOMMENDATIONS HEREIN SHOULD NOT BE CONSTRUED AS REPRESENTING EITHER THE APPROVAL OR DISAPPROVAL OF THE SECRETARY OF THE INTERIOR. THE PURPOSE OF THIS REPORT IS TO PROVIDE THE INFORMATION AND ALTERNATIVES FOR FURTHER CONSIDERATION BY THE BUREAU OF OUTDOOR RECREATION, THE SECRETARY OF THE INTERIOR, AND OTHER FEDERAL AND STATE AGENCIES.

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CREDITS

Sketch, frontispiece, courtesy of Dr. Claude E. Terry.

Photos, pages 8, 10 top, 13 bottom, 15, 17 top, 29, 31, 38, 42, 65, 67 and 78, courtesy of Dr. William Russell.

LIST OF TABLES

I. SUMMARY OF FINDINGS, RECOMMENDATIONS, AND COSTS

Findings

The Obed River Task Force found that 34 miles of the Obed River, 29.5 miles of Clear Creek, 34.5 miles of Daddys Creek, and 2 miles of the Emory River--a total of 100 miles--possess outstandingly remarkable scenic, recreational, geological, and fish and wildlife values and qualify for inclusion in the national wild and scenic rivers system.

Recommendations

1. That 100 miles of the Obed River, Emory River, Clear Creek and Daddys Creek be included in the national wild and scenic rivers system as defined in Public Law 90-542, the Wild and Scenic Rivers Act.

2. That the proposed river areas be classified as follows: Obed River from Interstate 40 to junction with the Emory River, 34 miles, wild. Clear Creek from U.S. 127 to junction with the Obed, 29.5 miles, wild. Daddys Creek from the millsite at river mile 34.5 to river mile 18, 16.5 miles, scenic. Daddys Creek from river mile 18 to junction with the Obed, 18 miles, wild. Emory River from junction of the Obed to Nemo bridge, 2 miles, scenic.

3. That the national wild and scenic river boundary contain approximately 15,644 acres, of which 9,136 would be acquired in fee title, 2,537 would be controlled through acquisition of easements, and 3,971 would be managed under intergovernmental agreement as this amount is already in public ownership in the State's Catoosa Wildlife Management Area.

4. That the river be jointly acquired and managed by the Tennessee Valley Authority and the State of Tennessee.

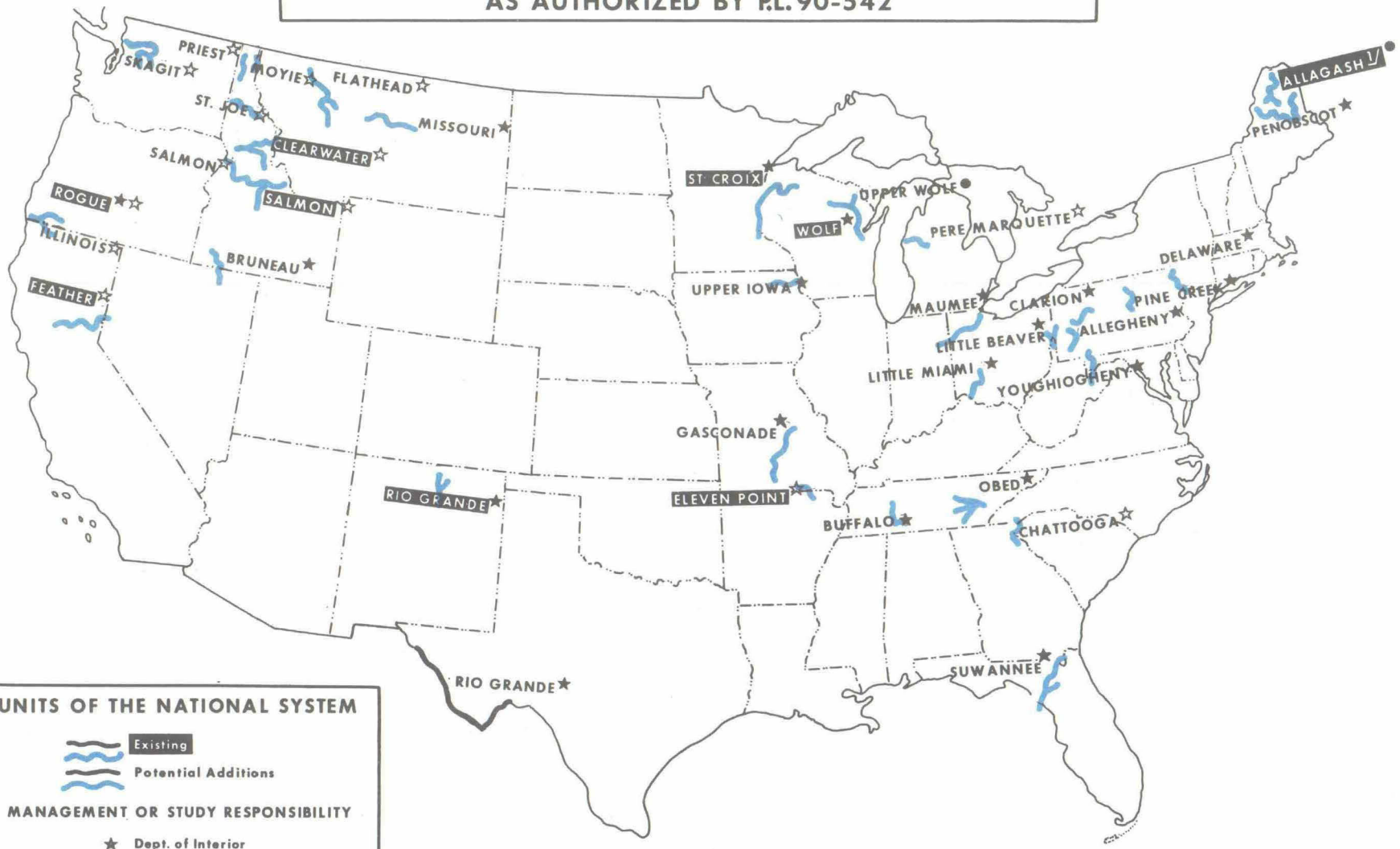
5. That a master plan for acquisition, development, and management be prepared by the State jointly with the Tennessee Valley Authority and in consultation with local agencies and submitted to the Secretary of the Interior for approval within 1 year from the time Congress authorizes the project.

6. That recreational development of the river be minimal with facilities designed to protect the natural values of the area while providing for public use consistent with these values.

Costs

Acquisition	$4,187,000
Development	808,000
Annual Operation and Maintenance, 1 Year	38,000

NATIONAL WILD AND SCENIC RIVERS SYSTEM
AS AUTHORIZED BY P.L. 90-542



UNITS OF THE NATIONAL SYSTEM

Existing

Potential Additions

MANAGEMENT OR STUDY RESPONSIBILITY

★ Dept. of Interior

☆ Dept. of Agriculture

● Non-Federal

1/ State of Maine

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Outdoor Recreation
JANUARY 1973

II. INTRODUCTION

The Wild and Scenic Rivers Act, Public Law 90-542, was approved on October 2, 1968. In the Act, the Congress declared it

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

The Act in establishing a national wild and scenic rivers system designated eight rivers as initial components of the national system and prescribed methods and standards for the addition of other rivers to the system.

The Wild and Scenic Rivers Act also designated 27 rivers for study (map, page 2) by the Secretary of the Interior and/or Secretary of Agriculture as potential additions to the system. The Obed in Tennessee and its tributaries--Clear Creek and Daddys Creek--were among those designated for study.

Subsequent legislation, germane to protection of outstanding rivers and their immediate environs, included the National Environmental Policy Act of 1969, Public Law 91-190, approved January 1, 1970. On March 5, 1970, Executive Order 11514, signed by the President, furthered the purpose and policy of the National Environmental Policy Act of 1969 by defining the roles of Federal agencies and the Council on Environmental Quality established by the Act:

> The Federal Government shall provide leadership in protecting and enhancing the quality of the Nation's environment to sustain and enrich human life. Federal agencies shall initiate measures needed to direct their policies, plans, and programs so as to meet national environmental goals. The Council on Environmental Quality, through the chairman, shall advise and assist the President in leading this national effort.

Wild and Scenic River Studies

The Wild and Scenic Rivers Act specifies that a study report shall accompany each proposal submitted to the President and the Congress for the addition of a river to the national wild and scenic rivers system. Reports must set forth:

1. The area included within the proposal;

2. The characteristics which make the river a worthy addition to the system;

3. The current status of landownership and use;

4. The reasonably foreseeable potential uses of land and water which would be enhanced, foreclosed, or curtailed if the area were included in the national system;

5. The Federal agency proposed to administer the area;

6. The extent to which administration, including costs, would be shared by State and local agencies; and,

7. The estimated cost to the United States of acquiring necessary lands and interests in lands and of administering the area as a component of the system.

The Act directed the Secretary of the Interior, in close cooperation with the affected States and their political subdivisions, to complete a study to determine whether the Obed River and its tributaries--Clear Creek and Daddys Creek--should be included in the national wild and scenic rivers system. The Bureau of Outdoor Recreation was designated as lead agency in the study by the Secretary of the Interior.

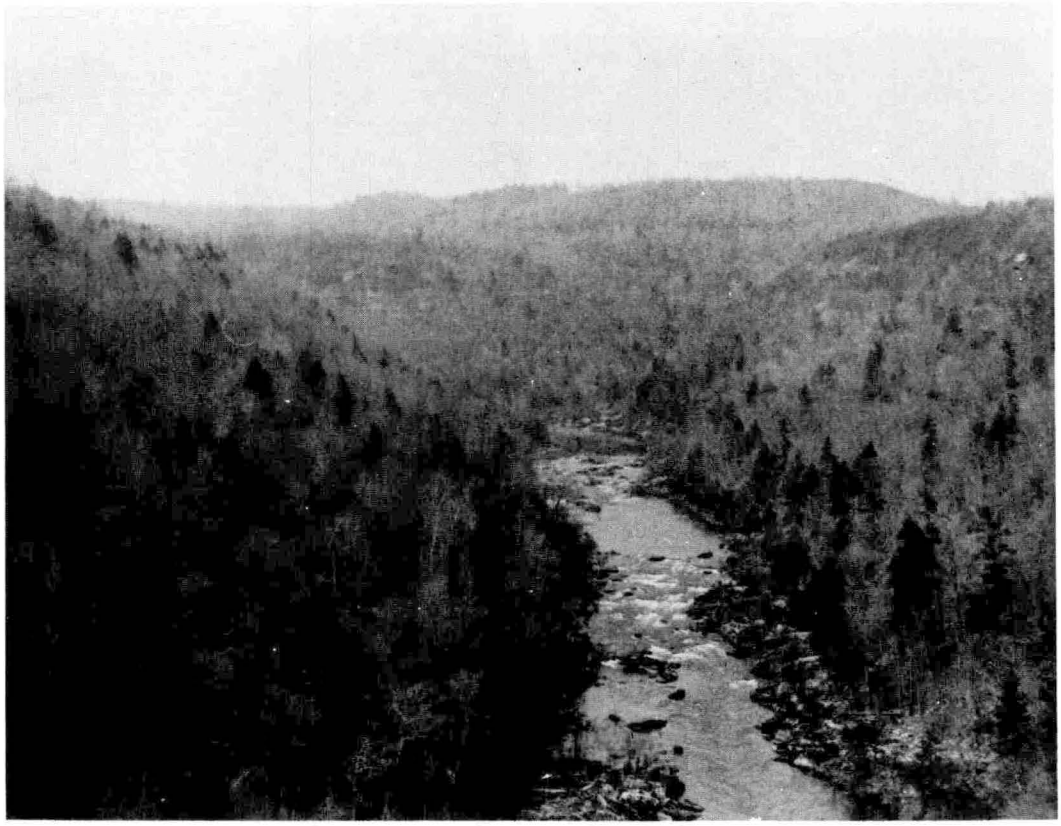
In accordance with Section 5(c) of the Wild and Scenic Rivers Act, the State of Tennessee, a pioneer in State scenic rivers legislation, requested a joint study. The Tennessee Department of Conservation undertook coleadership responsibilities with the Bureau of Outdoor Recreation.

The Southeast Regional Office of the Bureau and the Tennessee Department of Conservation, in keeping with the provisions of the Act, brought together a joint Federal-State study task force. A list of task force members in the field study is included in the Appendix. The purpose of the task force was to prepare a field report and proposal for the Obed River and its tributaries. This report and proposal are the result of that joint study effort.

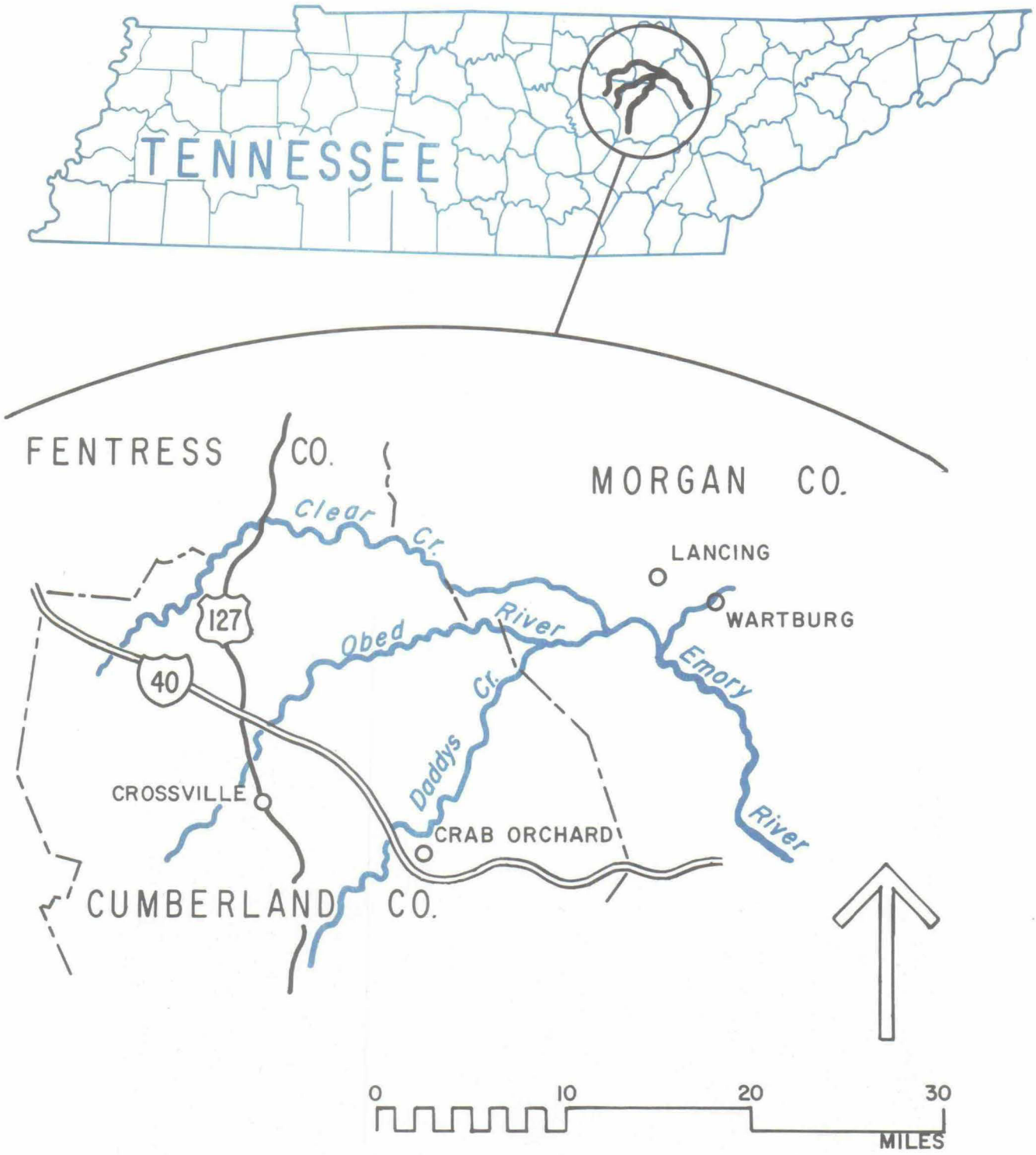
Background

Studies of the Obed River and its tributaries were made as early as 1930 to assess damages incurred from the great flood of 1929. Subsequent studies--the latest completed in July 1968--examined the feasibility of damming segments of the Obed River, Clear Creek, and Daddys Creek for both single-purpose and multipurpose impoundments. Conclusions reached from these studies by the Corps of Engineers and Tennessee Valley Authority were identical. Impoundments were found not economically feasible.

In February 1968, the Obed River and its tributaries were included in a bill which became the Tennessee Scenic Rivers Act. However, strong organized support persisted locally for the construction of a high dam on the Obed River. Since the 1968 restudy of the feasibility of the dam project was then underway, the Obed River and its tributaries were deleted from the bill prior to its enactment. However, other citizens groups including the Tennessee Scenic Rivers Association and the Tennessee Citizens for Wilderness Planning favored preserving the river. Largely through the efforts of these two organizations, the Obed River, Clear Creek, and Daddys Creek were included in Section 5(a) of the Wild and Scenic Rivers Act in October 1968.



Preservation of the primitive character of the Obed system has long been a goal of conservation groups.



LOCATION MAP

OBED RIVER

USDI - BOR, DECEMBER 1973

III. THE RIVER AND ITS SETTING

Location

The watershed of the Obed River is in the Cumberland Plateau of east Tennessee. It is characterized by forested mountains, scenic river gorges, and small communities, and contains some of the most rugged scenery in the Southeast. Elevations range from 900 to 2,900 feet above mean sea level.

The Obed River, Clear Creek, and Daddys Creek are located in Cumberland, Fentress, and Morgan Counties (map, page 6). Principal towns in the area include Crossville and Wartburg, Tennessee.

Interstate 40, the major east-west highway between Knoxville and Nashville, Tennessee, crosses the upper reaches of the Obed River and Daddys Creek. The interstate and related major highways provide easy access from cities in Tennessee, Georgia, Alabama, Kentucky, and the Carolinas. The total population within 50-mile zones up to 200 miles away is shown in the diagram on page 40.

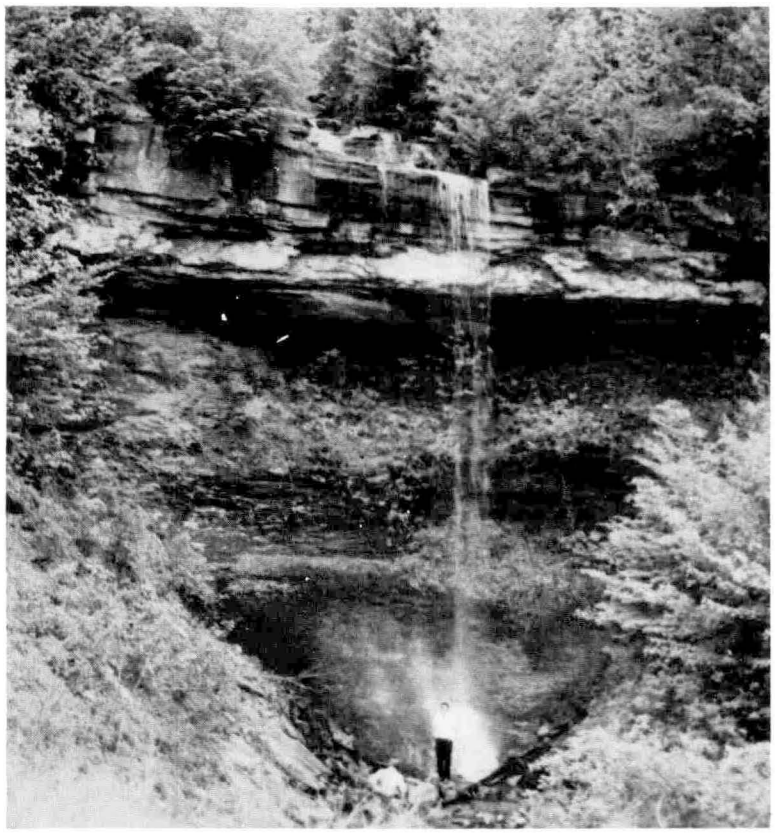
Obed River Near I-40 (River Mile 34)

Watershed

The Obed River, Clear Creek, and Daddys Creek drain an area of 520 square miles and comprise a total of 144 miles of mountain streams flowing northeast then east into the southbound Emory River which joins the Tennessee River system. Portions of all three streams flow through the Catoosa Wildlife Management Area administered by the Tennessee Game and Fish Commission.

Obed River

The river rises near the mountain town of Crossville, Tennessee, and flows northeast approximately 45 miles to its junction with the Emory River southwest of Wartburg. From its headwaters at river mile 45 to Interstate 40 (a distance of about 10 miles), the Obed River is a small stream flowing through a relatively shallow, wooded valley predominantly bordered by farmland. Below the Interstate 40 bridge, the river begins its journey through a highly scenic and sparsely inhabited area. Four miles below the interstate, at about river mile 31, 250-foot canyon walls face each other across the narrow gorge known as the Gould Bend corridor. The stream corridor has escaped the impact of civilization. Rocks fallen from the canyon walls pinch the stream into a tumbling succession of small waterfalls fed by several tributaries cascading over massive boulders.



Cascading tributary near Obed-Emory confluence

Gould Bend area of Obed River (River Mile 31)

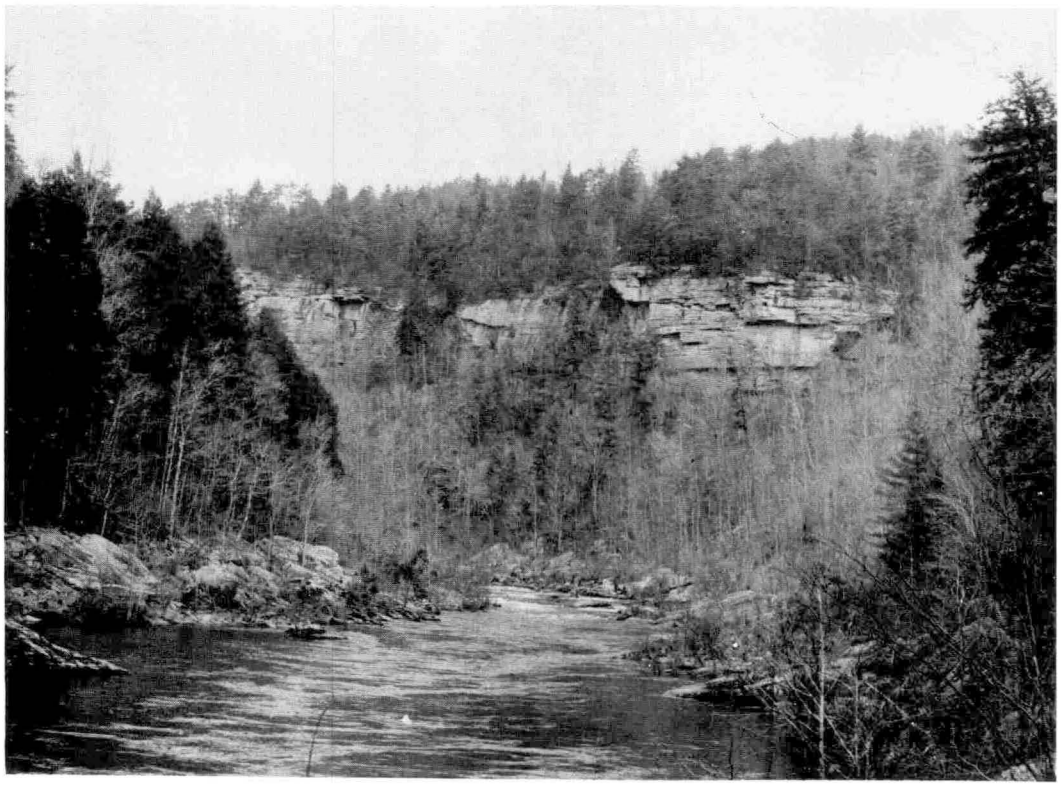
Towering eastern hemlock mingle with upland hardwood species and a lush understory of laurel, wild flowers, and ferns. Fallen chestnut trees, relics of a forest giant almost extinct from the American landscape, are found throughout the Gould Bend corridor.

