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ELEVEN POINT NATIONAL SCENIC RIVER UNIT PLAN

Mark Twain National Forest

**EASTERN REGION • FOREST SERVICE • U. S. DEPARTMENT of AGRICULTURE
MILWAUKEE, WISCONSIN**

UNIT PLAN
FOR MANAGEMENT OF THE
ELEVEN POINT NATIONAL SCENIC RIVER
MARK TWAIN NATIONAL FOREST

Submitted:

Planning Staff

4/25/72
Date

Recommended:

Ronald H. Olsen
Planning Staff Officer

7/10/72
Date

Robert H. Mason
Execution Staff Officer

7/10/72
Date

Active James J. Lyons
Forest Engineer

7/10/72
Date

John E. Ledgerwood
Administrative Officer

7/10/72
Date

Approved:

Mardon W. Joiner
District Ranger, Dorephan

7/11/72
Date

Frank E. Withers
District Ranger, Winona

7-11-72
Date

James E. Brewer
Forest Supervisor

12 July 72
Date

John H. Craven
Regional Forester

May 23, 1973
Date

EASTERN REGION

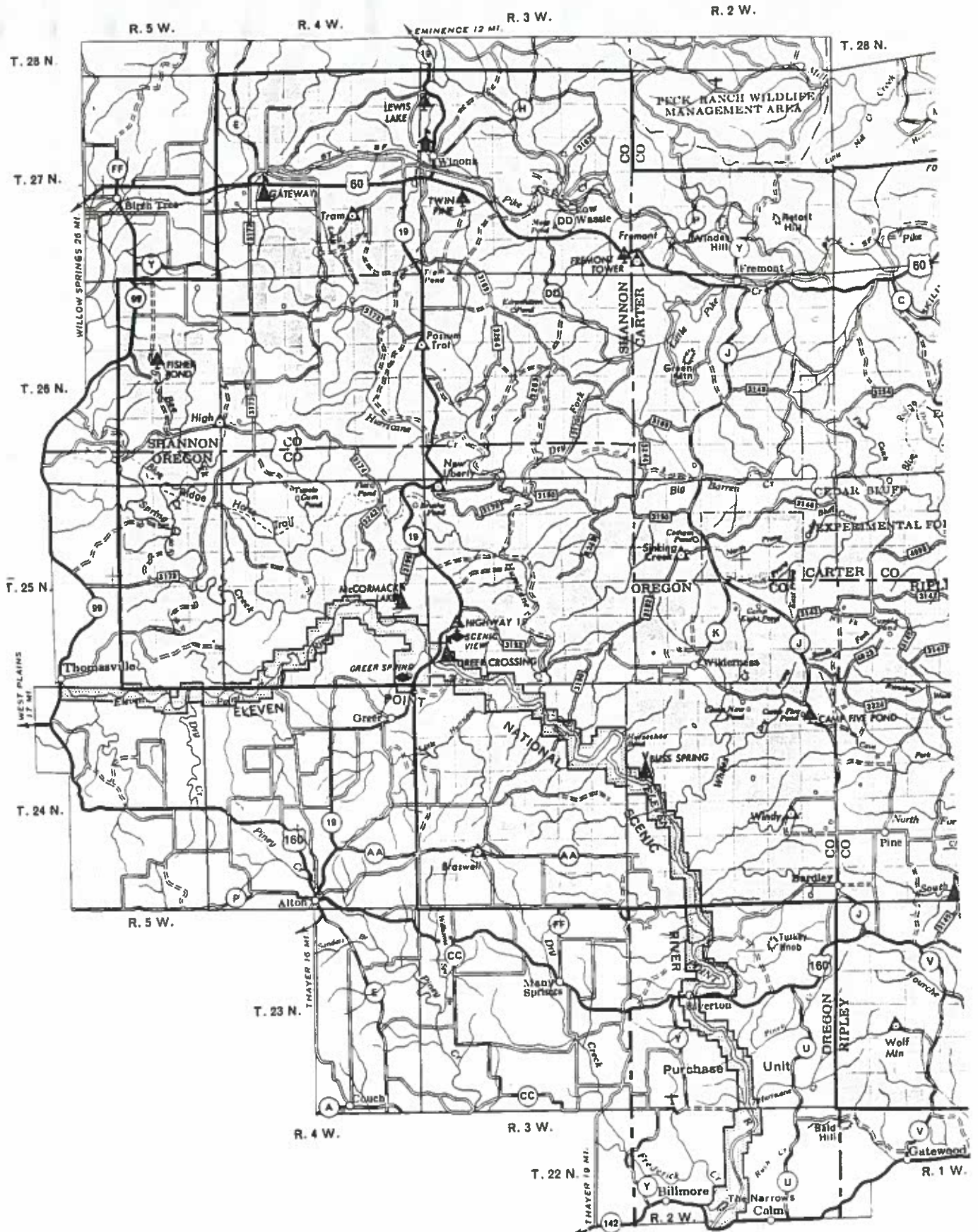


FIGURE 1.
ELEVEN POINT NATIONAL SCENIC RIVER AREA
 SCALE: 1/4" = 1 mile

UNIT PLAN
ELEVEN POINT NATIONAL SCENIC RIVER

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FOREWORD

This plan of management for the Eleven Point National Scenic River was prepared by an interdisciplinary planning team on the Mark Twain National Forest. Full appreciation of the plan requires the reader to understand the philosophy of management which the team followed in preparing the plan.

Basic objectives come from Public Law 90-542, The Wild and Scenic Rivers Act. These basic objectives call for protection and preservation of the values that qualified the Eleven Point as a national attraction. The values to be protected and preserved are natural features, including the water, the air, the vegetation, the wildlife, the fish, and the soil; also, the attributes provided by Nature for the American people, including solitude, scenery, and recreation experience; and, also, there are geologic, historic, cultural, archeologic, and scientific values.

The often quoted Pogo has stated, "We have met the enemy and he is us." The scenic river values must be protected for and from people.

This plan of management was developed under the basic philosophy of protection from degradation by the people that love the river. It was also written to preserve the values that qualify the river as a national scenic attraction.

The very basic assumption that is followed throughout the plan is that Nature did such a fine job of designing and maintaining the Eleven Point River that there is a chance people, in their quest to enjoy Nature's values, will destroy the attractions. This plan is not so much a plan of

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management for the river and the land--Nature will take care of these--as it is a plan for management of the people who will come to the river to enjoy the river values.

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INTRODUCTION

110 - Direction

The Forest Service assumed responsibility for administration of the Eleven Point National Scenic River when the Wild and Scenic Rivers Act (PL 90-542) became law in 1968. The law required the Forest Service to classify the river, establish a boundary, and implement the classification through a management plan. The law also stated the objectives that the management plan must adhere to:

1. Protect and enhance the scenic, recreational, geologic, fish and wildlife, historic, cultural, archeological, scientific, and other values.
2. Preserve the river in a free-flowing condition.
3. Protect the river and its immediate environments for the benefit and enjoyment of present and future generations.
4. Protect water quality and fulfill other vital national conservation purposes.

With these objectives in mind, the first plan known as the River Plan - Eleven Point (17) was developed by the Mark Twain National Forest. After considerable public involvement and professional resource analysis, the Eleven Point was classified as a Scenic River. The plan was submitted to Congress and published in the Federal Register, and is used here as a guide for this more complete analysis of the management problems.

The problems of protecting the fragile resources of a river while providing for public use are complex. Use by large numbers of people may destroy the very resource they come to enjoy. The narrow Scenic River

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corridor allows easy access by the public, and a host of harmful influences; such as water pollution, all-terrain vehicles, and unnatural may infiltrate the zone. The unique and fragile nature of the resources themselves indicates we must administer with wisdom and a tender hand.

A comprehensive management plan is obviously needed to meet the challenge of increasing use. The attached plan will meet the challenge.

120 - Management Plan Objectives

This management plan:

1. Meets the criteria of legislation as written in Public Law 94-163, the Wild and Scenic Rivers Act.
2. Establishes a philosophy of management for the scenic river based on resource quality standards and user experience levels.
3. Develops policies to resolve identified problem areas based on the philosophy of management and existing Forest Service policies. In new problem areas developed, policies may be formulated. In the interim, established standards will guide decisions).
4. Presents an orderly development plan based on resource protection and user needs.
5. Develops policies that will insure the safety of the use of funds, public understanding of management, enforcement of regulations, and research.

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6. Considers known aspects of the ecology of the Scenic River Zone, and provides for Man as a part of the natural community, rather than an intruder.

130 - Supply

A guide to Missouri streams (14) lists 37 float streams with a total of 2,200 miles of floatable water located mainly within the Ozark Highlands. There are additional streams in the Arkansas portion of the Ozarks. These streams are generally clear and fast-flowing, many spring fed, and located in a forested setting. The majority afford little canoeing difficulty and are rated as easy to medium. For the most part, the streams flow through private land and have no recreational developments. Access is usually at road crossings over the highway rights-of-way or by landowner permission.

Four Ozark rivers have been recognized as having national significance--the Current River, the Jacks Fork River, Eleven Point River, and the Buffalo River. The first two comprise the Ozark National Scenic Riverways. The Buffalo River is a National Park. Both of these units are administered by the Department of Interior.

140 - Demand

With the growing number of people, the increased leisure time, and greater income; many types of recreation participation will grow at accelerated rates. The Outdoor Recreation Resources Review Report, (15), 1962, states that between the years 1960 and 2000, recreation participation will

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approximately triple. The report also recognizes the attraction of oriented activities as a source of recreation. Canoeing or boating high-quality stream in a natural environment is one such activity.

Within a 250-mile radius of the Eleven Point River, lives a population of over eleven million people. Included in this area are the metro complexes of St. Louis, Kansas City, and Memphis. The demand potential for high-quality outdoor recreation is great and will continue to increase.

Use build up on the Current River is an indication of the total demand for canoeing. Residents on the river reported that up to 600 canoes per day have utilized the more favored stretches. Use has doubled within the last five years.

Results of a user study done by the Forest Service on the Eleven Point during the summer of 1971, (16), indicate that total floating camping use for the period of June 1st through August 31st amounted to approximately 2,500 visitor days of use within the Scenic River. Based on increases in nation-wide activity in camping and canoeing, visitor days of use are predicted during the same time period of 1972 on the Ozark National Scenic Riverways indicates that this projection is probably conservative.

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150 - Assumptions

Based on the foregoing information, the following assumptions can be made:

1. The recognition that the Eleven Point Scenic River Area will receive as a part of the Wild and Scenic Rivers System, will attract a greater proportion of users than undesignated streams in the Ozarks.
2. The location of the Eleven Point River within the Mark Twain National Forest, will increase its attractiveness to the public.
3. Development of recreational facilities in the Eleven Point Scenic River Area will attract more use than an undeveloped river.
4. The demand for use of the Eleven Point River will exceed the carrying capacity of the area by 1975. (See Section 240 for carrying capacity).

STANDARDS

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STANDARDS

210 - Introduction

Quality standards have been determined for the water, air, soil, and other components of the environment. Also, various levels of recreational experience have been defined, as well as carrying capacity limitations. These standards and limitations, along with social and political considerations, act as planning constraints in determining the type and degree of development and use within the Eleven Point Scenic River Area.

The attached standards are not absolutes. As information on resources is improved, many of the standards will be changed to meet the demands of maintaining a quality environment. The outgrowth of establishing quality standards as outlined in this chapter should be:

1. Increased user enjoyment.
2. Reduction of conflicts between competing uses.
3. Stability and protection for the entire river ecosystem.

The resource quality standards and experience levels defined in this plan are directed to National Forest lands only. Air and water quality standards have been established by the State of Missouri and are applicable on public and private lands inside the Scenic River Zone. Terms of use on private land within the seen area of the Scenic River Zone will be governed by scenic easement contracts.

STANDARDS

220 - Resource Quality

221 - Air Quality

221.1 - Objective

The air quality standards for the Scenic River Zone are the ambient air standards adopted by the Missouri Air Conservation Commission. It is recognized that the present air quality in the Scenic River Zone is better than these standards. The air quality will, therefore, be maintained at the present quality level.

221.2 - Ambient Air Quality Standards

<u>Pollutant</u>	<u>Concentration</u>	<u>Remarks</u>
1. <u>Sulfur Oxides</u>		
Sulfation	0.25 mg SO ₃ /100 cm ² /day	Maximum annual average.
	0.50 mg SO ₃ /100 cm ² /day	Maximum month value.
Sulfur Dioxide ^{b,f}	0.02 ppm	Maximum annual arithmetic average for any sampling site, 24-hour sampling time.
	0.10 ppm	24-hour average not to be exceeded over 1 day in any 3-month period at any sampling site.
	0.36 ppm	Maximum 1-hour average at any sampling site.

^aAll standards, unless otherwise indicated, refer to places where people live or an undesirable effect could result from levels above the standard.

^bBy West-Gaeke or conductometric methods.

^fStandards for sulfur dioxide may be converted from parts per million by volume to micrograms per cubic meter, at 70 degrees Fahrenheit and 14.7 psia, by multiplying by 2,645.

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Suspended Sulfate (Analysis of high- volume filters).	4 micrograms/m ³	Allowable maximum annu average.
	12 micrograms/m ³	Not to be exceeded ove one percent (1%) of th time.
Sulfuric Acid	4 micrograms/m ³	Allowable maximum annu average.
	12 micrograms/m ³	Not to be exceeded ove one percent (1%) of th time.
	30 micrograms/m ³	Hourly average not to exceeded over one perc (1%) of the time.
2. Hydrogen Sulfide	0.05 ppm	1/2 hour average not t exceeded over 2 times year.
	0.03 ppm	1/2 hour average not t exceeded over 2 times any 5 consecutive days
3. Oxidant (Total) ^c	0.15 ppm	Maximum allowable 1-ho value.
4. <u>Dustfall</u> ^{d,e}	10 tons/sq.mi./mo	3-month average above ground in all areas ex those zoned heavy indu trial.
	25 tons/sq.mi./mo	3-month average above ground in zoned heavy industrial areas.

^cPotassium iodide colorimetric method of measurement.

^dUse background value of 5.0 tons/sq.mi./mo. in all areas.

^eTotal dustfall including water soluble and water insoluble and all other components.

STANDARDS

- | | | |
|--|-------------------------------|---|
| 5. <u>Suspended Particulates</u> (High Volume Sampler) | 75 micrograms/m ³ | Annual geometric mean at any sampling site. |
| | 200 micrograms/m ³ | Not to be exceeded over one day in any 3-month period at any sampling site. |
| 6. <u>Soiling Index</u> | 0.4 Coh per 1,000 lineal feet | Annual geometric mean. |

222 - Fish and Wildlife

222.1 - Objective

To assure the protection and enhancement of all aquatic and terrestrial fauna native to the scenic river area.

222.2 - Standards

All management and protection activities will emphasize endemic species occurring under natural habitat conditions.

223 - Soil Quality

223.1 - Objective

Manage the soil to prevent accelerated erosion and excessive compaction, and to not exceed the soils limitations.

223.2 - Standards

Usable information to measure soil quality standards is not available at this time.

