ITEM NO. 10

THE BLUE RIVER

NATURAL, SCENIC AND RECREATIONAL RIVER STUDY

July 31, 1974

INDIANA DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OUTDOOR RECREATION

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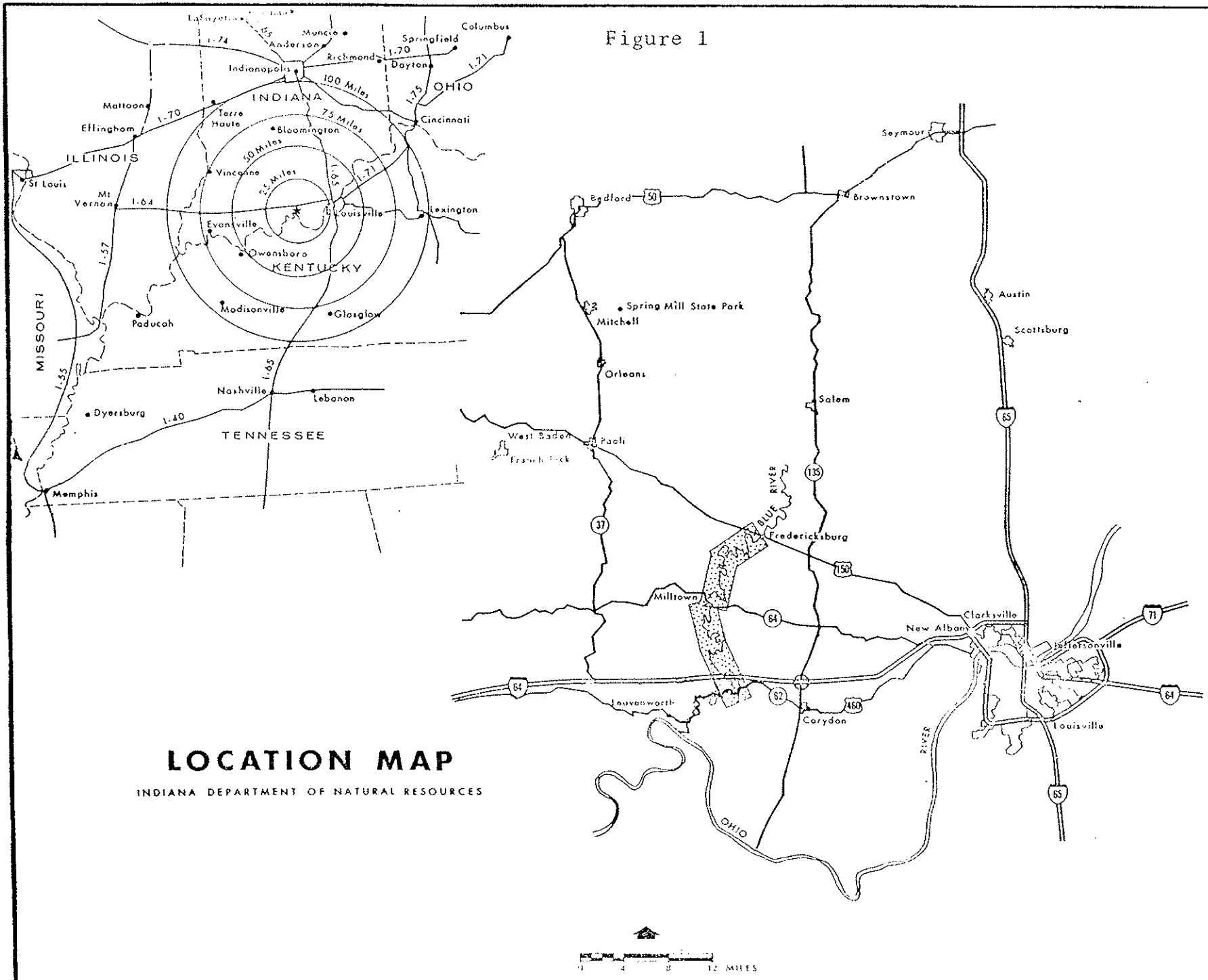
Figure 1



LOCATION MAP

INDIANA DEPARTMENT OF NATURAL RESOURCES

INTRODUCTION

The Indiana Natural, Scenic, and Recreational Streams System was established by act of the 1973 General Assembly (P.L. 134). The law was designed to preserve and protect those streams in the State which possess outstanding natural and scenic characteristics.

The Director of the Department of Natural Resources has chosen the Blue River in Harrison, Crawford, and Washington Counties as the first stream in the State to be studied for inclusion in the System. The Blue River Basin also includes portions of Floyd and Clark Counties. This report presents the findings, conclusions, and recommendations of the Department staff who studied the stream.

Criteria have been developed and subsequently submitted for approval to the Natural Resources Commission. Adoption of the criteria provided an objective method by which streams or stream segments in the State could first be qualified or disqualified for inclusion in the System and secondly be rated for designation as either natural, scenic, or recreational streams.

Two important stipulations within the criteria require that in order for any stream or segment to be considered, it must 1) be a minimum of ten miles in length, and 2) be capable of being canoed from March through June.

In determining which classification a stream or segment falls within, the criteria are used to rate the stream from the following aspects:

1. Naturalness of bank vegetation;
2. Vegetation depth-length;
3. Physical modifications of the stream or its course;
4. Human development of floodplains, slopes, and visible uplands;

5. Special natural features;
6. Aesthetic quality of water;
7. Number of roads, railroad, or overhead utility line crossings;
8. Paralleling roads;

This study involved both field inspection and review of written reports and other publications. The Natural Rivers System Coordinating Committee herewith submits this study for review and consideration by the Natural Resources Commission.

GENERAL DESCRIPTION

The Blue River flows through one of the most scenic, interesting, and diverse areas in the State. In a brief period of time, one may experience the pastoral tranquility of rural farmland, extensive forest areas, numerous caves, and such historically significant attractions as the first State Capital and the Ohio River. Blue River originates in Washington County and becomes the county line of Harrison County on the east and Crawford County on the west during much of its journey to the Ohio.

HISTORY

The Blue River area is rich in historical heritage. Many Indian sites are located in the area, a reminder of the relatively large populations located there when the uplands were first explored in the early 1800's by Squire Boone, Daniel Boone's brother.

Abe Lincoln's uncle, Josiah, settled near Depauw and many of the Lincolns' descendants still reside in the area. Another President, William Henry Harrison, was an early settler in the area and built a log cabin and operated a mill at Harrison Spring along the Blue. The territorial capital and later the Indiana State Capital were located at Corydon, 12 miles to the east of the Blue. Here in 1816, Indiana's Constitution was drafted under the old Constitutional Elm. The Civil War period is also historically significant with the site of the battle between Morgan's Raiders and the home guard having been fought near Corydon. Interestingly, this was the only battle besides Gettysburg which was fought on Northern soil.

Natual features still existing today were closely entwined in the history of the area. Wyandotte Cave, named for the Indians who inhabited it, was the site of a flint quarry. The cave was first revealed to white men by an Indian woman who had been nursed back to health by one of the Kentucky Boones. The Buffalo Trace, the route traveled by the buffalo from their wintering grounds in the Ohio River Valley to the Illinois prairie, crosses the Blue River about fifteen miles below Fredericksburg.

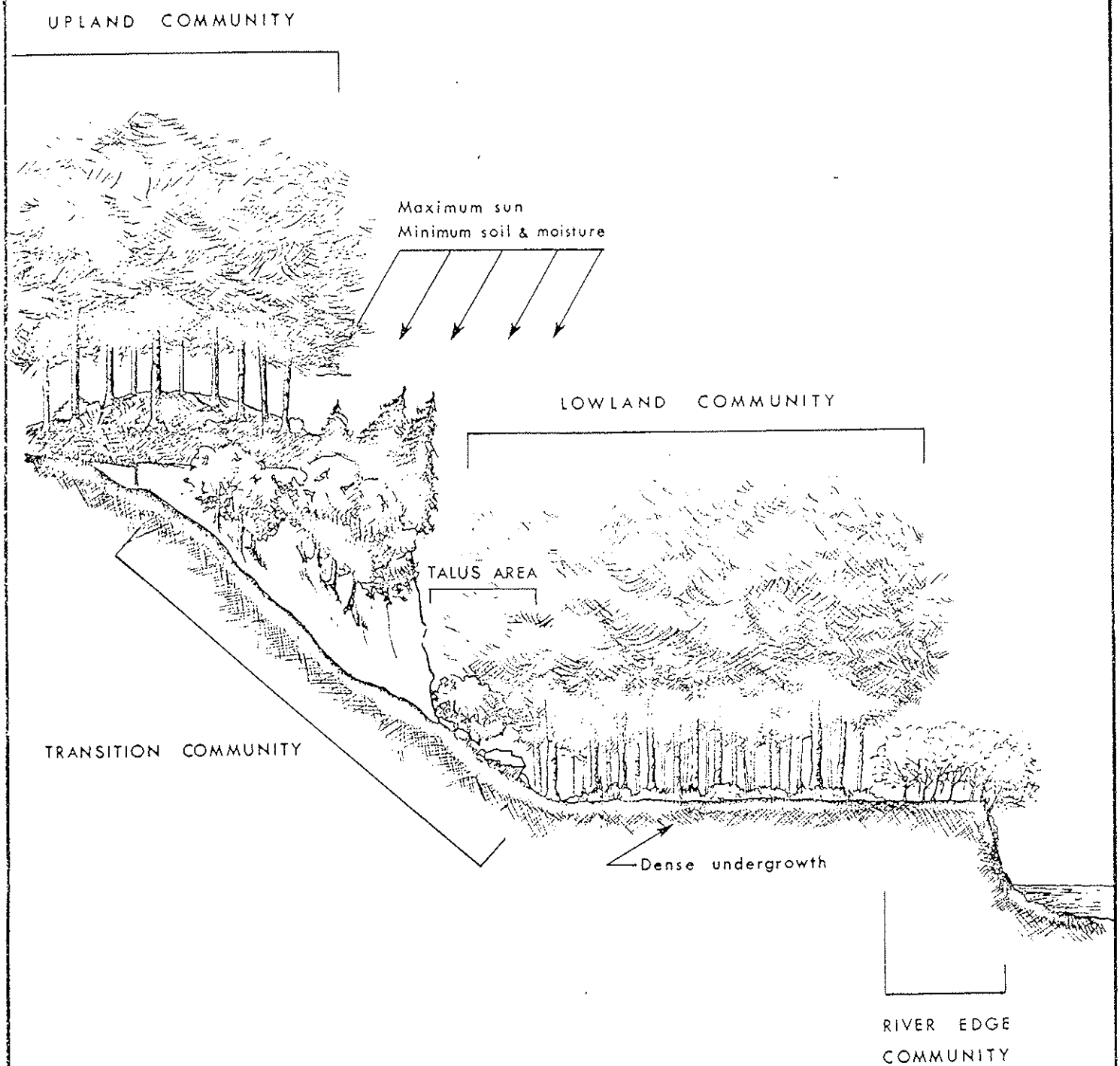
The combination of a rich historical heritage and outstanding natural scenery, have made the area an important tourist destination in Indiana. The preservation of the river and historical preservation are complimentary and for this reason should be coordinated in the future.

VEGETATIVE ANALYSIS

Generally, vegetation in the area conforms to the Western Mesophytic association which originally occupied the Mitchell Plain area in south central Indiana. Certain areas however, may exhibit characteristics more evident to an Oak-Hickory association which has its range nearby. For purposes of this study, this mixed woodland has been classified into four communities. These are the upland, transition, lowland, and river edge communities illustrated in Figure 1.

River Edge Community - This community occupies the area immediately adjacent to the river and is the most unstable of the four designated plant communities. Vegetation is characterized by its ability to survive in rich, moist soil and exhibits rapid regrowth between flood periods.

Figure 2



VEGETATIVE ANALYSIS

Lowland Community - The lowland community is located on the narrow floodplain between the river and the river and the steeper topography of the bluffs. This area is charcterized by large trees able to withstand frequent flooding. The deep, moist and rich soils produce prolific undergrowth such as vines and shrubs. The unique characteristic of this community is its lack of a dominant species.

Transitional Community - Plants in this community are somewhat less flood tolerant and include plants of both the upland and lowland communities. The plants grow on the talus piles at the base of cliffs or in the gullies reaching back into the uplands.

Upland Community - These are the plants of the ridge tops and areas above the bluffs which can be seen from the river. Trees in this community require drier, shallower, and better drained soils. There are a much reduced number of species in the uplands and there is much less undergrowth.

The visual impact of the vegetation on the stream user cannot be over-emphasized, thus, the disturbance or destruction of large areas would have a dramatic negative effect from both a physical and visual standpoint.