From Gould Bend to Adams Bridge at river mile 25, a distance of about 6 miles, the valley widens and becomes deeper. Boulders along the streamside are seemingly transformed into cliffs extending over the surface of the water. These overhangs are of outstanding aesthetic value.

One-half mile below Adams Bridge, the Obed becomes a quiet stream and enters the State-owned 80,000-acre Catoosa Wildlife Management Area. Trees overhanging the stream at this location provide natural diving boards over the clear, deep pools.

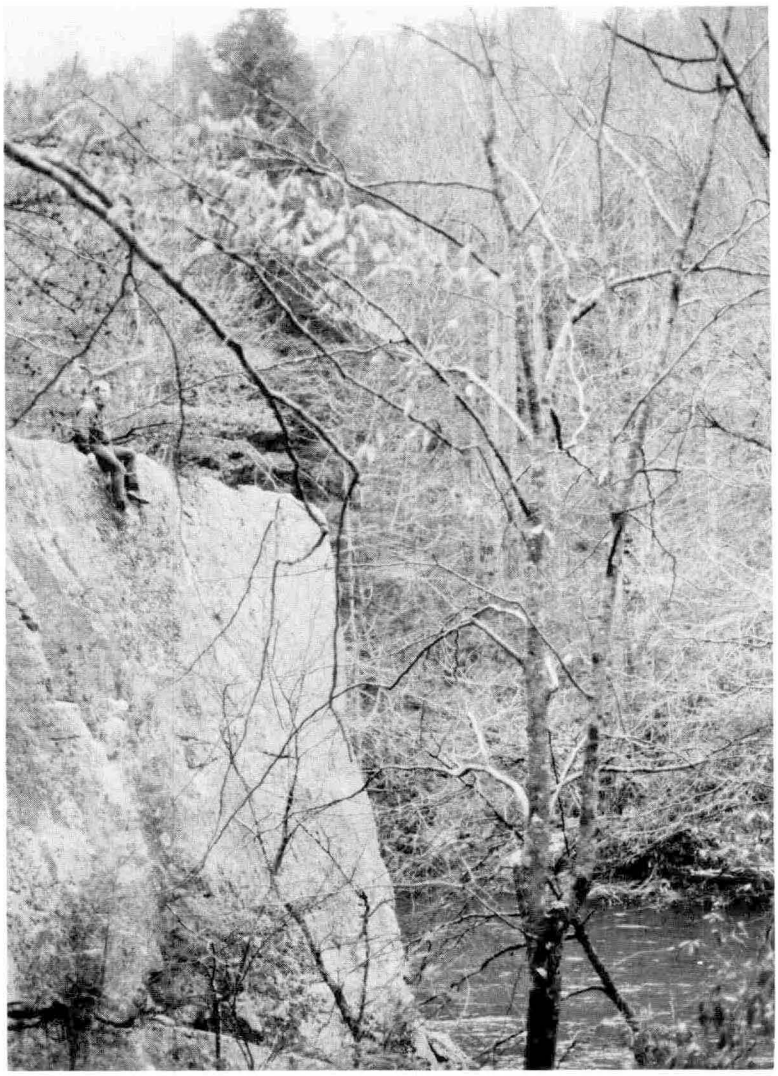
Three miles below Adams Bridge, the river again flows between canyon walls exceeding 300 feet in height. These walls recede at Potters Ford where a grassy cove with an artesian well is a significant visitor attraction. Downstream of a low concrete bridge at Potters Ford, the Obed is bordered by bluffs varying in height from 200 to 500 feet.

Obed River (River Mile 22)



Obed River (River Mile 4)

The section of the Obed between river mile 16 and its confluence with the Emory River is one of the most scenic and interesting areas in the Southeast, offering a diversity of quality recreation opportunity. Dramatic, multicolored canyon walls enhanced by a number of shallow caves tower above the river. Gray lichens and dark mosses cover boulders of all imaginable sizes and shapes, wet by fierce white water. A variety of wildlife and fish ranging from Russian boar and ruffed grouse to smallmouth bass and muskellunge exists within the corridor. Clear Creek and Daddys Creek enter the Obed at river miles 5 and 9, increasing its size and rate of flow and contributing to the scenic value of the Obed canyon.



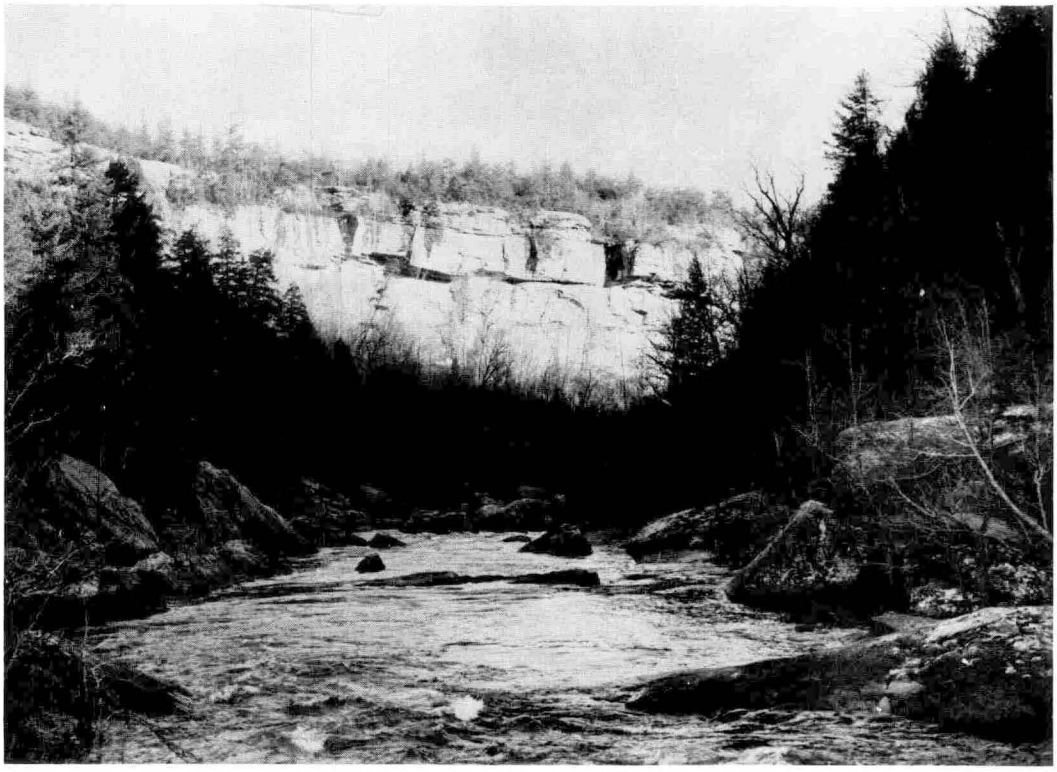
Boulder on the Obed River

Clear Creek

Clear Creek rises on the Tennessee Valley Divide a few hundred feet upstream of Interstate 40 and flows eastward for 48 miles before entering the Obed at river mile 4.4. From its source to U.S. Highway 127, the crystal clear stream averages about 12 feet in width and meanders over a rocky course through rolling farm country. Shortly after the U.S. Highway 127 crossing, 29 miles upstream from its confluence with the Obed, the stream becomes deeper and wider, entering narrow valleys bordered by stretches of sheer rock wall. There is no improved road access for 20 miles below U.S. Highway 127. This remote, scenic, uninhabited area provides an excellent small-scale wilderness opportunity for fishermen, floaters, hikers, canoeists, naturalists, and other outdoor recreation users. Rapids alternate with deep, long pools amidst huge boulders. Numerous small tributaries, forming cascades, progressively increase the size of the stream as it flows eastward. One such tributary at river mile 15 boasts an 85-foot waterfall.

Clear Creek (River Mile 8.5)

White water on Clear Creek (River Mile 2)



Clear Creek canyons (River Mile 2.4)

The lower 2-mile stretch from Lilly Bridge to Clear Creek's confluence with the Obed is among the most dramatic in the entire Obed River system. About one-fourth mile below Lilly Bridge is a wide, peaceful, smooth-bottomed pool ideally suited for swimming, wading, rock hopping, and tubing. At the lower edge of the pool is Jacks Rock, a huge boulder named for the muskellunge caught by fishermen casting from the rock. An underwater section of Jacks Rock creates an 8-foot drop with an "S" swirl at its base which challenges the most skilled canoeist.

Daddys Creek

From its headwaters, 49 miles above its confluence with the Obed to the Alvin York Highway crossing at river mile 34, Daddys Creek is a narrow stream flowing through gently rolling pastoral courtryside. Upon rounding a bend about 100 yards above the highway crossing, the current of the briskly flowing stream is momentarily decreased by an abandoned gristmill dam. The site has a 4-foot-high concrete spillway and rustic mill building. Reflecting a facet of America's early technology and culture, the old mill provides interesting sightseeing.

Daddys Creek at old millsite (River Mile 34)

Devils Breakfast Table On Daddys Creek (River Mile 2.5)

From the mill to the Center Bridge crossing, a distance of 17 miles, Daddys Creek winds through a diverse topography. Banks rise about 100 feet above the stream along this segment and land is used both for farms and forests. This section of Daddys Creek is ideally suited for streambank fishing and passive floating.

From Center Bridge to the Hebbertsburg Bridge at river mile 9, Daddys Creek flows through a steep sided valley. There are occasional flat bottoms. The surrounding landscape, characteristic of the nearby rugged Crab Orchard Mountains, is colorful in the spring with a variety of wild flowers, dogwood, and redbud trees.

Daddys Creek near Hebbertsburg Bridge (River Mile 9)

Downstream, the valley becomes deepened, narrow, abruptly opening into a scenic cove at Yellow Creek, a cold, small mountain tributary. Immediately below the cove, the steep sided canyon pinches in on the creek again. From this point to the Devils Breakfast Table, a pinnacle of rocks balancing a flat slab of sandstone, are found the most rugged and scenic sections of the stream. Huge cliffs extend vertically almost from the water's edge. Gigantic boulders create difficult white water. The canyon is outstandingly scenic and almost uniformly dramatic from the Devils Breakfast Table to its junction with the Obed River.

Daddys Creek from the river and from the bluff (River Mile 2.5)

Geology

Interesting structural features are present in the Obed region. The Sequatchie Anticline, a ridge and valley structure which trends northeast-southwest, has been breached by erosion resulting in exposure to weathering and erosion of the weaker limestones in the Sequatchie Valley, Grassy Cove, and Crab Orchard Cove. These are among the most beautiful valleys in the Southeast. The anticline continues to the northeast where it forms the Crab Orchard Mountains.

Another important structure is the Cumberland Plateau overthrust, a western extension of the fractures produced by mountain building forces toward the end of the Paleozoic Era. This complex zone extends up the Emory River as a tear fault and then breaks through as a series of thrust faults along the south side of the Obed River across Daddys Creek and roughly parallel to the Obed. The Obed River flows parallel to the fault system throughout its course. The fault complex is well exposed in Yellow Creek Gorge of Daddys Creek, on the lower Obed, and also along Interstate 40 east of Crossville.

The diversity of rock sizes, types, and shapes existing in the Obed River region attracts the geologist and adds immensely to the scenic quality of the area. Rocks exposed in the Obed drainage are of the Pennsylvanian (50 million years BP) and Mississippian (30 million years BP) periods. The Mississippian rocks exposed along the upper reaches of Daddys Creek consist of red and green shales, dark red and olive gray siltstones, and minor amounts of limestone. The Pennsylvanian formations form the broad, flat to rolling areas of the northwest Cumberland Plateau and the vertical cliffs of the Obed River and its tributaries. The Pennsylvanian strata consist primarily of sandstone, siltstone, and shale.

It is primarily the interbedded shale and sandstone which has created the spectacular multicolored bluffs of the Obed River and its tributaries. Sections of sandstone, once a part of the rimrock, have gradually moved downslope becoming deposited in the stream corridors. These boulders not only enhance the experience of white water canoeing and sightseeing, but also provide natural areas for picnicking, sunbathing, and rock hopping during periods of low to moderate flow.

Soils

The three-county study area falls in the Cumberland Plateau soils class, described by the Soil Conservation Service, U.S. Department of Agriculture, as having sandy and poor soils which average about 2 feet deep to sandstone rock.

A soil survey was completed for Cumberland County in 1938. No survey has been done for Morgan or Fentress Counties. The soil types of Cumberland County occur in complicated patterns with small bodies of

(Daddys Creek and Obed Junction)
Sections of rimrock have fallen into the stream

different types found in close intermixture. The detailed soil map is not reproduced here, but a map of associations is shown on page 21. It identifies relatively broad areas, each of which is made up of about the same combination of soil types. Associations are thought to be approximately the same along the study streams in Fentress and Morgan Counties.

In the Muskingum-Hartsells-Crossville association, sandstone and shale are the underlying rocks, although small outcroppings of the shale appear here and there. Typically, Hartsells soils occupy the smooth ridge crests and Muskingum occupy the strong or steep slopes, while the Pope, Philo, or Atkins soils are in the bottom lands along the major streams. (This distribution is also true for the other associations having these soil types.)

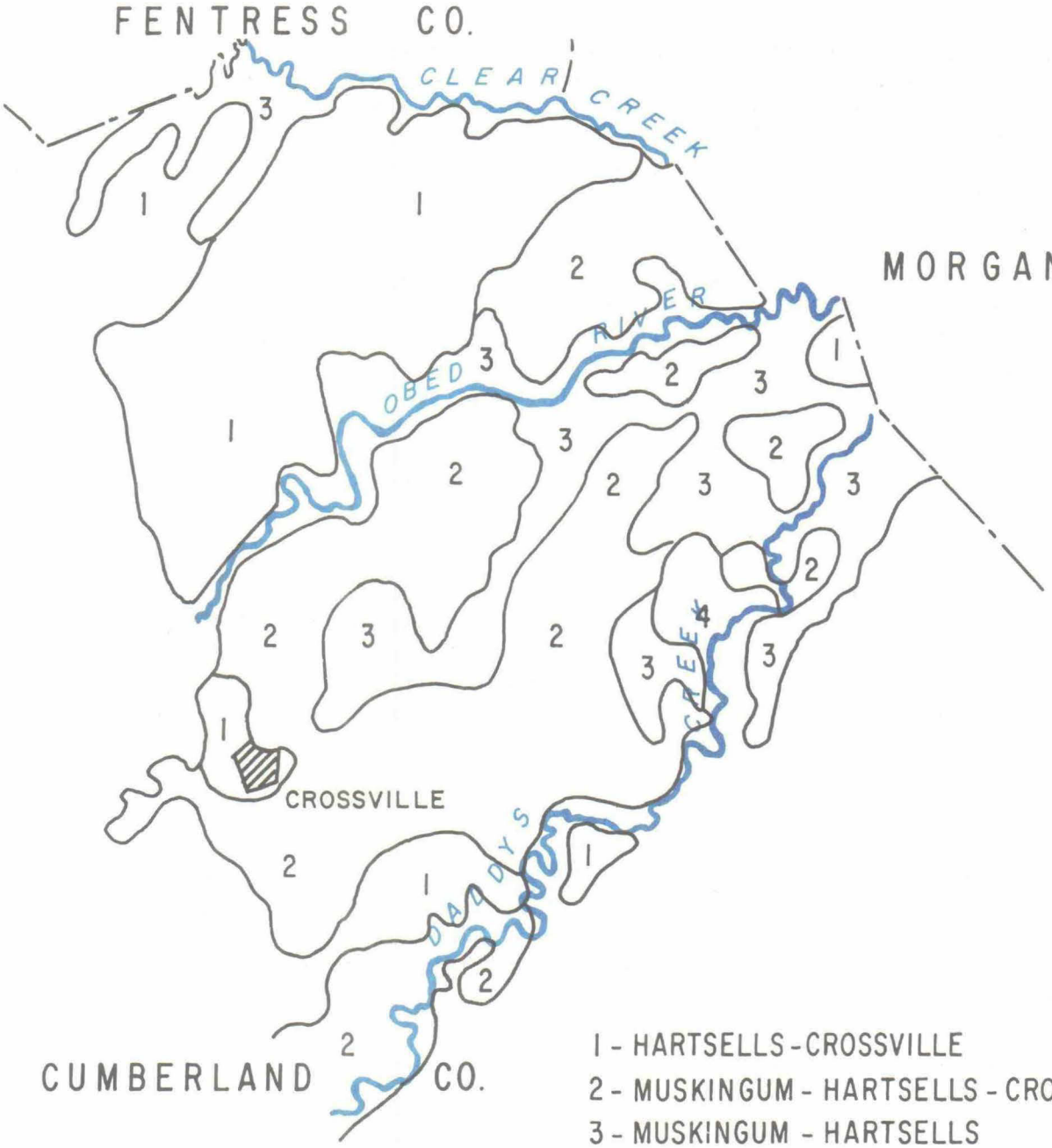
The Muskingum soils are very poorly suited to crops and pasture, and although poorly suited to the production of timber, forest is probably their most feasible use. The Hartsells and Crossville are physically suited to crops but naturally very low in fertility, requiring liberal fertilization even on newly cleared land. The inextensive Pope and Philo are well suited to agriculture.

The Muskingum-Hartsells association differs from the one just described chiefly in having a much larger proportion of Muskingum, Pope, Philo, and Atkins soils, a smaller proportion of Hartsells and very little Crossville. In general, soils are very stony and shallow over bedrock. This association offers little opportunity for agricultural development as much of it occurs in small bodies surrounded by soil not suitable for crops, and very little of the land has been cleared.

The Muskingum-stony land association, as the name suggests, is composed of Muskingum soils and stony land with only a very small acreage of Hartsells and Crossville on ridge crests and Pope, Philo, and Atkins in bottom lands. Fourth- and fifth class soils predominate, and the association is probably best suited to forest and recreation.

Streamflow

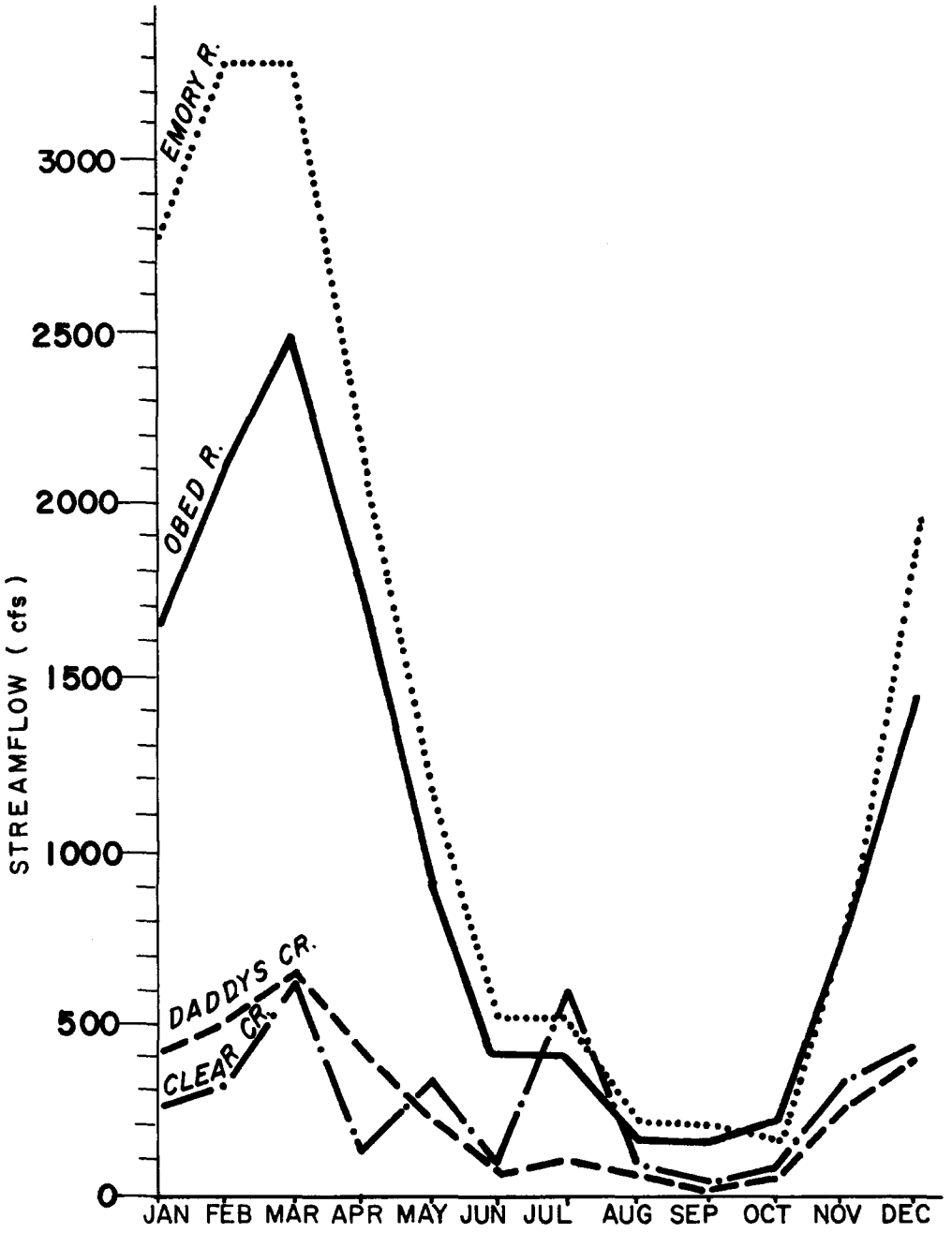
The uneven flow of the Obed River, Clear Creek, and Daddys Creek varies directly with rainfall. The Obed streamflow graph on page 23 reflects the flow variations which can be expected. Observed extremes range from over 140,000 c.f.s. to less than 1 c.f.s. There has not been sufficient sampling to allow the computation of mean monthly or annual flows for the three study streams. From the graph, an analysis of the Emory River watershed, and other U.S. Geological Survey data,