224 - Sound Quality

224.1 - Objective

Maintain the opportunity for solitude, recognizing that developed areas may have activities which limit the opportunity for solitude.

STANDARDS

224.2 - Standard

The following levels of noise were used to establish a maximum noise level for the Eleven Point River. These measurements were taken in a quiet residential area in the early morning hours. All measurements are recorded as decibels on the A scale (dB(A)).

Ambient	36
Birds	54
Auto Horn	75
Traffic	52
School Bus	57 (4)

Other measurements used were:

Power Boats (At Seat Nearest Motor) dB(A):

Cruising 83-104

Full Speed 85-90 (4)

Using these recorded sound levels, a maximum man-caused level is established for the following areas:

Undeveloped areas, float camps and riverscape areas with experience levels of 2 - 65 dB (A) (at 50 feet).

Developed areas and access points with and experience level of 3 - 80 dB (A) (at 50 feet).

225 - Vegetation Quality Standards

225.1 - Objective

All management and protection activities will emphasize native vegetation developing naturally with no evidence of man-caused disturbances to the seen area.

STANDARDS

225.2 - Standard

The plant associations and related associates described in Steyermark (9) will be the initial standards of plant composition. Each association (and associates) are related to soil vegetation units as follows.*

Soil-Vegetation Units and Related Plant Associates*

<u>Unit No.</u>	<u>Soil-Vegetation Unit</u>	<u>Plant Associations (Associates)</u>
I.	Rockland	1. Sides Oat Grama - Blackeyed Susan 2. Aromatic Sumac - Eastern Red Cedar 3. Chittinwood - Black Haw 4. Winged Elm - Indian Cherry
II.	Opequon	5. Chinquapin Oak - White Ash
III.	Viraton - Mindale	6. Sugar Maple - White Oak
IV.	Midco	7. Red Maple - Mockernut Hickory 8. White Oak - Red Maple 9. Willow - Witch Hazel
V.	Alluvial Land, Mixed Alluvial Land, Loamy	10. Silver Maple - Cottonwood 11. Elm - Ash
VI.	Ashton, Secesh, Newark	12. Sugar Maple - Bitternut Hickory
VII.	Clarksville, Coulstone Poynor Wilderness (Narrow Ridges and South and West Slopes)	13. Sassafras - Winged Elm 14. Blackjack - Post Oak 15. Pine - Huckleberry 16. Oak-Pine
VIII.	Clarksville, Coulstone, Poynor Wilderness (North and East Slopes), and Captina, Doniphan, and Macedonia.	17. Black Oak - Hickory 18. Scarlet Oak - Hickory 19. White Oak - Hickory

*Species lists for each associates and explanations of soil vegetation units are presented in Appendix 1020.

STANDARDS

226 - Water Quality

226.1 - Objective

Maintain the water quality of the Eleven Point River at its present high quality level.

226.2 - Standards for the Eleven Point

The Missouri Water Pollution Board has adopted the following standards for the Eleven Point River. The present water quality of the river exceeds these standards. The present water quality will be the base line from which quality will not be degraded:

1. pH - The pH shall be between 6.5 and 8.5 in the stream. A pH value above 8.5 in the stream must not be due to effluents or surface runoff.
2. Dissolved Oxygen - The dissolved oxygen in the stream shall not be less than 5 mg/l at any time due to effluents or surface runoff.
3. Temperature - Effluents shall not elevate or depress the average cross sectional temperature of the stream more than 5^oF. The stream temperature shall not exceed 80^oF due to effluents.
4. Substances Potentially Toxic or Detrimental - Substances toxic to humans, fish and wildlife, or detrimental to agriculture, mining, industrial, recreational or other legitimate uses shall be limited to non-toxic or non-detrimental concentrations in the stream.
5. Bacteria - The fecal coliform, in waters designated for whole body contact recreation, shall not exceed a geometric mean of 200/100 ml. (either MPN or MF count), nor shall more than 10% of total samples during any 30-da

STANDARDS

period exceed 400/100 ml. (either MPN or MF count). The above criteria shall not be applicable when the stream is affected by storm water runoff.

6. Taste and Odor Producing Substances - Taste and odor producing substances discharged shall be limited to concentrations in the stream that will not interfere with the production of potable water by reasonable water treatment processes or impart, unpalatable flavor to food fish, or result in noticeable offensive odors in the vicinity of the water, or otherwise interfere with the reasonable use of the water.

7. Turbidity - The turbidity in the stream shall not exceed 10 turbidity units due to effluents.

8. Color - The color in the stream shall not exceed 10 color units due to effluents.

9. Oil and Grease - The stream shall be virtually clear of oil and grease. Emulsified oil and grease concentrations shall be kept below levels which will interfere with beneficial uses of the stream.

10. There shall be no noticeable man-made deposits of solids, either organic or inorganic in nature, on the stream bed. The stream shall be free of floating debris, scum, and other floating materials attributable to municipal, industrial, or other waste disposal practices, in amounts sufficient to be unsightly or deleterious.

11. Radioactive Materials - The dissolved radium 226 and strontium 90 shall not exceed 3 and 10 picocuries/liter (pc/l) respectively in the

STANDARDS

stream due to effluents or surface runoffs. In the absence of strontium 90 and alpha emitters, the gross beta concentration shall not exceed 1,000 pc/l in the stream due to effluents or surface runoff.

12. Fluorides - The soluble fluoride concentration in the stream shall not exceed 1.2 mg/l due to effluents or surface runoffs. (2)

13. Non-Degradation - The Missouri Water Pollution Board has also adopted the following non-degradation clause that applies to the Eleven Point River:

It is recognized that certain of the waters under consideration possess an existing quality which is better than the standards established herein. The quality of these waters will be maintained unless and until it has been affirmatively demonstrated through public hearings that other uses and different standards are justifiable as a result of necessary economic or social development. It will be required that the highest and best technology be employed to maintain the high quality of the waters. Additional data and increased monitoring in cooperation with the Federal Government and other states, will permit the improvement of these standards. The interest of the Federal Government in interstate waters is recognized and this interest will be protected.

Standards for the Eleven Point will be in accord with Executive Order #11507, and based upon a water quality monitoring study:

1. Executive Order #11507 - All facilities constructed inside the Eleven Point Scenic River Zone will be constructed in accordance with Executive Order #11507, Prevention, Control, and Abatement of Air and Water Pollution at Federal Facilities.

2. Water Quality Monitoring - A two-year base line water quality monitoring study has been completed for the Eleven Point River. Water quality will not be lowered below this level. Statistical means have not

STANDARDS

been computed for all of the parameters tested. These are included as soon as they are completed (see Appendix 1025).

230 - Experience Level

231 - Experience Level Objective

The numbered experience levels will be maintained within the following zones:

<u>Area</u>	<u>Experience Level</u>
Watercraft Access Areas, Float Camps, Picnic Areas, Parking Lots and Areas of Concentrated Development.	2 or 3
Riverscape Zone (Undeveloped Areas)	2

232 - Experience Level Determination

In addition to the planning constraints outlined in the Resource Quality Standards, the quality of the river user's experience is also of primary importance in planning the future management of the Eleven Point River. Six recreation experience levels have been defined. These experience levels range from the primitive to the modern (see 233 - Experience Levels).

Five basic components define an experience level. These components are, (1) the degree of outdoor skills needed by the user, (2) the degree of modification to the natural environment, (3) the comforts and conveniences provided for the user and the importance of these to the user, (4) the importance of adventure, challenge, and physical achievement to the user, and (5) the importance of controls to the user. See section 233.

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In Section 233.1 experience levels have been defined for three areas within the Scenic River Zone. These areas are, watercraft access points, the riverscape, and the float camps. Three levels of experience have been defined in each of the tables. These experience levels are numbered two (2), three (3), and four (4). The primitive level of experience was not included because the Eleven Point Scenic River Zone is definitely not a primitive area. Experience level one (1) was not included because by definition it calls for non-mechanized access, and it states that the lack of mechanized access is very important to the user. Finally, experience level five (5) was not included in these tables because the modifications to the natural environment and facilities called for in this experience level are not compatible with the directive in the Wild and Scenic Rivers Act, to protect and enhance the natural scenic values of the river.

233 - Experience Levels

	Basic Needs	Outdoor Skills	Natural Environment Absence of Man-Made	Comfort and Convenience	Feelings of Adventure Challenge, & Physical Achievements	Importance of Controls
Primitive	Maximum	Maximum	Unmodified	Absence	Important	Absence Important
1	Near Maximum	High Degree	Little Modification	Minimal	Important (Without Mechanized Access)	Minimum
2	Near Maximum (Tempered by Motorized Access)	High Moderate	Little Modification	Few	Some (Challenging Motorized Access)	Minimum (Evident to the Users)
3	Intermediate	Moderate	Some Modification (For Comfort)	Important to Users	Some taste of adventure.	Important (Sense of Security for User)
4	Moderate	Moderate	Modification for Comfort Important	More Important than Adventure		Obvious and important to user, security.
5	Modest Degree	Minimal	Dominated by man-made modification.			Security very important.

STANDARDS

233.1 - Riverscape Experience Level

2

3

4

Natural Environment

Little modification. Natural environment dominates.

Some modification. Natural environment dominates.

Natural environment important, but modification for comfort and convenience are more important.

Vegetation

Natural vegetation dominates, no alteration of the vegetation for the comfort and convenience of the user. Limit or remove all man-made intrusions such as powerlines, roads, buildings, etc., to the extent possible. Facilities on developed sites will be obscured from the view of the floater while leaves are on, and will blend into the natural surroundings to the fullest extent possible during the dormant season.

Natural vegetation dominates, but some modification of the vegetation for the comfort and convenience of the user. Facilities on developed sites will be at least partially obscured from the view of the floater.

Vegetation modified for comfort and convenience of visitor. Vegetation shows dominance of man over nature. Facilities landscaped. Pine plantations, exotic trees, and mowed lawns would be typical. Sections of riverscape would still be natural.

Comfort and Convenience

Modifications and facilities for comfort and convenience will not be made. Outboard motors will not be allowed. Floaters will carry out their own trash. Terminal roads will be closed outside the zone, except at designated access points.

Some modifications for comfort and convenience will be made. Limited use of outboards will be permitted. Also, limited trash removal services will be provided.

Emphasis on comfort and convenience for the user. No restrictions on outboard motors. Numerous roads allowed to waters edge. Sites developed for convenience to user and visually obvious.

STANDARDS

2

3

4

Adventure and Challenge

Limit information concerning the river to allow some opportunity for search and discovery. No signs or detailed maps.

Provide some detailed information about the river; detailed maps, warning system, signs.

Provide on-the-ground VIS information and detailed maps for the user. Have regular patrols on the river that the user can depend on. Reduce hazards in the river such as trees, overhanging brush, logs and rocks. Have hazards and developed sites clearly marked.

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STANDARDS

233.2 - Float Camp Experience Level

2

3

4

Natural Environment	Little modification. Natural environment dominates. Modifications limited to site protection.	Some modification. Natural environment still dominates, but some modification for comfort and convenience.	Natural environment important, but modification for comfort and convenience more important.
Vegetation	Alteration of vegetation limited to site protection and safety. Allow natural succession. Any seeding or planting would use only native species adapted to <u>specific sites</u> .	Careful manipulation of native species (communities) to insure site protection and some enhancement for comfort and convenience. Native species used for any planting or seeding. Limited cutting of herbaceous vegetation. Selective use of herbicides to mold vegetation.	Obvious modification of vegetation for both site protection, comfort, and safety. Planting, seeding, and mowing acceptable. Use of exotic species allowed.
Topography	Any modification limited to site protection. No modification for comfort or convenience.	Some changes such as leveling, grading, etc., to enhance comfort (level line tent sites).	Extensive modification of site to enhance convenience and comfort. Leveling and surfacing tent sites. Cuts and fills if necessary.
Comfort and Convenience	Facilities provided limited to those necessary to protect the site and meet resource quality standards. Minimum sanitation, informal camp areas. Carry out all refuse.	Some facilities provided beyond the need for site preparation. Tables, fire rings, trails, etc.	Comfort and convenience emphasized with respect to facilities. Typical camping experience--tables, grills, fire rings, and garbage disposal.

STANDARDS

2

Adventure and Challenge
Important--camping experience affords opportunity to use skills not required in most camping experiences. No fire wood provided.

3

Some taste of adventure remains, but modification and facilities are more obvious and less skills required.

4

Little or no challenge or adventure. A typical camping experience on a well-developed site.

Controls

Controls limited to those necessary for safety and site protection.

Controls are evident for safety, site protection, and comfort.

Control obvious and important to the user.

STANDARDS

223.3 - Watercraft Access Experience Level

2

3

4

Natural Environment Little modification. Natural environment dominates.

Some modification. Natural environment dominates (for comfort and convenience).

Natural environment important, but modification for comfort and convenience more important.

Vegetation

Tree removal and pruning limited to safety reasons only i.e. dead limb hanging over the boat landing.

Tree removal for safety and adherence to trail standards. No clearing or pruning for scenic purposes.

Tree removal and pruning for safety and for scenic purposes. To create a "park-like" area.

Allow natural succession. Use of native species for site protection allowed. No mowing.

Random planting of native species allowed. Spraying for poison ivy allowed.

Landscape planting of native and exotic species allowed. Spraying for poison ivy allowed.

Topography

Modifications to the natural type. Limited to those modifications required for site protection. None made for the comfort and convenience of the user.

Subtle modification to the natural topo made for the comfort and convenience of the user. Traveled surfaces leveled. Surface materials chosen for site protection.

Modifications to the natural topo made extensively for the comfort and convenience of the user. Flat and paved surfaces.

Comfort and Convenience

All facilities supplied would be for the protection of the site. Graveled road and parking area, but informal in nature. No square parking lots and parking barriers. Carry canoes to boat landing. Fit facilities into the natural vegetation and topo.

Some facilities provided for the comfort and convenience of the user, but adventure and challenge is more important. Traffic control obvious, formal parking, hard surfaced roads. Carry in of boats and canoes over short distance required (Day use, sanitary, water, informal VIS).

Facilities supplied extensively for the comfort and convenience of the user. Comfort and convenience is more important than challenge and adventure. Vehicular access for boat-canoes loading to the rivers edge on paved surfaces. Sanitary facilities, water, formal VIS, day use, camping, trails provided.

STANDARDS

2

Adventure and Challenge

Adventure and challenge is important. A sense of accomplishment by the user is needed. Controls on the user are subtle. Site characterized by unimproved road access, lack of facilities, carry-in canoe or boat, and little or no modification to the environment. The need to exercise basic outdoor skills is present to the degree of carrying ones canoe a moderate distance over an unpaved trail.

3

Some taste of adventure and challenge. Improvements made to handle a greater volume of use and for site protection. Some modification made for convenience. This is basically a one-use site, that of river access. The need to exercise outdoor skills is limited to carrying the canoe a short distance over a hard surfaced trail.

4

Adventure and challenge is all but lacking due to the abundance of comforts and convenience provided. The comforts and conveniences are more important to the user than the feeling of accomplishment afforded through a more challenging river access. The need to exercise basic outdoor skills is lacking.