FAUNA

A great number of animal species occur in and around the Blue River. Among the popular game animals are the white tail deer, the cottontail rabbit, and the grey and fox squirrel. Mink, muskrat, raccoon, and beaver are also readily observed and occasionally a red or grey fox or coyote are seen. Bird species abound and even the migrating rare bald eagle has been sighted from the Blue River.

The Blue River is one of Indiana's outstanding fishing streams as it contains 48 different fish species and 14 game fish species. There have been unconfirmed reports of the existance of Ohio River Muskellunge in the Blue River but the only known population in the State occurs in the Little Blue River in Crawford County. Blue River is also the location of the largest number of freshwater mussel species found anywhere in Indiana.

The existance of wildlife has a tremendous influence on the river traveler's feeling of being in a natural and wild setting. Few thrills can compare with the sight of an eagle soaring above, a whitetail deer deep in the woods, or a great Blue Heron fishing in a placid pool.

GEOLOGY

The Blue River is an entrenched stream that has cut deep into the Mississippian limestone of the Crawford Upland, which was laid down when oceans covered the region. However, despite its entrenched classification, it is not a river of dramatic canyons. Seldom is the river completely enclosed by the limestone walls. The river has cut and shaped a series of "half canyons" along its course. It is normally bordered on one side or the other by steep stone faces.

Today the topography is characterized by hills and sink holes of a typical karst topography, underlain with the numerous passageways that form Wyandotte, Marengo, and other smaller caverns in this region. Within the valley and floodplain of the Blue River can be found glacial outwash sediments from an Illinoisan or older glaciation. Although the region was never covered by glacial ice, it did receive glacial rock and sediment carried by streams flowing from the melting ice.

With a few isolated exceptions, the carved limestone walls along the river are not dramatically exposed to the river traveler. Usually these high walls are shrouded in a heavy cover of trees and shrubs. Occasionally the stone is viewed through a mysterious-like setting of shade, moss, and screened areas.

Nor is rock a dramatic feature of the stream bed. This is due to the heavy vegetative cover along the stream and sediment that has been deposited by stream fluctuations. The canoeist must remain alert, however, for large rocks in the stream which lie just below the surface of the water.

SOILS

A variety of soils are found in the area and they vary greatly in permeability, fertility, and suitability for development. The characteristics of a soil are determined by (1) parent material, (2) climate, (3) the plant and animal life, (4) relief, and (5) time.

The soils in the region were primarily formed from two basic parent materials -- limestone and sandstone. The upland soils are characterized by a very thin profile which is poorly developed and excessively drained. In general, these soils are poorly suited to development or agricultural use.

Alluvial soils dominate the lower elevations which are subject to flooding during periods of excessive rainfall. These soils are normally darker, have better developed profiles and vary greatly in thickness. These areas are well suited for retention as wildlife areas since they may be flooded at times during the year.

Soils of limestone derivation, occupying gently sloping upland positions are well drained and moderately thick. These

soils are poorly suited for development but are being used for cropland and pasture.

CLIMATE

The Blue River area has a very moderate climate. Although outdoor pursuits are available throughout the year, an 8 month period of pleasant climatic conditions can be expected. Precipitation averages over 42 inches per year and is fairly well distributed with the exception of a tendency toward rather wet springs and dry autumns. Summer and fall brings the sunniest weather and the growing season averages about 180 days.

The Blue River rises and falls very quickly during heavy rains which may at times make the river hazardous for the canoeist. The fall months generally bring low water conditions making river travel more difficult.

LAND USE

The dominant land use along the river is agriculture although the land is not particularly well suited to this use as evidenced by the nature of the terrain, soils, and general appearance of the landscape. Forest production is also very important in the area, occupying nearly as much land as agriculture. Along the banks of the Blue River an increasing number of summer dwellings and campsites are appearing and urbanization exists at Fredericksburg, Milltown, and to a lesser extent, at White Cloud.

The major detrimental land use posing a threat to the river's natural integrity is the cottage development scattered in varying degrees of intensity along the river. Surprisingly, this development is very well integrated into the riverscape , with a few isolated exceptions, since the structures are usually rustic and

camouflaged by the vegetation.

Another Land use having a detrimental impact upon a Natural, Scenic or Recreational river includes the pasturing of animals in such a way as to allow animals to enter the water or trample the banks. This practice results in eroded stream banks and polluted water, not to mention an intrusion on the natural experience of the river traveler.

POPULATION & ECONOMY

The Blue River area (Harrison, Crawford and Washington Counties) is well below the State average in population density. The above counties' non-urban populations, 85%, 75%, and 75% respectively, are an indication of the rural orientation in the area. From 1960 to 1970, Harrison County experienced a 6.3% increase in population while Crawford County experienced a 4.1% decrease. Wahington County had the greatest increase with 8.2%. Fredericksburg and Milltown, the two largest towns on the study segment of the Blue River, had 1970 populations of 207 and 829 respectively.

The large population of the Louisville, Kentucky metropolitan area exerts increasing economic and recreational pressure on Blue River and its surroundings. Recreational real estate purchase, fishing, float trips and other recreational pursuits have been the major influences on the river corridor.

The economy of the area is based primarily on the production of agricultural products such as tobacco, poultry, dairy products, hogs, cattle, corn and soybeans. Fewer people are employed by industries producing lumber, wood furniture, limestone, and silica sand.

Future economic growth will probably result as small industries locate in the area and as the tourist industry expands. The preservation of the Blue River will have a positive impact on the economic growth in the area.

TRANSPORTATION

Regional access to the study area is very good. Commericial air transport or service is not immediately available, but the area is served by the Southern Railroad which crosses the Blue River at Milltown. The locally owned I.N.A. & C. Railroad services the town of Corydon from the Southern owned tracks. U.S. 460, State Road 64, and U.S. 150 are the major east-west highways in the area. North-south access is provided by State Roads 66 and 135 and Interstate #64 has been completed westward to Corydon. When completed, I-64 will bisect the river just above White Cloud as it serves the east-west traffic between St. Louis and Cincinnati. Interstate 65, linking Louisville with Indianapolis, passes about 40 miles to the east of the Blue River area, and acts as a feeder for I-64.

This generally attractive transportation pattern will allow rapid ingress and egress from the area which will undoubtedly bring increasing pressures on the Blue River corridor.

REGIONAL RECREATION RESOURCES

The Blue River watershed offers many recreational facilities for people within the region and those visiting the area. The diversity of the landscape with its undulating topography, extensive forest areas, and outstanding geologic features is very conducive to recreational development. Following is a discussion of publicly and privately owned facilities which are of regional significance.

Harrison-Crawford State Forest - This is the largest publicly owned acreage offering recreation opportunities in the watershed. Located to the south of the portion of the Blue River being considered for designation, Harrison-Crawford State Forest offers boating, fishing, camping, hiking, hunting, picnicking, and horseback riding on its more than 24,000 acres of managed forest.

Included in the property is Wyandotte Caves, extensive and beautiful underground caverns which have been developed for observation. Tours catering to the weekend tourist and to the accomplished spelunker are offered.

Future development plans call for dramatic expansion of the Harrison-Crawford State Forest and Wyandotte Cave areas. This development, to be known as Wyandotte Woods, will be a major recreation complex including campgrounds, boat docks, saddle barns, swimming pool, trails, and support facilities.

Clark State Forest - Located in the upper corner of the watershed is Clark State Forest, including Deam Lake offering more than 22,000 acres to the recreationist. Facilities for boating, camping, fishing, hiking, hunting and horseback riding are provided.

Elk Creek State Fishing Area - This property, managed by the Division of Fish and Wildlife, is located near New Philadelphia and provides fishing and boat launching facilities in a 48 acre man-made lake.

Harrison County Parks - Harrison County has developed two outstanding parks in the area. Buffalo Trace Park is a 131 acre park located near Palmyra which has a 30 acre lake for fishing and boating. The park also provides a campground, tennis courts, and play facilities. The county also owns and manages Hays-Woods Nature Reserve, a

68 acre park that provides picnic areas, playgrounds and playfields, and nature trails.

Private Recreation Development - Marengo Cave and Squire Boone Caverns are privately owned and well-known scenic attractions in the area. A number of privately owned campgrounds also provide facilities for campers wishing to make extended visits to the area.

WATER QUALITY

Generally, water quality is very good in the Blue River according to statistics gathered by the State Board of Health. Potential problem areas are at Fredericksburg and White Cloud where individual homes along the river have septic systems which may allow effluent to reach the stream. The same problem exists wherever residential type uses occur along the river, but the combined effect of these problems does not present a significant impact upon water quality in Blue River. Livestock allowed to graze up to the water's edge may add pollutants to the stream, but the limited numbers of stock involved produce an extremely minimal impact.

The water runs clear except after rainstorms when the river carries a heavy silt load from the surrounding agricultural activities. Generally, the water clears within four or five days.

The visual and olfactory impact of water quality may greatly affect the river user. Prime consideration should be given to maintaining and improving the water quality of the Blue River.

RIVER SEGMENT ANALYSIS

GENERAL RIVER DESCRIPTION

The Blue River rises in northern Washington County and has two major tributaries, the South or Muddy Fork and the Middle Fork. From Fredericksburg south to the Ohio River, the Blue River has been declared legally navigable. The river has sufficient flow for year round canoeing but low water during the fall months may make it necessary for canoeists to line or pull the canoe over shallow areas.

For purposes of classification, the portion of Blue River which is being studied for inclusion into the Indiana Natural, Scenic, and Recreational Streams System has been divided into four segments:

1. River mile 57, just below Fredericksburg to river mile 42.
2. River mile 42 to river mile 32 below Milltown.
3. River mile 32 to river mile 22.
4. River mile 22 to river mile 11 1/2 below White Cloud.

SEGMENT #1

The total length of this segment of the Blue River is approximately 15 miles. Here the river has an average width of 65 feet and a moderate gradient of about 3 feet per mile. Water depth varies considerably but averages 5 feet as the river meanders southward. Game fish populations are quite high in this segment and include golden redhorse, smallmouth bass, white sucker, rock bass, longear sunfish, spotted bass, and bluegill.

The segment exhibits a contrasting personality to the river traveler. Immediately below Fredericksburg, only a few trees or shrubs are visible along the river bank but soon the openings become less frequent as the river flows through more dense woodland.

Open fields are screened from view by a dense fringe vegetation, giving the traveler a feeling of solitude. The sound of traffic on paralleling roads and the existence of cabins or other evidence of cabins or other evidence of man, occasionally detract from the user's experience in this segment. Other intrusions include utility line crossings and a very large campground is located between Goodman Bend and Self Island (river mile 48-47) on the east side of the river. Access is limited to Fredericksburg and the private campground already mentioned.

SEGMENT # 2

The second segment extends from river mile 42 to river mile 32, a distance of 10 miles. Here the river widens to an average of 80 feet in width. The average fall of the river is slightly over 3 feet per mile which is comparable to the first segment. The river also begins to deepen and averages about 7 feet. In this segment the Blue has an irregular pattern to its meandering course as it flows through a more disected landscape.

The effect of Milltown and its resultant impact upon the river traveler is dramatic. Steep wooded hillsides and rock outcroppings give way to the sounds and sights of a small urban area. Paralleling roads, bridges, and utility crossings are concentrated in the mile and one-half length of stream flowing through Milltown.

A low head dam in Milltown makes a portage necessary and also creates a large section of rapids downriver. Access within the segment is limited to above and below the dam and at the Totten Ford Bridge at river mile 40.

SEGMENT #3

This is the most scenic stretch of the Blue River being studied.

Here, the river's pace begins to quicken as the stream falls 42 feet within the 10 mile length of the segment. Average river depth and width remain comparable to the previous segment--7 feet and 80 feet respectively. Evidence of pollution or erosion is absent from this portion of the stream.

Several exciting rapids combine with outstanding natural scenery to give the user the impression of majestic natural beauty in an unadulterated environment. This impression is interrupted, only infrequently. Large rocks lying just beneath the surface of the water require a watchful eye by the canoeist and the action of the water creates deep holes around the rocks providing excellent game fish habitat. The segment displays no evidence of erosion or pollution.

The only access to the stream in the segment is at a point near river mile 29. This factor may be negative from a recreational standpoint, but may also help to preserve the present integrity of the natural environment on this segment.

SEGMENT # 4

The river broadens and becomes more shallow through this stretch. The average depth is 4 feet and river width averages 130 feet. Interestingly, the stream gradient is most severe in this segment with an average fall of 5.3 feet per mile. Good game fish populations are present. Channel catfish, gar, golden redhorse, smallmouth bass, spotted bass, longear sunfish, bluegill, and rock bass all provide enjoyment for the angler.

This segment exhibits the most evidence of man's presence. Paralleling roads, utility line crossings and many cabins and year-around homes affect the traveler. Low-lead impoundments are located at Rothrock and at White Cloud.