SOIL ASSOCIATIONS OF OBED SYSTEM IN CUMBERLAND COUNTY

USDI - BOR, DECEMBER 1973

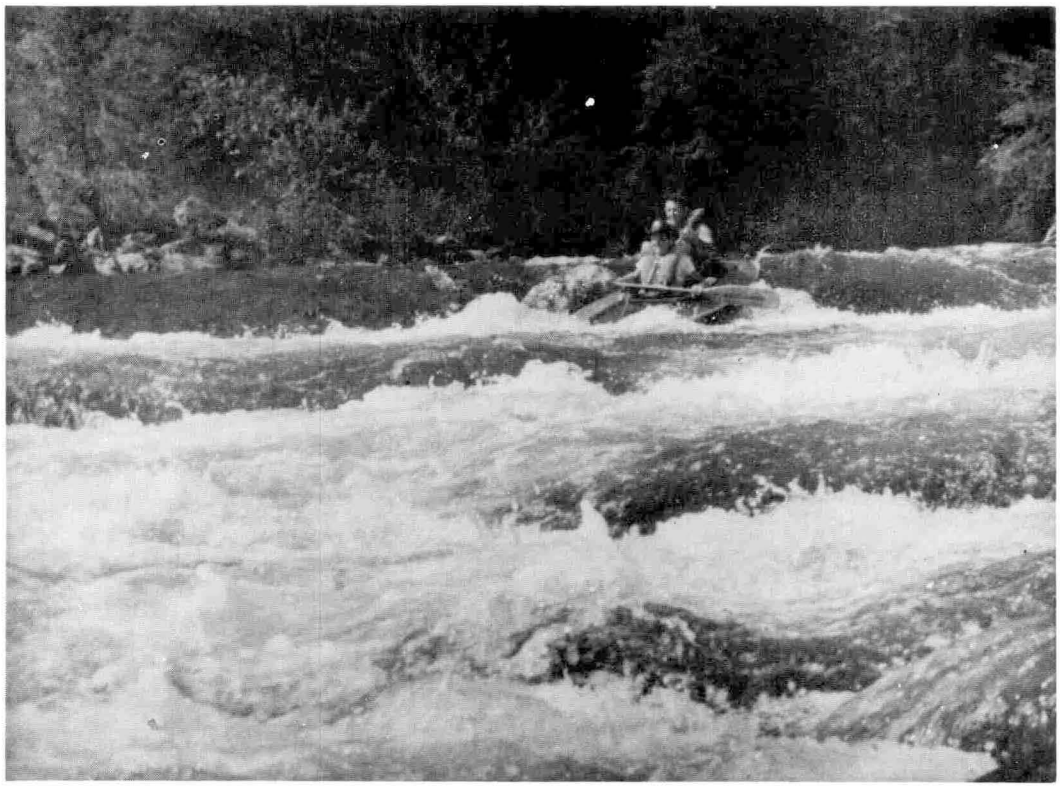
OBED RIVER



SOURCE: USGS Records

STREAMFLOW
OBED RIVER

USDI - BOR, DECEMBER 1973

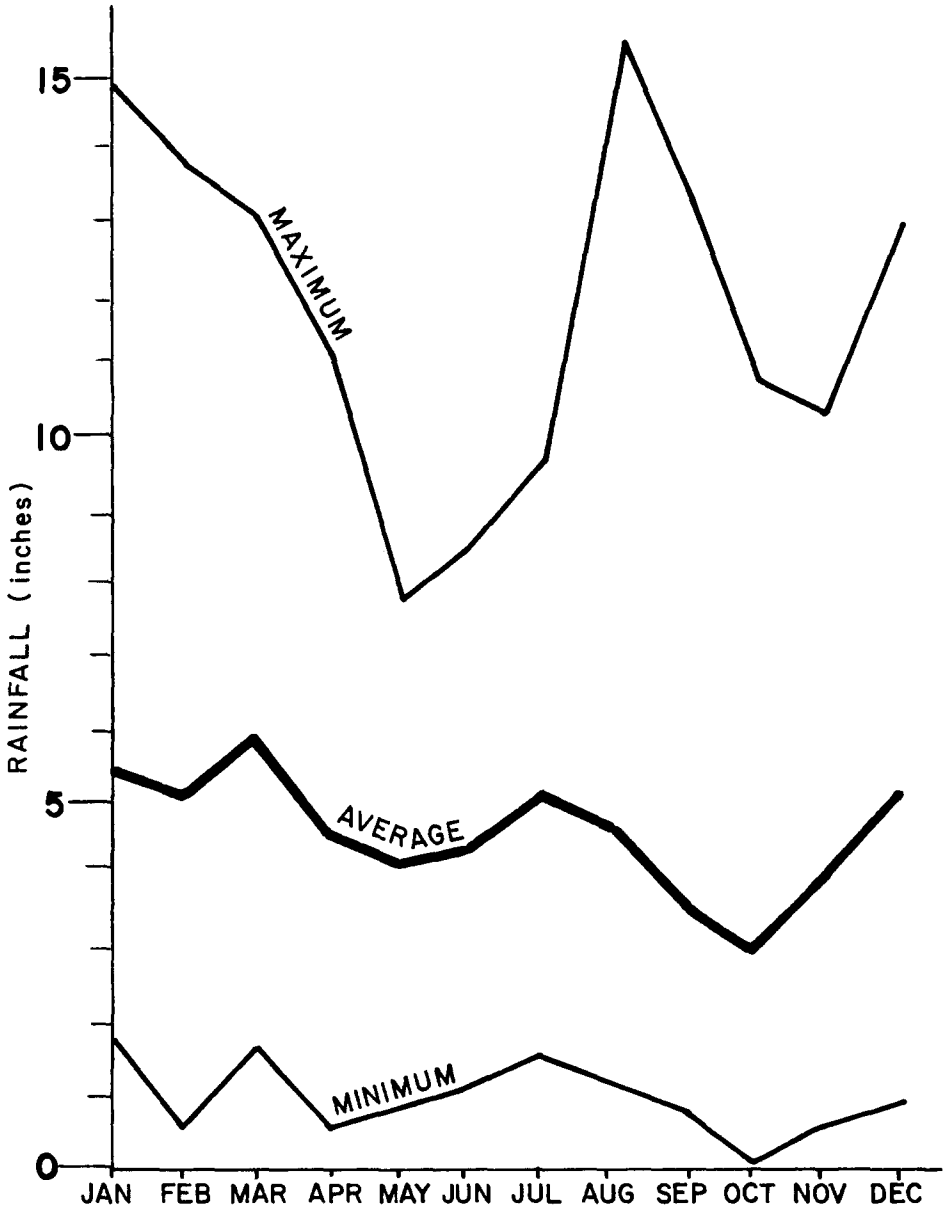


Running the white water of the Obed River system

WHITE WATER CANOEING CLASSIFICATION
FOR OBED RIVER SYSTEM

Stream Section	Water Level For Canoeing			Trip Distance (Miles)	White Water Difficulty
	Low	Fair	Good		
Obed River					
I-40 to Adams Bridge	May-Nov	Dec	Jan-Apr	10	VI
Adams Bridge-Potters Ford	May-Nov	Dec	Jan-Apr	4	II
Potters Ford to Obed Junction	Jun-Nov	May	Dec-Apr	11	III
Obed Jct. to Nemo Bridge	Jul-Oct	Jun, Nov	Dec-May	9	IV
Clear Creek					
U.S. Hwy. 127 to Hegler Ford	May-Nov	Dec	Jan-Apr	19	III
Hegler Ford to Jett Bridge	Jun-Nov	May	Dec-Apr	5	II
Jett Bridge to Lilly Bridge	Jun-Nov	---	Dec-May	5	III
Daddys Creek					
Hwy. 68 to Center Bridge	May-Nov	Dec	Jan-Apr	10	I
Center Bridge to Hebbertsburg Bridge	Jun-Nov	May	Dec-Apr	8	II
Hebbertsburg Bridge-Devils Breakfast Table	Jun-Nov	---	Dec-May	6	V

White Water Difficulty Key:
I - Easy (beginner)
II - Medium (novice)
III - Difficult (intermediate)
IV - Very Difficult (advanced)
V - Exceedingly Difficult (expert)
VI - Serious Risk of Loss of Life

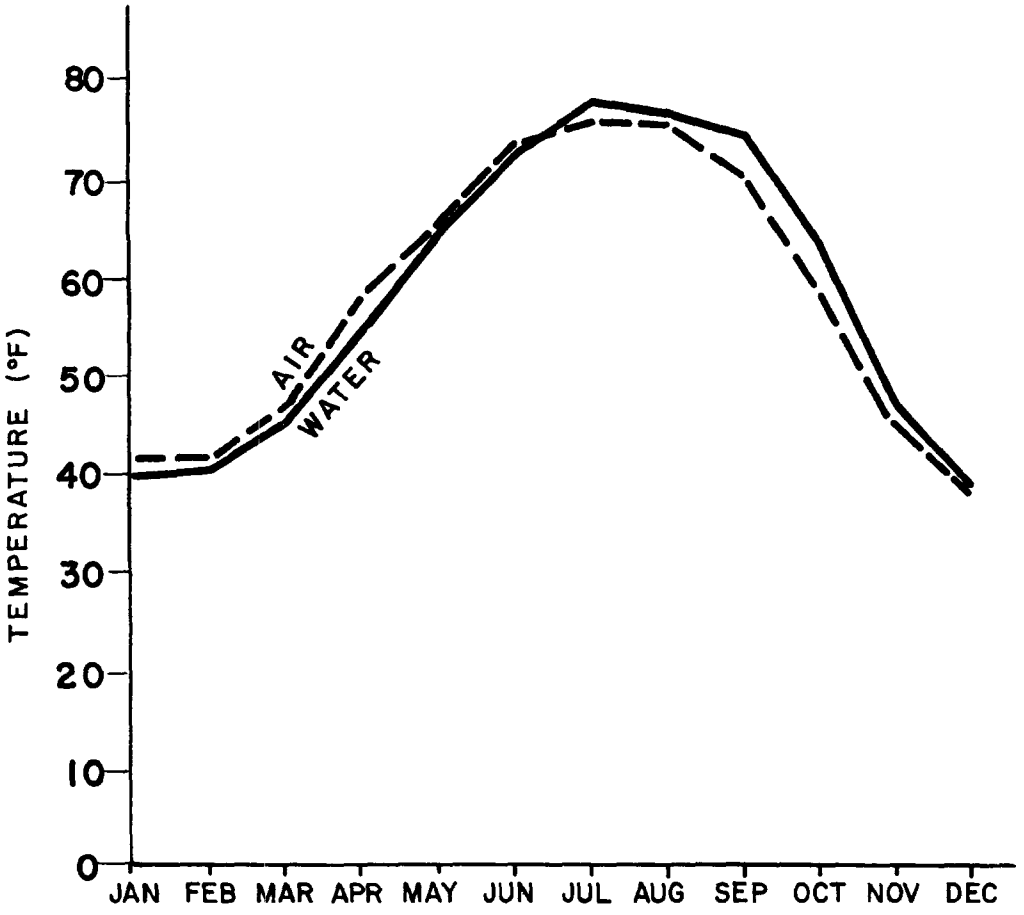


SOURCE: U.S. WEATHER BUREAU STATION AT CROSSVILLE, TENN.

RAINFALL DISTRIBUTION

USDI - BOR, DECEMBER 1973

OBED RIVER



WATER TEMPERATURES BASED ON USGS READINGS ON THE EMORY RIVER AT OAKDALE, TENN.

AIR TEMPERATURES FROM US WEATHER BUREAU STATION AT OAK RIDGE, TENN.

AVERAGE TEMPERATURES

USDI - BOR, DECEMBER 1973

OBED RIVER

In the past, discharge of waste water from the Crossville sewage treatment plant and industrial waste from a vegetable processing plant near river mile 39 have chemically and bacteriologically degraded about 4 miles of the Obed River.

Crossville placed its renovated sewage treatment plant in operation in early 1971. This plant is designed to handle all municipal and industrial wastes from the Crossville area. Although secondary treatment and disinfection are provided, water quality is marginal below the waste water discharge point during periods of low flow in the upper river. Water quality, however, recovers sufficiently to meet standards in the reach under consideration for inclusion in the national wild and scenic rivers system.

Vegetation

The most striking characteristic of the vegetation in the Obed River study area is its diversity. In the gorges of the Cumberland Plateau, as in the Appalachian highland, the mixed forests of 1 million years ago survived the Pleistocene glaciation to become the source of the present deciduous forest of the Eastern United States. The rich botany of the Obed region results from the variety of sites within the gorges ranging from extremely dry to moist. Within the valleys are found not only typical flora, but also plants usually restricted to other geographical locations.

Because some of the ravines have been inaccessible to logging, an occasional relic of virgin forest is found towering over a scattered stand of second growth trees. Most striking of the evergreens are the huge hemlocks and white pines. Among the deciduous trees are many species of oaks, beeches, gums, maples, and magnolias. The abundance of the fringe-tree (Chinanthus Virginicus L.), listed as "uncommon to rare" in Stupka's "Wildflowers in Color," is notable. Flowers in blossom throughout a long season include several species of azalea, rhododendron and mountain laurel. Brilliant color changes occur in the hardwoods with the coming of fall. Sweet blueberries can be picked in June. Royal fern lines the banks of the streams and yucca grows on the talus slopes. Sweetshrub with its interesting maroon flowers is abundant in the rich woods where the ground is covered by partridge berry, ferns, and an ever changing array of wild flowers. The huge boulders in and near the streambeds are covered with mosses and lichens adding immeasurably to their beauty.

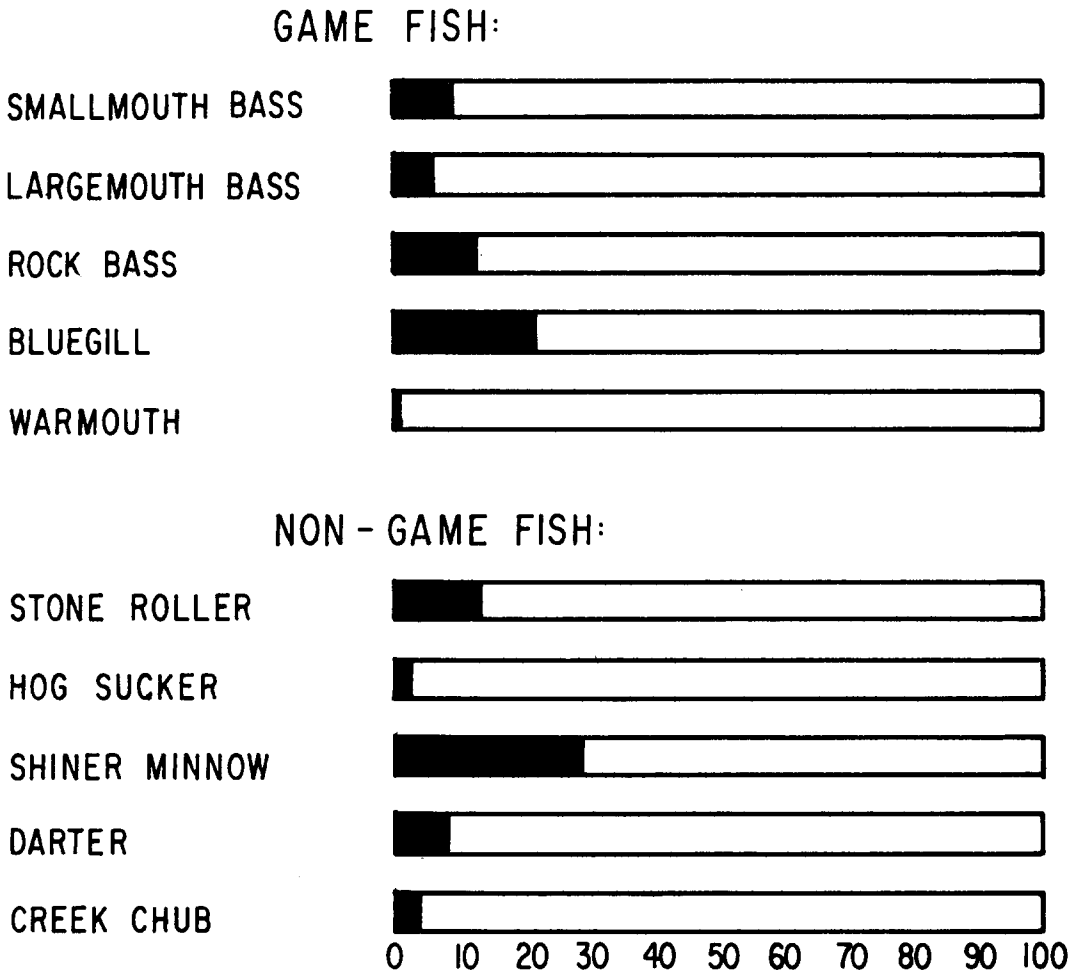
Mosses and lichens soften streamside rocks

In 1970, Dr. Edward C. Clebsch, University of Tennessee ecologist, reviewed existing literature and found that no ecological studies of vegetation in the Obed River area had been made. Subsequently, in January of 1971 naturalists of the Tennessee Department of Conservation sampled points along the Obed River, Clear Creek, and Daddys Creek for a base list of the stream corridor flora. Their findings are listed in the appendix (page A-99). Many species in addition to those on the base list probably exist in the unsampled canyons and hollows of the Obed region.

Fish and Wildlife

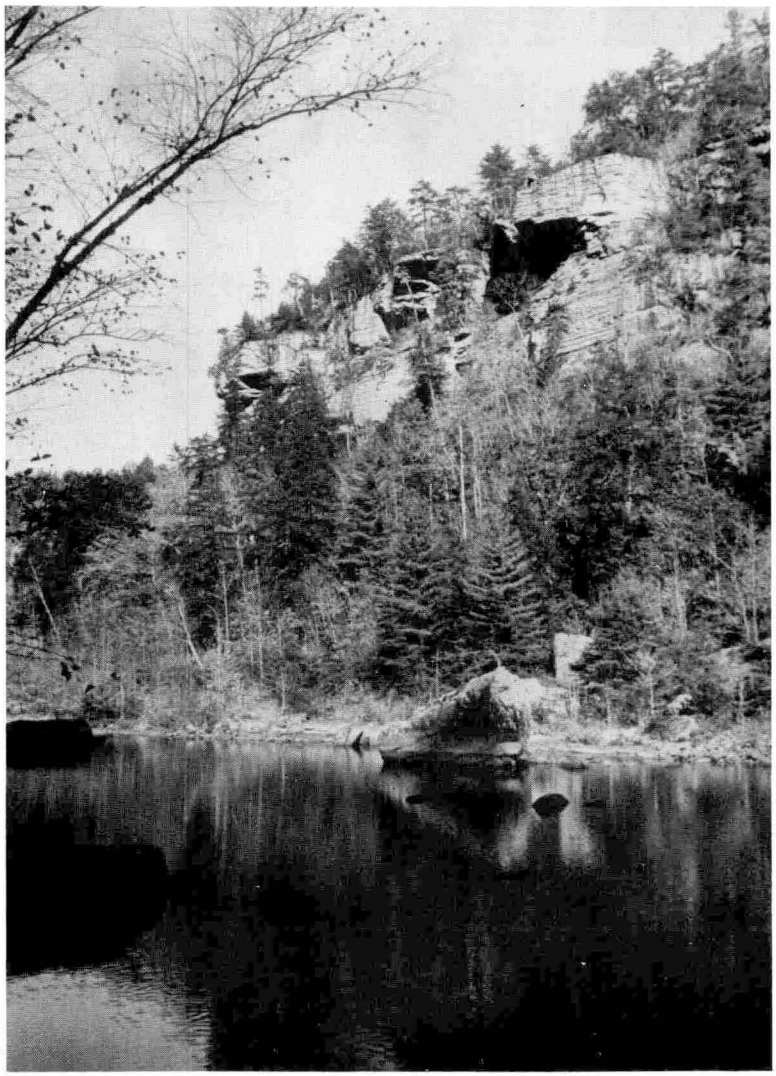
The fish and wildlife habitat of the Obed River area is among the best in the State. There is good fishing for smallmouth, rock, and largemouth bass in the Obed River and its major tributaries. The Obed and Daddys Creek also offer the southernmost muskellunge fishing in the United States. A fish population study of the Obed River by the Tennessee Game and Fish Commission in 1970 indicates that game fish make up almost half of the fish population in that stream. The results of the study are shown in the following graph.

PERCENTAGE COMPOSITION OF FISH POPULATION



Wildlife species found in the Obed area are primarily forest game with a particularly abundant population of Virginia whitetail deer. Other game animals in the region include raccoon, quail, rabbit, squirrel, opossum, wild turkey, dove, and the famed and eagerly sought ruffed grouse. Recently, wild Russian boar have been introduced into the Catoosa Wildlife Management Area. This release has been successful. The currently overpopulated herd is the only free roaming population west of the Smoky Mountains.

The red-cockaded woodpecker, which is on the Department of the Interior's wild and endangered species list, inhabits the study area. According to the Tennessee Ornithological Society, there are only two breeding populations in the State. One population consists of three known birds in the Great Smoky Mountains National Park--the other, estimated to be 10 birds, resides in the mature pine stands of an Obed River tributary.



Inaccessible canyon walls harbor birds of prey

The steep canyon walls of the Obed River afford suitable nesting sites for the golden eagle and the peregrine falcon. Continued use of these sites is enhanced by the rugged topography and inaccessibility of the canyon. Human intrusions in such areas should be limited.

The excellent, diversified wildlife populations of the Obed River watershed, and especially the Catoosa Wildlife Management Area, provide an environment suitable for an onsite wildlife conservation education program.

Water Resource Development

In February 1971, the Tennessee Valley Authority's Water Control Planning Division stated they had no plans for future studies of water control projects on the Obed River, Clear Creek, or Daddys Creek.

Projects involving both single and multipurpose dams on the three streams were studied from 1930 to 1968 by the Tennessee Valley Authority and the Corps of Engineers. None proved economically feasible. The last study in 1968 of a dam on each of the study streams included three multipurpose alternative plans. The benefit-cost-ratios were all less than one.

On October 1, 1971, the Federal Power Commission stated that they possessed no hydroelectric project applications for the Obed River basin. In conjunction with their regional inventory of potential hydroelectric sites, the Federal Power Commission has determined that sites near river miles 2 and 23 on the Obed River have potential as pump-storage projects and that a site at river mile 3 possesses potential as a conventional hydroelectric project (80,000 kw.). There are no plans, however, for present or future development at any of the sites.

History and Archeology

Partially because of its remote and rugged landscape, there has been relatively little archeological exploration in the Obed River region. The Archeological Appraisal Section of the National Park Service has described the area as "unknown country." An intensive field examination to inventory the archeological aspects of the stream corridors is needed.

Limited excavations along the Cumberland Plateau indicate that prehistoric Indians lived in the area since their earliest arrival in the region. The majority of archaic sites discovered are small open sites and rock shelters. Because of the abundance and diversity of game, early hunters occupied the Plateau. It is believed that the first Europeans to visit the area--the "Long Hunters"--intermittently occupied the numerous rock shelters along the Obed River and tributaries.

During the 1700's, the Burke Road or Great Stage Road routed by the Obed River was completed connecting Nashville to Knoxville, Tennessee. This road later linked Nashville to Washington, D.C., and was frequently traveled by such historic figures as Andrew Jackson, Davey Crockett, and Mark Twain. The following description of the Great Stage Road is found in "Cumberland County's First Hundred Years:"

> "Where were all these settlers going who filled the roads so that on the Great Stage Road, at least, you could never stand beside it without seeing wagons or stages moving westward? In the fall of the year, tradition says, the lines of wagons moved in unbroken formation across Cumberland County. At first they went to the settlements in Middle Tennessee but this was also the period of settlement for all the Southern and Western States. It began after 1803 in the Louisiana Purchase States, in 1845 Texas was opened up, in 1846 Oregon and in 1848 California and so on . . . ."