Controls

Controls minimal but evident to the user. The only controls used would be to protect the site and the experience level of the user.

Controls are evident and present for site protection, as well as the convenience of the user.

Controls are obvious to the user. Strong traffic and parking controls. Signs and physical barriers are extensively used.

STANDARDS

240 - Carrying Capacity

241 - Situation

Determination of carrying capacity of recreational uses on the Eleven Point is dependent on the physical resources and the experience levels of the users. In all cases, one of the above two factors is limiting on the amount of recreation use that can be allowed without reducing the quality of that resource or experience.

The concepts of carrying capacity have been talked about for some time. Until recently, no one has attempted to test carrying capacity theory on the ground by actually limiting the amounts of recreation use allowed to occur.

During the summer of 1971, the Mark Twain National Forest sponsored a study to collect information on the attitudes of people using the Eleven Point for recreational purposes. The study was a start in determining an experience level, but was limited in time, personnel, and area. Data from the study is included in the appendix 1009 and should be used to supplement further data collection.

Knowledge of carrying capacity of rivers for recreational use is very limited, and each river must be judged on its own characteristics and the attitudes of its users.

242 - Assumptions

1. The Eleven Point River will be subjected to increasingly heavy use pressures.

STANDARDS

2. The Eleven Point is in danger of serious resource deterioration as recreational use increases.

3. Experience levels decrease as use increases beyond some given point.

243 - Alternatives

None.

244 - Policy

1. A combined administrative study and research project will be pursued to determine the carrying capacity of the Eleven Point River to support recreation use. A program of research was started in the summer of 1971 as a basis for carrying capacity determination (16).

2. A carrying capacity will be set for the river upon which plans and management will proceed, until the carrying capacity study is completed.

245 - Coordinating Requirements

1. The base figure of four canoes per mile will be used to determine carrying capacity. (Taken from BOR space standards and average significance for the Eleven Point River, which is one quarter mile). The Bureau of Outdoor Recreation (BOR) Space Standards (6) are taken from the Wisconsin Department of Natural Resources which has set four canoes per mile as the carrying capacity for Wisconsin rivers. The revised Minnesota Outdoor Recreation Plan will also adopt this standard (From draft comment review).

2. Because of the low flow volume of the river above Greer Springs the four canoes per mile figure should be adjusted to compensate for the smaller size.

STANDARDS

Cane Bluff to Greer Crossing ✓

Distance 7 mi. X 3 Canoes/mi. = 21 Canoes

21 Canoes X 2 People/Canoe = 42 PAOT ✓

Greer Crossing to Riverton

Distance 19 mi. X 4 Canoes/mi. = 76 Canoes

76 Canoes X 2 People/Canoe = 152 PAOT

Turner Mill South

According to the 1971 river use study, 18% of the floaters launching at Greer Crossing take out at Turner Mill.

152 PAOT (Greer) X .18 = 27 PAOT

Riverton To Highway 142

9 mi. X 4 Canoes/mi. = 36 Canoes

36 Canoes X 2 People/Canoe = 72 PAOT

42
152
72
266 PAOT

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RESOURCE POLICIES AND COORDINATION

301 - Introduction

Policies concerning resources and their uses must fall within the quality standards as stated in the previous chapter.

A variety of policy alternatives were examined, but final policy selection was based on compatibility with PL 90-542 and quality standards.

310 - Air Quality

311 - Situation

See Section 221.

312 - Assumptions

None.

313 - Alternatives

None.

314 - Policies

Any man-caused activity on Federal lands that will lower present air quality or activity on private lands that will violate the Missouri Ambient Air Quality Standards will be prohibited.

315 - Coordinating Requirements

1. Any suspected air quality violations on privately owned lands will be monitored, and if they exceed existing standards, they will be reported to the Missouri Air Conservation Commission.

2. Air quality will be monitored and baseline standards established for present air quality when funds become available.

320 - Fish and Wildlife

321 - Situation

The traditional concept of wildlife has centered on sport or game species which have recreational and often economic values. The trend

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in recent years, however, is to consider all forms of wildlife. Ecological aspects and intrinsic values of wildlife are transcending the commodity concept of the past.

A complete list of fauna, both terrestrial and aquatic, is not available at this time. Information and knowledge of the complex web of interaction of this ecosystem is even more remote.

Hartowicz (8) reported that from the 52 original species of mammals inhabiting south central Missouri, five or possibly six have been extirpated from the region. These include the bison, elk, gray or timber wolf, cougar, red wolf and river otter. From this list only the cougar and river otter might be reestablished.

One hundred seventy-five species of birds have been reported for this region. The Carolina parakeet, ivory billed woodpecker, passenger pigeon, red-cockaded woodpecker, and ruffed grouse are extinct or absent. The red-cockaded woodpecker was last sighted in 1907, and the ruffed grouse disappeared during the 1930's (Hartowicz) (8). The ruffed grouse has been successfully reestablished on the Carman Spring Wildlife Refuge in Howell County, and from this source may be introduced in the Scenic River Area. There is also hope the red-cockaded woodpecker can be reestablished with the return of mature stands of pine.

The list of extirpated species might be larger if knowledge of the total fauna was complete. Reptiles and amphibians include at least 70 species. Turtles, frogs, and snakes are commonly observed along the Eleven Point River and add to the visitor's experience.

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Clifford (10) found 45 forms of aquatic invertebrates in the Current River and reported the abundance of mollusks.

Of 260 species of fish occurring in the entire Mississippi River Valley, 105 species have been for the Current River Pflieger (11). Although the relationship of fish between the Current River and the Eleven Point has not been completely described, it is reasonable to assume that the Eleven Point supports a large and diverse fish population.

The most abundant fishes are minnows, suckers, sunfishes and darters. Funk (7) lists the bleeding shiner, wedgespot shiner, Ozark shiner, checkered madtom, Ozark madtom, and Arkansas Saddled darter as species endemic to the Ozark uplands of southern Missouri and northern Arkansas.

This large and diverse list of both terrestrial and aquatic fauna has at least three important implications to the protection and management of the Scenic River Area. First is the ecological implication which recognizes the total fauna as an integral part of the ecosystem(s) and should be considered in all facets of management. Second are the intrinsic values associated with human observation and awareness of wildlife. This type of experience is usually referred to as non-consumptive utilization of wildlife. And third is the consumptive use of wildlife afforded from sport fishing and hunting. This type of recreation activity is not necessarily product or commodity oriented, but may also include social, cultural, and spiritual values.

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Because the Scenic River Zone is composed of a long and narrow strip of land with Federal lands intermingled with privately-owned lands, there are limitations on the impact the area can have on wildlife. Mobile species, such as deer, turkey, larger mammals, and most birds, will not be confined to the Scenic River Area. The private lands, in some instances will contribute to the habitat diversity and thus enhance conditions for certain species.

322 - Assumptions

322.1 - Management Emphasis Concerning Fauna of the Scenic River Area

1. Placing primary emphasis on sport hunting and fishing would require intensive habitat management which would not be compatible with other objectives and purposes of the Scenic River Area.
2. Equal emphasis for all animals inhabiting the area is consistent with the overall objectives of the Scenic River Area.

322.2 - The Trout-Stocking Program Maintained by the Missouri Department of Conservation

1. Trout fisheries management in Missouri is aimed at providing maximum sport fishing opportunities in a limited area.
2. Trout fishing opportunities are limited in Missouri and, consequently, attract disproportionately large numbers of fishermen.
3. Trout are an exotic species and, therefore, represent an artificial introduction into the ecosystem.

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322.3 - Reestablishment of Extirpated Species

1. Species once indigenous to the Eleven Point are available for restocking. Native species that might be available for restocking are the river otter and ruffed grouse.

2. Once introduced, native species would resume their natural role in the ecosystem balance.

323 - Alternatives

323.1 - Management Emphasis Concerning Fauna of the Scenic River Area

1. Primary emphasis is to provide sport hunting and fishing opportunities.

2. Primary emphasis is to protect and enhance all terrestrial and aquatic fauna while providing opportunities for both consumptive (hunting and fishing) and non-consumptive uses of the wildlife resource.

323.2 - The Trout-Stocking Program Maintained by the Missouri Department of Conservation

1. Continue the trout-stocking program at the present level.

2. Discontinue the trout-stocking program.

3. Modify trout stocking methods to reduce ecological and environmental impacts, bringing the program more in line with Scenic River objectives.

323.3 - Reestablishment of Extirpated Species

1. No reestablishment.

2. Reestablishment of selected species of indigenous fauna.

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324 - Policies

- ✓ 1. Primary emphasis is to protect and enhance all terrestrial and aquatic fauna while providing opportunities for both consumptive (hunting and fishing) and non-consumptive uses of the wildlife resource.
- ✓ 2. Continue the trout-stocking program within the Scenic River Area.
- ✓ 3. Reestablish extirpated species such as ruffed grouse and river otter through cooperation with the Missouri Department of Conservation.

325 - Coordinating Requirements

1. Cooperate with the Missouri Department of Conservation to effectively control the collection and removal of fauna from the Scenic River Area.
- ✓ 2. Encourage the Missouri Department of Conservation to release trout from boats, rather than by road access.
- ✓ 3. Cooperate with the Missouri Department of Conservation in establishing fishing regulations best suited for the Scenic River Area.
- ✓ 4. Initiate a program to study the feasibility of establishing ruffed grouse and river otter through co-op work with the Missouri Department of Conservation.

330 - Minerals

331 - Situation

Historically, prospecting and mining have not been a factor in the Scenic River Area, except for the removal of gravel. However, the area is in the West Plains brown iron ore district. At one time, Howell and

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Oregon Counties were the leading brown iron ore producers in the region and in the State. In 1957, the year of peak production, there were 23 mines in Howell County and 5 in Oregon County. Mining activity then declined until 1967, when there were only two operators in Howell County. The drastic drop in ore production was chiefly due to changing demand and the low quality, low market value of the brown iron ore.

There are no known deposits of extractable minerals within the Scenic River Area, except for gravel, and there are no outstanding mineral rights presently known on existing National Forest land. There are two magnetic anomalies on the Howell-Oregon County line in the vicinity of the Eleven Point River upstream from the Scenic River Area at Peace Valley. One of the anomalies has been drilled by the American Zinc Company, but no information has been released.

Gravel bars are one of the outstanding natural attractions of the Scenic River Area from ecological and recreational viewpoints.

332 - Assumptions

332.1 - Gravel Bar Utilization

1. Mining of gravel within the Scenic River Zone has a degrading effect on water quality, and does not meet the water quality standards.
2. Mining activities inside the Scenic Zone would be incompatible with sound standards and experience levels for the Riverscape Zone.

332.2 - Utilization of Leasable Minerals

1. Mining activities may easily violate water, air, sound, and vegetation quality standards.

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2. There is a high probability that no mineral deposits of any size exist.

3. Mining activity of any kind may have serious incompatibility conflicts with other uses of the area.

333 - Alternatives

333.1 - Gravel Bar Utilization

1. Consumptive utilization of material in gravel bars as a common mineral.

2. Non-consumptive utilization as a natural feature with ecological and recreational values.

333.2 - Utilization of Leasable Minerals

1. Utilization subject to existing laws, regulations, policies, and guides.

2. Utilization restricted by special provisions to assure safeguards against pollution and unnecessary impairment of the scenery.

334 - Policies

1. Gravel bars within the Scenic River Zone will be utilized as non-consumptive features, recognizing the value as other than common minerals.

2. Mineral utilization will be restricted by special provisions to assure safeguards against pollution and unnecessary impairment of the scenery.

335 - Coordinating Requirements

1. No permits will be issued for removal of common minerals.

2. Any type of lease involving minerals must include a plan of operations approved prior to entry and a performance bond to cover rehabilitation of the area.

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3. Scenic easements will require that any mineral activity on private lands provide safeguards against unnecessary impairment of the scenery.

340 - Solitude

341 - Situation

The Eleven Point Scenic River Zone is an area where solitude may be experienced. National Forest administration must minimize man-caused sounds to maintain this opportunity. It is recognized that users, whether they be hikers, canoeists, or people driving for pleasure, are in themselves man-caused sounds. This fact has been incorporated in the carrying capacities for the river.

342 - Assumptions

1. Sound is an increasing menace to the health and well being of the American people. Its affects are only now being investigated. A quote from one report states, (4) ". . . noise is being found to induce physiological changes that are suspected of having a relation to disease."

2. In daily living circumstances people cannot avoid the constant sounds of civilization.

3. The American people deserve a chance to escape excess noise.

343 - Alternatives

None.

344 - Policy

All man caused sounds in excess of the following sound levels will be considered intrusions on the solitude of the riverscape. This will

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include both air and ground conveyances:

65 d (A) (at 50 feet) in all undeveloped areas and float camps.

80 d (A) (at 50 feet) in all developed areas such as watercraft access points, road crossings and picnic grounds.

345 - Coordinating Requirements

1. No control of sound standards is possible on private lands inside the Scenic River Boundary.

2. Two exceptions to the sound standards will be outboard motors during the time periods they are allowed inside the zone and the discharge of firearms.

3. A sound meter should be used to more accurately determine levels of sounds within the different development areas, and the information used to adjust the standards as necessary.

350 - Unique Areas

351 - Situation

Public Law 90-542 specifically states that the river and its environment will be protected. There are several areas within the Scenic River Area that qualify as unique. They include:

1. Turner Mill Spring
2. Caves
3. The Narrows Area
4. Pigman Mound
5. Greer Spring and surrounding valley.
6. Graveyard Springs
7. Other areas as they are identified.

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352 - Assumptions

Unique areas inside the Scenic River Area deserve special management attention over and above normal river administration. These include:

1. Rare or endangered species of plants, animals, or birds.
2. Special scenic or unusual physical features.
3. Fragile physical features that might be damaged or destroyed by

light amounts of public use.

353 - Alternatives

None.

354 - Policy

An intensive and comprehensive inventory, interpretation, and management plan will be made for each area that falls in the unique category.

355 - Coordinating Requirements

1. In any case, where genuine expertise in a particular scientific area is necessary for planning, and the people are not available through normal agency channels, the work should be contracted. Examples of needed skills might be in archeology, botany, or ornithology.

2. Conduct and maintain an inventory of all known caves, springs, and unique plant or animal communities.

3. Maintain the list of unique areas as administratively confidential as a means of protection, except for those areas judged to be suitable for public use.

360 - Vegetation and Soils

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361 - Situation

The variety of soils, the steep and varied topography, combined with the impact of past land uses, all contribute to the rich and diverse vegetation within the Scenic River Area.

For the purpose of classifying and understanding the landscape, soil series and topographic position were combined into nine units termed soil-vegetation units. Each unit represents a reasonably homogenous segment of the landscape which supports one or more plant associates. Plant associations and associates described by Steyemark (1940) (11) were related to each soil-vegetation unit (Resource Quality Standards and Appendix 1022).