The Rothrock Dam was built to form a millrace for the operation of a grain and saw mill. The old mill is now owned by the Department of Natural Resources and a long portage of about 300 feet is necessary to get around the dam.

The dam at White Cloud is passable during low water periods when the canoe can be lined through a sluice. At other times, however, a portage of about 150 feet is necessary. Water depth is 7 to 8 feet below the dam and this area is frequently used as a swimming hole by local people.

The two dams and the other intrusions already mentioned weighed heavily in rating the stream for classification.

EVALUATION & RECOMMENDATION

Individual stream segments were rated to determine their qualification for classification as natural, scenic, or recreational streams. The following definitions taken from the act will assist in understanding the criteria.

1. The term "natural river" shall mean any river which, free of impoundments, is generally unpolluted, undeveloped, and unacessible.

2. The term "scenic river" shall mean any river which is free of impoundments, acessible in several places, and with minimal pollution and shore line developments

3. The term "recreational river" shall mean any river which does not contain those characteristics necessary to qualify as a natural or scenic river, but which still maintains scenic or recreational characteristics of unusual and significant value.

4. The term "river" shall mean any flowing body of water and adjacent lands, or portions thereof.

The criteria are designed to give the State an objective rating system which can be applied to any river. Even though a stream meets the necessary criteria, it may be disqualified if its rating from classfication criteria is too low to be included in one of the classes.

In order to qualify for evaluation, the stream segments must meet the following minimum criteria:

1. Stream segment must be a minimum of 10 miles long.

2. Depth must be adequate to canoe in the months of March through June in years of normal rainfall although some rapids may require wading or portaging. Intermittent streams shall not be qualified.

3. If a stream segment receives zero points on any of the classification criteria below, it is automatically disqualified from further consideration. The automatic disqualifications is made if:

   a. The stream (or segment) is channelized for more than

5% of its stream length or a dam or dams impound water which create artificial pools that back up water for more than 5% of the stream's length at normal summer water levels. Inundation and/or channelization having a cummulative total of more than 5% disqualifies the stream. (See classification criteria no. 3 in appendix).

b. Pollution is chronic and visible (Not including Muddy waters). (See classification criteria no. 6 in appendix).

c. A total of more than 5 miles of paralleling roads are within 1,000 feet per 10 miles of stream. (See classification criteria no. 7 in appendix).

d. There are ten or more road, railroad, or overhead utility line crossings per ten miles of stream. (See classification criteria no. 8 in appendix).

Once a stream is seen to meet the criteria qualifying it for study, it is then rated for classification as a natural, scenic, or recreational stream. If it fails to meet minimum rating values, it is disqualified.

The system for classification has eight categories for which the stream or any ten-mile segment of it is investigated. These are naturalness of bank vegetation, a vegetation depth-length index, physical modification of stream course, human developments, special natural features, water quality, paralleling roads, and number of crossings. For each category, a rating value is assigned, either 0, 1, 2, 3, or in one case, 4, on the basis of a set of defined criteria. The lower points are for lower quality, the higher points for better quality, according to the defined criteria. Streams or stream segments are then classified into one of three groups according to their point totals.

Total Points	Classification
21+	Natural
17-20	Scenic
13-16	Recreational

Streams with rating of 12 or lower are disqualified, however,

they may be rated and considered at a later date if improvement has been made to warrant re-evaluation.

The complete rating table for application of criteria appears in the appendix.

An interdisciplinary committee made up of representatives from various Divisions within the Department of Natural Resources was formed to study proposed streams for possible inclusion into the System. This Natural Rivers System Coordinating Committee has rated the Blue River segments and recommends the following classifications:

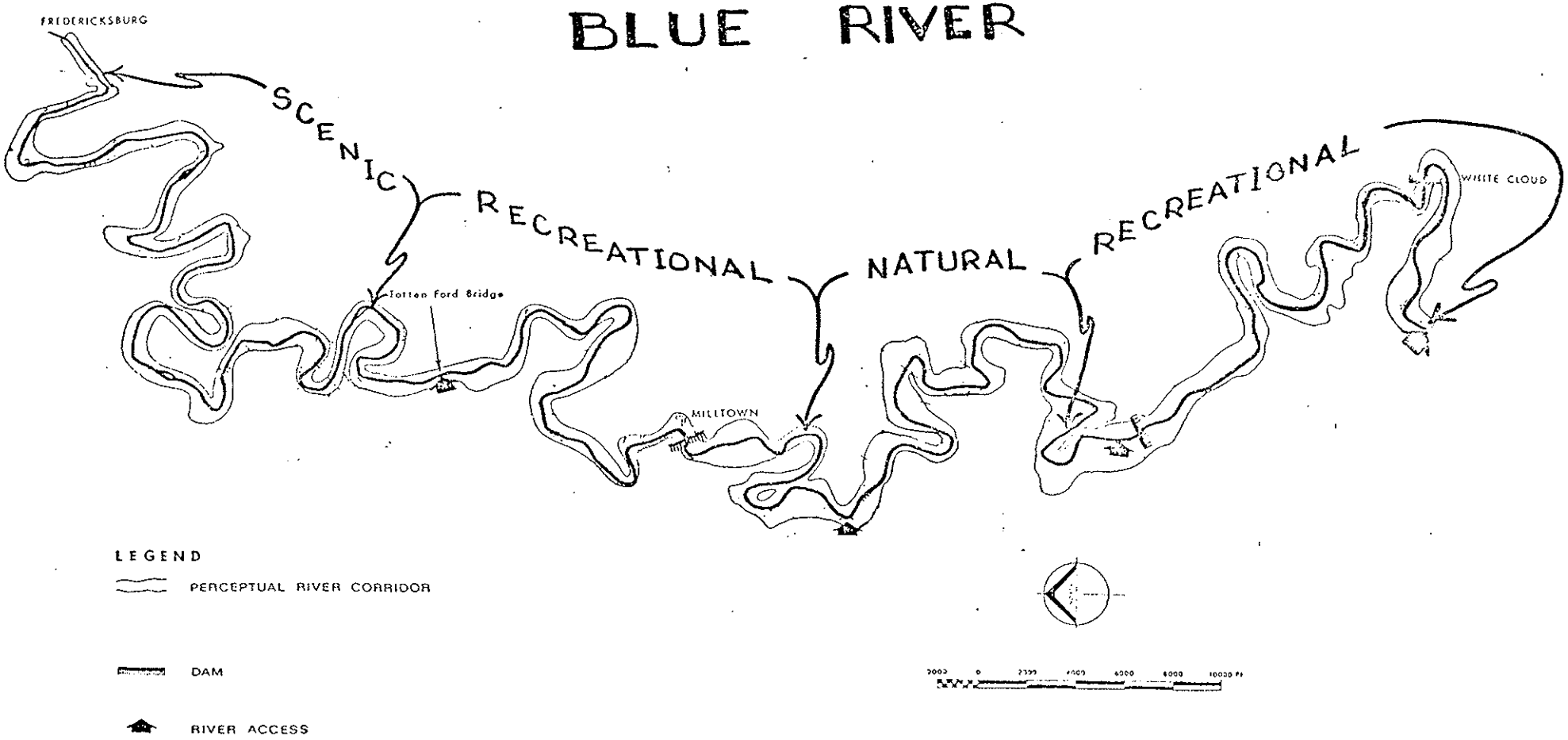
SEGMENT #1 (River mile 57 below Fredericksburg to river mile 42)
Proposed designation: Scenic (approximately 15 miles)
Committee Rating: 19 points

SEGMENT #2 (River mile 42 to river mile 32 below Milltown)
Proposed designation: Recreational (approximately 10 miles)
Committee Rating: 14 points

SEGMENT #3 (River mile 32 to river mile 22)
Proposed designation: Natural (approximately 10 miles)
Committee Rating: 22 1/2 points

SEGMENT #4 (River mile 22 to river mile 11 1/2 below White Cloud)
Proposed designation: Recreational (approximately 10 miles)
Committee Rating: 13 1/2 points

Figure 3


BLUE RIVER
FREDERICKSBURG
SCENIC
RECREATIONAL
NATURAL
RECREATIONAL
WHITE CLOUD
Totten Ford Bridge
MILLTOWN
LEGEND
PERCEPTUAL RIVER CORRIDOR
DAM
RIVER ACCESS

RIVER CONCEPT PLAN

The Indiana Natural Scenic and Recreational Rivers System Act directed the Department of Natural Resources to prepare and maintain a plan for establishment, development, management, use and administration of rivers in the system. The Act also states that this plan is to become an integral part of comprehensive state plans for water management and outdoor recreation.

ESTABLISHMENT

The law authorizes the Director of the Department of Natural Resources to study and from time to time, submit to the Natural Resources Commission proposals for the inclusion of any section of river into the System. In recommending a river segment for inclusion, the Director is to prepare a detailed report on the factors which, in his judgement, make the river worthy of designation.

Based upon the study and recommendations of the Director, the Commission may designate a river for inclusion into the System by rule and regulation. Prior to promulgation, the Director must notify each adjacent or abutting land owner of plans and recommendations for the river. A public hearing must then be held in the county containing the largest section of the river being considered.

ADMINISTRATION

The Director of the Department of Natural Resources assumes administrative responsibility for the Indiana Rivers System as provided for in the Act. He may take the necessary action to acquire, develop, maintain, and preserve the river and authorized related land area. This is to be done in accordance with his previously conferred powers with respect to parks, fish and wildlife areas, reservoirs, forests, and other areas.

The law also provides that the Director may seek assistance in the development, operation, and maintenance of rivers in the System from other governmental units and agencies. The Director and the Department of Natural Resources retains primary responsibility, however.

PROTECTION

Protection of the Blue River will be accomplished by a number of strategies. As long as abuses of the natural values are prevented or preventable through other means, full public ownership in fee will not be necessary to insure this protection. Instead, the State will attempt to acquire easements to insure that land uses remain static or are upgraded along the length of the stream corridor.

Since the Blue River has been declared a navigable stream from Fredericksburg to the Ohio River confluence, it will not be necessary for the State of Indiana to acquire the stream bed or water use easements.

The primary means of providing protection to the Blue River will be through the purchase of "conservation easements". This type of easement as provided in Public Law 195, Acts of 1971 is defined as "a restriction or restrictions on the use of land designed to preserve in their open state for a period of years, or in perpetuity, lands of cultural, scenic, recreational, or historic significance". These easements permit all reasonable uses of the land not in conflict with the purposes for which the easements were acquired.

The purchase of a conservation easement will not allow public access to the land. Where access is needed, the State will purchase the land in fee simple. The intention of the easement

concept is to allow landowners to continue their present land uses but to restrict them from practicing specifically defined uses which would be detrimental to the scenic integrity of the stream. This approach will be the most palatable for the landowner and the least expensive for the State while accomplishing the intent of the Natural Rivers Act.

The Indiana Natural Resources Commission presently has the power to regulate all development in the floodway of the Blue River as set forth in the 1945 Flood Control Act. This power will provide a great deal of protection to insure the continued naturalness fo the stream and its corridor.

The Natural,Scenic and Recreational Rivers System Act directs the Commission to disapprove any use or development within their power if in their judgement such use and/or development may alter the original classification of the stream segment.

MANAGEMENT

Management of the Blue River will be in accordance with the overall goal of the Natural Rivers Program which is to first preserve the stream in as natural a condition as possible and secondly to improve the recreational access and use of the stream by the public. Usage by the public shall be encouraged, but only to the extent that this usage will not pose a threat to the preservation of the natural characteristics of the various preserves. Publicity that would tend to increase public use beyond that point shall be avoided.

Access points allowing the public to enter and exit the river will be developed as part of this program. These sites will be located along the river so as to allow one day or longer

trips down the river. Figure 3 illustrates a typical access site with facilities for parking, picnicking, boat launching and where feasible water and toilets. Facilities for camping are not included at this time but may be developed in the future.