The Alvin York Highway named for a famous United States soldier of World War I, traverses the upper basins of all three study streams.

The distance of the Obed region from major settlements and railroad lines, coupled with its infertile soils, caused the area to be of little significance during the Civil War. Following the Civil War, the Cumberland Plateau gradually evolved a marginal agrarian economy that has largely remained to date.

Economy

The three counties in the Obed study area have made some economic progress during the past 5 years. Some indices show their rate of economic growth has been greater than for the State as a whole. Most economic indicators, however, show that the area still lags behind the rest of the State.

Commercial agriculture is severely hampered by the steep topography of most of the study area. Beyond the immediate stream corridors, however, the relatively level land of the Cumberland Plateau, particularly in the western portions of Cumberland and Morgan Counties, is suited for agriculture.

Income from the sale of agricultural products for Cumberland, Fentress, and Morgan Counties totaled $14.1 million in 1969 compared to $8.8 million in 1964, an increase of about 60 percent. Overall agricultural sales in the State for the same period increased by 18 percent. Agricultural sales in 1969 for the three counties represented 2.3 percent of the State's total. Since 1949, the total number of farms in the counties decreased while the average farm size increased to its present average of approximately 130 acres. Livestock sales account for over half of the total farm income. Poultry, beef, and dairy production are the principal sources of farm income. Chief crops in the region include sorghum, corn, snapbeans, tobacco, pimentos, peppers, hay, and small grains.

The major forest type in the three-county area is upland hardwood. White pine, eastern hemlock, shortleaf pine, and Virginia pine also are of commercial value.

In 1970, the sale of all forest products from Cumberland, Fentress, and Morgan Counties provided $14.5 million or 2 percent of the State total. There were 533 persons employed at 38 primary and secondary processing mills in these counties in 1970.

Manufacturing and the retail trade industries are increasing in importance. During 1960, 22 percent of the Cumberland County work force and 26 percent of the Morgan County work force were involved in manufacturing.

The most important mineral commodity of the Obed area is bituminous coal. Coal production of 407,000 tons in Cumberland, Morgan, and Fentress Counties during 1969 represented 6 percent of Tennessee's total production. Total recoverable coal reserves in the study area stream corridors, however, amount to less than one-half of 1 percent of the estimated total recoverable coal deposits in the three-county area. (See mineral resources map on page 35.)

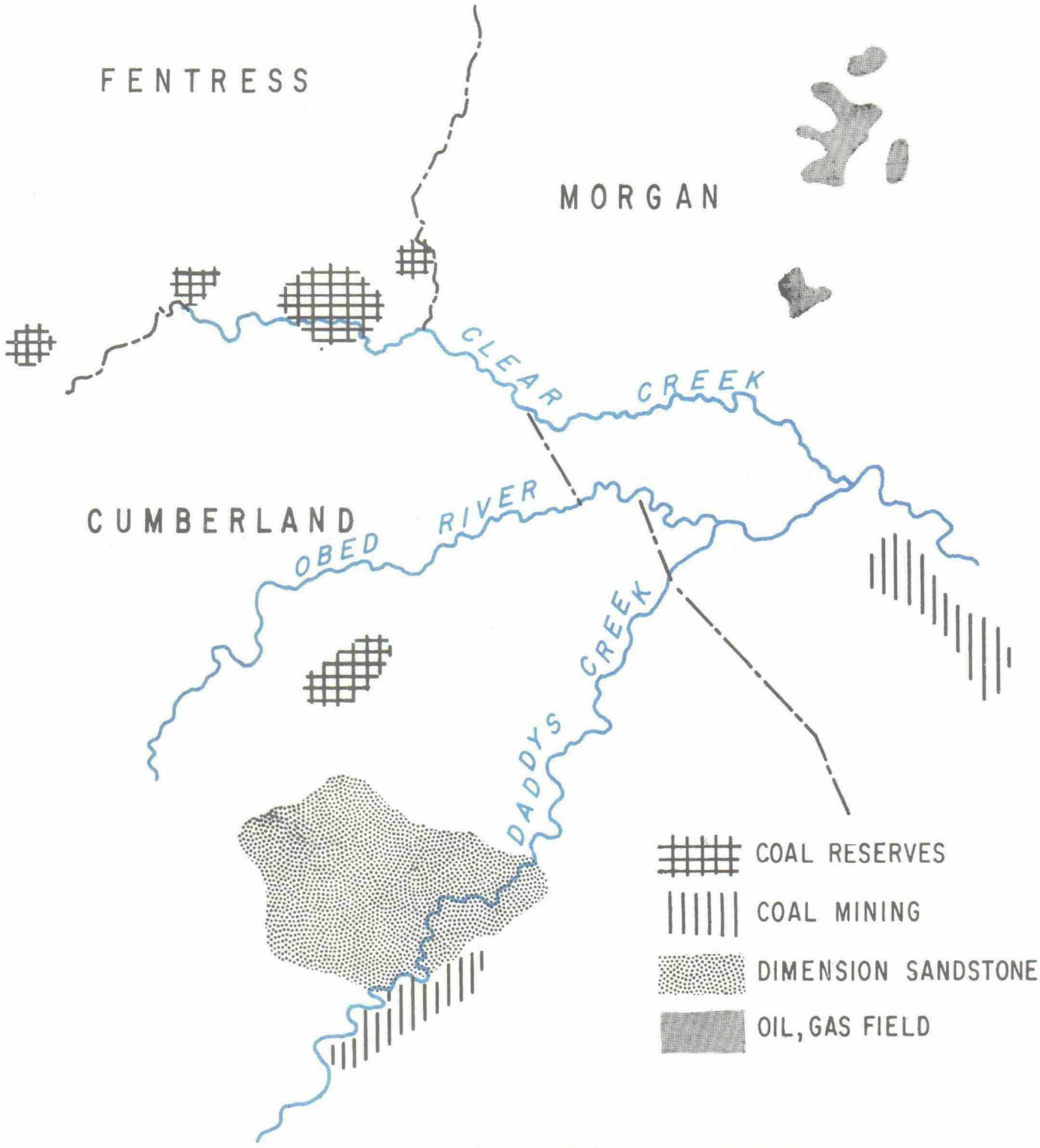
Because of the steady demand for coal used by the steamplants of the Tennessee Valley Authority, the Tennessee coal market has remained relatively stable. Fifty-five percent of the coal mined in Tennessee during 1971 was purchased by the Tennessee Valley Authority. The increase of nuclear-fueled steamplants, air pollution abatement programs, and other factors will probably have long-term effects on the coal mining industry in the future.

Limited deposits of gravel, barite, clay, shale, limestone, sandstone, and sand are present in the Obed River region. Economically recoverable quantities of the latter three minerals exist in the Daddys Creek corridor near Crab Orchard. This area near Crossville, Tennessee, is noted worldwide for its Crab Orchard sandstone used in building. Increases in costs for the manual labor required to quarry this material are expected to cause a decrease in future production.

Increased utilization of the recreation potential of the Cumberland Plateau is indicated by the number of new recreation developments that have been built recently or are presently under construction. A study completed in 1971 by the University of Tennessee, Department of Statistics, estimated total tourist dollars spent in Cumberland, Fentress, and Morgan Counties during 1970 at $3.7 million, an increase of more than 125 percent since 1958. A very minor part of these total expenditures resulted from tourist use of the study stream resources.

Navigability

The Tennessee Supreme Court in a West Tennessee Land Company case (127 Tennessee 575) classified and defined streams in Tennessee as follows:



MINERAL RESOURCES

USDI - BOR, DECEMBER 1973

OBED RIVER

Classification		Criteria
I.	"Legally Navigable"	Sufficient width, depth, and volume for navigation by commercial freight boats.
II.	"Navigable in the Ordinary Sense"	Does not meet the criteria under "Legally Navigable" but can be rafted, etc.
III.	"Not Navigable in any Sense"	Suited only for floating logs.

The Obed River, Clear Creek, and Daddys Creek fall into the "Navigable in the Ordinary Sense" classification. In July 1970, the Tennessee Attorney General's office stated that "In the second class of streams, the riparian owners own the stream and the land under the stream to the center of the stream, subject to a navigation easement in the public, from low water marks to low water marks." All acquisition and easement estimates discussed later in this report include streambed and banks in accordance with the Attorney General's ruling.

Landownership

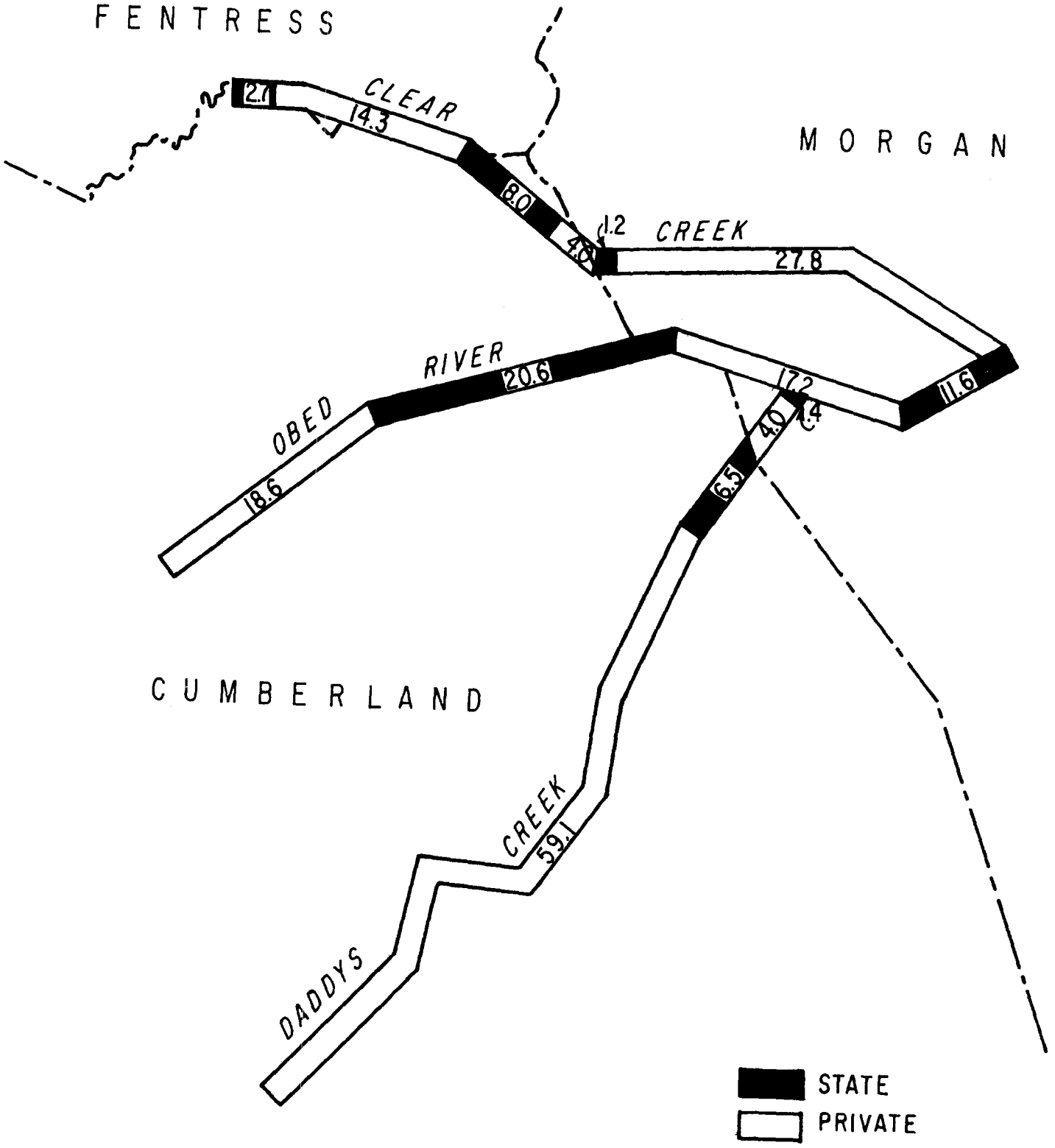
The 80,000-acre State-owned Catoosa Wildlife Management Area is the only public land adjacent to the study streams. The following table reflects the distribution of private landowners along each of the study streams.

Private Landowner Distribution

	Number of Streamside Owners as of June 1971		
Acreage	Obed River	Clear Creek	Daddys Creek
1-25	21	2	30
26-50	7	13	17
51-100	13	8	11
101-200	11	7	14
201-300	2	2	3
301-500	8	3	3
501-999	2	-	3
1,000+	2	3	5
	66	*38	86

*Does not include the section from Catoosa Wildlife Area to State Highway 28 in Fentress County as information was not available.

RIVERBANK OWNERSHIP IN MILES BY COUNTY



Several of the scenic overlooks in the Obed system are privately owned.

Private streambank owners include insurance, land, and timber companies as well as individuals. Six of the 10 streamside tracts exceeding 1,000 acres are individually owned. There is an average of four landowners per stream mile on the Obed River, two per mile on Clear Creek, and three per mile on Daddys Creek.

Population

The total 1970 population of the three counties of the Obed region was 46,946. Fentress and Morgan Counties have experienced a significant loss in population over the last 10 years while Cumberland County's percentage growth parallels the statewide increase of 10 percent. The combined 1970 population of the three principal towns within the Obed study area was 7,821.

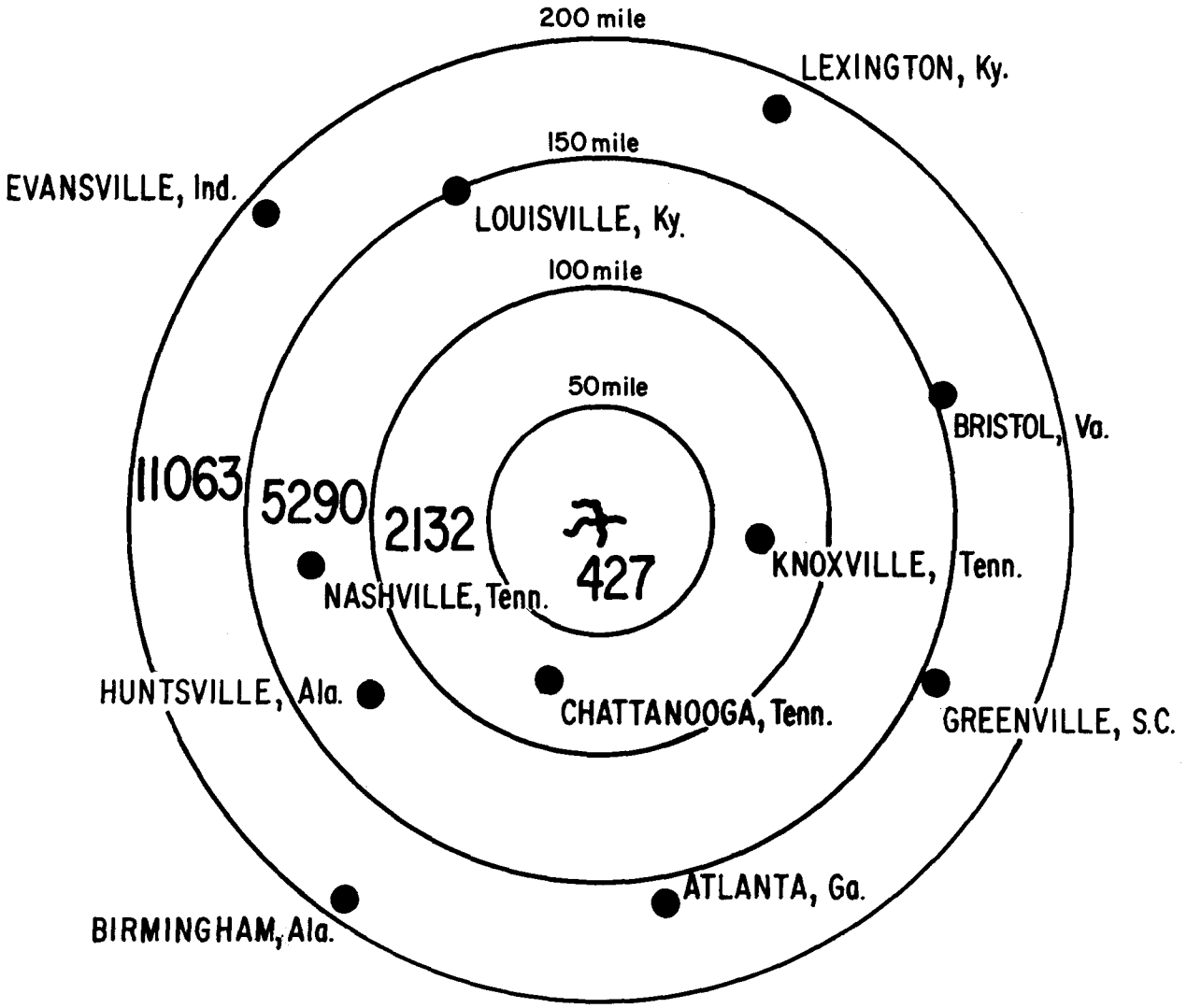
Populations of Principal Towns

City	1960	1970	Percent Change 1960-1970
Crossville	4,668	5,381	+15.2
Jamestown	1,727	1,899	+10.0
Wartburg	540	541	0.0
Total	6,935	7,821	+12.8

Population Data For Obed River Study Area Counties

County	Cumberland	Fentress	Morgan
1960 Population	19,135	13,288	14,304
1970 Population	20,733	12,593	13,619
Percent Change (1960-1970)	+8.4	-5.2	-4.8
Projected 1980 Population*	23,483	14,500	14,903

*State and county population projections for the State of Tennessee, 1970-2020, February 1968, Tennessee State Planning Commission.



ABOVE POPULATIONS (expressed in thousands) ARE CUMULATIVE AND BASED ON 1970 BUREAU OF CENSUS FIGURES.

OBED RIVER REGION POPULATION

USDI - BOR, DECEMBER 1973

OBED RIVER

Land Use and Environmental Intrusions

The rugged terrain of the Obed River study area has discouraged agriculture and similar land uses. As a result, the area is relatively uninhabited and unchanged by man. Some pastures and croplands exist near the upper reaches of all three streams, but these are almost entirely buffered by narrow streamside belts of trees.

Agricultural use at Clear Creek and
Panther Creek is screened by streamside trees.

A major portion of the land is still in forest cover as shown in the following table.

Land Use in the Three-County Obed River Region

County	Cropland	Pasture	Forest	Other	Total Acres
Cumberland	10%	7%	82%	1%	433,920
Morgan	3%	5%	91%	1%	344,960
Fentress	11%	8%	79%	2%	318,720
Total					1,097,600

The rugged terrain has discouraged agriculture and the area is relatively unchanged by man

The following table categorizes stream front land use by acres in 1/4 mile width corridors measured from the center of the streams. Thus the table reflects use of a 40,000-acre area rather than the 15,425 acres proposed for the national wild and scenic rivers system.

Land Use Along Obed River Study Streams

OBED RIVER

Location	(CP)	(F)	(M)	(C)	(O)
To mile 9	39	2,829	12	--	--
Near mile 28	55	5,619	3	*400	3
To mile 36	425	2,123	--	--	12
To mile 39.5	391	716	--	--	13
Acres	910	11,287**	15	400	28

DADDYS CREEK

Location	(CP)	(F)	(M)	(C)	(O)
To mile 21.5	540	6,276	64	--	--
To mile 34	600	3,360	40	--	--
To mile 48	658	3,800	22	--	--
Acres	1,798	13,436	126	0	0

CLEAR CREEK

Location	(CP)	(F)	(M)	(C)	(O)
To mile 4	78	1,202	--	--	--
To mile 29	270	7,697	33	--	--
To mile 52	330	7,020	10	--	--
Acres	678	15,919	43	0	0
Total Acres	3,386	40,642	184	400	28

CP = Cultivated or pastureland
F = Forested land
M = Mining lands
C = Commercial
O = Other

*Forested area being developed for commercial purposes (Catoosa Canyons).
**Includes portions of Catoosa Wildlife Management Area.

Strip-mined area near Obed-Emory confluence before reclamation

Surface coal mining in the summer of 1963 near the confluence of the Obed with the Emory River resulted in an unsightly scar along the river bluff. Remining in 1970 with special reclamation efforts including extensive grading, tree and shrub planting and hydroseeding of grasses resulted in improved aesthetic and wildlife values in the areas. The Tennessee Department of Conservation, Division of Surface Mining, has imposed a moratorium on the issuance of coal mining permits in the watershed of the study rivers until the Obed Wild and Scenic River study is completed. The Tennessee Valley Authority, the major coal consumer in the region, has adopted the following policy:

> The Tennessee Valley Authority accepts no offers of coal mined from locations in or near areas officially designated by State or Federal agencies, or identified by TVA, as wild or scenic river areas; wild, wilderness, natural, scenic, or public recreation areas; or areas under study pursuant to legislative authority for any such official designation, except where special circumstances exist. No such offers will be accepted from locations in or near areas for the above uses unless, after coordination with the appropriate agencies, TVA determines that the coal can be mined without substantially adversely

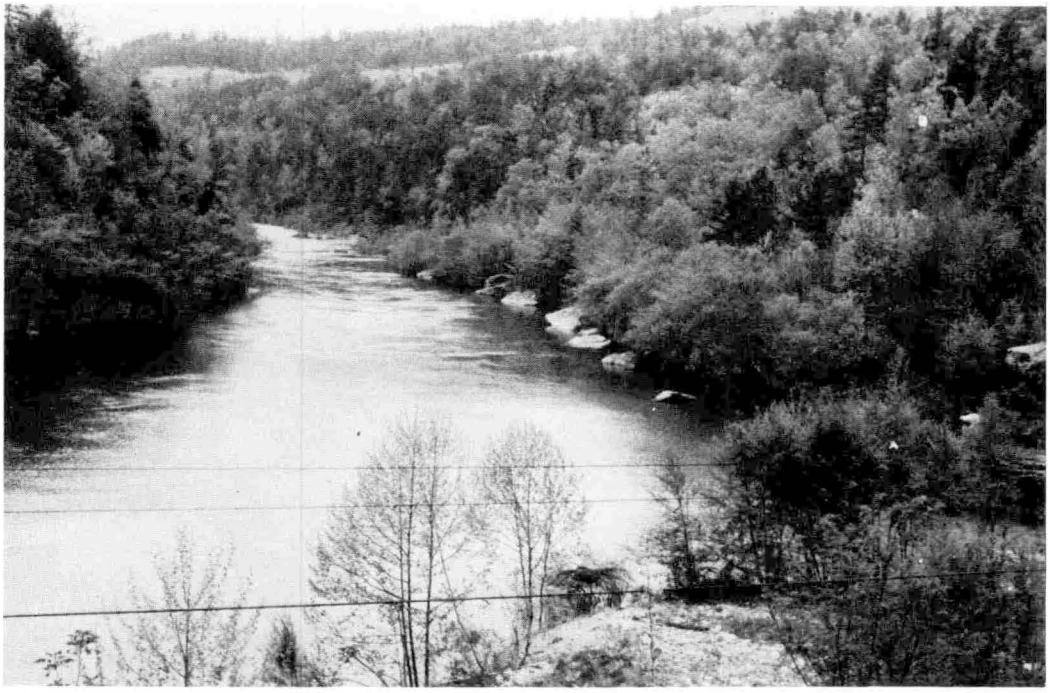
affecting the areas' potential for such use. In such cases, and also in cases involving offerings of coal from mines in or near other visually important areas such as major highways or population centers, special provisions designed to protect aesthetic values are incorporated in the purchase contracts. No coal will be accepted from areas in which in TVA's judgment mining would adversely affect a public water supply and such adverse effect cannot be avoided by proper reclamation.