The relative proportion of each soil-vegetation unit follows:

<u>Number</u>	<u>Soil-Vegetation Unit</u>	<u>Percent</u>
I	Rockland	19
II	Opequon	10
III	Viraton-Mindale	6
IV	Midco	5
V	Alluvial-Mixed & Loamy	7
VI	Ashton-Secesh-Newark	7
VII	Clarksville-Coulstone- Poynor-Wilderness (Narrow ridges and south and west slopes).	23
VIII	Clarksville-Coulstone- Poynor-Wilderness (North and East Slopes)	17

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IX Capitina-Doniphan-Macedonia 6

Farming, logging and fire have been the principle man-caused factors influencing both soil and vegetation. Corn and cereal grains were the predominant crops during the early 1900's. This type of agriculture was located primarily on the alluvial and colluvial soils. During the late 1950's, the emphasis for annual crops began to give way to forage crops of hay and pasture.

Fields or open areas comprise about 14 percent of the Scenic River Area. The condition of these areas range from tame grasslands to various stages of succession, including perennial grasses to late stages of woody plant invasion.

Public lands administered by the Forest Service have been managed under Secretary of Agriculture Regulation U-3 (CFR 251.11) since 1958. Because of this designation, only limited timber harvest and management has been conducted.

Approximately 40 percent of the Scenic River Area has a low capability for timber production. About one-half of the upland soil capable of producing good timber is on slopes in excess of 35 percent.

The suitability of each soil-vegetation unit for three types of land use follow:

Suitability Rating for Soil-Vegetation Units
Within the Eleven Point Scenic River Area

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<u>Soil Vegetation Unit (Numbers)</u>	<u>Annual Crops</u>	<u>Pasture</u>	<u>Timber Management</u>
I	U	U	U
II	U	M	M
III	S	S	S
IV	U	U	U
V	M	M	M
VI	O	O	O
VII	U	S	S
VIII	M	S	S
IX	M	S	S

O = Optimum S = Satisfactory M = Marginal U = Unsatisfactory

362 - Assumptions

362.1 - Management Constraints for Vegetation Manipulation

1. The selection and management of plants relates directly to the esthetic and ecological qualities of the Scenic River Area.
2. Native plants characteristic of each site or plant associates provides an adequate selection for all intended purposes of vegetation management.

362.2 - Commercial Removal of Wood Products from Public Lands Within the Scenic River Area

1. The potential for timber harvest and management is limited to less than 20 percent of the total acreage of public lands.

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2. Most timber operations would not be economical because of the steep terrain, lack of roads, and the necessity for modified timber management practices.

3. The esthetic values of the vegetation transcend the economic benefits involved.

4. Commercial timber harvest operations would exhibit an obvious disturbance by man and thus conflict with the Resource Quality Standards and Objectives.

362.3 - Management and Manipulation of Vegetation by Livestock Grazing or the Harvest of Forage for Hay

Livestock grazing and harvesting of forage for hay is primarily dependent upon tame species of grass and normally requires the addition of plant foods. These actions create artificial vegetative conditions, which would be incompatible with the resource objectives and quality standards for vegetation.

362.4 - Rehabilitation of Burns, Blowdown Areas, or Other Catastrophes

1. Restoration of disturbed areas occurs naturally within a short period of time without seeding or planting.

2. Natural plant succession is acceptable to the river user and is less costly than seeding, planting, or manipulation.

363 - Alternatives

363.1 - Management Constraints for Vegetation Manipulation

1. Planting, seeding, or manipulation of vegetation will be limited to native plants common or characteristic of the site or plant community

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involved.

363.2 - Commercial Removal of Wood Products from Public Lands Within the Scenic River Area

1. Modified timber harvest in the "seen" area and regular approved practices in the remainder of the Scenic River Area.
2. Modified timber harvest throughout the Scenic River Area.
3. No commercial harvest or removal of wood products within the "seen" area and modified management in the remainder of the Scenic River Area.
4. No commercial removal of wood products within the Scenic River Area.

363.3 - Management and Manipulation of Vegetation by Livestock Grazing or the Harvest of Forage for Hay

None.

363.4 - Rehabilitation of Burns, Blowdown Areas, or Other Catastrophes

1. Allow restoration through natural plant succession and development.
2. Seeding, planting and manipulation of native vegetation to hasten restoration.

364 - Policy

1. Planting, seeding, or manipulation of vegetation will be limited to native plants common and characteristic of the site or plant community involved.
2. No commercial harvest or removal of wood products within the "seen" area and modified management in the remainder of the Scenic River Area.
3. Management of vegetation will not include grazing by livestock, the harvest of hay, or any agricultural practice.

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4. Disturbed areas resulting from fire, blowdown, or other catastrophes will be allowed to recover naturally without seeding, planting, or vegetation manipulation.

365 - Coordinating Requirements

1. Insure that planting stock is of local origin.

370 - Water

371 - Situation

See Section 226.

372 - Assumptions

None.

373 - Alternatives

None.

374 - Policy

1. No man-caused degradation of the present water quality will be permitted.
2. Maintain or improve existing water quality.

375 - Coordinating Requirements

1. Establish carrying capacities for National Forest users to prevent degradation of high-quality water.
2. Dispose of effluents in a manner that prohibits direct access to natural waters.
3. Report suspected violations of State water quality standards to the Water Pollution Board and follow up on the action taken.

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4. Monitor the water quality of the Eleven Point River on a continuous basis, at the following locations:

- a. Thomasville
- b. Greer Spring
- c. Hurricane Creek
- d. Riverton
- e. Narrows (Highway 142)

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401 - Introduction

The following sections describe the uses people make of the Scenic River Zone. All uses must meet the resource quality standards as described in Section 200. Some uses are conflicting, and in those cases where the quality of the river experience is seriously affected, some provision must be made to eliminate or reduce the conflict. The most serious threat to the area is over use.

410 - Recreation Activities and Facilities

411 - Canoeing and Boating

411.1 - Situation

Canoeing and boating are popular activities on the Eleven Point River. During the summer of 1971 (June - August) over 2,200 people floated from Greer Crossing to Riverton. Two canoe livery operations on the river provide watercraft rental and transportation services to put in and take out points.

The majority of outboard motor use on the Eleven Point is of a local origin. Motors are used to power gigging and fishing craft and are normally ten horsepower and smaller in size.

A study conducted by Duffield (16) during the summer of 1971 showed 3 percent of the watercraft had motors. Seventy percent of the respondents felt motors should not be allowed on the river. When asked to list the low points of their trip, the presence of motors was the third most-often mentioned item. Litter and too many people were first and second.

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Many of the motors presently used on the river are run by private landowners.

The Forest Service does not have the authority to prohibit the use of outboard motors on the river, but it does have the authority to prohibit transporting outboard motors across National Forest land.

411.2 - Assumptions

411.21 - Canoeing and Boating

1. Canoeing and boating are recreational activities that are compatible with Scenic River objectives.
2. Canoeing and boating will continue to increase in popularity as recreational pursuits.
3. Watercraft launching sites are necessary to allow canoeing and boating use.

411.22 - Outboard Motor (Fuel Burning Engines) Use on the Eleven Point

1. Outboard motors may add pollutants to the air and water and may violate sound standards.
2. Water quality standards are presently being violated in sloughs and backwaters where oil and gas accumulate, covering the surface.
3. Outboard motors increase visitor contacts and reduce experience level.
4. A small number of motors used on the river would reduce the sense of adventure and experience level for many during the heavy use season of April 1 thru September 30.
5. Paddling, poling, and electric motors may be used to carry on activities such as fishing.

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6. There are numerous, convenient locations for use of motors, such as the lower Current River, Norfolk Lake, and the lower Eleven Point.

7. The river from Thomasville to Greer is shallow and unsuitable for outboard motor use.

8. Acquisition of cabins will reduce motor use on the river.

411.3 - Alternatives

411.31 - Canoeing and Boating

1. Watercraft launching sites will be provided at designated road access points.

411.32 - Outboard Motor (Fuel Burning Engine) Use on the Eleven Point

1. Outboard motors may be transported across Forest Service administered land within the Eleven Point Scenic River Area.

2. Outboard motors will be restricted in horsepower, location, and season of use on Forest Service administered land within the Eleven Point Scenic River Area.

3. Outboard motors are prohibited on Forest Service administered land within the Eleven Point Scenic River Area, except during giggering season.

4. Outboard motors are prohibited on Forest Service administered land within the Eleven Point Scenic River Area.

411.4 - Policy

411.41 - Watercraft Launching Sites

Watercraft launching sites with parking will be provided at the following sites:

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1. Thomasville
2. Braswell Ford Area
3. Greer Crossing
4. Turner Mill South
5. Riverton
6. Highway 142

411.42 - Outboard Motors

Outboard motors up to and including ten horsepower may be used during the period of October 1 through March 31. Outboard motors of all types are prohibited on National Forest Lands during the rest of the year.

411.5 - Coordinating Requirements

411.51 - Standards for Watercraft Launching Sites

1. Design - Sites will include parking based on carrying capacity for intended uses.
2. Location - A necessary consideration is placement and design for flood damage protection.
3. Facilities - All watercraft access will have a short carrying distance from road to water. Greer Crossing will have a parallel docking facility of at least 100 feet in length made of logs and rock with molded cut banks.
4. The unloading point at Braswell ford will be at least 100 feet from the riverbank. The trail will be located to provide screening and reduce the threat of flood damage.

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5. Trail Clearing - Not more than 6 feet wide, curvilinear, unsurfaced, except where needed for safety or watershed protection.
6. Toilets - Two U-12A vaults at Greer Crossing, Riverton, Turner Mill South, and Braswell. None at Thomasville or the Narrows because of flood plain restrictions.
7. Water - No water necessary.
8. Signs - Minimum necessary for safety and regulatory information. One roofed bulletin board will explain concepts of the Scenic River and the expected behavior of the user at each major access point. The bulletin boards will be maintained in conjunction with the travel permit stations.
9. Parking Lots and Entrance Roads - Parking lots will be turf over gravel subsurface. The following entrance roads will be asphalt seal coat:
 - a. Thomasville
 - b. Greer Crossing
 - c. Riverton
 - d. Highway 142 Access
10. Refuse Containers - Provide large containerized recepticals for refuse disposal at all access points, except Thomasville. Containers will be accessible, simple to maintain, but visually compatible with the surrounding landscape.

411.52 - Watercraft Use on the Eleven Point

1. Post outboard motor regulations on bulletin boards.
2. Insure users are aware of carry-in, carry-out regulations.

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412 - Camping

412.1 - Situation

Overnight float camping is a time honored, traditional activity on the Eleven Point. Bliss Spring is the only developed float camp on the river and the majority of camping takes place at that site or on one of the numerous gravel bars scattered along the river. The number and quality of gravel bars changes from year to year. The Eleven Point does not have the abundant gravel bars so characteristic of many Ozark streams.

A developed auto campground is located at Greer Crossing. The campground is hardly used because of a lack of shade trees. Suitable sites for auto campground development are limited.

412.2 - Assumptions

412.21 - Auto Access Campgrounds Inside the Scenic River Area

1. Overnight camping will continue to be a popular activity on the river.
2. Any well-located and designed campground inside the Scenic Zone will receive heavy use.
3. There already is a serious problem of too many people inside the Scenic River Zone for the facilities provided.
4. The sites available for campgrounds within the zone are marginal, and pose a serious physical threat to the landscape within the narrow river valley.

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5. Auto campgrounds are not necessary for recreational type of activities carried on inside the Scenic River Area. Campgrounds outside the area will serve transient canoeists and boaters as well as camps inside the area. A sufficient number of campsites should be available outside the area to serve the needs of floaters before and after the trip.

6. It is impossible to eliminate the sounds and visual impact of activities of a large campground from the river.

7. Consequences:

	<u>Positive Consequences</u>	<u>Negative Consequences</u>
Auto Campground Within the Zone	1. Convenient for users. 2. People want to be close to water 3. Greer Crossing is a constructed facility ready for use.	1. Draw people into zone. a. Reduce experience levels. b. Physical damage. 2. Imposition on river. 3. Subject to flooding. 4. No shade on present Greer site.
Auto Campground Outside Zone	1. No effect on river. 2. No flooding. 3. Variety of sites available.	1. Inconvenient to river. 2. Expensive to construct new facility.

412.22 - Float Camping Facilities on the Eleven Point

1. Developed float camp facilities will allow more control over resource quality than to allow random camping.

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2. Developed sites can be dispersed and group size enforced, thereby maintaining stated experience levels.
3. Camping in general, and gravel bar camping in particular, is a time honored, quality experience. This activity should be allowed to continue unless quality standards will be adversely affected.

412.3 - Alternatives

412.31 - Auto Access Campgrounds Inside the Scenic River Area

1. No auto campgrounds allowed in area.
2. Locate auto campgrounds where the impact on the riverscape is minimal.

412.32 - Float Camping Facilities on the Eleven Point

1. Restrict float camping to gravel bars only.
2. Provide developed float camp facilities and allow gravel bar camping, no camping on other public lands.
3. Allow unrestricted camping on all public lands inside the area.
4. Provide developed float camp facilities. No float camping on gravel bars or on other public lands.

412.4 - Policy

1. No auto access campgrounds will be allowed inside the scenic river zone.
2. Provide developed float camping facilities on the Eleven Point. Allow gravel bar camping. No camping on other public lands inside the zone.

USE POLICIES AND COORDINATION

412.5 - Coordinating Requirements

1. Allow camping only on gravel bars and designated sites. Such use may become harmful to resource or experience level quality standards.
2. Encourage the use of gas stoves and metal tent poles.
3. Provide information to campers on locations of developed sites.
4. Advertise and enforce regulations on carry out of garbage and litter.
5. Remove the existing campground at Greer Crossing when a suitable alternate is constructed outside the Scenic River area.
6. Limit group size to the design load on all float camps.
7. Provide information explaining the regulations and user responsibilities to each party using the river.
8. Display warnings at all access points and in the literature of possible abrupt rises in river water level due to heavy rains.
9. Provide float camp sites at the following locations:

Number of Camping Units*

Location

2	Catlett Cabin
2	Braswell Crossing
2	Cane Bluff
3	Deadmans Cave
2	Greer Spring, across from mouth of spr
2	Little Hurricane Creek
4	Stinking Pond Hollow

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<u>Number of Camping Units*</u>	<u>Location</u>
6	Horseshoe Bend
2	Bliss Spring
4	Whites Creek
2	Greenbriar Hollow
2	Turtle Island Spring
2	Boze Mill Spring
2	Sibkey Spring
4	Piney Creek
2	Fredrick Creek
2	Morgan Spring

*Note that in most river sections there are more float camps planned than needed to meet carrying capacity for that stretch of river. The extra camps will be used as alternate areas when rehabilitating over-used sites.

11. Construct float camp facilities to the following design criteria:
 - a. Design - Sites will contain a maximum of four units and a minimum of two units.
 - b. Location - Camps will be located in areas where the mouth of a creek or back water slough affords adequate screen for the river, or where other natural features provide a visual and sound screen to minimize impact on other users.

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Sanitation facilities will be above the 100-year projected flood level. Units will be kept at least 100 feet from the river bank and at least 100 feet apart.

c. Facilities - Facilities will be rustic in design.