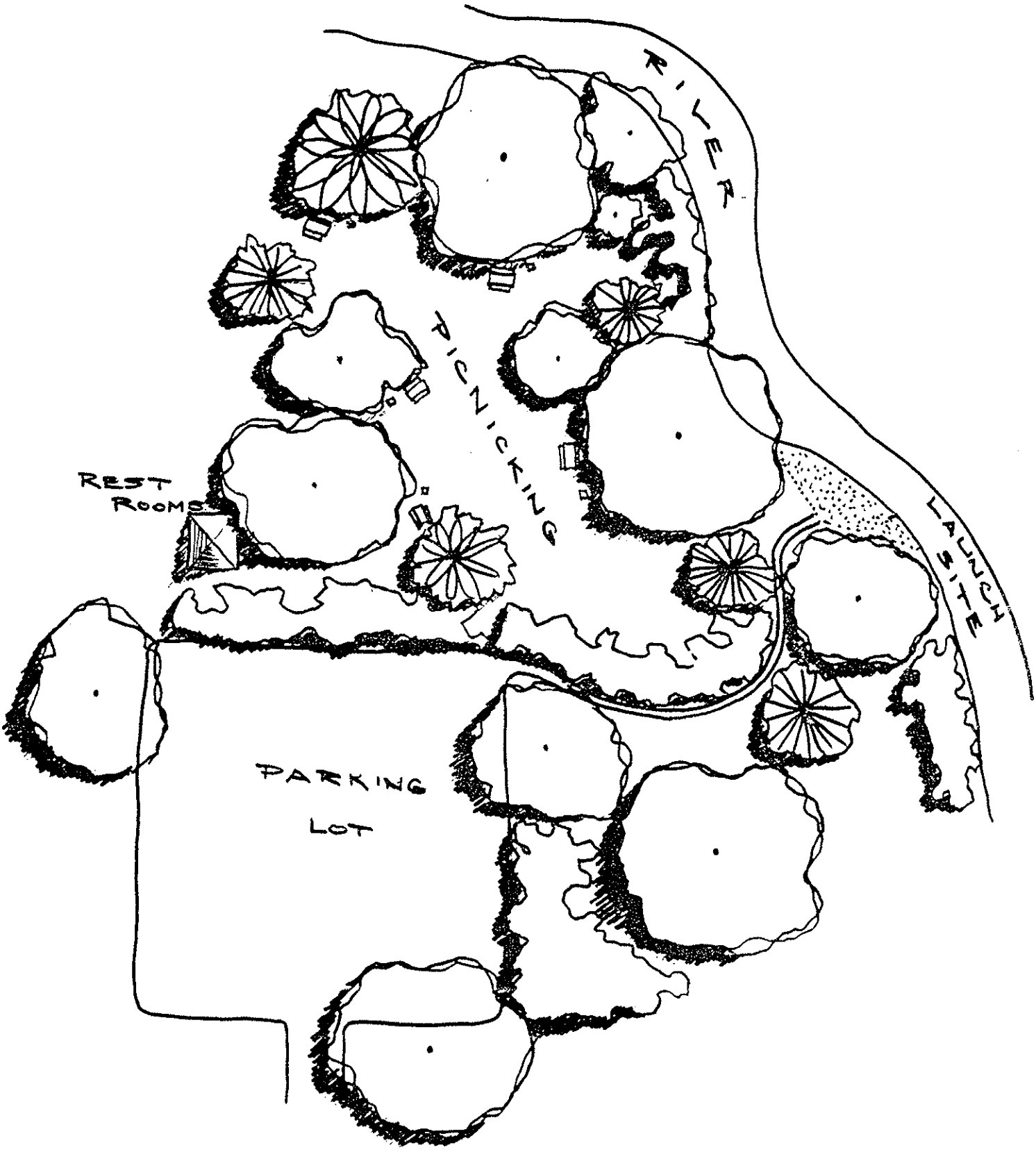
Travel through the corridor will be by water only because trail development is not considered practical at this time. This is due to the ruggedness of the terrain along the river, present agricultural land use at places and the substantial cost involved in obtaining land use type easements or land in fee the entire length of stream.

The Division of Outdoor Recreation will be responsible for overall coordination of the management and protection of the Blue River. In this capacity, the Division will periodically monitor the stream corridor to insure that the property is being managed according to the goals of the program and the intent of the law.

The Division of Forestry will be responsible for day to day management of the stream and corridor. This responsibility includes management considerations such as litter control, water quality control, and maintenance of access sites. In addition, the Division of Forestry will report to the Division of Outdoor Recreation any activity or use of the stream or corridor which is deterimental to the natural qualities of the stream.

The following policies will be adhered to in managing and developing the Blue River Corridor once it has been designated for inclusion into the System:

1. The depth of easement acquisition shall not extend farther than from the river bank to the visible horizon. In instances where the visible horizon extends beyond



TYPICAL ACCESS

SITE

the immediate river corridor it may not prove feasible to acquire easements great distances from the river. In general, the depth of easement acquisition will vary depending upon vegetative and topographic conditions.

2. Developed access points shall provide sanitary facilities, trash containers, water, canoe launching, parking, and limited picnic facilities where feasible.

3. Commerical concessions selling dry goods, groceries, equipment and bait shall not be permitted on property controlled by the State of Indiana.

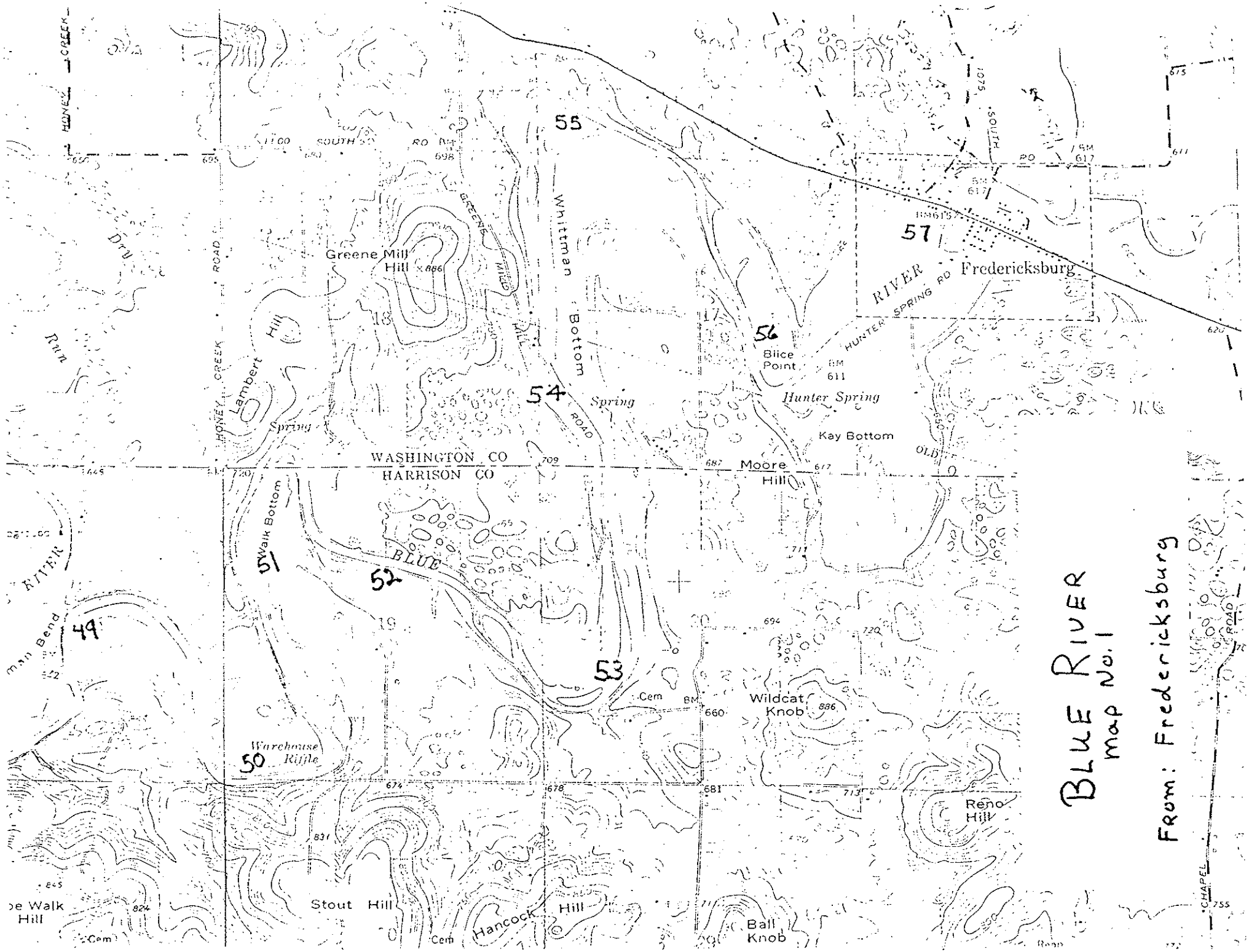
4. Trees, branches, or other debris shall be cut or removed only if their presence constitutes a safety hazard for river travelers. This shall not preclude the harvesting of timber as provided for in easements obtained by the Department of Natural Resources.

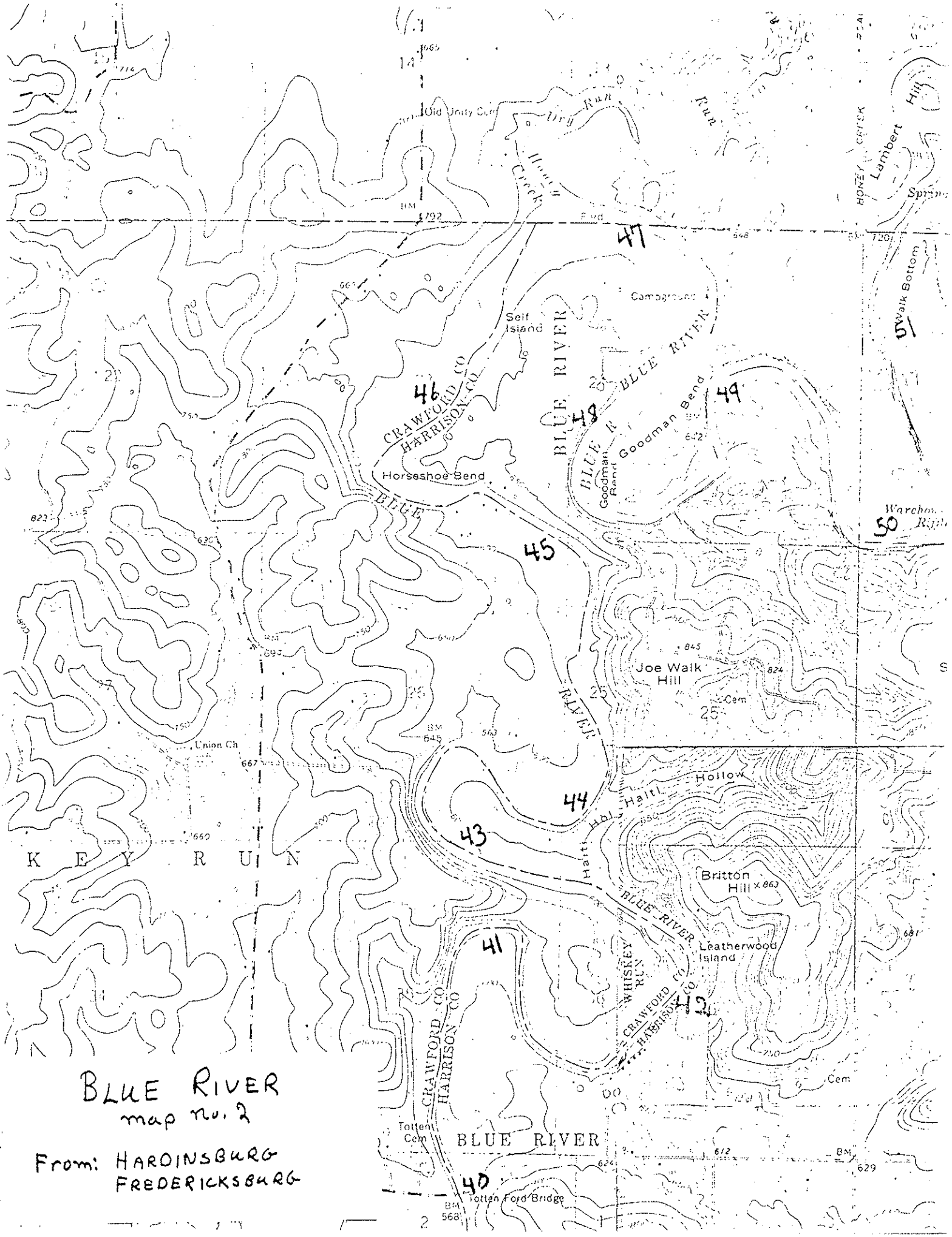
5. No action shall be taken to alter natural growth or features on lands owned or controlled by the Department of Natural Resources for the purpose of enchancing beauty, neatness, or amenities of the river corridor.

6. The primary visitor activities in the stream corridor shall be canoeing, boating, fishing, and nature observation.

7. Access site facilities will be designed and constructed so as to have the least possible effect upon the natural qualities of the river.