Twenty-three mining permits in Morgan County and eight permits in Fentress County remain active. No permits are active in Cumberland County.

New private recreation developments as well as expanded public recreation development are attracting more visitors and developers to the Obed River region. Private development, if allowed to continue unregulated, will reduce the effectiveness of efforts to protect the wild character of the three streams.

Catoosa Canyons, a private recreation and summer home development, is under construction near river mile 35 on the edge of the Obed River corridor. Coordination between the developer's plan and the scenic river plan will be essential to preserve the aesthetic and physical qualities of the river unchanged.

Rock formation at Catoosa Canyons development



In 1971, the Tennessee Valley Authority completed construction of the Bull Run-Wilson 500 kv. power transmission line. The line crossed the headwaters of the Obed River, and Clear Creek and Daddys Creek near the middle of its length. It paralleled an existing 161 kv. line in the Obed region. In order to minimize adverse visual effects, high line towers were placed back from the stream-banks and the lines were strung by helicopter. The vegetative cover under the powerline was retained.

Although there are 20 road crossings and one rail crossing of the Obed River, Clear Creek, and Daddys Creek, none parallel the streams. Access to the streams from road crossings is extremely limited because of the steep banks.

Nearby Recreation Opportunities

Numerous recreation opportunities near the study area are provided by State parks, State forests, and Tennessee Valley Authority reservoirs. Many of these are within an hour's driving time of the Obed River.

The 1,425-acre Cumberland Mountain State Park located 4 miles south of Crossville is managed both as a natural area and for intensive recreation use. The terrain of the park is typical of the interesting tableland of this portion of the Cumberland Plateau.

Frozen Head State Park, containing 11,500 acres, is located 5 miles west of Wartburg and, although not presently developed for recreation use, provides opportunity for hunting, picnicking, and hiking. Similar recreation opportunities are provided by the Bledsoe State Forest located near the southwest corner of Cumberland County. The 80,000-acre Catoosa Wildlife Management Area provides a variety of big game hunting and general outdoor recreation opportunity.

Private recreation facilities include the Cumberland County Playhouse. This rustic structure is located on a 12-acre site overlooking Lake Holiday near Crossville, Tennessee. An air-conditioned building seats 500 people and hosts "Tennessee, U.S.A." a musical comedy based on Tennessee history. During the first two seasons, the production attracted 35,000 people from every State in the Union and 14 foreign countries.

Several resort facilities are concentrated around Crossville. Recreation provided by these resorts includes boating, fishing, golfing, swimming, trap and skeet shooting, flying, camping, tennis, and picnicking. An additional resort under construction plans a 10,000-acre ski and hunting facility.

Lamance Falls and Potters Falls are located on Crooked Fork Creek 2 miles southwest of Wartburg, Tennessee, and provide a variety of quality outdoor recreation opportunity. Cascading water falls from natural steps of boulders into emerald colored pools. Potters Falls is privately owned, but neither maintained nor developed. Lamance Falls, privately owned and maintained, has 10 picnic tables and a play area. Both areas are open to the public free of charge.

Regional Recreation Opportunities

For the purpose of assessing outdoor recreation opportunity, the region is defined as that area within a 200-mile radius of the intersection of the Obed River and Interstate Highway 40.

The Tennessee Valley Authority's 170,000-acre Land-Between-the-Lakes model recreation area, located 190 miles northwest of the Obed area, provides a great diversity of recreation opportunity. To the northeast, 50 and 130 miles respectfully, are the Daniel Boone and Jefferson National Forests. Southeast are the Great Smoky Mountains National Park, 75 miles; Cherokee National Forest, 60 miles; Nantahala National Forest, 75 miles; Chattahoochee National Forest, 90 miles; and Pisgah National Forest, 120 miles. Lookout Mountain at Chattanooga, Tennessee, 70 miles southwest, is well known for its spectacular scenic views.

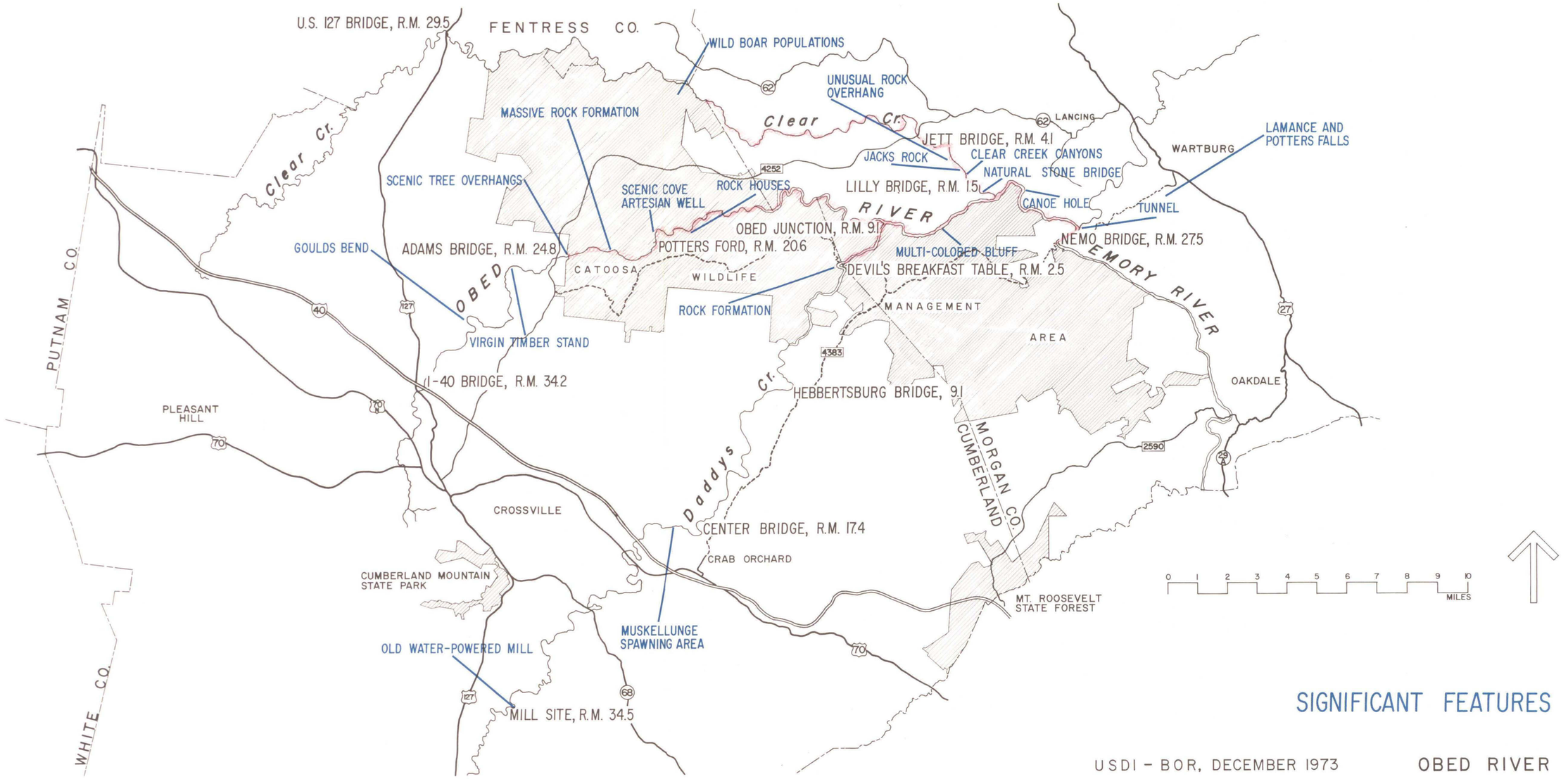
Thirteen Tennessee State parks and forests provide a variety of quality recreation opportunity to visitors of the region. Thirty-seven reservoirs of 5,000 acres or larger provide a total of more than 900,000 acres of water-oriented recreation opportunity. Numerous smaller reservoirs are scattered throughout the region.

The degree of protection provided streams by inclusion in the Tennessee Scenic Rivers Act should be carefully evaluated before an assessment is made of the balance between recreation opportunities of existing impoundments and on protected streams. Until land acquisition programs for State streams have been implemented, Tennessee scenic rivers are vulnerable to deletion from the State system. This fact has been demonstrated by the legislative removal of major portions of the Buffalo and Harpeth Rivers from the Act. However, progress is being made. The land acquisition program to implement Tennessee's first State scenic river is now nearing completion of the Hiwassee River.

There are presently no national wild and scenic rivers in Tennessee or the Southeast. Of the existing 11 Tennessee scenic rivers, only 16.4 miles of stream are classified under criteria comparable to the "wild" classification in the national system. The Eleven Point River in southeast Missouri is the nearest free-flowing stream to the Obed which has been included in the national wild and scenic rivers system. The Chattooga in North Carolina, South Carolina, and Georgia has been studied and legislation introduced in Congress to include it in the system. The Suwannee in Georgia and Florida has been studied and recommended for State action, and the Buffalo in Tennessee remains on the Federal study list. The Big South Fork of the Cumberland in Tennessee and Kentucky has been studied as a potential national river and recreation area, and authorizing legislation has been introduced into Congress.

Significant Features

In addition to the diversity of active outdoor recreation opportunity available in the Obed River, Clear Creek, and Daddys Creek stream corridors, there are numerous natural, historical, geological, archeological and paleontological sites which are of great interest and enjoyment to visitors. The following map displays the most important features identified to date.



SIGNIFICANT FEATURES

USDI - BOR, DECEMBER 1973

OBED RIVER

IV. THE RIVER PROPOSAL AND ALTERNATIVES

Introduction

This chapter outlines the proposal for preserving portions of the Obed River, Clear Creek, and Daddys Creek as a part of our national heritage for the enjoyment of present and future generations. Also outlined is the overall concept from which the proposal was derived and alternatives considered during the formulation stage. (The Emory River is discussed in section 6.)

Authority

Prior to developing a proposal for a potential wild and scenic river area, it is essential to examine applicable laws and guidelines.

In order to qualify for inclusion in the national wild and scenic rivers system, a stream segment must fit one of the following categories as outlined in Public Law 90-542.

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

2. Scenic river--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.

3. Recreational river--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.

Based on the Wild and Scenic Rivers Act, the Departments of Agriculture and the Interior have adopted the following guidelines for streams classified as "wild."

> "The administration of a wild river area shall give primary emphasis to protecting the values which make it outstandingly remarkable while providing river-related outdoor recreation opportunities in a primitive setting."

The guidelines further state that management objectives for a "scenic" river area should parallel those of "wild" areas. However, an increased degree of development, type of land use and accessibility is permitted under the scenic classification.

Findings and Classification

The Obed River task force found that 34 miles of the Obed River, 29.5 miles of Clear Creek, and 34.5 miles of Daddys Creek--a total of 98 miles--possess truly outstanding and remarkable scenic, recreational, geological, and fish and wildlife values and qualify for inclusion in the national wild and scenic rivers system under criteria set forth in Public Law 90-542 and the "Guidelines for Evaluating Wild, Scenic, and Recreation River Areas." Sixteen and one-half miles are suitable for "scenic" classification and 81.5 miles for "wild" classification. Classifications and locations are shown on the Stream Classification map on page 53.

Conceptual Plan

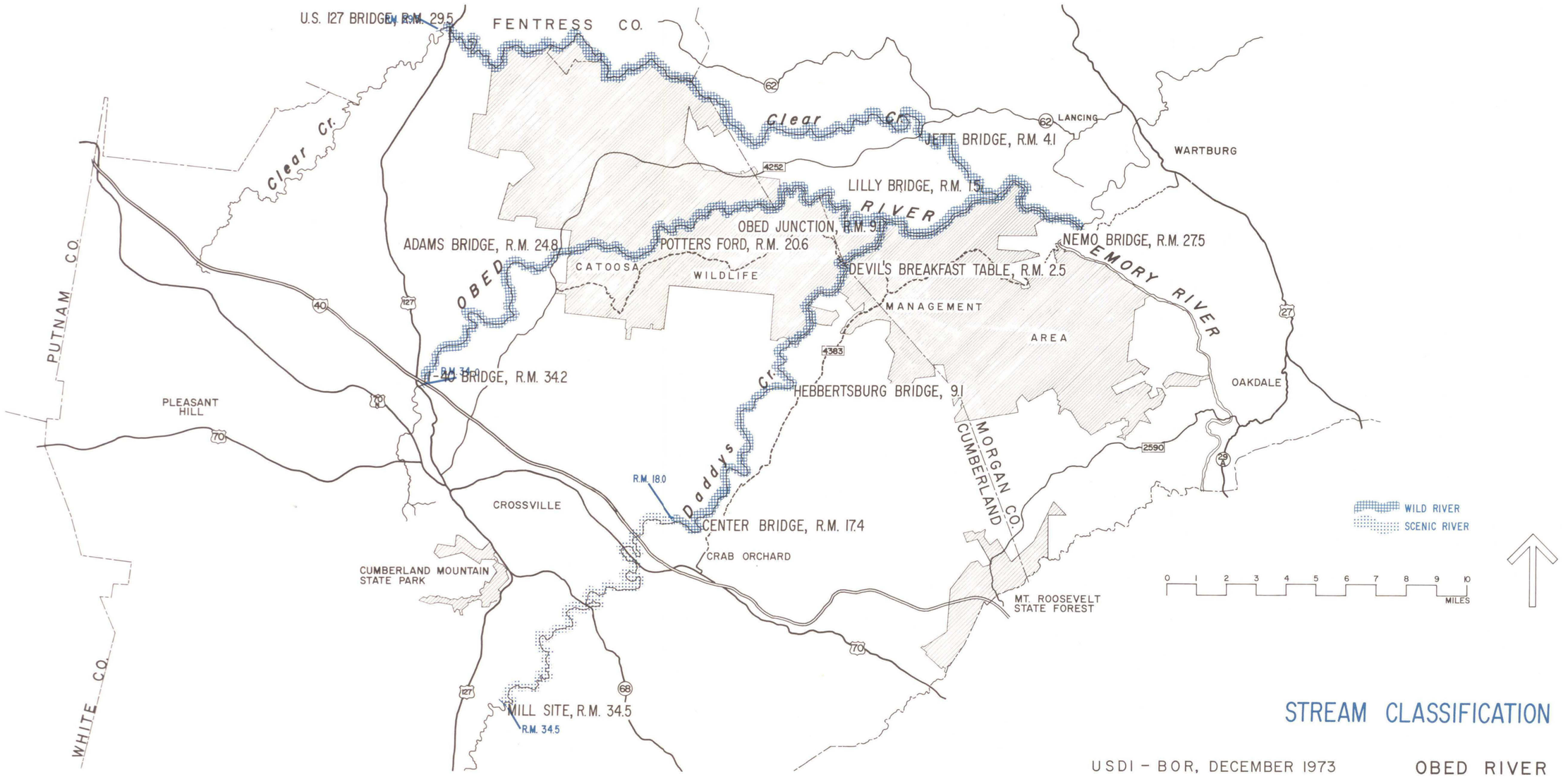
The Obed National Wild and Scenic River framework plan must maintain the integrity of the natural river resource while providing quality public outdoor recreation opportunity for a variety of activities. To achieve this objective, it is necessary to determine the extent of acquisition and development needed and to formulate an administrative proposal.

Acquisition Alternatives

Acquisition methods available for protecting the Obed River are fee simple acquisition, easements, intergovernmental agreements, and zoning. The Act specifies that up to an average of 100 acres per river mile within the boundary of a component of the national system under Federal administration may be acquired.

There are many ways in which the boundaries of a wild river can be defined, from the maximum protection of acquiring the entire watershed, which is usually prohibitively expensive, to the minimum of acquiring the streambed and banks, which limits the protection of the scenic values of the river and the opportunity to provide associated benefits such as hiking trails and overlooks.

The sight line or visual corridor concept was used to estimate the quantity of land necessary to preserve the outstanding values of the river. This concept consisted of defining that land which has a visual impact on the river user and therefore must be protected from adverse use if the natural, scenic value of the river corridor is to be retained.



STREAM CLASSIFICATION

USDI - BOR, DECEMBER 1973

OBED RIVER

Where the riverbanks are low, a strip of land 200 to 500 feet deep on each side will be adequate to protect the view from the river, accommodate a trail, and allow boat landing or portage. Where bluffs front the river on one or both sides, the boundaries could be drawn just beyond the ridge line to insure protection of the slopes and prevent incompatible development on the rim (see diagram on page A-96).

Fee simple--Fee simple acquisition allows all land use to be controlled, simplifying management. It guarantees the right of public access and use and provides maximum assurance against land uses which are not compatible with stream classification. This type of acquisition is normally used for stream corridors where construction of any improvements or land uses such as cropping, grazing, and timber or mineral exploitation are incompatible with the objective of preserving the outstandingly remarkable qualities of the river. Fee simple acquisition also allows full compensation to the landowner for the value of his property.

Easements--Easements can provide effective resource protection along stream sections where less stringent controls are necessary. Many types of easements could be negotiated which would protect the aesthetic values of the streams. A scenic easement might permit compatible agricultural uses and control noncompatible uses such as commercial or high density residential development. An easement for public use could also be arranged; but, in general, where rather intensive public use is necessary for boat launching, camping, hiking, and trail riding, etc., purchase of the full title is desirable. Preservation easements could keep the land in its present state without further increase in development. However, in cases where the degree of control exercised causes the cost of an easement to approximate the full value of the property, fee simple acquisition is preferable. A list of recommendations for scenic easements is included in the appendix (page A-98).

Fee easement combination--This concept, incorporating advantages of both fee acquisition and scenic easements, would allow existing compatible land uses such as agriculture along relatively level stream bottom lands to continue while assuring public recreation opportunity along the streambanks for floating, hiking, and fishing. A diagram illustrating this concept is included in the appendix (page A-97).

Intergovernmental agreements--Written agreements between governmental agencies with resource management and control responsibilities at Federal, State, and local levels can provide an effective and economical means of protecting land and water resources. Such agreements are highly suitable and desirable for the Obed National Wild and Scenic River proposal because of the large amount of State-owned property adjacent to the study streams.

Zoning--The State of Tennessee, along with the counties involved in the Obed River area, is empowered to formulate and enact zoning regulations. Zoning ordinances, if properly formulated and implemented, can be used efficiently and economically in certain situations to protect resources and reduce the need for fee acquisition and easements. Highly restrictive, low density zoning, however, often becomes the victim of pressures to permit more profitable development. Because of its inherent weaknesses, zoning as a means to protect the resource is not recommended within the proposed Obed National Wild and Scenic River boundary. It is recommended that Morgan, Cumberland, and Fentress Counties, in addition to the Tennessee legislature, consider zoning to protect the watershed outside the proposed wild and scenic river boundary.

No acquisition--This alternative would allow the present trends of land use and development to continue. The rugged terrain typical of the Obed River study area has until now discouraged intensive land uses.

However, many of the currently forested and pastured lands in the Obed area will be utilized in the future for other purposes, including recreation development, homesites, and associated goods and services. Uncontrolled development of cabins, vacation homes, and recreation structures in the vicinity are the greatest immediate threat to the present character of the stream corridors.

Zoning regulations for building codes have not been adopted by the Obed River counties. Selection of development sites and building standards has been left to individual owners and builders. It is questionable whether without Federal or State action, effective standards and controls can be established by local government soon enough to prevent deterioration of the river's wild and scenic qualities.

Abandonment of surface coal mining sites without reclamation has exposed the Obed River system to potential dangers from acid-mine drainage and siltation. In addition, the aesthetic qualities of the stream corridor bluffs are affected. As the price of coal increases, small scale operations mine previously uneconomical seams. Local or State controls, combined with the enforcement of existing water pollution control laws, are now a necessity to prevent damage from such mining operations.

Correction of these existing trends toward deterioration would be necessary to perpetuate the qualities which make the Obed a potential national wild and scenic river.

Surface coal mining is a potential threat to the visual and water quality of the Obed

Acquisition Proposal

The proposal for protection and recreation use of the Obed system involves 15,425 acres of land for an average of 156 acres per mile for the 98 miles of stream included. An average of 93 acres per mile is proposed for fee acquisition, with easements and intergovernmental agreements to protect the remainder.

Because of the very high quality of this resource, which qualifies it as part of the national system, and the development pressures which currently are felt around it, acquisition is desirable as soon as possible. It is proposed that acquisition be a 50-50 cooperative effort by the State of Tennessee and the Federal Government in order to create the maximum economic advantage and to expedite implementation. Total State acquisition is not considered feasible at this time because of heavy commitments to acquisition on other State scenic rivers. Because of the State's interst in sharing in the acquisition effort and the large landholdings which the State already has in the Catoosa Wildlife Management Area, total Federal acquisition is not recommended.