- (1) Toilets - Sealed vaults with cedar shake roofs, one per site.
- (2) Tent Pads - Contoured, drained surface with irregular edge of variable size. Use indigenous material.
- (3) Fireplaces - Open fire ring made from native stone.
- (4) Boat Landings - Natural stone or large logs placed irregularly at water's edge with trail to camp units where needed.
- (5) Signs - Rock cairn or rustic wood sign will mark the campsite at the junction of creek and river or other obvious location.
- (6) Drinking Water - None provided.
- (7) Garbage cans will not be provided (carry out).
- (8) Tables - UIIA - 7-foot light plank.

12. Horseshoe Bend Float Camp will be used as a group camp when large groups (30 people) use the river and desire to camp at the same location. This camp will have 6 units.

13. Small inconspicuous signs will be placed at the entrance to each float camp, to identify that site by name and help floaters locate themselves.

413 - Fishing

413.1 - Situation

The Eleven Point supports a variety of fishlife, but the potential

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for fisheries is limited because of the low fertility of the habitat. The river is not recognized as an outstanding fishing stream, but fishing is an important recreational activity. Spearing or gigging fish from john boats at night with the aid of lights is a popular sport during the fall and early winter season. Access to the river for bank fishing and boating is at major road crossings and by private roads.

413.2 - Assumptions

1. Sport fishing will continue to be an increasingly popular recreational activity on the Eleven Point.
2. Fishing is a compatible and essential part of a river experience.
3. River bank deterioration may occur in areas where use is heavy.
4. Sport fishing and gigging on the river are established uses.
5. There are no indications that fishing is having an adverse effect on the native fish populations.

413.3 - Alternatives

None.

413.4 - Policy

Sport fishing and gigging should continue as compatible recreation activities as long as the well being of the fishery resource is not endangered and the river banks and attendant vegetation is not impaired.

413.5 - Coordinating Requirements

1. In areas where bank fishing pressures are heavy, trails should be located and constructed to minimize the impact on the river banks.

414 - Hiking

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414.1 - Situation

People presently do not come to the Eleven Point purposely to hike, but many floaters hike. The Whites Creek Unit will increase public interest in hiking throughout the National Forest. There are no established hiking trails within the Scenic River Area. The popularity of backpacking is rapidly increasing. The river zone offers some outstanding terrain for hiking.

414.2 - Assumptions

1. There is a demand for hiking trails in the Scenic River Area (average hiking distance for floaters .2 mile, Duffield) (16).
2. Hiking trails will provide a diversity of experience for floaters.
3. Trails will provide greater opportunities for more people, with a minimum conflict between users.
4. The United States will own only half of the Scenic River shoreline. A selected trail system would allow adequate hiking opportunities with a minimum of right-of-way and enforcement problems. Because of fencing, cattle, agricultural operations, and private residences, trail locations on private lands would be difficult and very expensive.
5. A selected trail system on Government lands will reduce the user conflict problems to a minimum by proper trail location, but still allow 536 more people at any one time to have a scenic river experience.
6. Consequences:

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	<u>Positive Consequences</u>	<u>Negative Consequences</u>
No Trails	<ol style="list-style-type: none">1. No expense.2. No conflict problems with other uses.3. No ROW problems.	<ol style="list-style-type: none">1. Reduces recreation opportunity.2. Trails will be made by public.3. Unduly restricts the local user.
Selected Trail System in Parts of Zone	<ol style="list-style-type: none">1. Allows continued local use.2. Moderate costs.3. Minimum ROW costs.4. Increases user benefits.5. Compatible use with experience level.	<ol style="list-style-type: none">1. Some chance for user conflicts.
Trail Along Entire Length of River	<ol style="list-style-type: none">1. Allows more people, more complete use of river.	<ol style="list-style-type: none">1. High costs of construction.2. Large number of ROW's needed.3. Increased chance of use conflicts.4. Difficult maintenance a enforcement problems on pri lands.5. Difficult trail locatio problems on private lands.

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414.3 - Alternatives

1. No trails.
2. Selected trail system in parts of area.
3. Trails covering the entire area.

414.4 - Policy

Build a trail system in selected portions of the Scenic River Area.

414.5 - Coordinating Requirements

1. Hiking Trail Location - Hiking trail construction will take place in the following locations:

<u>Location</u>	<u>Trail Mileage</u>
Graveyard Spring - Hurricane Creek -	
Turner Mill - Stinking Pond Hollow	8
Becky Road - McCormack Lake -	
Greer Crossing - Graveyard Hollow	9
Catlett Camp - Cane Bluff - Long Hollow	11
Byrum - Allen	8
Turner Mill South - McFry - Horseshoe Bend	7
Stinking Pond Hollow - Horseshoe Bend -	
Bliss Spring	9
Whites Creek - Boze Mill	8
Greer Springs - Narrows -	
Boze Mill - Pigman Mound	<u>7</u>
Total Miles	67

2. Allow overnight trail camping at designated trail campsites only.
3. Carrying capacity for trails is 8 people/mile.

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4. Trail camps will be located where they are a minimum conflict with other uses of the river:
 - a. No hiking camps closer than 150 feet to the river bank.
5. Toilets will be located out of the 100 year flood plain.
6. One trail camp for each 50 PAOT of hiking trail capacity.
7. Trail camps will not be located closer than one mile from any major road head.
8. Trail camp facilities:
 - a. Toilet
 - b. Cleared area
 - c. Fire ring
 - d. Tent pad.
9. Trail camps will be located at the following locations:
 - (1) Brass Well Ford Spring
 - (2) Deadmans Cave
 - (3) Minich Spring
 - (4) McCormack Bluff
 - (5) Graveyard Spring
 - (6) Big Bottom Hollow
 - (7) Powder Mill Spring
 - (8) Byrum Slough
 - (9) Boze Mill
 - (10) White Oak.

415 - Horseback Riding

415.1 - Situation

There are no developed horseback riding trails in the Scenic River

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Zone. Horseback riding is only an occasional activity and restricted to mostly private lands. Horseback riding opportunities are available at other nearby locations, such as the Blue Ridge Horse Trail, New Liberty Horse Trail, and numerous Forest Service woods roads.

415.2 - Assumptions

1. Horseback riding trails would receive increasingly heavy use.
2. Use of horses on existing trails would create maintenance problems and conflicts between recreation users.

415.3 - Alternatives

1. No horseback riding in the Scenic River Area.
2. Limited horseback riding.
3. Horseback riding will be allowed inside the Scenic River Area.

415.4 - Policy

Riding of horses will not be allowed inside the Scenic River Area.

415.5 - Coordinating Requirements

None.

416 - Picnicking

416.1 - Situation

Picnicking is a popular activity along the Eleven Point River. Auto-picnicking facilities are available at Greer Crossing, Riverton, and the Narrows. Many people picnic as part of a days float trip.

416.2 - Assumptions

1. Picnicking is a recreational activity that is compatible with Scenic River objectives.

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2. Picnicking activity will increase in the future.

416.3 - Alternatives

None.

416.4 - Policy

1. Picnicking should continue as a compatible recreational activity on the Eleven Point River.
2. Picnicking facilities will be provided at developed sites only.

416.5 - Coordinating Requirements

1. Location of Sites - Auto access picnic grounds will be provided at Greer Crossing, Riverton, and the Narrows.
2. Design - Ten-unit family picnic areas will be located at Greer Crossing, Riverton, and the Narrows.
3. Eliminate or minimize flood damage by locating sites out of the flood plain if possible. Greer Crossing units are within the flood plain however, the sanitation facilities are located above the known high-water level.
4. Facilities - All facilities will be in accordance with Regional design standards and screened from the river unless the situation warrant special design criteria.
 - a. Tables - 7-foot light plank, anchored for flooding if necessary.
 - b. Toilets - Sealed vault, single seat - two.

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- c. Table Pads - Wood chip surface, irregular in shape, extending at least two feet beyond the table edge.
- d. Grills - Upright, cast.
- e. Signs - Special design.
- f. Water - Hand pump and well.

417 - Off-Road Vehicles

417.1 - Situation

There is minor use of motorcycles and four-wheel drive vehicles within the Scenic River Area. This use takes place along woods roads and at major and minor access points. Use is increasing.

Executive Order 11644, Use of Off-Road Vehicles on the Public Lands, February 8, 1972, requires control of such vehicles.

417.2 - Assumptions

1. Use of motor vehicles on other than established roads is detrimental to established resource quality standards.
2. Use of motor vehicles for recreational purposes, within the Scenic Zone, at other than access points is a violation of experience level standards.

417.3 - Alternatives

None.

417.4 - Policy

1. Motor or air vehicles of any type will not be permitted on public lands within the Scenic River Zone except:
 - a. For emergencies, rescue, and fire suppression.

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- b. At designated access points to the Scenic River.
- c. On designated temporary roads when such use is necessary for proper care and harvest of farm crops or for access to existing residences or private lands or for maintenance and construction of developed facilities or harvest of timber.

417.5 - Coordinating Requirements

None.

418 - Shooting

418.1 - Situation

Firearms are commonly carried in boats and canoes for hunting, shooting of targets and non-game species of birds and animals. It is a violation of Missouri State law to kill non-game birds and animals without a collectors permit.

418.2 - Assumptions

1. Indiscriminate shooting of firearms disturbs populations of non-game birds and animals.
2. Non-game species are of equal importance with game species.
3. Shooting of firearms from canoes and boats is a safety hazard and detracts from the enjoyment of many visitors.
4. Firearms are not necessary for the protection of visitors.
5. Discharge of a firearm is a distracting and unnatural sound and, therefore, violates the river sound quality standards.

418.3 - Alternatives

None.

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418.4 - Policy

Regulate indiscriminate shooting of firearms along the river to the extent possible under basic authority of State and Federal statutes.

418.5 - Coordinating Requirements

1. Through information and education efforts encourage people not to carry firearms on the river.

420 - Development

421 - Experience Level

421.1 - Situation

Experience levels for development sites are based on the concepts shown in Section 232, Experience Level Determination. Experience levels were arrived at by determining the amount of projected use a facility would be receiving, the constructed facilities necessary, and consideration of administrative problems connected with maintenance of a particular experience level.

421.2 - Assumptions

None.

421.3 - Alternatives

See Section 231.

421.4 - Policy

Experience Level 2

Thomasville Access
Cane Bluff Access
Turner Mill North

Experience Level 3

Greer Crossing Access and Picnic Ground
Riverton Access
Highway 142 Access

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Experience Level 2

Hiking Trails and Trail Camps
Boze Mill Area
The Narrows Hiking Area
Pigman Mound
Greer Spring and Trail
Turner Mill South

Experience Level 3

The Narrows Access Area, VIS Center, and
Picnic Area
Greer Spring Parking Area and VIS Center
Float Camps

421.5 - Coordinating Requirements

None.

422 - Carrying Capacity for Developed Sites

422.1 - Situation

Deterioration of overstory, loss of ground cover, and erosion is evident at river areas receiving heavy use. Shoreline erosion is especially obvious at Greer Crossing and Turners Mill, while ground vegetation is disappearing at Bliss Spring Float Camp, Greer Crossing picnic area and watercraft launching sites.

It is doubtful that a quality scenic river experience can be found at Bliss Springs or Greer Crossing during heavy use periods.

422.2 - Assumptions

1. Developed recreation sites are subject to the greatest deterioration effect from use.
2. Proper site design can reduce physical damage from over use.
3. Developed sites set the tone for the quality of the river experience.

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4. Determination of carrying capacity for developed sites (Space Standards (6):

Floater - Based on carrying capacity of river sections above and below the developed site.

Picnicking - Three picnic units to one acre.

Sightseeing - This is a random use and will be subject to space available on the site.

Nature Study and Photography - Based on quality of the area for the activity.

Swimming - Swimming takes place at random locations, subject to space available.

Hiking - Based on length of hiking trail available. Eight hikers per mile of trail.

Fishing - Based on the shoreline available for fishing. Two hundred shoreline feet per fisherman.

5. Parking lots will be used to limit the total number of people using the site.

422.3 - Alternatives

None.

422.4 - Policy

1. Enforce carrying capacity on all developed sites.
2. Adjust site carrying capacity based on research data.

422.5 - Coordinating Requirements

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1. If observations indicate deterioration of sites, before quantitative research data is available, carrying capacity levels can be adjusted to a lower level.

422.6 - Carrying Capacities for Sites

See Section 240, Carrying Capacity.

The numbers shown opposite each activity in the following table are the desirable levels of use at that site, for the indicated activity, based on three people per auto.

Total vehicle parking units (VPU) indicate the maximum size of the parking lot.

Example:

Total Use for Cane Bluff = 37 VPU (Vehicle Parking Units) X 2 People/Au
= 74 PAOT

<u>Site</u>	<u>Uses</u>	<u>Parking Units</u>
Thomasville	Floater	6 (7)*
	Other Uses	<u>2</u>
	Total VPU	8
Cane Bluff	Floater	14 (7)
	Other Uses	26
	Total VPU	40
Greer Crossing	Floater	32 (26)
	Other Uses	<u>21</u>
	Total VPU	53

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<u>Site</u>	<u>Uses</u>	<u>Parking Units</u>
Turners Mill South	Floater	9 (9)
	Other Uses	<u>10</u>
	Total VPU	19
Turners Mill North	All Uses	<u>8</u>
	Total VPU	8
Riverton	Floating	38 (12)
	Other Uses	<u>32</u>
	Total VPU	70
Highway 142 Boat Access	Floating	12
	Other Uses	<u>12</u>
	Total VPU	24
Narrows	All Uses	<u>32</u>
	Total VPU	32
Greer Hiking Area	All Uses	<u>17</u>
	Total VPU	17
Greer Spring	All Uses	<u>25</u>
	Total VPU	25

*() indicates number of parking units needed downstream.

423 - Design Standards

423.1 - Situation

In 1971, there were only two developed Forest Service sites on the Eleven Point--Greer Crossing and Bliss Springs.

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423.2 - Assumptions

1. The developed sites are heavily used and considerable effort must be extended to maintain them in quality condition.
2. Proper attention to design will make sites aesthetically pleasing, functional, and provide a minimum of impact on the resources, thereby meeting resource and experience level standards.

423.3 - Alternatives

None.

423.4 - Policy

423.41 - Developed Sites

1. Locate all development sites except boat access, float camps, and picnic areas on the periphery or outside the zone if possible.
2. Locate all recreation improvements on soils suitable for the intended use and to insure protection of the environment.
3. Locate water and sanitation facilities above the 100-year flood level, and designed to prevent water pollution.
4. Treat all areas disturbed by construction to reestablish natural vegetation or cover for soil stability and erosion control.
5. Provide for public safety in the location, design, construction, and maintenance of all facilities and improvements.
6. Administer developed sites in accordance with the assigned experience level, and in a manner that maintains that level.
7. Encourage the private sector to construct recreation facilities for public use outside the Eleven Point River Zone.

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8. Enforce the carrying capacity on all developed sites.

423.42 - Hiking Trails

1. Construct hiking trails so that in all cases they conform to the natural landscape. Use native materials in construction.
2. Construct trails in such a manner to prevent erosion.
3. Locate hiking trails to minimize contact with other uses.
4. Allow overnight trail camping at designated trail campsites only.