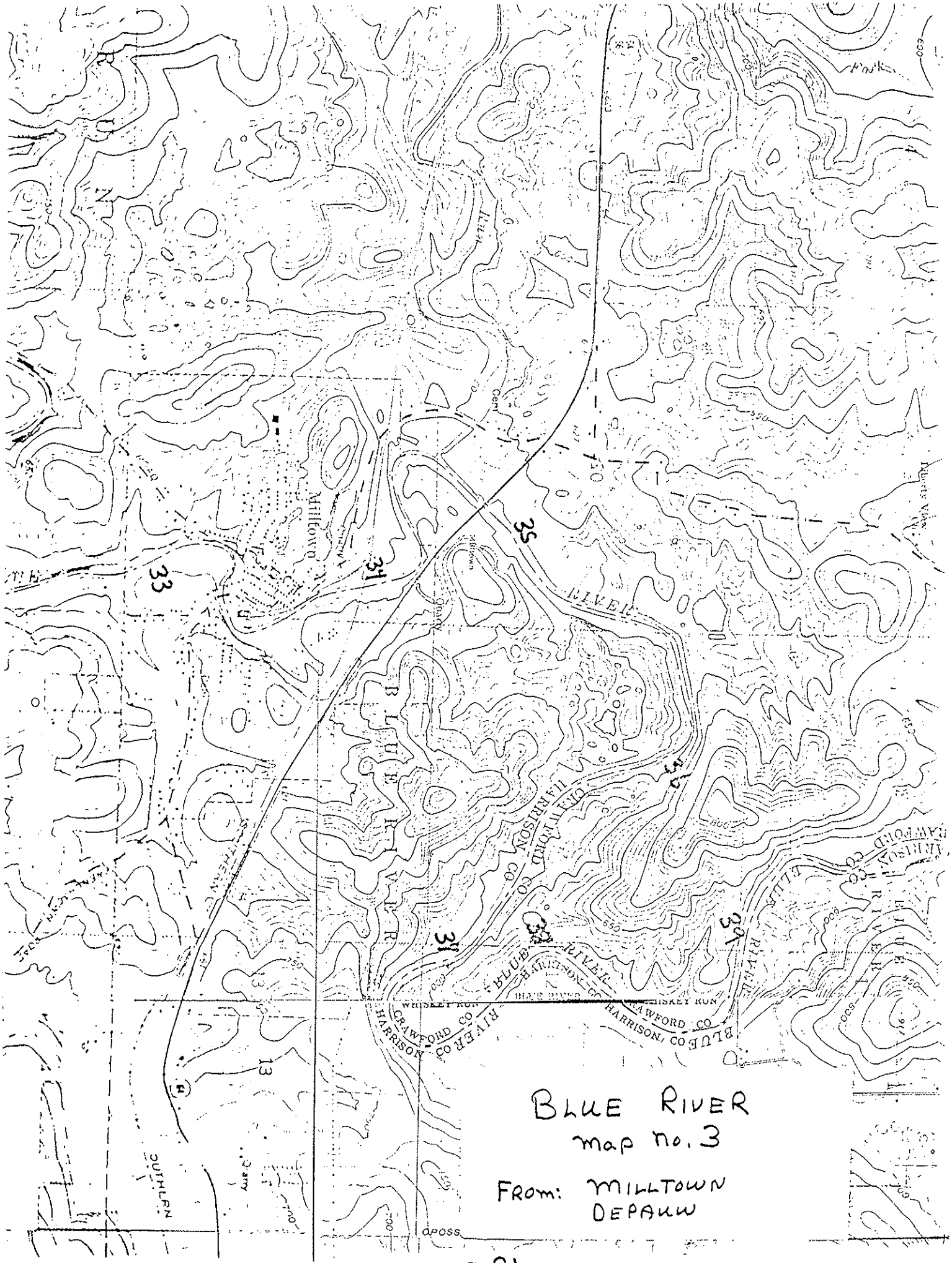
APPENDIX

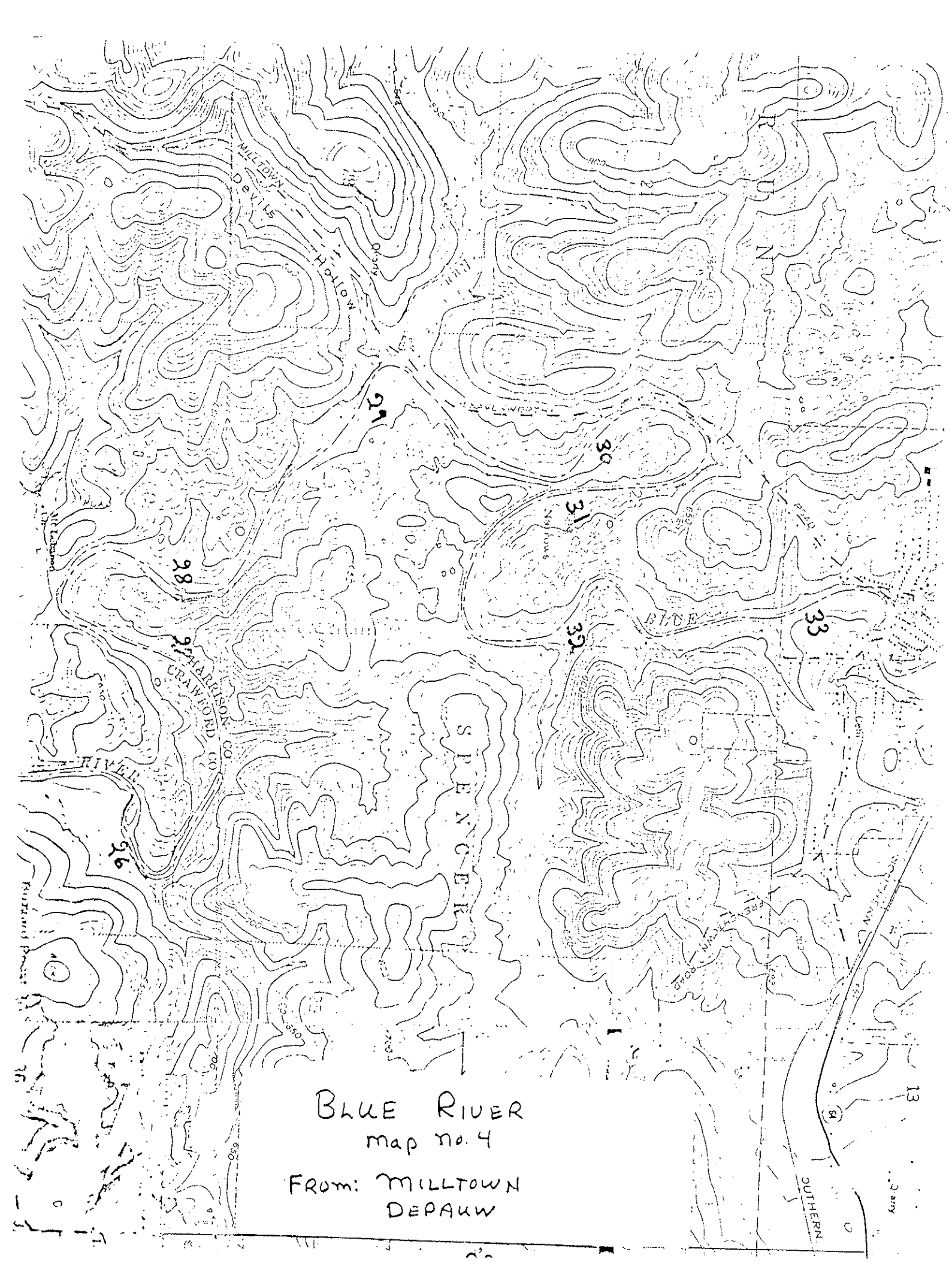

BLUE RIVER
Map No. 1
From: Fredericksburg
Greene Mill Hill
Whittman Bottom
Lambert Hill
Spring
Hunter Spring
Kay Bottom
Biice Point
Moore Hill
Fredericksburg
RIVER
WASHINGTON CO
HARRISON CO
Walk Bottom
BLUE
Wildcat Knob
Reno Hill
Stout Hill
Hancock Hill
Ball Knob
Warehouse Riffle
Main Bend
HONEY CREEK
SOUTH RD
HUNTER SPRING RD
OLD ROAD
CHAPEL
49
50
51
52
53
54
55
56
57