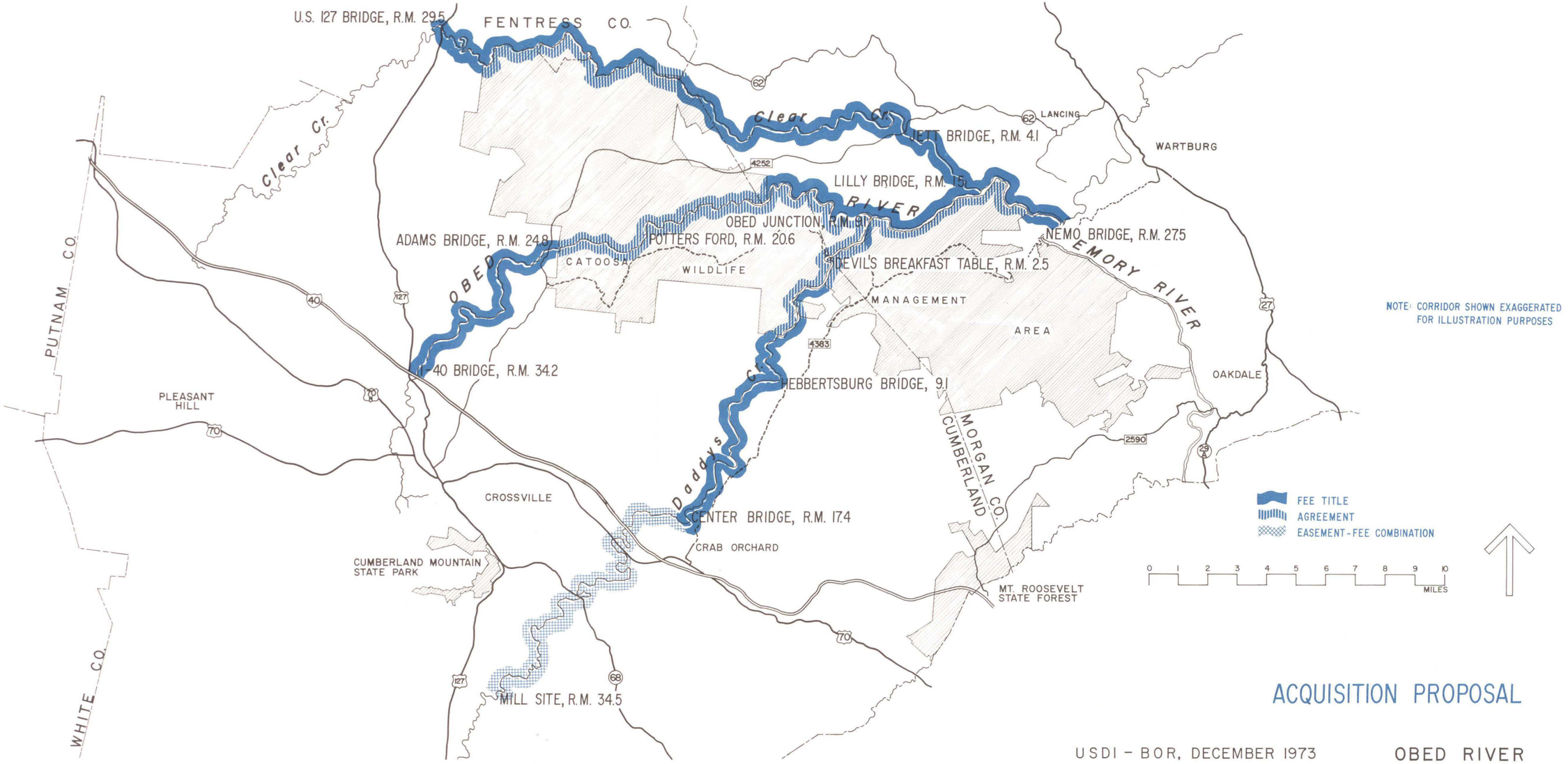
Twenty-eight percent of these streamside lands or 3,971 acres lie within the State-owned Catoosa Wildlife Management Area, administered by the Tennessee State Game and Fish Commission, and should be included in the system under a Federal-State agreement at no cost to the Federal Government. Seventy-two percent of the streamside lands or 11,454 acres are privately owned. Every effort should be made to implement the proposal through the acquisition of easements where feasible and compatible with the project purposes. It is estimated that 9,111 acres are suited for fee title acquisition and 2,343 for scenic easement.

A detailed acquisition plan should be drawn up by the State of Tennessee and the participating Federal agency as part of a master plan for the national wild and scenic river.

Proposed Location of Acquisition, Easement, Agreement in Acres

County	Fee Title	Scenic Easement	Intergovernmental Agreement*	Total
Cumberland	4,465	2,343	2,533	9,361
Morgan	3,849	0	1,222	5,071
Fentress	797	0	196	993
Total	9,111	2,343	3,971	15,425

*Existing State lands in proposed boundary.



ACQUISITION PROPOSAL

USDI - BOR, DECEMBER 1973

OBED RIVER

Administration Alternatives

There are three principal alternatives for administering the proposed Obed Wild and Scenic River: State administration, Federal administration, and combined State-Federal administration. Local governments could also participate in administering the proposed area through agreements under any of the administrative alternatives. Such participation should be encouraged.

Total State administration--Twenty-eight percent of the streamside land along the Obed River, Clear Creek, and Daddys Creek is owned and administered by the Tennessee State Game and Fish Commission. Tennessee could provide protection for the Obed by including it in the State scenic rivers system pursuant to the Tennessee Scenic Rivers Act of 1968, which designates the Tennessee Department of Conservation, in cooperation with the State Game and Fish Commission, to administer the streams in the Tennessee scenic rivers system.

Tennessee could also provide protection for the Obed by acquiring, developing, and including it in the State Scenic Rivers System and requesting the Secretary of the Interior to designate the river as a part of the national system. Section 2(a)(ii) of the Wild and Scenic Rivers Act provides that State rivers which are designated as wild, scenic, or recreational river areas by or pursuant to an Act of the State legislature and which are permanently administered as such by an agency or political subdivision of the State at no cost to the United States and which meet the criteria in the Act and the guidelines may, upon application by the Governor, be included as State administered components in the national system by the Secretary of the Interior.

However, adequate State funding for total acquisition and development or administration, is problematic. It appears doubtful at this time if any additional streams will be added to the State system prior to implementation of the streams already designated as State scenic rivers. The State is presently heavily committed to acquisition on designated State rivers. It is therefore unlikely that the State will be able to move rapidly enough to protect the major river resource values without substantial Federal participation in acquisition, development, and administration.

Total Federal administration--The area could be administered as a Federal component of the national system by any of the following agencies: The National Park Service, the Tennessee Valley Authority, the Corps of Engineers, and the Forest Service.

RIVER NOT IN NAT. FOREST!

NO CORPS PROJECT INVOLVED!

An Act of Congress would be required to include the Obed River in the national system under Federal administration.

Congressional designation of the Obed and tributaries as components of the national wild and scenic rivers system is the most expedient means of protecting the resource. However, because of the large amount of streamside land owned and administered by the Tennessee State Game and Fish Commission and Tennessee's leadership, interest, and experience in scenic rivers, benefits resulting from total Federal administration of the proposed area appear marginal.

Combined State-Federal administration--This alternate administration concept would share responsibility between Federal and State government for the management and administrative decisions for the proposed area. Local government and private entities could also play a cooperative role in determining how well the outstanding physical and aesthetic qualities of the Obed River system are preserved and enhanced. A coordinated approach by all these interests to plan implementation is essential.

It would be possible for management of the entire river corridor to be a joint project or for the State to continue to administer the riverbank lands contained in the Catoosa Wildlife Management Area and for the designated Federal agency to administer all or part of the additional lands acquired outside the boundaries of the management area.

Formal agreements between the Tennessee State Game and Fish Commission, the administering body for the Catoosa Wildlife Management Area, and other possible State or Federal administrative participants would be essential for coordinated and efficient management.

Roads leading into the Catoosa Wildlife Management Area essential for access to the proposed area are periodically closed. The Tennessee Game and Fish Commission takes this action during non-hunting seasons to minimize internal road damage. Public use is controlled during the big game hunting season by permits for certain wildlife management units. A public information program supplementing coordinated regulations between the State Game and Fish Commission and the Federal administrative agency of the proposed Obed River would be needed.

Administration Proposal

It is proposed that the Federal Government and the State of Tennessee share in the administration and development as well as in the acquisition of the proposed Obed National Wild and Scenic River. Because of their previous experience in cooperative projects with the State of Tennessee, present activities in the Obed River area, and interest in diversifying outdoor recreation opportunities in the region, the Tennessee Valley Authority is the Federal agency proposed to participate in acquisition, development, and management of this project. Section 22 of their authorizing Act provides for demonstration recreation projects, designed to be turned over in the future to the State for their total administration.

A master plan would be prepared by the State of Tennessee jointly with the Tennessee Valley Authority and in consultation with affected local agencies. This plan would be produced and submitted to the Secretary of the Interior for approval within 1 year from the time Congress authorizes the project. It would provide cooperative agreements between the State and Federal Government which would outline responsibilities of each party for acquisition, development, and management of all or specific portions of the river. A special management unit for the national wild and scenic river should be provided for in the master plan and created after approval of the plan.

The lands involved in the Obed National Wild and Scenic River would thus be subject to the provisions of the Wild and Scenic Rivers Act, Public Law 90-542, and the Acts under which the Tennessee Valley Authority is administered. In case of conflict between the provisions of these Acts, the more restrictive provisions should apply. The master plan should be drawn up according to the management objectives provided in "Guidelines for Evaluating Wild, Scenic and Recreational River Areas Proposed for Inclusion in the National Wild and Scenic Rivers System Under Section 2, Public Law 90-542."

Development Alternatives

Appropriate activities--Prior to proposing development of a resource for recreation use, it is essential to identify the activities compatible with the resource. The portions of the Obed River, Clear Creek, and Daddys Creek proposed for inclusion in the national system will provide high quality opportunity for white water canoeing, floating, hiking, wading, picnicking, sightseeing, fishing, hunting, conservation education and nature study.

Methodology--Two methods are employed in planning the recreation development of a river. The first entails an inventory of the resource to determine the optimum development point to provide a balance between maximum public use and maximum protection of the physical and aesthetic qualities of the resource. The second method involves projecting anticipated visitor demand on the resource over a given period of time to determine the degree of development needed to meet the estimated carrying capacity and demand.

The first approach is deemed more suitable for the Obed River study area because of the almost exclusively "wild" classification recommended for the river and the rugged topography which severely limits recreation development potentials. If development were based on demand, it is probable that future uncontrolled visitor use of the Obed would exceed the capacity of the resource to sustain it, resulting in loss and degradation of its outstanding qualities.

Carrying capacity--Carrying capacity is defined as the maximum annual use the resource can withstand without physical damage or reduction of the quality of recreation experience. Preservation of the "wild" and "scenic" resources of the Obed River will necessitate establishment of a sustainable carrying capacity and subsequent enforcement of use limitations. Visitor demand for the Obed National Wild and Scenic River area during periods such as the Labor Day weekend will exceed the carrying capacity for certain activities. In this study, accommodation of total demand during peak periods is not included in estimating the annual carrying capacity of the resource.

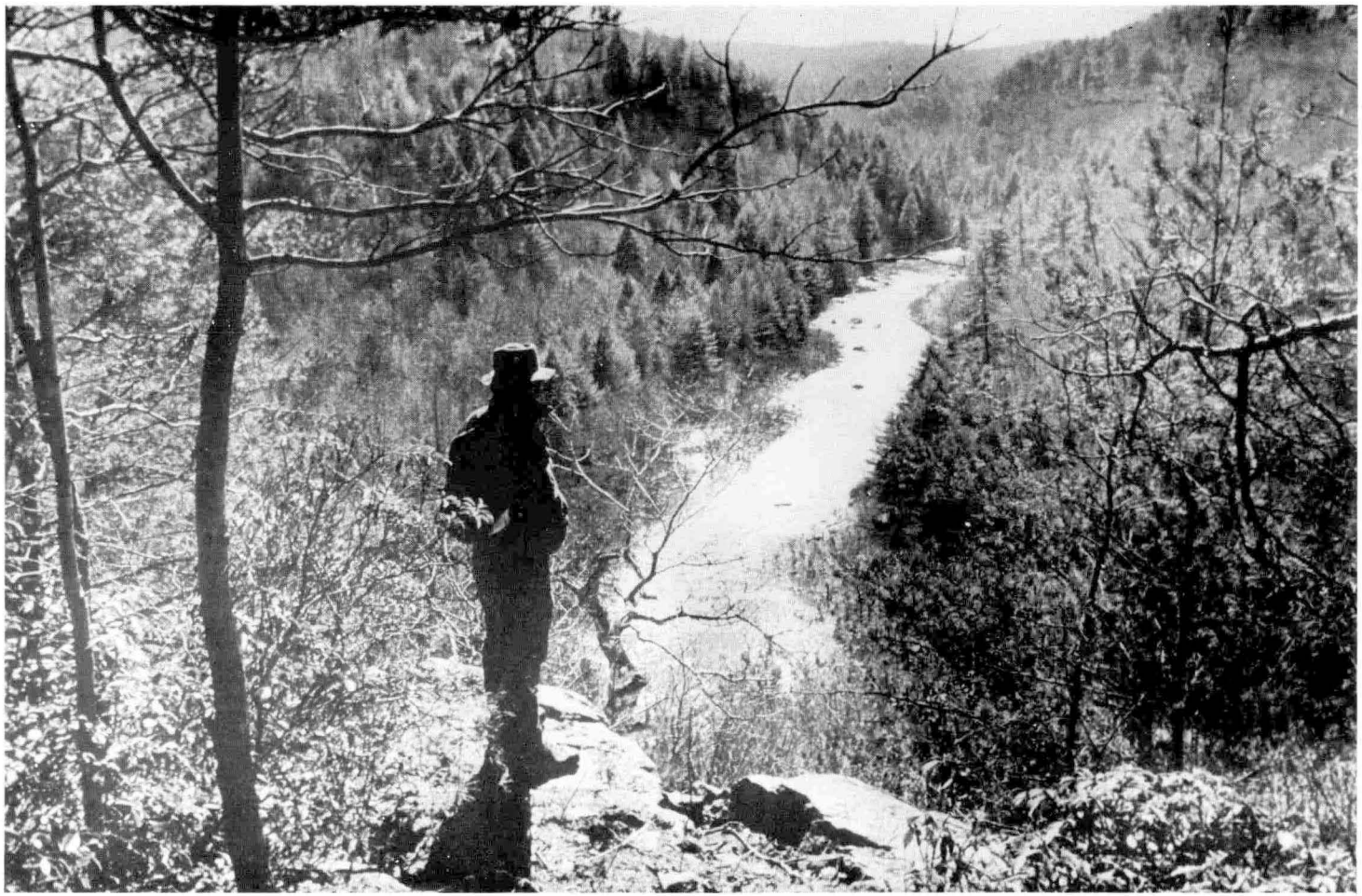
The following factors were considered in establishing carrying capacity for the stream corridors.

1. Recreation activities compatible with the river resource.

2. Accessible land suitable for recreation use.

3. Stream corridor classification.

4. Interrelationships between recreation activities.



Hiking is a year-round activity on the Obed

5. Time of year anticipated activities take place.

6. Surface cover and topographical variations.

Location, type, and design of a recreation facility greatly influences the amount and quality of use that can be provided and the extent of impact on the resource.

A study conducted for the Forest Service by Robert C. Lucas concerning the recreational capacity of the Quetico-Superior Area reveals that the distance separating user groups is the most significant factor affecting quality of experience in a wilderness area. Topography, density of vegetation, and the psychological attitudes of the visitor must also be related to separation in the determination of resource carrying capacity. These factors are also applicable to the quality of experience on wild and scenic rivers.

The following maximum instantaneous carrying capacities were developed in 1970 by the Forest Service for the Chattooga Wild and Scenic River Study.

Activity	Stream Classification	Maximum Instantaneous Carrying Capacity
Floating	Wild	10 craft/mile & 2 people/craft
Hiking	Wild	8 parties/mile & 4 people/party
Hunting	Wild	50 acres/hunter
Fishing	Wild	8 fishermen/mile

Carrying capacity limitation--The estimated maximum annual carrying capacity for the proposed Obed Wild and Scenic River area is 580,000 visitor days. This annual figure was derived by using the above instantaneous carrying capacities. The available resources were evaluated and the instant carrying capacities, expressed as people at one time (PAOT), determined. The PAOT figures were then converted to annual visitor days using factors such as length of recreation season, peak periods of use, extent of activity participation, and turnover rates.

Sandstone bluffs and boulders dwarf canoeists on the Obed River.

Activity	Unit Resource	People At One Time	Annual Visitor Days
*Sightseeing from scenic overlooks	4 overlooks	80	74,880
White water canoeing	52 miles	1,040	121,680
Rafting, tubing	46 miles	920	107,640
Hiking (designated trails)	18 miles	576	63,900
Other hiking and related activities	60 miles	1,920	199,680
Swimming, wading	50 acres	250	39,000
Hunting	5,000 acres	100	2,600
Fishing	50 miles	200	23,400
Camping	20 acres	100	7,800
Picnicking	50 acres	250	39,000
			679,580

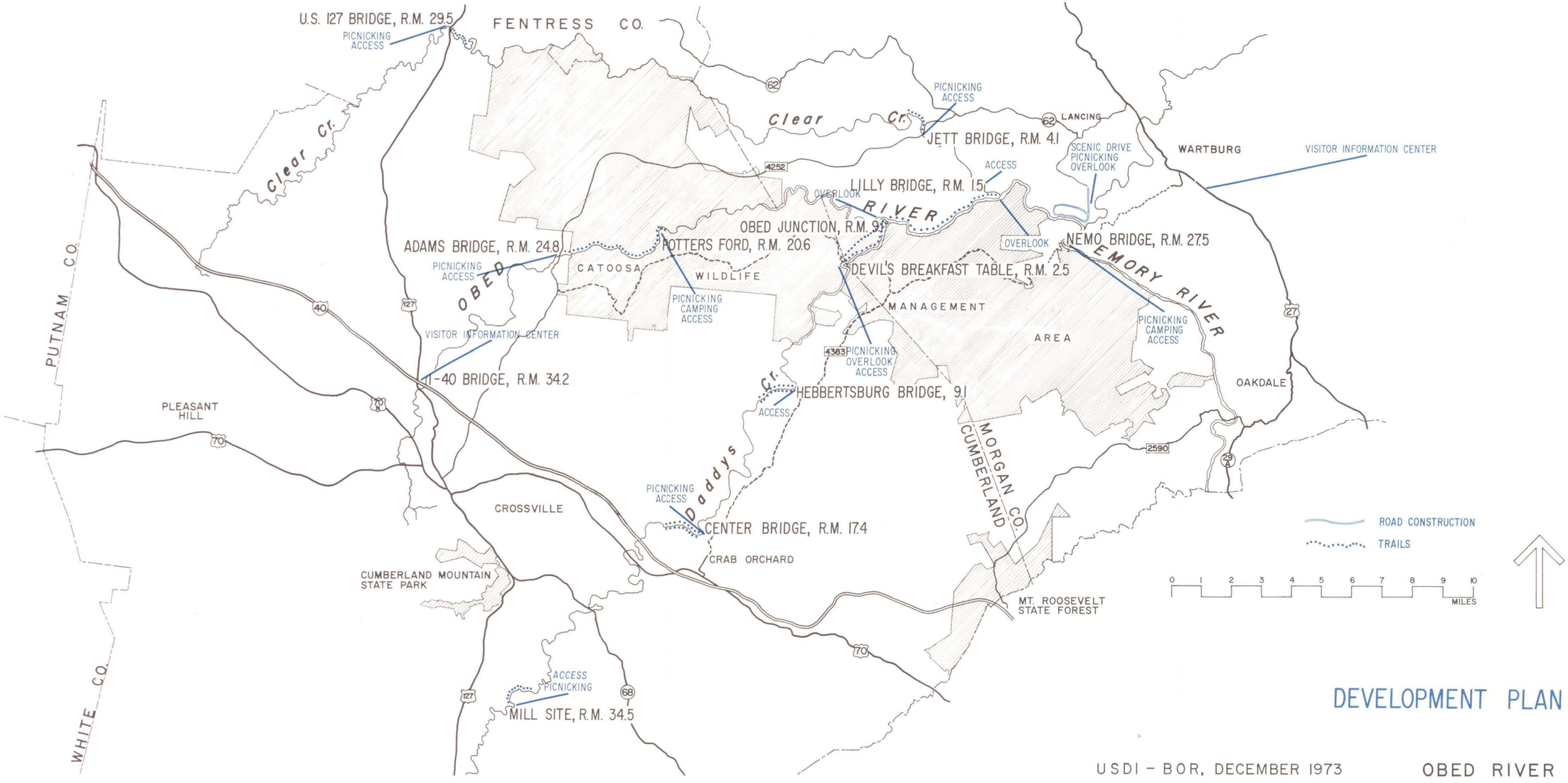
*Does not include proposed visitor information centers near Crossville and Wartburg, Tennessee.

The annual carrying capacity of 580,000 visitor days for the proposed area is less than the calculated total annual visitor days of 679,580. This reduction is an adjustment to compensate for activities which would share the same resource such as floating and fishing. On-the-ground evaluation by the administering agency over a period of years will be required to establish the final carrying capacity of the resource.

Development Proposal

Stream corridors are currently without recreation facilities. Small, undeveloped, scalped-out areas at road crossings presently serve as focal points for recreation use. The majority of future recreation facility development is proposed near these areas to minimize impact and avoid construction of new access roads. All developments, where possible, would be screened from view from the river. A tentative development plan is mapped on page 69.

Floating--Nine access points are proposed to facilitate canoeing, kayaking, rafting, and tubing activity. Support facilities for floating have been located on the basis of existing roads, soils and vegetation, stream suitability, stream difficulty classifications, float distance, and currently popular float stretches. Development should consist of a setback parking area and turnaround connected by trail to a launching site for nonpowered boats. Powered boats should be prohibited from the wild classified sections.



DEVELOPMENT PLAN

USDI – BOR, DECEMBER 1973

OBED RIVER

Picnicking--Picnic units at nine access sites are proposed. Topographic and vegetative characteristics are of a nature to permit picnic users a view of the stream without exposing developed areas to view from the stream. Development of these sites would provide picnicking opportunities to accompany all types of recreation activity and would be served by nearby parking facilities.

Scenic overlooks--Four overlooks are proposed to afford the visitor outstanding views of the truly spectacular scenery of the white water and gorges of the Obed River. Overlooks would provide large numbers of visitors with a view of the area without decreasing the quality of recreation experience within the gorge areas.

Visitor information centers--Two visitor information centers, one near Crossville and one near Wartburg, are proposed to serve as the public focal points for the Obed National Wild and Scenic River. A facility on Interstate 40 provides a view of the Obed River and accommodates rapid visitor turnover. The center would allow large numbers of visitors a brief view of the headwaters of the Obed River and provide them information concerning the outstanding qualities of the resource and the public outdoor recreation opportunity provided. Another information center could be established in conjunction with the Frozen Head State Park at Wartburg, Tennessee.

Interpretive facilities--Interpretation of significant natural features including flora and fauna will be an important part of the public appreciation of the Obed River area. An interpretive program should be planned as a facet of the overall development concept. Proposed trails, visitor information centers, the Catoosa Wildlife Management Area, and some of the river access points (such as the Devils Breakfast Table) should be used as part of the interpretive program.

Scenic drives and access roads--A scenic drive should be constructed along the strip-mine site overlooking the Obed-Emory confluence. The one-way loop drive approximately 2 miles in length should include spurs for pulling off the road and a short trail leading to an overlook. Vehicle access to other proposed overlooks should be terminated a minimum of 300 feet from the vistas to reduce intrusion and environmental impact on the sites. The construction of additional roads or the widening of roads beyond two-lane standards is not recommended.

Fishing--An intensive fishery management program for existing species should be initiated under the guidance of the Tennessee State Game and Fish Commission for the proposed stream segments.

Camping--Primitive camping units to serve canoeists and hikers are proposed for the Potters Ford area at river mile 21 on the Obed. Currently, this area is used for camping during the fall and winter months by big and small game hunters. Development consisting of sanitation facilities and a potable water source would be located on the perimeter of the river corridor near the ford to minimize streambank degradation and vegetative losses normally associated with streambank camping.

Private recreation development in the local and State forests and parks outside the boundary of the proposed area would continue to provide most of the camping opportunity in the region. One hundred and twelve camping units are located within a 15-minute drive of the three study streams, and additional development providing camping, picnicking and other recreation opportunities will soon be completed within a 5-minute drive of Adams Bridge on the Obed River.