423.5 - Coordinating Requirements

1. Construct trails using Forest Service standards in the Trails Handbook.
2. River and stream crossings will not be improved, except for stepping rocks on banks and in tributary streams.
3. Carrying capacity for trails is 8 people/mile.
4. Mark hiking trails with rock cairns.
5. Erect trail signs at trail heads and main trail junctions.
6. Rock work will be done in areas where erosion may be a problem, to reduce compaction and clearly mark the trail pad.
7. Cleared width six-feet maximum, with eight-foot height, and tread width 24-inch maximum.
8. Trail location should provide the following:
 - a. Pass through a diversity of vegetational types.
 - b. Negotiate a diversity of terrain that provides some challenge.
 - c. Minimum impact on other uses.
 - d. Minimum impact on resources.

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430 - Concessions

431 - Recreation Concessions

431.1 - Situation

There is one combination canoe livery, store, and gas station on the river at Riverton.

431.2 - Assumptions

1. Concession-type facilities for recreation should be provided by private enterprise.
2. Concession-type facilities should be located outside the Scenic River Area.
3. Concessions within the Scenic River Zone reduce the experience level for visitors by their intrusion on the aesthetic qualities of the landscape.
4. Concessions would have a difficult time meeting the high resource quality standards for the Scenic Zone.
5. Because the Scenic Zone is a narrow, one-half-mile-wide strip of land, there are plentiful alternatives for concessions to locate near the Scenic Zone boundary on private lands.

431.3 - Alternatives

1. Administer under existing regulations and policies.
2. Restrict to provide for protection of the resources and to enhance the outdoor experience along the river.
3. Prohibit the establishment of additional concession-type facilities within the scenic River Area.

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431.4 - Policy

The establishment of additional concession-type facilities within the Scenic River Area will be prohibited.

431.5 - Coordinating Requirements

1. Established concessions will be allowed to continue operation as long as they meet pollution, public health, and safety standard as outlined by the Forest Service.

2. Applications for additional concession-type facilities will not be approved.

440 - Rights-of-Way

441 - Utilities and Roads

441.1 - Situation

There are over 17 utility and road rights-of-way on public and private land within the Scenic River Area. Access to private property across public land exists.

441.2 - Assumptions

1. Rights-of-way are an intrusion on the natural environment.
2. Existing major highways and powerlines will be a management problem.
3. Existing access across public land to private land will have to be provided.
4. Motor vehicles do not meet quality standards for air and sound.
5. Motor vehicles do not provide the visitor with a sense of challenge, adventure, and solitude in a natural setting.

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6. Access creates adverse administrative problems and landscape degradation. Any access where motor vehicles are allowed encourages increased numbers of people and the associated problems of clean up, river bank erosion and soil compaction and law enforcement.

7. Hiking trails will replace roads to provide access to the Scenic River Area.

8. Utility rights-of-way are unnatural scars on the land and do not meet high requirements of landscape aesthetics.

441.3 - Alternatives

1. Permit according to existing laws, regulations, directives, policies, and guides.

2. Permit with stipulations to provide compatibility with the enhancement and protection of natural values of the Scenic River Area when significant public benefit will occur.

3. Prohibit construction within the Scenic River Area.

4. Permit only in conjunction with highway right-of-way.

441.4 - Policy

Road rights-of-way will not be permitted except for reconstruction of existing highways on the present location.

Utility rights-of-way may be permitted where stipulations to protect the natural environment and recreational values can be included.

441.5 - Coordinating Requirements

1. Any permitted powerline under 34.5 KV must be buried.

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2. Vegetation on existing powerline rights-of-way will be controlled by selective basal application of approved herbicides.

3. A vegetative screen will be maintained to obscure the cleared right-right-of-way from seen areas.

4. Cooperation in vegetative management on rights-of-way on private land will be actively pursued.

5. A cooperative agreement for the maintenance of highway and bridge rights-of-way through the Scenic River Area should be negotiated with the Missouri State Highway Department. The agreement should include roads and structures on the landscape:

a. Color of bridges and repainting.

b. Mowing ROW, height of cutting, distance from roadway.

c. Maintenance of upstream and downstream ROW under bridges, use of screening.

6. As rights-of-way are no longer needed, they will be restored to natural conditions.

450 - Transportation

451 - Vehicular Access

451.1 - Situation

There is a major highway at the east and west end of the Scenic River Area and two additional major highways cross the area. Throughout the length of the area, 52 private service roads and county roads provide access to the river from both sides and on both National Forest and private land. Seven roads ford the river in places. The Forest Service

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road to the Greer Crossing site is in place. Classification of the river as "Scenic" by definition requires limited vehicular access.

451.2 - Assumptions

1. It will be necessary to retain some roads for access to residences and farming operations on private land.
2. Some use of motorized equipment will be necessary during the rehabilitation and construction phases.
3. Motorized vehicles are an intrusion on the riverscape and result in deterioration of the environment.
4. Road facilities are necessary for ingress and egress to developed recreation areas.
5. Roads, either public or private, used for access to the river and with termini on the river, result in deterioration of the river environment.
6. Motorized vehicles are in conflict with providing a quality recreation experience on the Eleven Point.
7. Motorized vehicles do not meet standards for air and sound quality.
8. Roads and river crossings are scars on the natural landscape.
9. Road access creates management problems by encouraging more people to use the area.
10. Motor vehicles do not enhance the visitors chance to find challenge, adventure, and solitude.

451.3 - Alternatives

1. Administer with established use.

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2. Restrict use of motorized vehicles to designated types of use and to designated locations.

3. Prohibit use of motorized vehicles.

451.4 - Policy

The use of motorized vehicles within the Scenic River Area will be restricted by type of use and to designated locations.

451.5 - Coordinating Requirements

1. Closure notices will be obtained from the Regional Forester for the entire Eleven Point Scenic River Area.

2. Access will be limited to roads as indicated on the Scenic River Area Transportation Plan map.

3. Motorized land vehicles will be restricted to designated roads.

4. Abandoned roads will be rehabilitated to blend with the environment.

5. All roads entering the Scenic River Area which will not be a part of the transportation plan will be closed to vehicular traffic, except for valid existing rights.

6. Prohibit public access to the river over areas under easement.

7. Provide trail access in place of roads that are closed, in cases where traffic on the road was regular and for purposes of recreation.

460 - Land Uses

461 - Agriculture and Grazing

461.1 - Situation

There were few existing permits within the Scenic River Area at the time of establishment. There is one grazing permit adjacent to the Scenic

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River Area which includes 20 acres within the Zone. There is one agricultural permit within the area. Access to bottomland fields is difficult and often requires crossing the river. Some fields in this zone provide suitable forage for cattle grazing. These areas are not fenced along the river and livestock have free access to the river and shoreline. Grazing and agricultural activity exists on private land along the river.

461.2 - Assumptions

1. Livestock use along the river and within the 100-year flood plain results in a deterioration of scenic values and water quality.
2. Existing grazing and agricultural activity on private land adjacent to the river will continue.
3. As more agricultural and grazing land is required, there will be more permit applications for use of government land.
4. Agricultural and livestock use permits are not essential to the conduct of public business in the Scenic River Area.
5. Agricultural and range activities on public lands are not in keeping with the management objectives of the Scenic River Area in that they do not enhance the natural environment or recreational experience.
6. Because of the necessary roads, vehicle travel, and fences, agricultural uses may have an adverse effect by lowering resource and experience quality levels.
7. Adequate areas devoted to agriculture and/or grazing exist on private land within the Scenic River Area to provide scenic diversity.

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461.3 - Alternatives

1. Permitted subject to existing laws, regulations, rules, policies, and guides.
2. Permitted with restrictions to provide for compatibility with the objectives of the Scenic River Area.
3. Prohibited as not essential to the conduct of public business within the Scenic River Area.

461.4 - Policy

New agriculture and grazing occupancy permits will not be permitted within the Scenic River Area.

461.5 - Coordinating Requirements

1. Existing use permits adjacent to the Scenic River Area will be modified to exclude those portions of the permit area inside the Scenic Zone.

ADMINISTRATIVE POLICIES AND COORDINATION

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- 574 - Facilities Design
- 580 - Maintenance
- 581 - Maintenance of Scenic River Zone

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510 - Fire

511 - Wildfire Control

511.1 - Situation

The Scenic River Area contains 14,195 acres, of which 4,440 acres may be National Forest land and 9,755 acres private land. More than 60% of the area is within the Department of Conservation fire protection boundary. The largest ranch along the river, Pigman Ranch, is located in the State protection area and the ranch suppresses fires on their own property. All developed facilities and most unique features will be located on National Forest land.

511.2 - Assumptions

1. Mechanized fire fighting equipment is of limited value in fire suppression in the Scenic River Area due to its rugged terrain.
2. The State of Missouri cannot effectively suppress fires on National Forest lands in their protection area without mechanized equipment.
3. The unique natural, archeological, and other values are susceptible to damage from heavy equipment, whereas hand construction of fire lines poses a minimal threat to the environment.
4. The risk of greater burned area, under certain conditions, exists where mechanized fire equipment would not be utilized.

511.3 - Alternatives

1. No restrictions on the use of mechanized fire fighting equipment.
2. The use of mechanized fire fighting equipment restricted by burning conditions, areas, etc.

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3. The use of mechanized ground fire fighting equipment on National Forest land within the Scenic River Area is prohibited.

511.4 - Policy

The use of mechanized fire fighting equipment within the "seen" area will be restricted to extreme burning conditions when this type of control is necessary to protect high-value properties and resources. No restriction on equipment use outside the "seen" area.

511.5 - Coordinating Requirements

1. All fire maps will display the boundaries of the Scenic River Area and the "seen" area from the river.
2. All unique features within the Scenic River Area will appear on fire maps.
3. A Cooperative Agreement between the Department of Conservation, State of Missouri, and the Forest Service will be negotiated to include:
 - a. Inclusion of the entire Eleven Point Scenic River Zone in the Forest Service fire protection area.

520 - Information and Education

521 - Information and Education Analysis

521.1 - Situation

Over the next few years, we will acquire the land and the scenic easements necessary to administer the Eleven Point as a Scenic River (it is anticipated that condemnation will be used), commence developments, and carry out law enforcement.

Local people living in the area are unsure of the Forest Service program. The majority of information they receive is hearsay. People

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floating the river have a limited knowledge they are on a Scenic River or of future development plans.

521.2 - Assumptions

1. Public involvement, personal contacts, brochures, slide talks, and other well-organized public contacts can disseminate information, alleviate fears, instill confidence, and change opinions.
2. Publicity concerning recreational opportunities available on the Eleven Point will draw increasing interest in river management and increasing numbers of people interested in experiencing a scenic river.
3. The purpose of the plan is not to encourage mass types of recreation on the river.

521.3 - Alternatives

None.

521.4 - Policy

1. Public relations activities having to do with the river will be confined to explaining current or future management policies, regulations and available facilities.
2. Printed material used to explain regulations, natural history, human history, or camping methods will be professionally prepared and made available to all users.
3. Rangers will see that the publics, local and non-local, are informed of regulations, and reasons for implementation of those regulations.

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4. Mass media using the Eleven Point for documentary purposes will not be encouraged.

521.5 - Coordinating Requirements

1. Information and education will constitute a major portion of time during river patrols. Objectives will be to inform visitors as to regulations, how-to-do-it, recreation facilities available and interpretation of management plans and natural history.

2. Regulations, restrictions, and needs will be presented to the media in a concise and professional manner.

3. Printed, verbal, and audio visual material which may specifically encourage visitors to use the area will be restricted as much as possible.

530 - Land Adjustment

531 - Land Acquisition Program

531.1 - Situation

The 1968 Wild and Scenic Rivers Act directed that boundaries be established, classification made, and a development plan prepared for each of the eight designated components of the river system within one year. The River Plan - Eleven Point was completed and submitted to Congress for publication in the Federal Register within the prescribed time and is now in effect. The 44.4-mile segment of the Eleven Point included in the Wild and Scenic Rivers Act is located between State Highway 99 near Thomasville, and State Highway 142 near Gatewood in Oregon County, Missouri, four miles upstream from the Missouri-Arkansas state line. In establishing the detailed boundaries of the Eleven Point Scenic River area, as required

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by Public Law 90-542, aliquot parts of section descriptions were used to minimize any requirements for boundary location. The boundary was established to include an average of not more than 320 acres per mile on both sides of the river, as required by the Act. The established boundary includes a total area of 14,195 acres, of which 10,660 acres was in private ownership.

Cover types on the private ownership consists of the following: woodland - 5,216 acres, unimproved pasture and open woodland - 4,590 acres, cropland - 470 acres, and improved pasture - 385 acres.

Approximately fifty percent of this private land is in four large ownerships. Three are used for livestock production, including some crop lands; the other and largest is used as a recreational retreat and is managed primarily to encourage forest growth.

Less than ten percent of the total acreage of private land is subject to intensive farming practices. The main source of livestock forage is provided in the uplands. Bottomland fields are usually small, often isolated and subject to flooding. The acreage under cultivation has declined rapidly over the last thirty years and all indications are that this trend will continue. There is a small general store, two privately operated camping areas, and sixty-six residences and summer homes within the area. There are approximately one-hundred different property owners within the Scenic River Boundary. A description of each property and justification for acquisition is included in Appendix 1012.

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531.2 - Assumptions

1. Acquisition of selected land within the Scenic River Area is needed to insure the necessary protection and management of the river, and to provide opportunities for public use and enjoyment.

2. The archeological site at the Pigman Mound, springs such as Greer, and unique areas like the Narrows are examples of sites needed in public ownership to meet the objectives of the Wild and Scenic Rivers Act.

3. Public access areas and float camps become the direct responsibility of the Forest Service and must be publicly owned. Fee acquisition will be necessary in some instances to protect and enhance the scenic and esthetic values along the riverscape. There are situations where public access to the river is available across private lands and presents an undesirable condition from the overall management of the Scenic River Area. Purchase of these areas may be the most desirable alternative.

4. Cabins and summer homes along the shores, in most cases, represent an undesirable intrusion upon the river and its environment. The presence of these dwellings is compounded by associated features such as roads, dumps, transmission lines, and boat docks. These areas will be purchased in fee.

531.3 - Alternatives

None.

531.4 - Policy

Land having outstanding recreational, aesthetic, historical, or archeological values, and lands needed for the protection of the Scenic River environment will, in most cases, be purchased in fee.

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531.5 - Coordinating Requirements

1. Coordinate development plans with acquisition.

532 - Scenic Easements

532.1 - Situation

Partial interests (scenic easements) may be acquired to control the use of private land for the purpose of protecting the scenic view from the river, but such control shall not affect, without the owner's consent, any regular use exercised prior to the acquisition.

532.2 - Assumptions

1. Scenic easements are needed on the private lands to insure that all uses that have an adverse impact on the Scenic River Area are controlled in order to maintain a scenic and esthetically pleasing riverscape.
2. Easements will be used primarily to limit or control new uses and developments that would have an adverse effect on management objectives.
3. Scenic easements are needed to control general public access over private roads within the Scenic River Area.

532.3 - Alternatives

None.

532.4 - Policy

Scenic easements will be acquired on the seen area of all private lands within the Scenic River Boundary (Appendix 1011).