BLUE RIVER
map no. 2

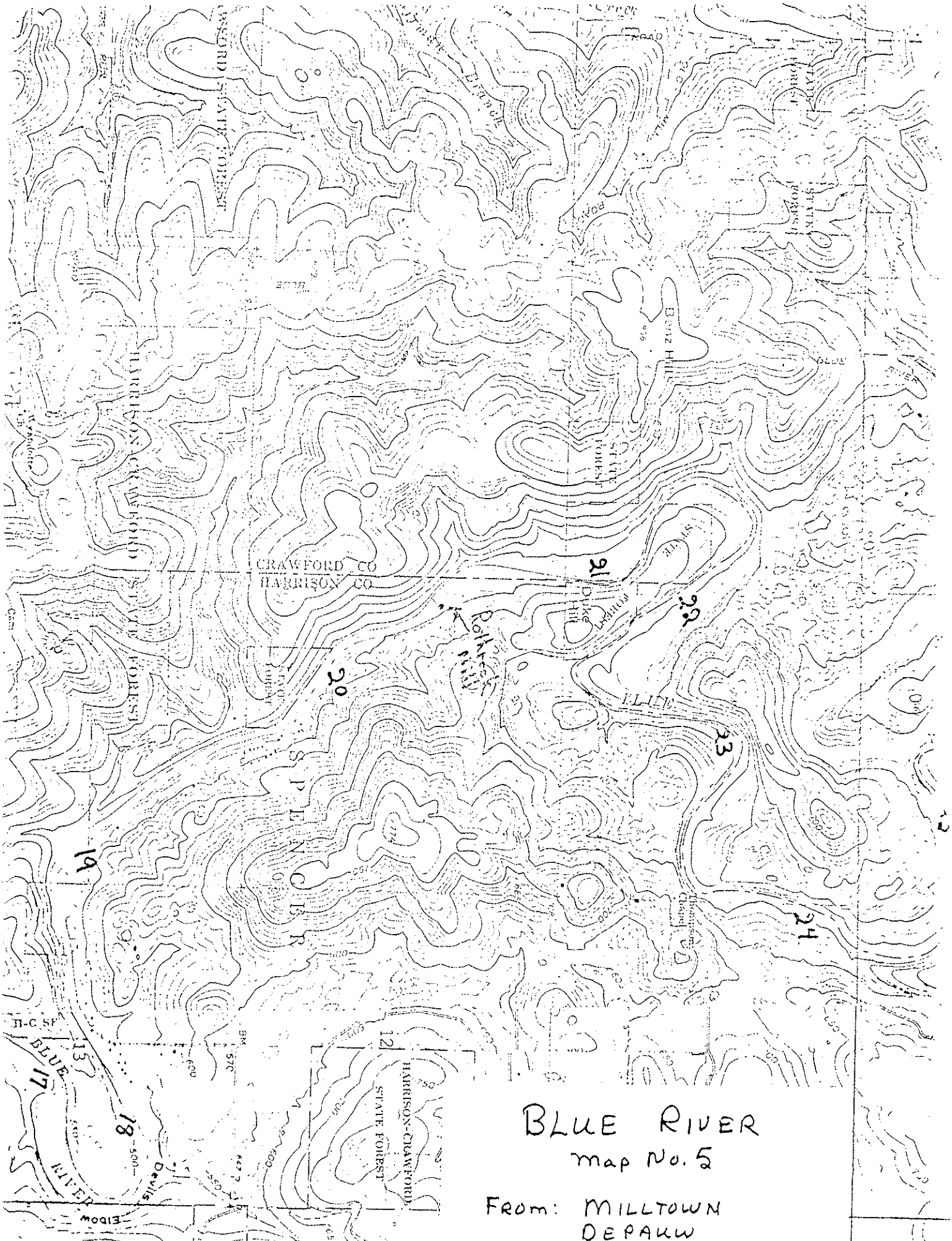
From: HARDINSBURG
FREDERICKSBURG


BLUE RIVER
map no. 3
FROM: MILLTOWN
DEPAUW



BLUE RIVER
map no. 4

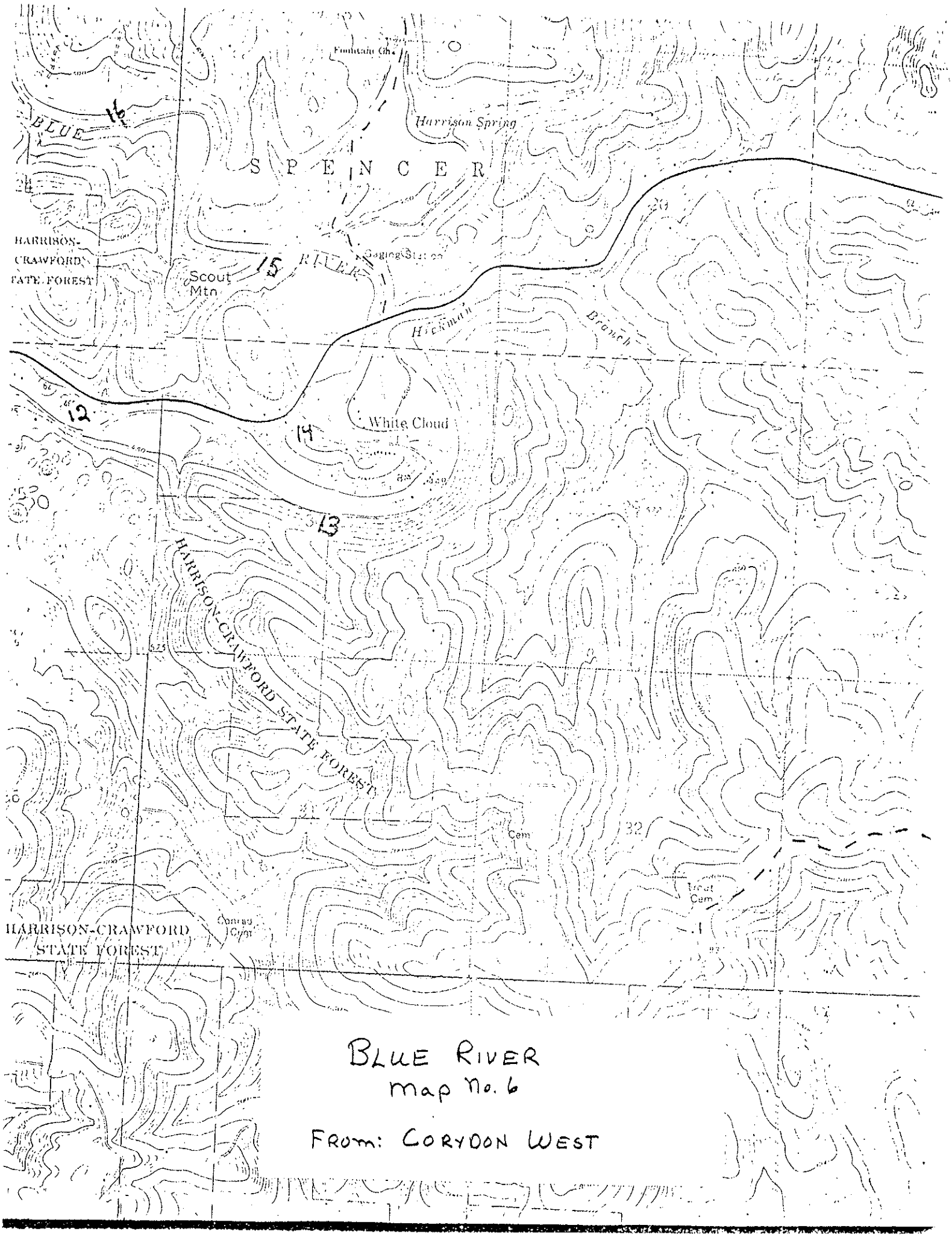
FROM: MILLTOWN
DEPAUW



BLUE RIVER

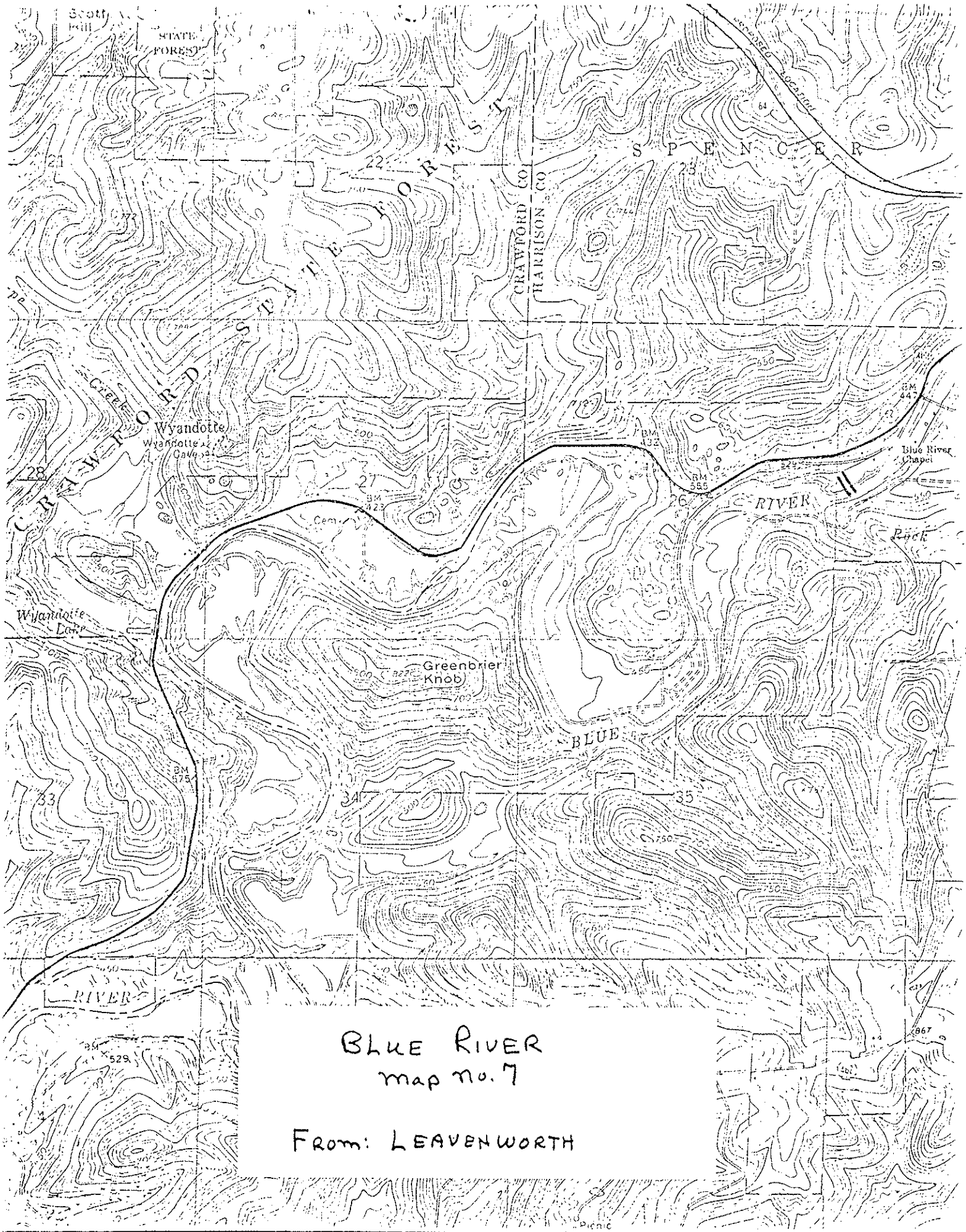
Map No. 5

From: MILLTOWN
DEPAUW



BLUE RIVER
Map No. 6

FROM: CORYDON WEST



BLUE RIVER
map no. 7

FROM: LEAVENWORTH

GENERAL DESCRIPTION OF BLUE RIVER PLANT COMMUNITIES

River edge community

This community is the most unstable of the four designated plant communities and occupies the area immediately adjacent to the rivers. In some instances it may be completely missing due to recent flooding or encroachment by the lowland community. Vegetation in the River edge community is comprised of near-hydrophytic plants such as willows, green briers, wild grapes, trumpetvine and juvenile plants from the lowland community. Plants in this area are characterizied by: (1) their ability to survive in rich, moist soil and (2) rapid regrowth between flooding periods.

Low Land community

The lowland community is crowded on the narrow flood plain between the rivers and the steep topography of the bluffs. Because this area is subject to frequent flooding, the soil is deep, moist, and rich and encourages large trees with dense canopies and prolific growth of undercover such as vines and shrubs.

The most unique characteristic of this community is the complete lack of any dominant species. Instead, there is a large number of species that constantly compete with one another. These species must be capable of sustaining periods of flooding and supporting seed germination and early growth under conditions of dense shade. Many are frequently considered "weed trees".

Species in this community include:

Lowland Community

box elder
cottonwood
sycamore
silver maple
hackberry
ash
elm
black locust
sweet gum
tulip tree
hazelnut
river birch
linden
sour gum
cat brier, green briers, sour brier
winter berry
buckthorn
poison ivy
virginia creeper
wild grape
spice bush
gooseberry
trumpetvine
coralberry
elderberry

Transitional community

Immediately above the lowland community there occur plants that are somewhat less tolerant to flooding and less capable of growth on shallower soils. This community is designated as the transitional community in the Vegetative Analysis, and may include some plants of the lowland or upland communities. Along the river bluffs this community is very much in evidence, growing on the talus piles at the base of cliffs and in the gullies that reach back into the wooded uplands. Along the dry creek beds such as Potato Run, the transitional community extends further back from the lowland community than at any other place and may occur for a considerable distance up the hill sides.

This community does not include as great a number of species as the lowland community. Major species are:

hackberry	beech
sugar maple	pin oak
redbud	serviceberry
sycamore	coralberry
tulip tree	blackberry
black walnut	paw paw
ash	

Upland Community

The upland community occurs well above the flood plain and predominates along the ridge tops and above the bluffs. It comprises the major portion of vegetation throughout the study area. Typically, these areas are characterized as: (1) having drier, shallower, and better-drained soils, (2) not producing such a dense shade canopy, (3) having a markedly-reduced number of species, and (4) not having the tangled under growth of the lowland community.

Cedars grow at the top of bluffs or other smaller rock outcroppings where the soil tends to be excessively shallow and the tree canopy parts to allow greater sunlight. These conifers are adapted to germinating and surviving in the areas of greater sun and drier soils but cannot compete with the deciduous trees.

Certain areas within the upland community have been extensively reforested with pines. It can be expected that in the distant future these areas will eventually revert back to a deciduous type community similar to the existing upland community.

Major species within the upland community are:

- oaks
- hickory
- sugar maple
- dogwood
- redbud
- tulip tree
- eastern red cedar
- persimmon
- sassafrass
- hawthorns
- beech
- coralberry
- blackberry
- sumacs
- poison ivy

It should be noted that without the existing vegetation, the entire area would quickly lose the visual impact and sequence which it now provides to its users. Development in any area should not reach a point where this amenity is drastically disturbed or destroyed.

SOILS

According to leading authorities, the characteristics of a soil at any given point are determined by (1) parent material, (2) climate, (3) the plant and animal life, (4) relief, and (5) time. The soils of the Blue River Valley will be described primarily in terms of their parent materials although the other factors certainly have affected these soils also.

These soils can be divided into the upland soils which were developed on material weathered from bedrock and valley soils which were developed on material weathered from unconsolidated materials, mainly recent alluvium and terraces. The soils have been further divided into soil associations which have generally similar characteristics. The soil associations in and adjacent to the Blue River valley are published in the General Soil Maps of Harrison, Crawford and Washington Counties. These maps have been prepared by the Agricultural Experiment Station and Cooperative Extension Service, Purdue University; and the Soil Conservation Service, U.S. Department of Agriculture.

I. Upland Soils Developed on Parent Material Derived From Bedrock.

A. The Corydon-Weikert-Berks Association: Steep, well drained, shallow, clayey Corydon in weathered limestone, and steep, well drained, shallow, loamy Weikert and moderately deep, loamy Berks in weathered sandstone and shale. Depth to underlying bedrock ranges from 10 to 20 inches and in places the weather resistant limestone outcrops. Very steep slopes, stoniness and shallow soil depths are limitations which affect its use for outdoor recreational activities.

B. The Wellston-Zanesville-Berks Association: Sloping, well drained, silty Wellston and sloping, well drained, silty Zanesville with fragipans, both in windblown silts and weathered sandstone and shale, and steep Berks in weathered sandstone and shale. These soils have slight to severe limitations for outdoor recreational activities depending upon slope which varies from 2 to 25%. Shallow bedrock is also a limitation for some uses.

C. The Crider-Hagerstown-Frederick Association: Sloping, well drained silty Crider in loess (20-40 inches of wind-blown silt) and weathered, cherty limestone, clayey Hagerstown in Loess (0.20 inches) and pure (high percentage of calcium carbonate) limestone, and Frederick in loess (0-20 inches) and cherty limestone. Erosion and surface runoff are the major hazards in the use and management of these soils.

II. Valley Soils Developed on Parent Material Derived From Recent Alluvium or Pleistocene Terraces.

A. Haymond-Wakeland Association: Nearly level, well drained, silty Haymond and somewhat poorly drained, silty Wakeland in alluvial deposits. These soils are subject to flooding and have moderate to severe limitations for outdoor recreational activities.