Hiking--Nine trails, totaling about 18 miles in length, should be constructed in conjunction with overlooks and access points to facilitate recreation activities including photography, sightseeing, nature study, hunting, and fishing in addition to hiking. Very little hunting activity is anticipated in the stream corridors, however, because of rugged topography. Motorized vehicles, including trail bikes, would be prohibited. Access points currently enabling vehicular use of trails should be blocked. Numerous undesignated existing trails within the Catoosa Wildlife Management Area resulting from past logging operations can provide additional trail opportunity.

Cost of Proposal

Total land acquisition costs for the Obed proposal are estimated at $4,163,000, based on an estimated value in 1971 of $400 per acre for streamside lands. The annual operation and maintenance estimate is based on a visitation estimate of 50,000 for the first year.

Preliminary Cost Estimates

Land Acquisition

	Acres	*Total Cost ($000)*	*50% Federal Share*
Fee	*9,111*	*$3,694*	*$1,847*
Easement	*2,343*	*469*	*235*
Agreement	*3,971*	*00*	*00*
Total	*15,425*	*$4,163*	*$2,082*
Development		*$ 768*	*$ 384*
TOTAL		*$4,931*	*$2,466*
Annual Operation and Maintenance, year 1		*$ 35*	*$ 18*

V. ECONOMIC IMPACT OF PROPOSAL

Recreation, timber production, coal mining, and real property are considered in assessing the impact of the proposal on the economy of the region. Estimated economic benefits resulting from establishment of the proposed area are expected to exceed losses occurring from economic activity curtailed.

Recreation Use

Annual public use of the proposed area is expected to exceed 175,000 visitor days in the 10th year following establishment. (A visitor day is defined as a visit by one person to the area for 1 day regardless of the portion of that day spent in the area or the number of activities pursued.) Annual visitor expenditures, of minor economic significance at present, are projected to exceed $1.7 million (1971 dollars) by the 10th year following establishment. Since facilities in the river corridor will be minimal and designed primarily for day use and stream access, the nearby towns of Crossville, Wartburg, and other small communities are expected to provide tourist-oriented services and goods.

Existing recreation use--Estimated current recreation use of the resources included within the proposed boundary is 12,900 visitor days although the absence of recreation development within the stream corridors and the lack of visitor use data make it difficult to estimate the present recreation use. Existing use in the Obed River, Clear Creek, and Daddys Creek corridors is widely dispersed and virtually independent of developed facilities. Floating, fishing, hunting, picnicking, and sightseeing are the major activities. Local residents, conservation groups, and visitors to the Catoosa Wildlife Management Area constitute the majority of existing use.

The figures for the Catoosa Wildlife Management Area provided by the State Game and Fish Commission indicate the extent and quantity of existing public use in the region. (See table following on page 75.)

Areas currently used by the public have no facilities and are little more than clearings by the river.

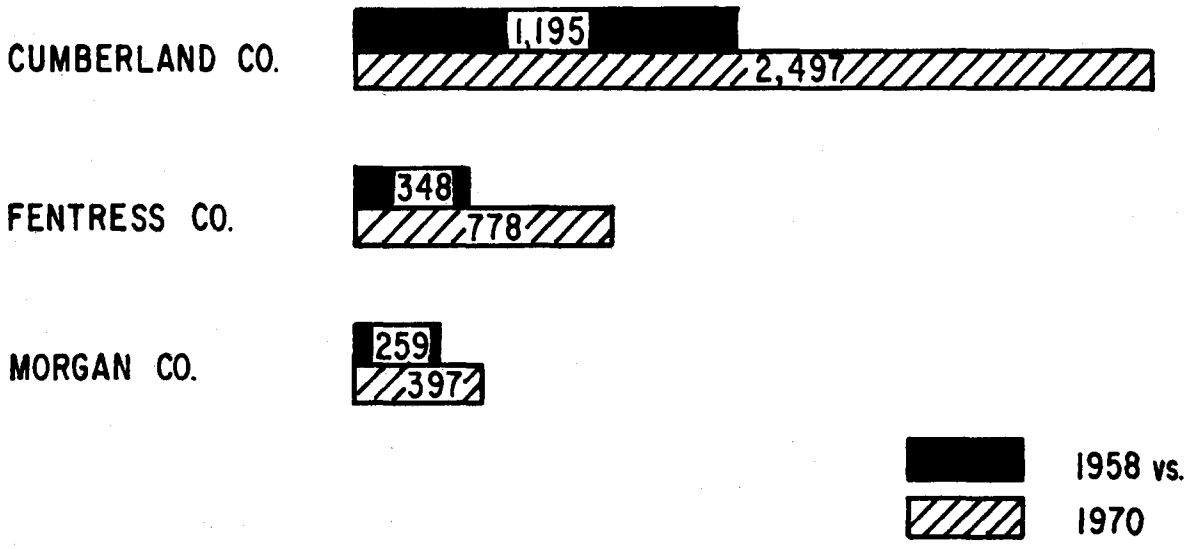
Activity	1966 Use Visitor Days	Estimated 1971 Use Visitor Days
Hunting	17,650	21,180
Sightseeing	10,000	12,000
Prehunting scouting	5,500	6,600
Picnicking	1,800	2,100
Fishing	1,200	1,440
Camping	800	960
Swimming	500	600
Nature study	200	240
Photography	150	180
Hiking	100	120
Floating	-	200
Totals	37,900	45,620

The Catoosa Wildlife Management Area is one of the most popular hunting areas in Tennessee. During the fall and spring of 1971, 9,186 big-game hunters and 363 turkey hunters visited the area. The deer harvest on the area from 1966 through 1971 totaled 2,965, compared to a total harvest of 685 for the remainder of Cumberland and Morgan Counties. Thousands of small-game hunters also use the area each year.

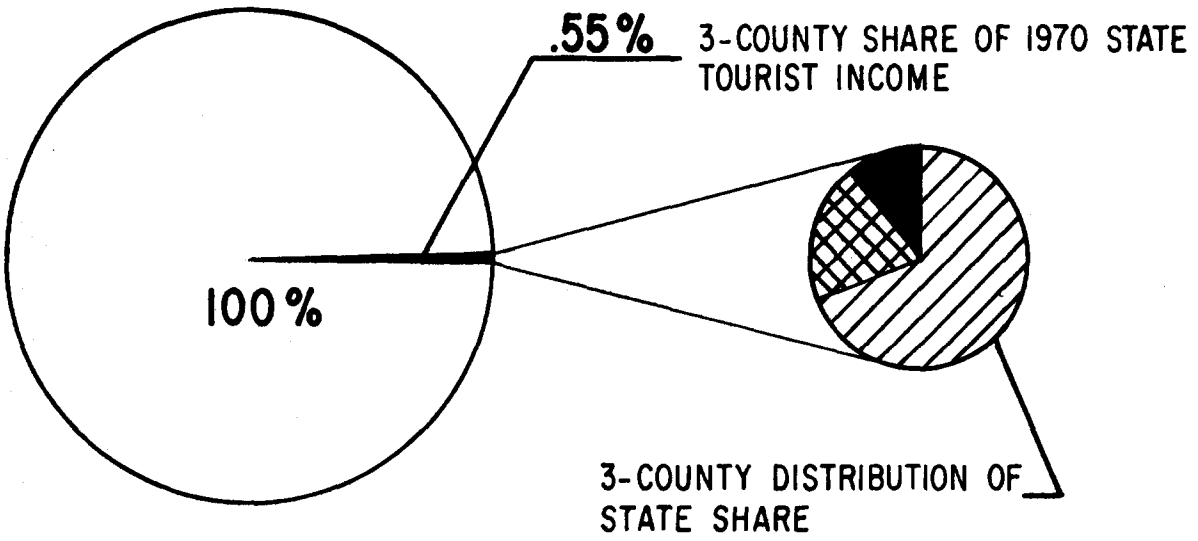
Although more than 8,000 vehicles cross the study streams daily on Interstate 40, only a small fraction now utilize the recreation resources considered in this proposal. Three factors are probably responsible for the limited use of the stream corridors: Lack of publicity and general knowledge of the quality of the resource, inadequate access, and lack of recreation facilities.

The following graphs show the extent of visitor use and amount of tourist expenditures in the counties most directly related to the Obed River area.

EXPENDITURES BY ALL TOURISTS IN 1,000's OF DOLLARS



LOCAL SHARE OF TOTAL STATE TOURIST EXPENDITURES



Potential recreation use--Implementation of proposals set forth in this report would modify existing use constraints. Inclusion of the Obed and its principal tributaries in the national wild and scenic rivers system will focus widespread attention on the recreation opportunity which the area can provide.

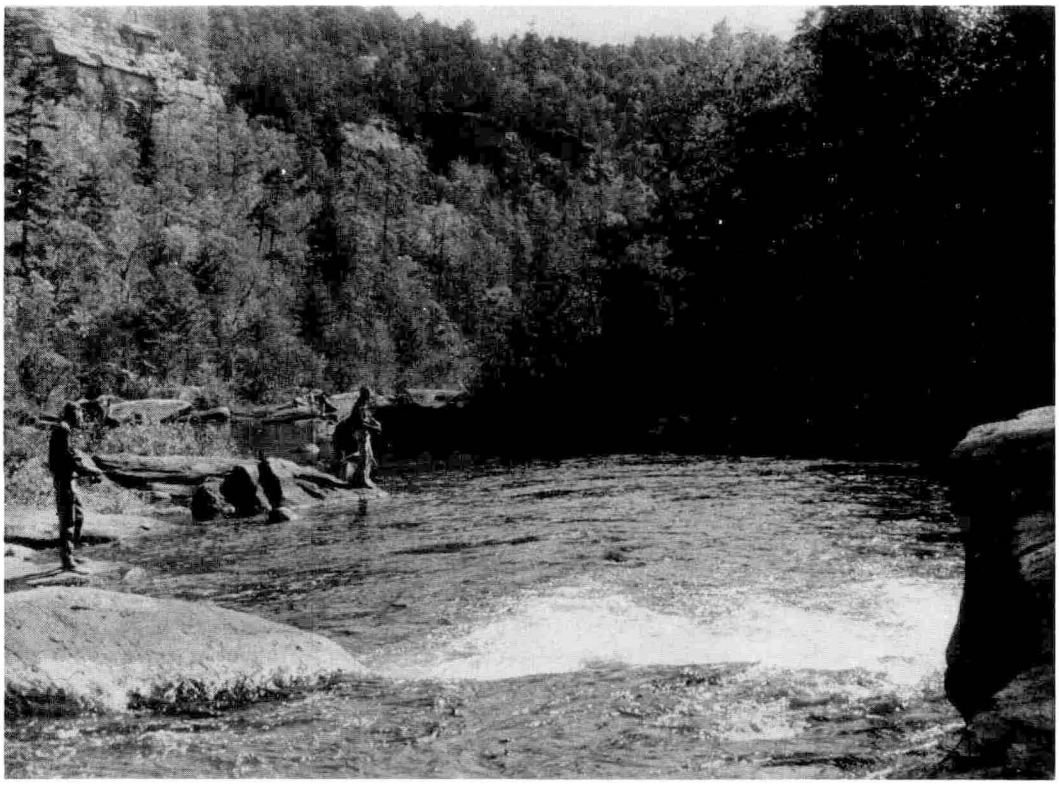
Following establishment of the river as a component of the national wild and scenic rivers system, nonlocal visitor use is projected to far exceed the current predominant local use. During the first 10 years resident use while increasing in number of visitor days will decline as a percent of total use from 60 to 22 percent. The rate of growth of recreation use will increase progressively in the years immediately following establishment.

Economic impact from recreation use--An estimated $90,000 annually can be attributed to current recreational use of the area. Expenditures result mainly from the sale of fishing licenses and motor vehicle gasoline sales. The majority of existing recreation use is local day use. Average daily local user expenditure is substantially lower than average daily tourist expenditure for an extended vacation.

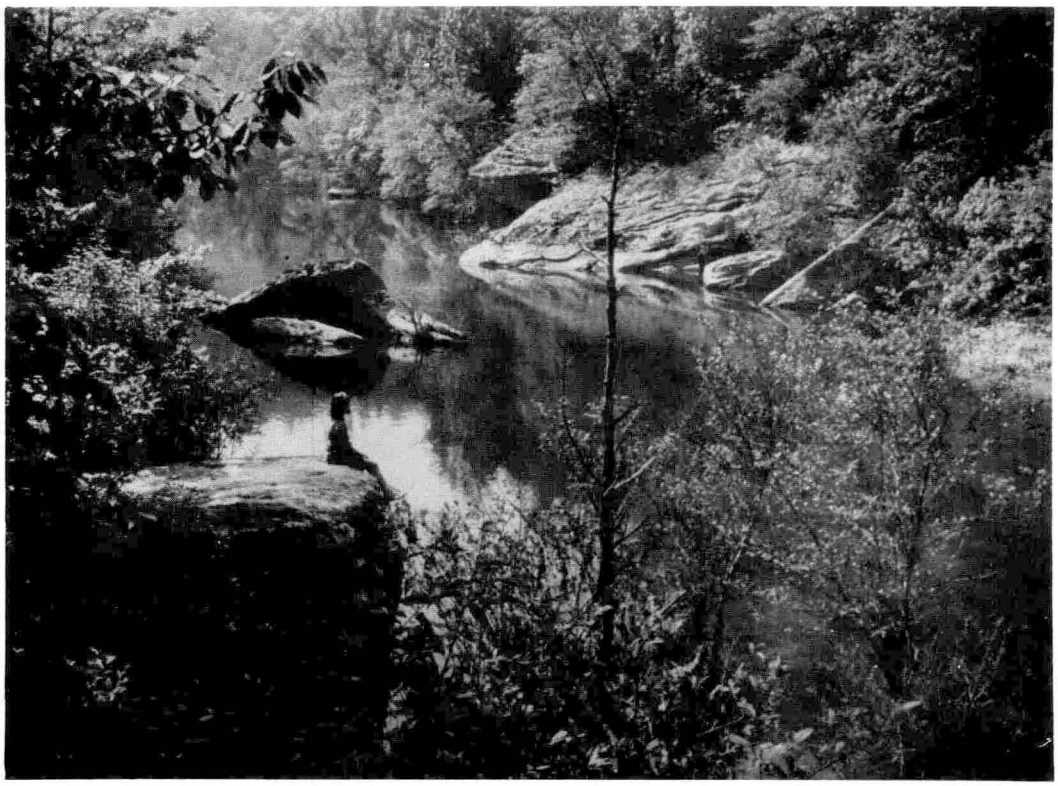
Because of the character of recreation use of a wild and scenic river, it is impracticable to identify the beneficial economic effect of the proposal on individual counties. Likewise, the economic impact on a locale from a particular segment of a stream included in the proposal would have limited validity. A general indication of the estimated total volume of recreation expenditures resulting from implementation of the proposal must suffice. The following table shows estimated total volume of visitor expenditure both local and tourist in relation to growth of recreation use over a 10-year period following implementation of the proposal.

Year Established	Total Annual Visits (Visitor Days)	Local Visits (Visitor Days)	Local Visits as Percent of Total	Total User Expenditures ($000)
+1	50,000	30,000	60%	$ 330
+5	90,000	31,500	35%	797
+10	175,000	35,000	20%	1,785

Note: The average daily expenditure for a local visitor was estimated at $3 and for a tourist $12.



Muskellunge fishing on Clear Creek



Serenity at an Obed River pool

Studies by Dr. L. C. Copeland of the University of Tennessee (1971) determined that tourists spend an average of $13 per day while in Tennessee. An earlier study (1969) by Professor Ernest W. Swanson of North Carolina State University computed daily expenditures of National Park Service visitors at $15.12. The conservative estimate of $12 used for the Obed proposal was derived from these studies, taking into account the specialized characteristics of recreation activities associated with wild and scenic rivers.

Local visitors include those persons residing in the general region as well as those who reside close to the Obed. The latter are termed resident visitors.

Information on the expenditure of resident visitors for the Obed is not available. The Tennessee Valley Authority, however, has estimated that the out-of-pocket figure would probably not exceed $1 since most resident day users spend very little locally and customarily bring their own food from home. With food and transportation costs, the average daily per person expenditure by local visitors including the resident group probably approaches $5.

A projected annual increasing real dollar per person expenditure is not used in estimating the economic impact resulting from establishment of the proposed Obed River area. Rather, the $12 tourist and $3 local figures are used in developing an estimate of total expenditures for all years 1 through 10 following establishment.

The initial direct dollar input value to the economy diminishes each time it is expended to a point where its effective identity is lost. Expression of this process in terms of dollar impact is termed the multiplier effect. An estimated multiplier of 2 was selected for the Obed study based on a rate of spending where 50 percent of the initial dollar is returned to the local economy. This multiplier was used in the following table to estimate the total economic impact from tourist expenditures:

Year Established	Total Visitor Use (+000)	Total Expenditure (+000)	Impact of Total Expenditure (+000)
1	50	$ 330	$ 660
5	90	797	1,594
10	175	1,785	3,570

Forestry

Although the area included in the Obed National Wild and Scenic River proposal is 90 percent forested, there is very little sale of forest products from this area. "High grading" and other cutting practices have already removed most of the higher quality species such as black cherry, black walnut, and yellow poplar from the corridors. Many of the remaining scattered stands of upland hardwoods intermingled with pine and hemlock are economically noncommercial because of topography, stand densities, and poor accessibility. Only 30 miles of stream corridor in the proposal are estimated to possess economically recoverable timber reserves.

In estimating that part of total economic benefits foregone from curtailment of timber harvesting, the negligible value of timber on the immediate streambank and in the sheer bluff areas was discounted. Streambank trees are predominantly noncommercial in species, size, and quality.

Applying the average corridor width of 1,500 feet along the 30 miles of corridor, an estimated 4,364 acres of timber would be withdrawn from harvest. Using 1970 dollars, the value that would be foregone by not harvesting the timber is $218 per acre. Using U.S. Forest Service growth predictions and a 5 percent interest rate, the average annual value of timber growth in the proposed corridor is $6 per acre. Below is a table showing the economic values foregone by not harvesting the commercial timber in the stream corridors.

Timber Values Foregone

	Total for 4,364 Acres
Value of annual growth foregone by not harvesting timber	$ 26,184
Value of timber at year 2000 - value foregone by not harvesting	$1,091,000

Coal Mining

Mining should not be permitted within the boundary of the proposed Obed National Wild and Scenic River. In addition to lowering the aesthetic value of the resource, surface mining, and especially strip mining, causes unstable soil conditions, a lowering of land productivity, and poor water quality. Acid-mine drainage, created by water passing over mined coal materials, becomes a continuing danger to fish and other aquatic life.

"The Tennessee Surface Mining Law" enacted in 1972 regulates surface mining and provides for the reclamation of lands affected by such operations. The 1972 law prohibits the issuing of permits for strip mining of coal on slopes exceeding 28 degrees where overburden would be deposited downslope from the mined seam. The law also requires reshaping and revegetation of the mined site within 1 year of the initial soil disturbance. Failure to reclaim a mined site results in forfeiture of a $600 per acre permit bond. Deep coal mining operations and the surface mining of dimension sandstone, marble, and limestone are exempt from the 1972 strip mine legislation.

Tennessee's Division of Surface Mining should continue to carefully review applications for the mining of coal in the Obed River watershed to assure that future operations will not have an adverse effect on water quality. Federal assistance in reviewing permit applications for the watershed should be provided the State through the Environmental Protection Agency and other appropriate agencies. The rendering of such assistance would have to comply with the 20-day period allowed by law for the Division of Surface Mining to review permit applications.

In January 1972, the Tennessee Department of Conservation, Division of Geology, estimated that 557 acres within the proposed wild and scenic river boundary were underlain with recoverable coal deposits. Of this area, 374 acres could be strip mined under current prices and technology while the remaining 182 acres would require deep mine operations. The total amount of recoverable coal within the stream corridors is estimated at 1,550,000 short tons, less than 1 percent of the estimated total recoverable coal reserves in Cumberland, Fentress, and Morgan Counties.

Major coal deposits occur from river mile 14 to river mile 18.5 on the Obed River and from river mile 17.5 to river mile 24.5 on Daddys Creek. There are no known recoverable deposits within the stream corridor of Clear Creek. Approximately half of the coal deposits in the Obed River corridor are located in the State-owned Catoosa Wildlife Management Area where mining is prohibited.

In 1971, the average selling price of mined coal in Tennessee was $5.24 per ton while the royalty received by the landowner varied from 15 cents to $1.25 per ton. Tennessee's Division of Geology has placed an average in-the-ground value of 50 cents per ton on coal in the Obed River region. Discounting the tonnage of coal in the corridors of the Catoosa Wildlife Management Area which cannot be mined, the following values were derived.

Value of Coal in the Stream Corridors

Estimated Recoverable Reserves (Short Tons)	50 Cents Per Ton	Market Value $5.24 Per Ton
950,000	$475,000	$4,978,000

In order to compare the mining benefits foregone with those of timber and recreation, it was assumed that the coal reserves of the corridors would be extracted at a uniform rate over a 30-year period with a yearly selling price increase of 5 percent. The total value of the extracted coal over the 30-year period is shown in the following table.

Value of Coal Over the Extraction Period

Average Annual Extraction Rate in Tons	Total Value for 30-Year Period	Value of Yearly Extractions
31,667	$10,331,042	$344,368

Other Materials

Aside from coal, dimension sandstone and limestone are the only minerals of economic importance known to exist in the Obed River region. No outcrops of limestone are present within the study stream corridors. Specific desirable characteristics of sandstone vary considerably from place to place, precluding any possibility of reserve calculations. Most quarrying is restricted to the Crossville sandstone, outcrops of which are located in the Crab Orchard area. According to Tennessee's Geology Division, the economic potential of quarrying sandstone in the study stream corridors is insignificant. Unlike coal mining, the quarrying of sandstone does not create acid drainage.

Real Property

Real property along the streambank corridors will be subject to use restrictions by scenic easements. The value, to the private owner, of lands subject to scenic easement may remain essentially unchanged or may even increase.

The 9,111 acres proposed for fee acquisition in Morgan, Fentress, and Cumberland Counties would be removed from the local tax digest upon implementation of the Obed proposal. The effect on land values caused by designation of the streams, however, will be of greater significance. Private lands immediately outside the corridors covered by easements or acquired in fee simple will have enhanced value for commercial and residential purposes. Designation of the proposed area will assure owners of adjacent lands that aesthetic and recreation values will be retained in perpetuity.

The enhanced value of private lands adjacent to the protected corridor cannot be derived accurately. For purposes of indicating total benefits resulting from river designation, a uniform average land value enhancement factor of 7 percent has been selected. The area to which this factor is applied is a 300-foot-wide strip contiguous to and paralleling lands proposed to be acquired both in scenic easement and in fee. Net increase in land value on this basis considering current market values is estimated to be $72,000.

Agriculture

Approximately 1,700 acres of the area included in the Obed proposal are utilized at present for row crops and pasture. Of this amount, approximately 1,300 acres are on the portion of Daddys Creek proposed for scenic easement, thus existing use could continue.

Using a net annual return of $60 per acre from bottom cropland and $15 per acre from pastured slopes to commute the annual values foregone, the significance of the removal of 400 acres of agricultural land is shown. Accumulated annual values lost were then compounded at 5 percent for 30 years to show the values foregone over that period. These data are arranged in the table below.