532.5 - Coordinating Requirements

1. The seen area will be defined on the ground and conform to the following definition: The land lying between a given point on the river and the horizon.

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2. Negotiate for controlling and/or limiting uses and developments that are considered as prior uses, however, with the understanding that they are authorized to continue under Public Law 90-542.

3. Annually inspect all private lands under easement to insure conformation to the easement contract.

540 - Law Enforcement

541 - Enforcement of Laws and Regulations

541.1 - Situation

At present, the primary law enforcement activities are carried out by the Missouri Department of Conservation enforcement agents. The Conservation Department has made numerous arrests and convictions for littering and game violations on the river. The amount of time agents can spend on the river is limited. The only enforcement the Forest Service does is defacto, or enforcement through presence. Violations of laws and regulations are numerous.

541.2 - Assumptions

1. Missouri Conservation Department and local law enforcement officials cannot provide adequate law enforcement on the river.
2. Enforcement of laws and regulations would reduce maintenance costs on the river.
3. Law enforcement is a necessary part of recreation management as evidenced by Park Service experience on the Current River.
4. Violations of laws and regulations will increase as use increases.

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541.3 - Alternatives

None.

541.4 - Policy

Law enforcement will be a regular part of recreation management on the Eleven Point River.

541.5 - Coordinating Requirements

1. Selected Forest Service personnel working on the river will be commissioned to enforce state conservation laws and regulations.
2. The Forest Service will cooperate with the Missouri Department of Conservation in enforcing State statutes.
3. During heavy use periods, the river will be regularly patrolled by an officer or officers trained and capable of enforcing State and Federal laws and regulations.
4. Law enforcement activities will be pursued at random times and locations on a year long basis, with District personnel assigned enforcement responsibilities.
5. Work schedules will be adjusted to accomodate enforcement activities.
6. Enforcement personnel will be provided uniforms.
7. Outboard motors will not be used by enforcement personnel. The possible use of electric motors should be investigated.
8. The Forest Service will cooperate with the Conservation Department and negotiate to provide funds under authority of PL 92-82 to help pay for additional costs of enforcement on the Eleven Point.

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9. The Eleven Point Scenic River zone should be declared an area of concentrated public use under 36 CFR 251.25 and 36 CFR 251.90-96. Applicable regulations and maps should be posted at all access points.

550 - Recreation Use Determination

551 - Travel Permit System

551.1 - Situation

Recreation use on the Eleven Point River is increasing rapidly. A study conducted during the summer of 1971 estimated 1,100 canoes and boats floated the river during the 90-day period from June through August. The National Park Service estimates 14,000 canoes floated the upper Current River during the same summer. There are two reasons why this high level of use must not be allowed to occur on the Eleven Point River. First, the adverse impact it would have on the vegetation and soils within the Scenic Zone. Second, the adverse impact it would have on the experience level of the river users.

To limit recreation use, a carrying capacity must be determined. Carrying capacity will be the maximum number of people allowed on the river at one time without adversely affecting the high standards of resource quality designated for the river, and without decreasing the quality of the river users' experience.

In order to determine a carrying capacity for the river, the following factors must be known and analyzed: (1) present use, (2) the effect of this use on the resources of the river, and (3) the attitudes of the people

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using the river.

551.2 - Assumptions

1. Unless a use restriction system is imposed on the Eleven Point River, a large number of canoeists will be floating this National Scenic River and exceeding the carrying capacity.
2. A permit system can be successfully administered on the Eleven Point.
3. A number of objectives can be reached using the permit system:
 - a. Information dissemination.
 - b. Information collection.
 - c. Economy of operation.
 - d. Year-long operation.
 - e. Ultimate control of use.

551.3 - Alternatives

1. A study by Forest Service Research to refine carrying capacities.
2. A cooperative agreement with colleges or universities to study summer use.
3. In-Service study using permit system.
4. In-Service study using personal interview.

551.4 - Policy

A travel permit system for watercraft will be used on the Eleven Point. Information from permits will be utilized in refining carrying capacity.

551.5 - Coordinating Requirements

1. Method of Implementation - Initially, this will be a self-

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administering travel permit system. Travel permit stations will be located at each of the six public access points in the river zone. One person in each party will be required to fill out a permit for that group. The permit will consist of an original and one carbon entry. The upper part of the permit is to be completed and signed before the river trip begins. The original will be left at the permit station where the trip begins. Upon completion of the trip, the yellow copy will be left at the permit station where the trip ends, or if one forgets, the copy may be returned to the Forest Service by mail (see Appendix 1013, Travel Permit Form).

2. Information Disseminated - Regulations on hunting, fishing, out-board motors, motorized land vehicles, campfire safety, gathering of fire wood, cutting of green trees, shrubs, and boughs, littering, and carryout of non-burnable food and beverage containers will be made available with the travel permit.

3. Information Gathered - Information gathered on the travel permit will consist of the name and address of the party leader, when and where the trip began, how many people and boats/canoes in the party, the number of nights the party camped along the river and where (i.e. Forest Service float camps or gravel bars), where their trip ended, and the number of hours the group stayed in the Scenic River Area.

4. Administration - The permit system will be administered at the district level. Permit stations will be constructed at each access point. Frequent checks at each station will be required to maintain a supply of permits and to collect the completed forms. Periodic checks on

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river users will be necessary to determine the percent of users actually possessing the permits--this will be used as a correction factor when determining river use from the collected permits.

5. Detailed Study of the River Users - A detailed study of the river user's experience will be needed to supplement the information obtained on the travel permits. This additional information will aid in refining carrying capacity for the Scenic River Area. The information will be gathered by taking a sample of the permits collected and mailing questionnaires to randomly sampled party leaders. Their responses will be of value in the analysis of user attitudes and perceptiveness.

6. A watercraft travel permit will be required from May 15 through September 15.

7. Legal authority for a travel permit is contained in 36 CFR, Section 251.25. Approval of the Office of Management and Budget is required for all permits and questionnaires asking information from the public.

8. Beginning with the second season of operation the number of permits issued will be limited to the estimated carrying capacity of the river (Section 240, Carrying Capacity). Permits should be issued on a partial reservation and partial first come - first served basis.

9. A charge could be assessed the user for the reservation service.

10. At some future date a charge for river users could be assessed to cover costs of maintenance and administration of the Scenic River.

560 - Signs and Signing

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561 - Scenic River Area Signing

561.1 - Situation

A few signs exist along the river, primarily on recently acquired lands. Standard Forest Service signs are used at Bliss Spring Float Camp. The State has erected trout management signs at Greer Crossing, Turner's Mill, and Bliss Spring.

561.2 - Assumptions

1. Informational and interpretive signing will be necessary within the Scenic River Area.
2. Inappropriate signing can be an intrusion upon the natural environment of the riverscape.
3. Unnecessary or inappropriate signs, especially as viewed from the river, can reduce the experience level.
4. Suitable natural types of markers can sometimes be used along the river. Essential signing only, in the remainder of the Scenic River Area will be sufficient.

561.3 - Alternatives

1. Signing throughout the Scenic River Area.
2. Minimal use of signs within sight of the river.
3. No signs within sight of the river.

561.4 - Policy

There will be minimal use of signing within sight of the river.

561.5 - Coordinating Requirements

1. Signs will not be permitted within sight distance of the river unless points of interest near the river cannot be marked adequately by the use of rock or log cairn.

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2. Signing will be appropriate to the experience level for that area.

3. Entrance Signing:

a. Entrance signs will be placed on the major road entrances to the Scenic River Area: Highway 99, Highway 19, Highway 160, and Highway 14.

b. Signs at major entrances will follow the general design shown in Figure 2-52.81 of the Sign Handbook.

c. Entrance signs will be placed on the minor road entrances to the Scenic River Area: Cane Bluff and Turner Mill South.

d. Signs at minor road entrances will follow the general design shown in Figure 1-52.81 of the Sign Handbook.

e. Entrance signs will be placed at the following recreation area locations: Greer Crossing, The Narrows, and Greer Spring. Signs should follow the format shown in Figure 5-52.2 of the Sign Handbook and a design speed up to 40 MPH.

4. Boundary Signing:

a. Signs indicating the boundary of the Scenic River Area will be placed where trails or roads enter the Scenic Zone on Forest Service administered lands.

b. Boundary signs on trails should follow Figure 1-61.21 in the Sign Handbook.

5. Trail Signing - Trail signs will be placed at intersection of roads and trails and two or more trails. Standard trail signing will be used.

6. Sign Mounting and Color - Mounting or supports for all signs will be designed locally and in conjunction with the Forest landscape architect.

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A completely rustic color and material will be chosen in keeping with the area surroundings. All signs will follow the same color scheme.

570 - Visitor Information Services

571 - Visitor Information Analysis

571.1 - Situation

There are no visitor information facilities on the Eleven Point River at this time. There is a great opportunity for interpretive services because of the history and unique nature of the resources.

Because of easy access from large urban populations, the Eleven Point will be used by city people eager to learn about and view nature.

Probably the heaviest use is from the camper, sightseer, and vacationer groups who do not actually float or fish the river, but have heard about the scenic river and pass through on the main access roads.

Second heaviest use will be from floaters. These people will cause the heaviest impact on the resource.

The fisherman-hunter group provides much of the spring and fall use. Fishermen also float. The trout stocking program draws many who come for an assured catch. Fishermen provide most of the guiding income for local professional guides.

Heaviest local use comes from fishermen, both floaters and bank fishermen. Local people are more dispersed than non-locals because they use private lands along the river. Picnickers and sightseers from nearby towns use the river regularly. Hunting is a minor use, most heavy during deer season.

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Heaviest river use is on the stretch from Greer Crossing to Riverton. Greer Crossing, Turners Mill, and Riverton are the three heaviest use points. Other areas of moderate use are Cane Bluff and the Narrows.

Spring - Heavy fishing and beginning of floating season. River is normally up. Heavy use in May.

Summer - Floating Season - Many vacationers and non-resident fishermen come to float. Increasing use by organization groups. Heavy use by sightseers and family campers. June, July, and August are heaviest use months of the year.

Fall - Heavy use by college float groups. Late fall brings hunters into adjoining wooded areas and fields. Local fishing continues.

Winter - Local fishing continues on warm days. Floating almost non-existent. Very little non-local use.

571.2 - Assumptions

1. Interpretive services will give the visitor a better understanding of Scenic River management, the river environment, and a richer experience.
2. Visitor information services will assist the manager in carrying out plan objectives by informing the user.
3. Visitor information services are necessary in order to maintain resource standards and protect sites against user deterioration.

571.3 - Alternatives

None.

571.4 - Policy

Provide visitor information services in the Scenic River Zone to help meet objectives and standards.

ARTICLE 10 - MISCELLANEOUS

10.1. The Board shall have the authority to make, alter, amend, rescind, suspend or terminate any rules and regulations necessary to carry out the purposes of the Charter. Such rules and regulations shall be subject to the approval of the Board and shall be subject to the approval of the Board.

10.2. The Board shall have the authority to make, alter, amend, rescind, suspend or terminate any rules and regulations necessary to carry out the purposes of the Charter. Such rules and regulations shall be subject to the approval of the Board and shall be subject to the approval of the Board.

10.3. The Board shall have the authority to make, alter, amend, rescind, suspend or terminate any rules and regulations necessary to carry out the purposes of the Charter. Such rules and regulations shall be subject to the approval of the Board and shall be subject to the approval of the Board.

ARTICLE 11 - FINANCE

11.1. The Board shall have the authority to make, alter, amend, rescind, suspend or terminate any rules and regulations necessary to carry out the purposes of the Charter. Such rules and regulations shall be subject to the approval of the Board and shall be subject to the approval of the Board.

11.2. The Board shall have the authority to make, alter, amend, rescind, suspend or terminate any rules and regulations necessary to carry out the purposes of the Charter. Such rules and regulations shall be subject to the approval of the Board and shall be subject to the approval of the Board.

ARTICLE 12 - ATTORNEY GENERAL

12.1. The Board shall have the authority to make, alter, amend, rescind, suspend or terminate any rules and regulations necessary to carry out the purposes of the Charter. Such rules and regulations shall be subject to the approval of the Board and shall be subject to the approval of the Board.

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571.5 - Coordinating Requirements

1. Interpretive Story Key:

ORIENTATION

Canoeing and Camping

Fishing

Hiking and Backpacking

Recreation on National Forest Lands

Recreation on Eleven Point

ENRICHMENT

Social History:

Modern Man on the Eleven Point

Agriculture

Greer Spring

Logging

Civil War

Irish Wilderness

Turners Mill

Ancient Man on the Eleven Point

Pigman Mound

Indians

National Wild and Scenic Rivers

Wild and Scenic Rivers Act

Eleven Point Management Plan

Construction and Maintenance

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Resource Management on National Forest Lands

Water Quality

Timber Management

Resource Planning

Wildlife Management

Beautification

Natural History:

Springs of Eleven Point

Four Seasons

Ecology on Eleven Point

Fish

Insects

Reptiles

Birds

Wildlife

Animals

Birds

Bottomland Forests

Plant Life

Caves and Karst Topography

ADMINISTRATIVE POLICIES AND COORDINATION (INTERPRETIVE PLANNING INVENTORY)

P - Primary Method
S - Secondary Method*

STORY	THEME	Self-Guided Walk	Self-Guided Auto Tour	Guided Walk	Guided Auto Tour	Audio-Visual Presentation	Brochure	Visitor Information Structure	Personal Contact
Natural History of Eleven Point	Ecology	S ³		P		S ²	S ⁴	S ¹	
Springs of Eleven Point	Spring Ecology and Underground Water			P			S ²	S ¹	
Early Man on Eleven Point	Archeology	S ¹					S ²	P	
Modern Man on Eleven Point	History	S ³		S ²			S ¹	P	
Camping, Canoeing, and Hiking	Outdoor Living			P		S ¹	S ²		S ³
National Scenic River	Management on Eleven Point					S ³	S ²	P	S ¹
Four Seasons	Natural History Appreciation	S ³		P		S ²	S ⁴	S ¹	
Mark Twain National Forest	Resource Management			P		S ²		S ²	S ¹

*The number over the secondary method(s) indicates the relative effectiveness, number one being the best.

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2. Interpretive Methods - Following are descriptions of interpretive methods suited to tell each story. The methods are listed in order of suitability to tell the story.

a. Natural History of Eleven Point and Four Seasons - Natural history and four seasons are best interpreted through the guided walk where one can actually interpret in the field. For items such as wildlife that cannot be found easily, a VIS exhibit or audio visual method is best. Audio visual is limited as films cannot always be found for subjects, and are limited to a power source.

(1) Guided Walk,

(2) V.I.S. Exhibit

(3) Audio-Visual

(4) Self-Guided Walk - Difficult to maintain, inappropriate to some aspects of a scenic river area.

(5) Brochure

b. Camping, Canoeing, and Hiking - The personal demonstration (guided walk) plus audio-visual is best. Also, the personal river contact is useful. Brochures are helpful.

(1) Demonstration (Guided Walk)

(2) Audio Visual - VIS structure

(3) Brochure

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c. Springs of Eleven Point - Best interpreted through V.I.S. structures and or guided walk. Exhibits would help to depict karst topography and pollution problems. Brochures can also be helpful.