B. Huntington-Wheeling-Markland Association: Nearly level and sloping, well drained, silty Huntington in alluvial deposits,

loamy Wheeling on outwash sand and gravel, and clayey Markland in lake deposits. The Huntington is subject to flooding and has severe to moderate limitations for recreational activities. The Wheeling and Markland are terrace soils and have slight to severe limitations depending upon the type of recreational activity and the percent of slope which varies from 2 to 35%.

III. Location and Distribution of These Soils.

Starting at the confluence of the Ohio River and Blue River and proceeding upstream along the boundry between Harrison and Crawford counties to Interstate Road 64, valley soils consist of the Huntington-Wheeling-Markland Association and the Haymond-Wakeland Association. Valley walls in this reach contain soils from the Corydon-Weikert-Berks Association in Harrison County and the Wellston-Zanesville-Berks Association in Crawford County. From I-64 through Milltown to the Harrison-Washington county line the Corydon-Weikert-Berks Association dominates the valley in Harrison County and the Crider-Hagerstown-Frederick Association is prevailing in Crawford County. In Washington County valley soils belong to the Haymond-Wakeland Association. Upland soils near the river are the Crider-Hagerstown-Frederick Association.

BLUE RIVER

FISHERIES

Species Composition and Relative Abundance of Fish from the Blue River.

›mmon name	Scientific name	Total Number	%	Total Weight 1/	%
›lden redhorse*	Moxostoma erythrurum	614	7.47	432.58	35.20
›rp	Cyprinus carpio	75	.91	351.65	28.61
›ngear sunfish*	Lepomis megalotis	1033	12.58	56.95	4.63
›ite sucker*	Catostomus commersoni	272	3.31	38.26	3.11
›eshwater drum	Aplodinotus grunniens	20	.24	37.86	3.08
›allmouth bass*	Micropterus dolomieui	115	1.40	32.42	2.63
›g sucker	Hypentelium nigricans	129	1.57	29.08	2.36
›ver carpsucker	Carpiodes carpio	16	.19	27.67	2.25
›ck bass*	Ambloplites rupestris	123	1.49	27.50	2.23
›zzard shad	Dorosoma cepedianum	64	.77	24.06	1.95
›mmon shiner	Notropis cornutus	1465	17.84	23.67	1.92
›oneroller	Campostoma anomalum	1511	18.40	16.05	1.30
›eek chub	Semotilus atromaculatus	670	8.15	14.16	1.15
›annel catfish*	Ictalurus punctatus	9	.09	14.16	1.15
›erical eel	Anguilla rostrata	6	.07	14.05	1.14
›een sunfish*	Lepomis cyanellus	236	2.87	13.07	1.06
›ngnose gar	Lepisosteus osseus	3	.03	12.00	.97
›otted bass*	Micropterus punctulatus	42	.51	11.53	.93
›llow bullhead*	Ictalurus natalis	86	1.04	10.79	.87
›rgemouth bass*	Micropterus salmoides	6	.06	5.75	.46
›uegill*	Lepomis macrochirus	122	1.48	5.23	.42
›otted sucker	Minytrema melanops	7	.07	4.53	.36
›illback carpsucker	Carpiodes cyprinus	3	.03	3.91	.31
›allmouth buffalo	Ictiobus bubalus	1	.01	3.64	.29
›gnose minnow	Notropis emiliae	562	6.84	3.57	.29
›untnose minnow	Pimephales notatus	365	4.44	3.46	.28
›ack Bullhead*	Ictalurus melas	44	.53	2.89	.23
›uthern redbelly dace	Chrosomus erythrogaster	205	2.49	1.23	.10
›nded sculpin	Cottus carolinae	77	.93	1.22	.09
›ntail darter	Etheostoma flabellare	70	.85	.89	.08
›lden shiner	Notemigonus crysoleucas	15	.14	1.10	.08
›dfin shiner	Notropis umbratilis	69	.84	.60	.04
›ite shiner	Notropis albeolus	28	.34	.60	.04
›ss pickerel	Esox americanus	3	.03	.63	.04
›dfish	Carassius auratus	1	.01	.35	.02
› perch	Percina caprodes	18	.21	.28	.02
›ngethroat darter	Etheostoma spectabile	26	.31	.27	.02
›ear sunfish*	Lepomis microlophus	1	.01	.25	.02
›verjaw minnow	Ericymba buccata	45	.54	.20	.01
›yface shiner	Notropis rubellus	19	.23	.17	.01
›ckstripe topminnow	Fundulus notatus	12	.14	.12	.009
›wn bullhead*	Ictalurus nebulosus	1	.01	.10	.008
›eye shiner	Notropis ariommus	10	.10	.09	.007
›enside darter	Etheostoma blenniodes	5	.05	.04	.003
›elcolor shiner	Notropis whipplei	2	.02	.04	.003
›ded killifish	Fundulus diaphanus	1	.01	.01	.0008
›nny darter	Etheostoma nigrum	1	.01	.01	.0008
darter	Etheostoma asprigene	3	.03	.01	.0008
ALS		8,211	99.73	1,228.70	98.7834
me Fish					

Weight in pounds and hundreths of pounds

Relative Abundance and Percent Composition of the Game Fish from the Blue River.

Common name	Total Weight	%	Total Number	%
Golden redhorse	432.58	66.39	614	22.70
Longear sunfish	56.95	8.74	1033	38.20
White sucker	38.26	5.87	272	10.05
Smallmouth bass	32.42	4.87	115	4.25
Rock bass	27.50	4.22	123	4.54
Channel catfish	14.17	2.17	9	.32
Green sunfish	13.07	2.00	236	8.72
Spotted bass	11.52	1.76	42	1.55
Yellow bullhead	10.79	1.65	86	3.18
Largemouth bass	5.75	.88	6	.22
Bluegill	5.23	.80	122	4.50
Black bullhead	2.89	.44	44	1.62
Redear sunfish	.25	.03	1	.03
Brown bullhead	.10	.01	1	.03
TOTALS	651.49	99.93	2,704	99.92

Standing Crop of miscellaneous and Game Fish taken from fifteen stations on the Blue River.

Stations	acres	lbs/acre	Miscellaneous lbs/acre	Game Fish lbs/acre
1	.03	478.66	364.66	114.00
2	.06	303.33	200.16	103.16
3	.11	166.63	58.36	108.27
4	.17	236.29	71.29	165.00
5	3.03	22.47	3.79	20.69
6	.27	119.25	27.81	91.44
7	.31	283.38	33.45	249.93
8	.15	276.13	103.73	172.40
9	.25	43.00	33.36	9.64
10	3.63	52.53	27.42	25.11
11	3.30	29.28	11.38	15.50
12	4.24	48.92	28.18	20.74
13	15.15	8.42	2.68	5.74
14	9.00	30.26	20.02	10.24
15	608.00	.0024	.00144	.00101
TOTALS	647.70	2,098.5524	986.29144	1,111.86101

The Relative Abundance and Percent Composition of Miscellaneous Fish Collected from the Blue River.

Common name	Total Weight	%	Total Number	%
Carp	351.65	60.92	75	1.36
Freshwater drum	37.86	6.55	20	.36
Hog sucker	29.08	5.03	129	2.34
River carpsucker	27.67	4.79	16	.29
Gizzard shad	24.06	4.16	64	1.16
Common shiner	23.67	4.10	1465	26.60
Stoneroller	16.05	2.78	1511	27.43
Creek chub	14.16	2.45	670	12.16
American eel	14.05	2.43	6	.10
Longnose gar	12.00	2.07	3	.05
Spotted sucker	4.53	.73	7	.12
Quillback carpsucker	3.91	.67	3	.05
Smallmouth buffalo	3.64	.63	1	.01
Pugnose minnow	3.57	.61	562	10.20
Bluntnose minnow	3.46	.59	365	6.62
Banded sculpin	1.22	.21	77	1.39
Southern redbelly dace	1.23	.21	205	3.72
Golden shiner	1.10	.19	15	.27
Fantail darter	.89	.15	70	1.27
Grass pickerel	.63	.10	3	.05
White shiner	.60	.10	28	.50
Redfin shiner	.60	.10	69	1.25
Goldfish	.35	.06	1	.01
Log perch	.28	.04	18	.32
Orangethroat darter	.27	.04	26	.47
Silverjaw minnow	.20	.03	45	.81
Rosyface shiner	.17	.02	19	.34
Blackstripe topminnow	.12	.02	12	.21
Popeye shiner	.09	.01	10	.18
Greenside darter	.04	.006	5	.09
Steelcolor shiner	.04	.006	2	.03
Johnny darter	.01	.001	1	.01
Mud darter	.01	.001	3	.05
Banded topminnow	.01	.001	1	.01
TOTALS	577.22	99.955	5,507	99.83

INDIANA
DEPARTMENT OF NATURAL RESOURCES

Criteria for Identifying Natural, Scenic and Recreational Rivers in Indiana

The 1973 General Assembly through passage of Senate Enrolled Act No. 134 created a Natural, Scenic, and Recreational River System. This act authorized the Indiana Department of Natural Resources to administer the implementation and development of the system. The criteria below have been developed to evaluate streams for possible inclusion in the system.

The following definitions taken from the act will assist in understanding the criteria.

A. The term "natural river" shall mean any river which, free of impoundments, is generally unpolluted, undeveloped, and unaccessible.

B. The term "scenic river" shall mean any river which is free of impoundments, accessible in several places, and with minimal pollution and shore line developments.

C. The term "recreational river" shall mean any river which does not contain those characteristics necessary to qualify as a natural or scenic river, but which still maintains scenic or recreational characteristics of unusual and significant value.

D. The term "river" shall mean any flowing body of water and adjacent lands, or portions thereof.

The following criteria define 1) the qualities necessary for any stream to be considered for the Natural, Scenic, and Recreational Streams System and 2) the qualities which place a stream into the different categories of the system.

The criteria are designed to give the state an objective rating system which can be applied to any river. Even though a stream meets the necessary criteria, it may be disqualified if its rating from classification criteria is too low to be included in one of the classes.

Criteria Necessary to Qualify for Evaluation

1. Stream segment must be a minimum of 10 miles long.

2. Depth must be adequate to canoe in the months of March through June in years of normal rainfall although some rapids may require wading or portaging. Intermittent streams shall not be qualified.

3. If a stream segment receives zero points on any of the classification criteria below it is automatically disqualified from further consideration. The automatic disqualification is made if:

   a. The stream (or segment) is channelized for more than 5% of its stream length or a dam or dams impound water which create artificial pools that back up water for more than 5% of the stream's length at normal summer water levels. Inundation and/or channelization having a cummulative total of more then 5% disqualifies the stream. (See classification criteria no. 3)

b. Pollution is chronic and visible (not including muddy waters) (See classification criteria no. 6)

c. A total of more than 5 miles of paralleling roads are within 1,000 feet per 10 miles of stream. (See classification criteria no. 7)

d. There are ten or more road, railroad or overhead utility line crossings per ten miles of stream. (See classification criteria no. 8)

Explanatory Comments on Necessary Criteria

Stream Segment Length

The minimum length of any segment to be considered should be 10 miles. This length allows for a pleasant half-day to full-day float trip, a stream-side walk of several hours, or fishing on a stretch long enough to provide variety of fish habitat and water appearance. A length any shorter does not allow an opportunity for adequate immersion in the natural or scenic environment. It would be piecemeal, chopped up naturalness. While the 10-mile minimum is admittedly an arbitrary length, field experience and interviews with other river users varify it as a reasonable and suitable length for a high-quality state system. There is no reason that short segments could not be protected by county governments or other arrangements. They should not normally become part of the state Natural Streams System, which should represent the best of the state.

Depth Rating

A channel depth of 6-12" is usually adequate to float a canoe. There is no objective measure of stream flow or depth which is easily taken and meaningful to this classification. Cubic feet per second measurements are meaningful only in a uniform channel with constant gradient. The pools, riffles varying widths and gradients of the streams in Indiana make comparison between streams on a cubic feet per second basis meaningless.

Classification Criteria

Once a stream is seen to meet the criteria qualifying it for study, it is then rated for classification as a natural, scenic, or recreational stream. If it fails to meet minimum rating values, it is disqualified.

The system for classification has eight categories for which the stream or any ten mile segment of it is investigated. These are naturalness of bank vegetation, a vegetation depth-length index, physical modification of stream course, human developments, special natural features, water quality, paralleling roads, and number of crossings. For each category a rating value is assigned, either 0, 1, 2, 3, or in one case 4, on the basis of a set of defined criteria. The lower points are for lower quality, the higher points for better quality, according to the defined criteria. Streams are then classified into one of three groups according to their point totals.