Cropland and Pastureland Values Foregone
Via In-Fee Purchases

	Daddys Creek (400 acres)
Value of annual production foregone by in-fee purchases	$ 15,000
Values foregone by year 2000	$990,000

Other Uses

No other commercial activities are known to exist in the proposed area. Potential uses of the resource other than those discussed are not foreseen. The trend for recreation use of the area appears well established and certain to continue.

Economic benefits gained as a result of implementation of the national wild and scenic river proposal are expected to exceed benefits foregone.

Analysis of Estimated Economic Benefits
Foregone and Gained
(In Constant Dollars)

	Average Annual ($000)	Total - 30 Years ($000)
Timber (Existing and Future Growth)	-26	-1,091
Coal @ $5.24/ton	-344	-10,331
Real Property - Enhanced Value	+72	*
Initial County Tax Loss	-23	-700
Agriculture	-24	-990
Other	--	--
Recreation Visitor Expenditure	+1,785	+53,550
Total Gained	+1,857	+53,550
Total Foregone	-417	-12,112
Net Gain	1,440	41,438

*Only initial enhancement is considered. No attempt was made to project future increases in land values based on enhancement resulting from river designation.

VI. THE EMORY RIVER SEGMENT

Introduction

During study of the Obed River, Clear Creek, and Daddys Creek, it became evident that inclusion in the proposal of a 2-mile segment of the Emory River downstream from the Obed confluence would enhance and contribute to the functioning of the recreation plan. Because study of the Emory River was not authorized by the Wild and Scenic Rivers Act, the resulting proposal and recommendations are treated separately from those for the Obed River and its tributaries. No lesser significance, however, has been attached to this recommended addition to the proposal.

General Description

The Emory River rises on the northern edge of the Frozen Head State Park in Morgan County and flows southwest and southeast for 46 miles before entering Watts Bar Lake near Harriman, Tennessee. The 2-mile section from just above its confluence with the Obed River (river mile 29) to just below Nemo Bridge (river mile 27) is recommended for inclusion in the Obed Wild and Scenic River proposal. This section of the Emory River will buffer the dramatic physiographic features at the mouth of the Obed River, provide significant recreation use and an essential floating takeout point at Nemo Bridge. The 2-mile section of stream averages 100 feet in width and is bordered by steep mountains. The river corridor is predominantly forested.

The State of Tennessee presently has an option to purchase approximately 2 miles of streamside lands along the west side of the Emory River from Nemo Bridge to the confluence of the Obed and Emory Rivers. This property is presently an inholding which will be added to the Catoosa Wildlife Management Area. Streamside lands along the other side of the Emory River are owned primarily by the Southern Railway Company whose tracks parallel part of the stream.

Recreation Use and Potential Developments

The recreation potential of the Emory River segment is similar to that of the Obed River. The proposed Emory segment has sufficient volume for floating almost year-round. It is suited for a large segment of the boating population, for while rapids are present, there is not the white water challenge that the boater finds on the Obed, Clear Creek, and Daddys Creek. Water quality of the Emory River is suited for all types of contact recreation use.

Emory River above Nemo Bridge

Nemo Bridge is the only suitable takeout for floaters coming down the Obed from Potters Ford, Lilly Bridge, and the Devils Breakfast Table. Development of a parking lot, boat launching site, and comfort station is recommended near the bridge. This facility would accommodate those fishing and using the river for other recreation activities. It would also provide an access point for floating down the Emory to Oakdale, Tennessee.

Classification

Scenic classification is recommended. The 2-mile stretch is free of impoundments, and the only developments visible from the stream are the Nemo Bridge and Southern Railway tunnel.

Acquisition

A 400-foot-wide scenic easement extending from midstream on both sides of the river is recommended to protect the corridor. This 800-foot-wide corridor would total about 194 acres. In addition, a 25-acre site is proposed for acquisition in fee north of Nemo Bridge and west of the Emory River to accommodate the proposed development of a parking area, launching site, sanitary facilities, picnicking, and possibly camping.

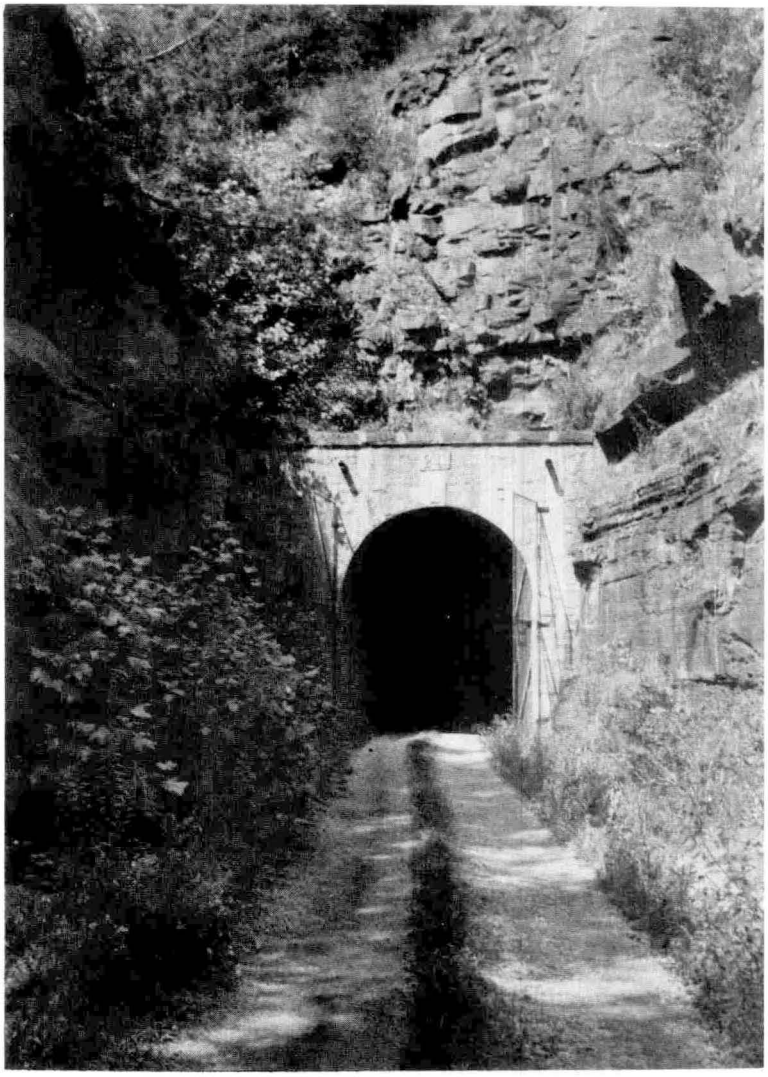
Costs

Total acquisition costs for fee and easement areas are estimated at $24,000. Estimated costs of proposal implementation are shown in the following table.

Preliminary Cost Estimates

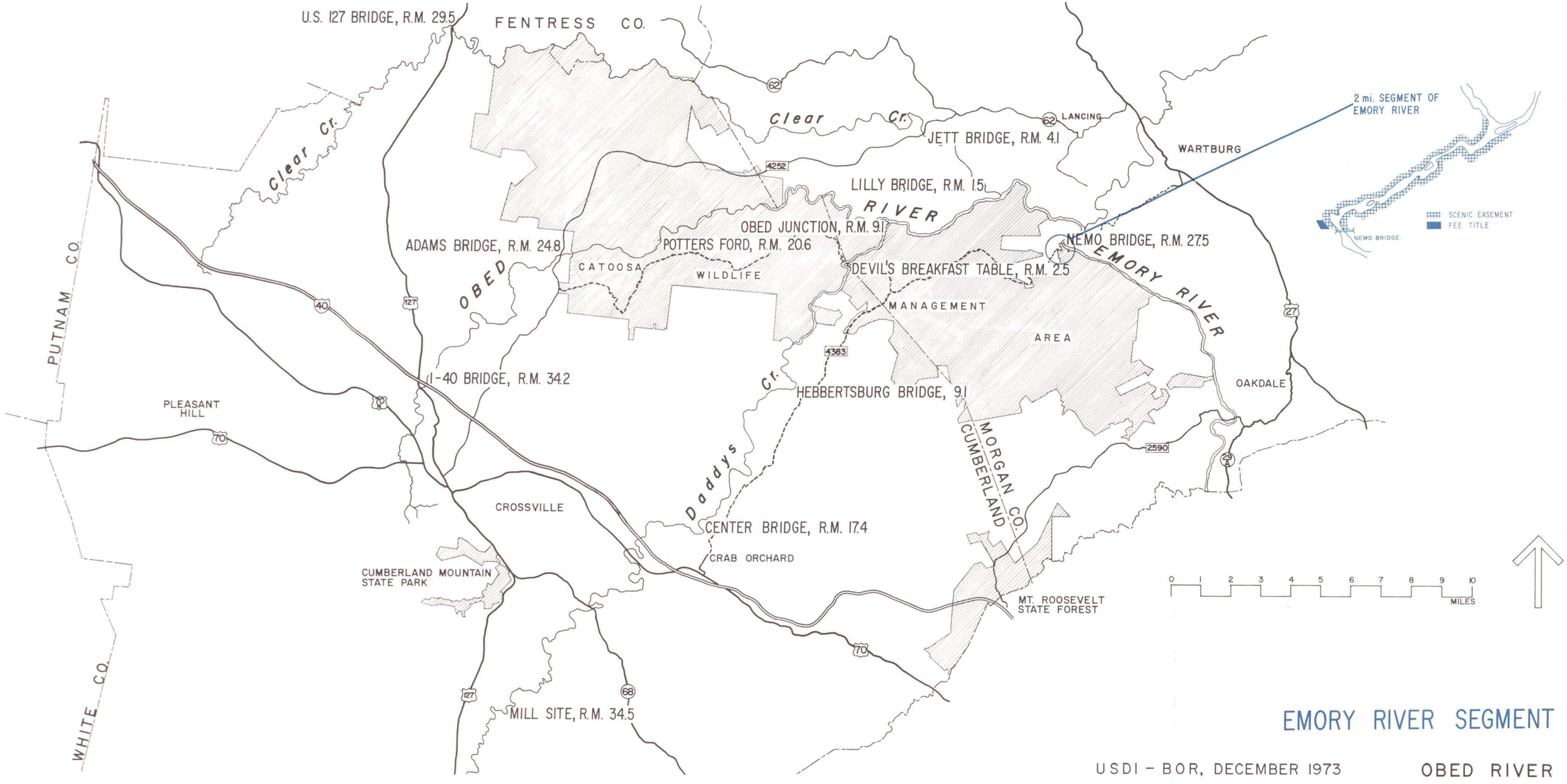
Land Acquisition	Acres	Cost*	50% Federal Share
Fee	25	$ 5,000	$ 2,500
Easement	194	19,000	9,500
Total	219	$24,000	$12,000
Development		$40,000	$20,000
TOTAL		$64,000	$32,000
Annual Operation and Maintenance, year 1		$ 3,000	$ 1,500

*Expressed in 1971 dollars.



Abandoned railroad tunnel provides access to the Emory River

Confluence of the Obed with Emory River



EMORY RIVER SEGMENT

USDI - BOR, DECEMBER 1973

OBED RIVER

VII. APPENDIX

OBED RIVER TASK FORCE MEMBERS

ENVIRONMENTAL PROTECTION AGENCY

*FEDERAL POWER COMMISSION

TENNESSEE DEPARTMENT OF CONSERVATION

TENNESSEE VALLEY AUTHORITY

U.S. DEPARTMENT OF AGRICULTURE
- U.S. Forest Service
- Soil Conservation Service
- Economic Research Service

U.S. DEPARTMENT OF THE ARMY
- *U.S. Army Corps of Engineers

U.S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
- *Environmental Health Service

*U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

U.S. DEPARTMENT OF TRANSPORTATION
- *Federal Highway Administration

U.S. DEPARTMENT OF THE INTERIOR
- *Bureau of Mines
- Bureau of Outdoor Recreation
- Bureau of Sport Fisheries and Wildlife
- National Park Service
- U.S. Geological Survey

*Agencies providing consultation and review.

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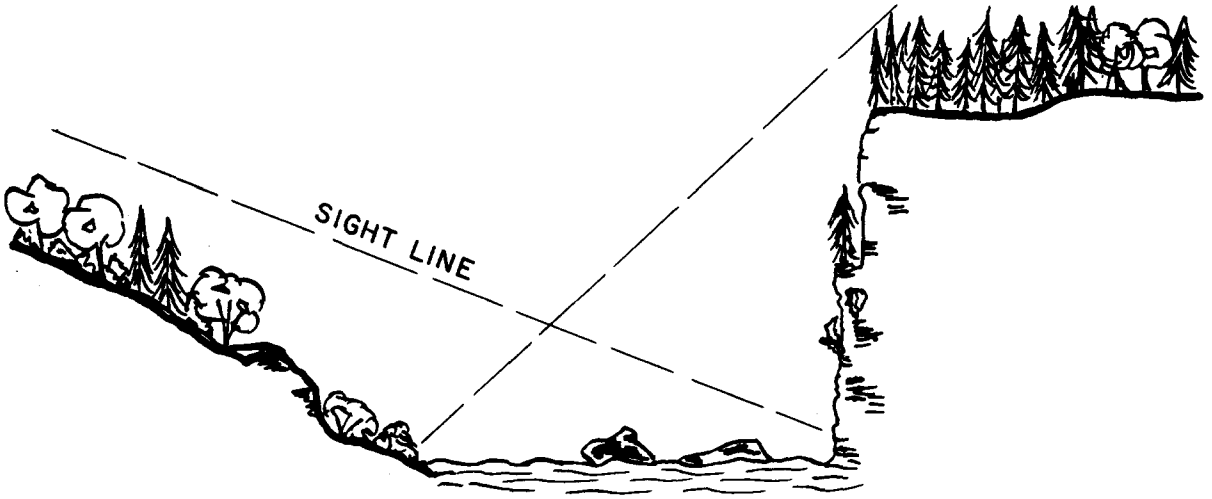
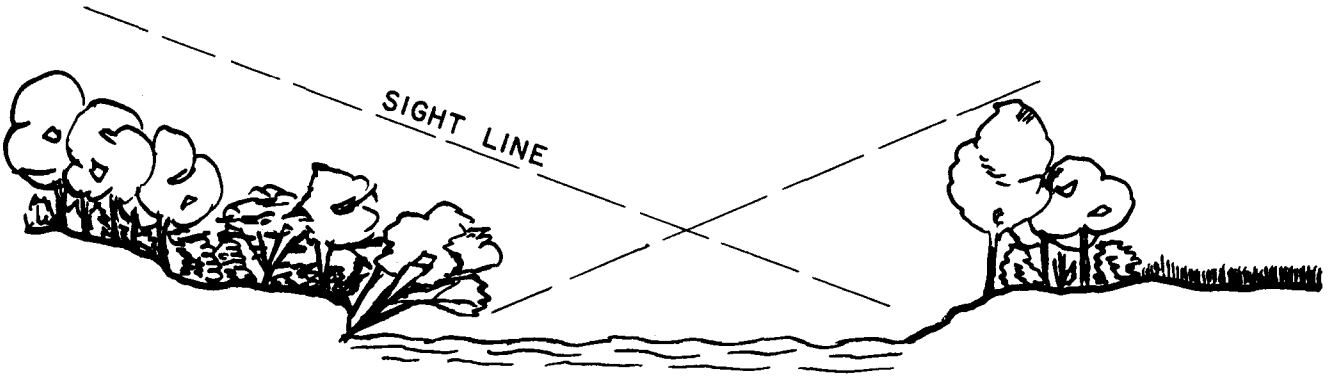


TYPICAL VALLEY CROSS SECTIONS



CRITICAL SIGHT LINES

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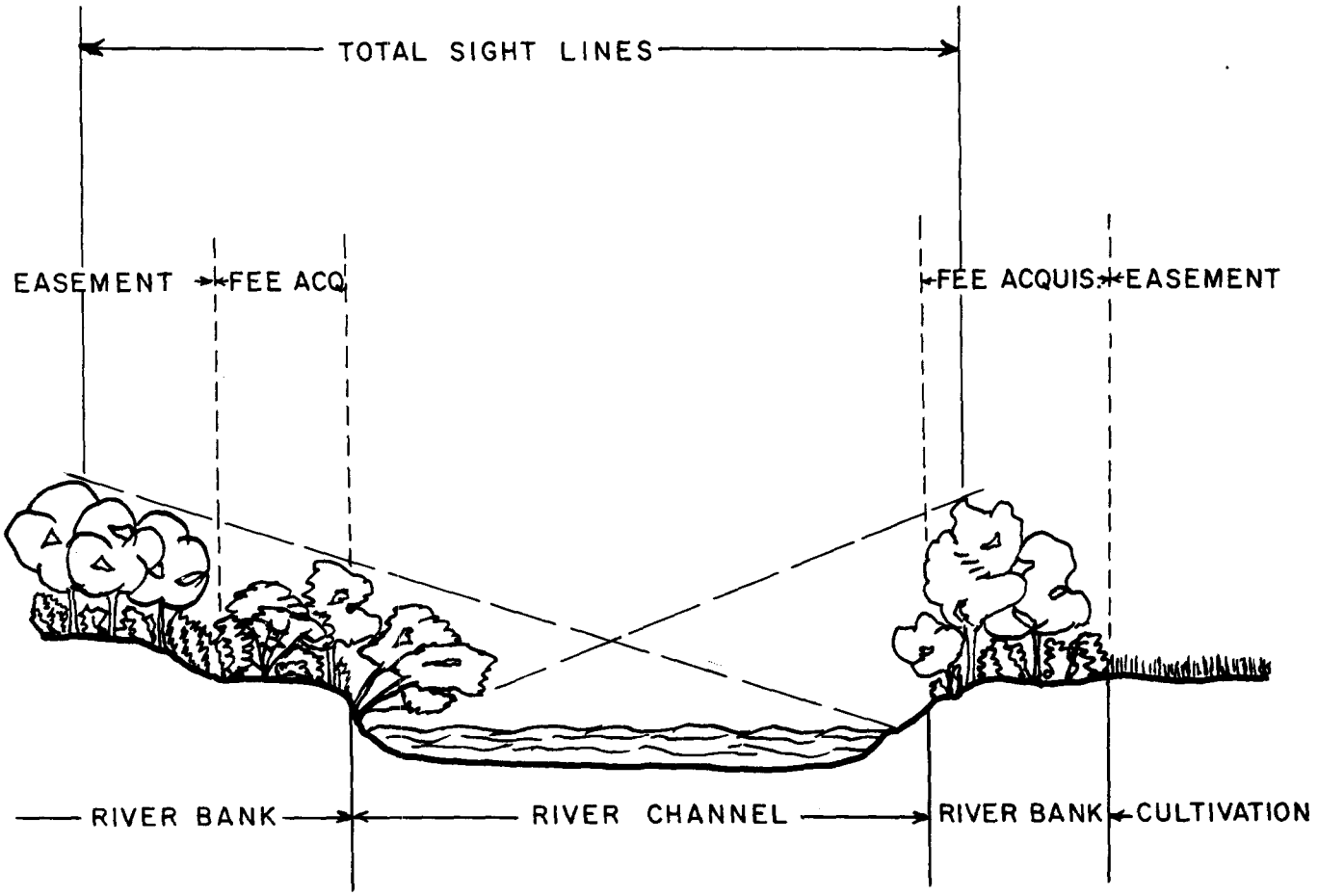
OBED RIVER



FEE - EASEMENT ACQUISITION CONCEPT

USDI - BOR, DECEMBER 1973

OBED RIVER

Criteria for Scenic Easements

1. Existing land uses that are compatible with the Wild and Scenic Rivers concept should be allowed to continue.

2. Streamside slopes visible from the stream should be maintained in a natural condition.

3. Clear-cutting of timber should not be allowed in easement areas.

4. Existing buildings, if compatible with overall objectives, could be allowed to remain.

5. No new buildings or other improvements should be allowed within the boundary without written permission of the administering agency or agencies.

6. Existing farm use access roads to the stream should be allowed to remain but not upgraded.

7. Livestock watering should be allowed to continue as long as it does not result in lowering the quality of water below the standards for contact recreation.

8. Public use on easement lands should be prohibited unless granted by the owner or specifically provided for in the easement agreement.

FLORA

American Beech
American Elm
American Holly
American Sweetgum
Asters
Blackberry
Black Cherry
Black Gum
Black Locust
Black Oak
Blue Beech
Blueberry
Carolina Rose
Chestnut Oak
Club Moss
Common Cinquefoil
Common Witch Hazel
Downy Rattlesnake-Plantain
Eastern Cottonwood
Eastern Hemlock
Eastern Hophornbeam
Eastern Red Cedar
Eastern White Pine
Ferns
Fescue
Flowering Dogwood
Goldenrods
Grapevine
Green Ash
Japanese Huckleberry
Lichens
Mountain-Laurel
Naked-Flowered Tick-Trefoil
Northern Red Oak
Pansy Violet
Pawpaw
Partridge Berry
Pignut Hickory
Poison Ivy
Poison Sumac
Purple Joe-Pye-Weed
Puttyroot Orchid
Red Maple
Rhododendron
Round River Birch Leaved Wintergreen
Sassafras
Shortleaf Pine
Showy Orchid
Silkgrass
Smilax
Southern Crab Apple
Spice Bush
Strawberry Bush
Sugar Maple
Sweet Birch
Sycamore
Teaberry
Trailing Arbutus
Tulip Poplar
Umbrella Magnolia
Virginia Pine
White Ash
White Oak
Wild Carrott
Wild Ginger
Wild Hydrangea
Wild Strawberry

SUMMARY OF PUBLIC INFORMATION MEETINGS

Public information meetings to present the findings of the Obed River Task Force were originally scheduled for May 24 and 25, 1973, in Crossville and Wartburg, Tennessee, but were postponed until September 24 and 25. Nevertheless, some comments and statements were received informally in May as well as at the formal meetings in September and for 30 days afterward. A complete transcript of the meetings and statements received by mail has been made. It is summarized below.

The information meetings created intense local interest. Approximately 1,300 copies of a brochure summarizing the findings of the study were distributed 30 days in advance of the meetings. The brochures were available in Crossville and in Wartburg, and copies were mailed directly to task force members, local and State senators and representatives, members of the local and statewide press, and over 100 individuals and groups who requested copies.

Approximately 75 persons attended at Crossville and 150 at Wartburg. Local residents comprised about 60 percent and 75 percent of the attendees, respectively. Thirty-two statements were received in support of the wild and scenic river concept. One statement and one petition with 61 signatures were received in opposition to such a proposal.

Subsequently, 107 letters and one petition were received for the record--95 in favor of the wild and scenic river concept and 12 opposed. The supporting letters included 44 from school children in the Cincinnati, Ohio, area. Public opinion was strongly in favor of a protective management policy with a minimum of facility development and limited use to prevent resource degradation. The National Park Service was frequently suggested as the Federal administrative agency.

Many of the statements suggested enlarging the corridor to protect more of the watershed and to provide a buffer zone between the wild river and areas where future development might occur. Tributaries specifically suggested for inclusion in the proposal were White's Creek, Yellow Creek, and Otter Creek.

Opposition to the wild and scenic rivers concept came mainly from local landowners. Many felt that their way of life would be adversely affected, even though they would not be displaced by the proposed action. Many cited existing problems with trespassers who litter their property. Several supported the concept of preservation of the existing wild and scenic values of the Obed system, but believed that present property owners could do the job.