Total Points	Classification
21+	Natural
17 - 20	Scenic
13 - 16	Recreational

Streams with ratings of 12 or lower are disqualified however, they may be rated and considered at a later date if improvement has been made to warrent re-evaluation.

The following rating table was approved by the Natural Resources Commission for use in future evaluations. The explanation of each criterion and its rating follows.

1. Naturalness of Bank Vegetation[1]

0 Pts. The native vegetation present and in immediate view from the stream (100' on each side + close visible slopes) is more than 75% disturbed by heavy grazing, cutting, or clearing.

1 Pts. The native vegetation present and in view from the stream is 51-74% disturbed by heavy grazing, cutting, or clearing.

2 Pts. The native vegetation present and in view is 25-50% visibly disturbed as above.

3 Pts. The native vegetation present and in view is 25% or less disturbed. Some light cutting, cattle grazing, or access, and clearing or thinning may have occurred, but as long as the character of the form remains intact, the condition of the vegetation will still rank 3.

[1]Native vegetation includes communities of plants of local origin dominating the land areas designated in either secondary successional or old-growth stages. The communities may include some introduced species.

2. Vegetation Depth-Length Index

Depth of the native vegetation affects the experience of isolation and naturalness along a stream by the public.

There are two classes of depth used in determining the index:

1. Native vegetation extending back from the bank at least 100 feet is simply measured in the miles of its length along the stream.

2. Forest or brush fringes and strips of vegetation less than 100 feet deep are given 1/2 the value of their length along the stream.

Examples: Strips of 150 ft. wide forest extend for 3 miles along both banks of the forest. Their index is 6 miles (both banks, each for 3 miles).

A fringe of forest 3-5 trees deep covers one bank for 3 miles. Its index value is 1.5 miles.

These two combined on a 10 mile stretch of stream would be 7.5 miles /20 miles of banks= 38%.

Rating

0 Pts. Stream has a vegetation depth-length index of less than 25%

1 Pts. Stream has a vegetation depth-length index of 25-50%

2 Pts. Index of 51-74%

3 Pts. Index of 75% or more

3. Physical Modifications of the Stream or Its Course

0 Pts. Disqualified-stream (or segment) is channelized for more than 5% of its stream length or a dam or dams impound water which create artificial pools that back up water for more than 5% of the stream's length at normal summer water levels. Inundation and/or channelization having a cummulative total of more than 5% disqualifies the stream.

1 Pts. Stream (or segment) is channelized for more than 3% but not more than 5% of the stream's length or a dam or dams impound water which create artificial pools that back up water for more than 3% but not more than 5% of the stream's length at normal summer water levels. Inundation and/or channelization should not have a cummulative total of more than 5%.

2 Pts. Stream (or segment) is not channelized or a dam or dams impound water which create artificial pools that back up for 3% or less of the stream length at normal summer water levels. Inundation and/or channelization should not have a cummulative total of more than 3%.

3 Pts. Stream (or segment) is not channelized and no dams are present along the entire stream length.

Notes to Classification Criteria No. 3

-If a stream segment receives a rating of 1 or 2 on this classification because of the presence of impoundments and it otherwise rates high enough for recommendation into the program, it will automatically be recommended as a recreational stream.

-Low head impoundments constructed within the banks of the stream channel are exempt from consideration, as impoundments under this classification criteria provided the impoundments do not visually affect the users' experience on the water. However, for each segment where low head impoundments are located, one point shall be deducted from that segment's point total.

4. Human Development of Flood-[2]plains, Slopes, and Visible Uplands (The stream (or segment) is to be rated when foliage is full for both a) urban impact and b) additional visible structures.)

a. Urban Impact

0 Pts. More than 10% urban along the stream

1/2 Pts. Between 5% and 10% urban along stream

1 Pts. Up to 5% urban along stream

1 1/2 Pts. 100% non-urban along both banks

b. Additional Visible Structures

0 Pts. More than twenty additional visible houses, cabins, barns, industrial buildings, gravel pits, or clusters allowed for every ten miles.

1/2 Pts. Between 11 and 20 additional visible houses, cabins, barns, industrial buildings, gravel pits, or clusters allowed for every ten miles.

1 Pts. Between 6 and 10 additional visible houses, cabins, barns, industrial buildings, gravel pits, or clusters allowed for every ten miles.

1 1/2 Pts. Up to five visible houses, cabins, barns, industrial buildings, gravel pits or clusters allowed every ten miles.

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[2] A cluster is defined as up to five cabins, houses, etc., located immediately adjacent to each other.

5. Special Natural Features

Views, species of plants, fish and wildlife habitat, or geological formations, occurring anywhere along the length of the stream (or segment thereof) either singly or in combination that are:

0 Pts. Not of local significance, not some of the finest examples of locally common features.

1 Pts. Of local significance

2 Pts. Of regional significance

3 Pts. Of statewide significance

4 Pts. Of national significance

6. Aesthetic Quality of Water

0 Pts. Disqualified- pollution is chronic and visible (not including muddy waters)

1 Pts. Visual pollution periodic but infrequent. Turbid or muddy chronically.

2 Pts. Visual pollution, except for muddy water, is rare. Turbid or muddy during half or fewer of the 6 warm season months.

3 Pts. No pollution visible except for highly unusual accidents. Turbid or muddy only after heavy rains, then stream clears up rapidly.

7. Paralleling Roads[3]

0 Pts. Disqualified-a total of more than 5 miles of paralleling road within 1,000 feet per 10 miles of stream.

1 Pts. Up to a total of five miles of paralleling county, state, or U.S. highways within 1,000 feet per 10 miles of stream.

2 Pts. Up to a total of one mile paralleling county or state (but no U.S.) highways within 1,000 feet per 10 miles of stream.

3 Pts. Up to a total of three-fourths of a mile of paralleling county roads within 300 feet per ten miles of stream. No state, U.S. or interstate highways paralleling within 1000 feet of the stream.

8. Crossings[4]

0 Pts. Disqualified- ten or more road, railroad or overhead utility line crossings per ten miles of stream.

1 Pts. Six to ten crossings per ten miles of stream

2 Pts. Four or five crossings per ten miles of stream

3 Pts. Zero to three crossings per ten miles of stream

[3]Paralleling roads including railroads are defined by their aesthetic effect on the user of the stream. Roads may be excepted if cars travelling them are invisible and inaudible from the river. Highly objectionable roads more than 1,000 feet from the stream may reduce the rating in individual cases.

[4]Covered bridges, foot bridges and fords may be excepted as crossings if, in the judgement of the examiners, they do not seriously impair the visual quality of the stream area.

Public Law No. 124
[S. 134. Approved April 24, 1973.]

SENATE ENROLLED ACT No. 134

AN ACT to amend IC 1971, 13-2 by adding a new chapter creating a natural, scenic and recreational river system.

Be it enacted by the General Assembly of the State of Indiana:

SECTION 1. IC 1971, 13-2 is amended by adding a new chapter to be numbered 26 and to read as follows:

Chapter 26. Natural, Scenic and Recreational Rivers-Preservation.

Sec. 1. This chapter shall be administered by the Indiana Department of Natural Resources which shall hereinafter be referred to as the "Department."

Sec. 2. As part of the continuing growth of the population and the development of the economy of the State of Indiana, it is necessary and desirable that rivers of unusual natural, scenic or recreational significance be set aside and preserved for the benefit of present and future generations before they have been destroyed; for once destroyed, they cannot be wholly restored. It is essential to the people of the State of Indiana that they retain the opportunities to maintain close contact with such natural, scenic and recreational rivers and to benefit from the scientific, aesthetic, cultural, recreational, scenic, and spiritual values they possess. It is, therefore, the public policy of the State of Indiana that a natural, scenic and recreational river system be established and maintained; that such areas be designated, acquired and preserved by the state; and that other agencies, organizations, and indi-

viduals, both public and private, be encouraged to set aside adjacent lands for the common benefit of the people of present and future generations.

Sec. 3. The following definitions are for use in this chapter only and shall be in no way construed to apply to any other chapter.

(a) The term "commission" shall mean the Indiana department of natural resources commission.

(b) The term "director" shall mean the director of the department of natural resources.

(c) The term "natural river" shall mean any river which, free of impoundments, is generally unpolluted, undeveloped, and unaccessible.

(d) The term "scenic river" shall mean any river which is free of impoundments, accessible in several places, and with minimal pollution and shore line developments.

(e) The term "recreational river" shall mean any river which does not contain those characteristics necessary to qualify as a natural or scenic river, but which still maintains scenic or recreational characteristics of unusual and significant value.

(f) The term "system" shall mean the Indiana natural, scenic and recreational river system.

(g) The term "adjacent lands" shall mean the area of land paralleling, but not necessarily contiguous to, the river, needed to preserve, protect, and manage the natural, scenic and/or recreational character of the river.

(h) The term "river" shall mean any flowing body of water and adjacent lands, or portions thereof.

(i) The term "water use easement" shall mean the granting of the right of the general public to travel along or across all water portions of the river.

(j) The term "scenic easement" shall mean the granting of protection of adjacent land in its present state to preserve its natural or scenic characteristics.

(k) The term "land use easement" shall mean the granting of the right of the general public to use the adjacent lands.

(l) The term "conservation easement" shall be defined pursuant to IC 1971, 14-4-5.5-1.

Sec. 4. (a) The director is authorized to study and, from time to time, submit to the commission proposals for the inclusion of any section of a river into the system, which in his judgment fall within one or more of the categories of natural river, scenic river, or recreational river.

(b) In recommending any river or section for inclusion in the system, the director shall prepare a detailed report on the factors which, in his judgment, make the river worthy of designation for inclusion in the system. This report shall evaluate among other categories:

(1) length of segment

(2) condition of naturally occurring vegetation

(3) stream scenic view

(4) physical modification of stream course

(5) human developments along stream

(6) unique or special features of area

(7) water quality

(8) paralleling roads

(9) number of stream crossings

(c) Specific criteria for each of these natural river, scenic river, and recreational river categories will be selected after having given due consideration to the above categories and any other categories which are deemed to be important.

Sec. 5. (a) Based upon the study and recommendations of the director, the commission may designate by rule and regulation a river for inclusion into the system in accordance with IC 1971, 4-22-2.

(b) Prior to the promulgation, the director shall notify each adjoining or abutting land owner of such plans and recommendations by registered mail and shall conduct a public hearing in the county which contains the largest section of the river being considered.

Sec. 6. In all planning for the use and/or development of water and related land resources of rivers in the sys-

tem, including the construction of impoundments, diversions, realignments, rip-rapping, roadways, crossings, channelizations, locks, canals, or other uses which may change the character of a river or destroy its scenic values, full review and evaluation of the river as a scenic resource shall be given and the environmental impact of the proposed use and or development shall be determined as specified in IC 1971, 13-1-10, before plans for use and/or development are approved by the commission.

Sec. 7. No use and or development of water and related land resources of rivers in the system will be approved if in the judgment of the commission such use and/or development may alter the original classification of a river in the system.

Sec. 8. The director shall procure and maintain a plan for the establishment, development, management, use and administration of rivers in the system. The river system plan shall be included and become an integral part of the comprehensive state plans for water management and outdoor recreation.

When a river is proclaimed a part of the system, it will become an administrative responsibility of the director. The director will take the necessary action in keeping with the policy of this chapter to acquire, develop, maintain, and preserve the river and authorized related land area in accordance with his powers and duties conferred elsewhere by law with respect to parks, fish and wildlife areas, reservoirs, forests, and miscellaneous areas. The director may seek assistance in the development, operation and maintenance of scenic rivers from other governmental units and agencies.

The director shall have the power to acquire on behalf of the State of Indiana land in fee title or any other interest in land including water use easements, scenic easements, and land use easements. With regard to conservation and water use easements only, the director shall have the power to exercise the right of eminent domain on behalf of the state of Indiana. Acquisition of land or of interest therein may be by purchase with appropriated or donated funds, exchanges, donations, or otherwise.

The director may seek financial assistance for land acquisition and for facility development of scenic rivers

from federal and local governmental sources and from private groups and individuals.

Sec. 9. Nothing in this chapter shall preclude a component of the state system from becoming a part of any national scenic rivers system. The director shall encourage and assist federal studies for inclusion of Indiana rivers in a national scenic rivers system. The director may enter into written cooperative agreements for joint federal-state administration of an Indiana component of a national scenic rivers system, provided such agreements for the administration of water and related land uses are not less restrictive than those set forth in this chapter.

Sec. 10. Recognizing that most of the rivers recommended for inclusion in the system may not be state owned, the Indiana General Assembly encourages riparian owners to grant easements to the director for the purposes of this chapter.

Sec. 11. The Department of Natural Resources is authorized to expend funds for the purposes of this chapter already appropriated or which may from time to time be appropriated to the department from any fund whatsoever for the purpose of developing public recreation facilities.

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