- (1) Guided Walk
- (2) Visitor Information Structure
- (3) Brochure

d. Modern Man on the Eleven Point - The overall history can be presented through a brochure with limited use of VIS structures. 1)

- (1) Brochure
- (2) Visitor Information Structure

e. Early Man on Eleven Point - Archeological sites are scattered and undeveloped and, in most cases, difficult to get to unless floating. These sites are delicate and great care should be taken in interpretation.

Until the time when an exhibit can be placed at the site (trail or wayside), a brochure provides the best alternative.

- (1) Brochure
- (2) Self-Guided Walk - Wayside Exhibit

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f. Mark Twain National Forest - National Forest management is best interpreted by guided tours.

(1) Guided Tours

(2) V.I.S. structure and Personal Contact

g. National Scenic River - This should be portrayed through written and visual media.

(1) Visitor Information Structure

(2) Brochure

(3) Audio-Visual

572 - Interpretive Planning Inventory Conclusions

572.1 - Situation

572.11 - Greer Crossing

Visitor use at Greer Crossing is very heavy because it is the primary starting point for float trips. Greer Spring and Mill site is also a prime attraction.

572.12 - Turners Mill

The Turners Mill area offers opportunity for some unique riverside interpretive possibilities. The use at this area is light at present.

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572.13 - Pigman Mound

This Indian mound may offer some future possibilities for interpretation.

572.14 - The Narrows

The Narrows is a 150-acre tract of land offering outstanding scenery and unique natural history.

572.2 - Assumptions

None.

572.3 - Alternatives

None.

572.4 - Policy

See 571.4.

572.5 - Coordinating Requirements

572.51 - Greer Crossing

1. Greer Mill is a historic landmark and should be rehabilitated into a condition where it would provide safe interpretation. This substantial building provides interpretive opportunities.
2. A parking lot to serve the mill and Greer Spring should be built.
3. The trail from the parking lot to Greer Springs needs to be reconstructed to handle heavy use and protect the fragile beauty of the area. Signing at the beginning of the trail should describe route and present restrictions.
4. A trail from Greer Crossing to the mouth of Greer Spring would serve as an interpretive trail for guided walks and a short hiking trail. A self-guiding

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brochure would describe ecology, habitat, and plant identification on the trail.

5. On weekends and other heavy use periods from May through Labor Day trained personnel should be on hand at Greer Mill - Spring complex, and Greer access to meet people, administer canoe use and provide information.

572.52 - Turners Mill

1. VIS structure - Turners Mill and Spring can be interpreted nicely with a simple wayside exhibit.

2. Surprise School - A prime example of the old one-room school house. The building should be protected. A few simple signs would serve for interpretive media.

572.53 - Pigman Mound

1. The mound should be investigated by competent archeologists.

2. Interpretive information should be available for those interested.

572.54 - The Narrows

1. The Narrows will have a picnic ground. The area will probably have moderate to heavy use.

2. VIS structure - A small protected building will have three or four two-dimensional exhibits and area information. This facility should be covered and closed during night time and off season.

3. Hiking trails and self-guided walks should round out VIS activities.

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572.55 - VIS Programs

A regular schedule of VIS and I&E programs will be planned:

1. Night Time Interpretive Programs at Greer Crossing and McCormack Lake - During periods of heavy use regularly scheduled campfire programs could be held. These could include movies, color slides, short talks, demonstrations, and discussions on subjects of interest and benefit to the visitor. Talks should touch on topics of management and controversy over National Forest and environmental administration.

572.56 - Other VIS

1. Interpretive brochures should be prepared on Greer Spring and Mill, the Narrows and Pigman Mound.
2. A map with enough detail so floaters can locate themselves while on the river, should be offered visitors. This map would contain a brief description of scenic and historic points along the river and location of all recreation developments.

573 - Direction of VIS Effort

573.1 - Situation

The main effort of the VIS program will be in reaching the individual who is using the river--the floater, hiker, fisherman, and picnicker. Our purpose will be to inform the visitor of regulations, educate as to the best methods of use, and help them enjoy and appreciate their surroundings. The secondary effort should be towards the visitor who is passing through, but stops only a short time, and whose main purpose is not a river experience. Our objectives here should be to make these

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people more aware and appreciative of their surroundings, and advise them of other recreational opportunities.

573.2 - Assumptions

None.

573.3 - Alternatives

None.

573.4 - Policy

See 571.4.

573.5 - Coordinating Requirements

Our VIS effort will be directed towards direct personal contacts until the planned facilities are constructed. This would include self guided walks, contacts along the river with the direct purpose of interpretation, brochures, and evening audio-visual programs in the nearby campgrounds.

574.1 - Situation

No facilities exist.

574.2 - Assumptions

1. Facilities are needed to properly interpret the Eleven Point River.

574.3 - Alternatives

None.

574.4 - Policy

See 571.4.

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574.5 - Coordinating Requirements

1. Interpretive Structures - Designed for the site to accommodate the following number of people at one time:

Greer Spring - 25

The Narrows - 25

2. Toilets - Waterborne systems in the interpretive structure at the Narrows. Treatment plants with irrigation will be needed to handle effluent.

3. Water - Drilled well with water piped to a suitable location.

4. Parking - Asphalt seal coat with curb and gutter.

5. Signs - Minimum necessary for safety, regulatory, and interpretation.

6. Trails - Carefully blended into these fragile environments to reduce the total impact on the landscape. Six-foot clearing maximum with eight-foot height.

a. Interpretive trails at the Narrows and Greer Crossing.

7. Interpretive Bulletin Boards

a. Location: Greer Spring Parking Lot, Turners Mill, and Greer Crossing.

b. Display - Visually interpret the resources or location by two dimension diagrams, photographs, and a minimum of writing.

Construction should be such that the exhibit can be inexpensively repaired if vandalized.

Boards should be located at prominent, but aesthetically acceptable sites.

ADMINISTRATIVE POLICIES AND COORDINATION

8. VIS activities will be located where their impact on other river uses is minimized.

9. VIS personnel will have training in interpretive skills.

10. The personal contact will be the main VIS tool.

11. Constructed facilities will be limited only to those absolutely necessary to interpretation and in keeping with the designated experience level for that site.

12. A comprehensive VIS program design will be made for each interpretive site by personnel competent in interpretive skills. This design should be completed before any construction takes place at the site.

580 - Maintenance

581 - Maintenance of Scenic River Zone

581.1 - Situation

The Forest Service has carried on a regular schedule of river cleanup on the Eleven Point for a number of years. Access points in government ownership are maintained by truck, while the river and associated float camp areas have been cleaned by both canoe and truck transported crews. Heavy recreation use has traditionally been from May 1st thru September 30.

581.2 - Assumptions

1. Amounts of litter can be reduced by a vigorous "carry out" campaign.

2. Camping allowed at designated sites and gravel bars only will reduce maintenance costs.

ADMINISTRATIVE POLICIES AND COORDINATION

3. Personal contacts with visitors will reduce littering and vandalism problems.

581.3 - Alternatives

None.

581.4 - Policy

Developed sites, float camps, hiking trails and the general river and forest landscape will be maintained to levels that insure protection of the sites, maintain aesthetic values, safeguard the general health of the user and recognize economy of funds.

581.5 - Coordinating Requirements

581.51 - Undeveloped Areas and Float Camps

1. Schedule cleanup patrols at least weekly, and more frequently where use necessitates, during the season from May 1st thru Sept. 30.
2. Clean-up crews will be well informed and act as I&E personnel to inform users of regulations and give assistance when needed.
3. A "carry out" program will be pursued and all persons using the river will be informed. Post regulations at all access points.
4. Garbage cans will not be provided at float camps. ✓
5. Firewood will not be provided at float camps. ✓
6. Electric motors should be investigated for use by clean-up crews. ✓
7. All garbage and refuse will be disposed of in a proper area outside the Scenic River zone.
8. Sewage systems at float camps will be constructed in such a manner that they can be maintained without the need for access roads.

ADMINISTRATIVE POLICIES AND COORDINATION

9. Float camps which show indications of physical overuse will be closed and rehabilitated. Alternate sites in the vicinity will be opened to floaters.

10. Float camps will be maintained by canoe transported crews.

581.52 - Developed Sites

1. Maintain adequate trash receptacles for "litter carryout" at all float take out points.

2. A mowing plan will be developed for each river access site.

3. Hazardous limbs or trees located in developed sites, that pose a safety hazard to visitors, will be removed.

581.53 - Visitor Information Facilities

1. Daily maintenance should be done on VIS buildings and exhibits.

2. Bulletin boards should be checked and maintained on a regular basis. Vandalism should be repaired promptly.

581.54 - General Maintenance Administration

1. A detailed District Recreation Site Operation and Maintenance Plan should be prepared for the Scenic River zone. This plan should be updated annually by March 1.

2. At least two annual inspections should be made by the District Ranger of all developed sites on the river.

UNIQUE AREA PLANNING

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610 - Unique Areas

611 - Boze Mill

612 - Greer Spring

613 - The Narrows

614 - Turners Mill North and South

UNIQUE AREA PLANNING

610 - Unique Areas

611 - Boze Mill

611.1 - Situation

Boze Mill home complex poses a difficult management problem. The United States is acquiring all home sites within the subdivision. The determination to acquire these homesites, some of which are quite expensive, was based on the undesirable visual impacts and human activity on the river landscape and the river user from the concentration of housing, and the polluting effects of septic systems.

Boze Mill Spring is one of the larger springs on the river with an average flow of 25 million gallons per day.

Title will be taken on the first tracts during the winter of 1972. Other homes will be acquired at regular intervals after that time. Some of the owners may take the option of a lifetime or twenty-five-year reservation and remain on their property.

The county road which runs through the Mill area will provide easy access to the river and river bank for recreation users. The area around the spring has been used for auto camping, picnicking, and floating for a number of years. The owners of the spring area have controlled the use by charging a fee for the use of the property. Use has been moderate, with light local use because of the charge. However, the impact on the site has been great. The spring area is ideal for various forms of river-based recreation. Once public ownership is established, increased use can be expected from local users and non-local auto campers who want easy river access.

UNIQUE AREA PLANNING

611.2 - Assumptions

1. Some individuals will keep 25-year or life estates on their cabins and the access road to these cabins will remain open.

2. During the period the road to Boze Mill remains open, there will generate heavy local use pressures on newly acquired sites. The area is ideal for day uses, such as swimming and picnicking.

3. With use, resource deterioration will take place.

4. The Boze Mill subdivision is being acquired, at high cost, in order to reduce visual and physical pollution and to maintain high experience levels. Therefore, the policy must maintain this objective.

5. Road access at Boze Mill is not part of the River Plan and public access to the river at this point is not an established use, rather a private use.

6. Consequences:

<u>Alternative</u>	<u>Positive Consequences</u>	<u>Negative Consequences</u>
1, 7, & 8	<ol style="list-style-type: none">1. Reduce resource damage.2. Maintain experience levels.3. Reduce impact on homeowners.	<ol style="list-style-type: none">1. Local resistance.
2, 3, & 9	<ol style="list-style-type: none">1. Satisfy local users.2. Hold numbers down to manageable numbers.3. Maintain reasonable resource quality.	<ol style="list-style-type: none">1. Possibility of vandalism and congestion for reservation holders.3. Lowering of experience levels.

UNIQUE AREA PLANNING

<u>Alternative</u>	<u>Positive Consequences</u>	<u>Negative Consequences</u>
4, 5, 6, & 10	1. Reduce road congestion. 2. Satisfy local users. 3. Lower levels of construction discourage heavier use.	1. Higher facility levels encourage use. 2. Reduction of experience levels. 3. Physical deterioration. 4. Higher development level would defeat objectives.

611.3 - Alternatives

1. No use - restricted.	With Road
2. Allow use - no parking lot or facilities.	With Road
3. Allow use - no parking lot, limited facilities.	With Road
4. Allow use - parking lot, no facilities.	With Road ✓
5. Allow use - parking lot, limited facilities.	With Road
6. Allow use - parking lot, complete facilities.	With Road
7. No use - restricted.	No Road
8. Allow use - trail, no facilities.	No Road
9. Allow use - trail, limited facilities.	No Road ✓
10. Allow use - trail, complete facilities.	No Road

611.4 - Policy

1. Alternative No. 4 for interim use.
2. Alternative No. 9 for long-term use.

611.5 - Coordinating Requirements

Listed in priority of accomplishment:

UNIQUE AREA PLANNING

1. Remove all home sites and return areas to natural land contours and vegetation.
2. Close Boze Mill Road to vehicle traffic and revegetate. No road relocation. Involves negotiation with county court.
3. Build trail from road head to Boze Mill Spring.
4. Provide those facilities needed to stop resource damage and maintain experience levels, trails and sanitary facilities.
5. Provide float camping facilities.

According to Forest Service engineers, there are no good alternatives for relocating Boze Mill Road. The Conners are the only family that would be inconvenienced by the road closure. They would still have access to their home after closure of the road, but road distance to Highway 160 will be increased by 0.5 miles.

612 - Greer Spring

612.1 - Situation

Greer Spring boils out of the ground in the southwest 1/4 of section 36 of the Louis Dennig property. The water then flows swiftly between and over the rocks of the spring branch, 1 1/4 miles to the Eleven Point River. The average flow is 328 cfs, and the fall from the upper outlet to the river level is 62 feet. The large volume of clear, cold water issuing from the ground with such force and then plunging down the narrow, rocky gorge with its heavily wooded, steep slopes, makes this a place of extraordinary beauty and striking grandeur. It is indeed one of the scenic gems of the Ozarks.

UNIQUE AREA PLANNING

Even more important than the pristine beauty of this spring, is the important influence it has on the Eleven Point. At Highway 19 Bridge, the water from Greer Spring provides 63% of the total flow, and 90% of the low flow volume of the river. At Highway 160, 20 miles downstream, it provides 44% of the total flow and 70% of the low flow.

The spring influences the river in other ways also--the vegetation, animal life, and fish are affected by the low water temperature. The character of the river changes drastically when one floats downstream to the point where water from Greer Spring flows into the river; the air temperature cools, and the water clears and becomes faster.

The Spring and Spring Branch are a prime attraction for people visiting the area. Up to the present, the owner has kept the land surrounding the spring in its natural state and has maintained the trail to the spring. Lack of publicity, other than word of mouth, has kept the people visiting the area within manageable numbers. The visits to the spring have been increasing over the last few years, and the first indications of site deterioration are now appearing.

State Highway 19 passes through the middle of the property, providing the public easy access. Improvements on the premises include a caretakers house near the entrance to the spring, Mr. Dennig's private cabin complex midway down the spring branch, the old Greer Mill, and the charcoal plant and associated buildings.

The area offers great opportunities for recreational development within the scheme of the Scenic River Plan. It also offers great challenges to the Forest Service to preserve the scenic and natural qualities.

UNIQUE AREA PLANNING

Louis E. Dennig (father of the present owner) began acquisition of the present holdings in 1915. Greer Spring and surrounding lands were acquired in that year. Thirty-four other transactions and a number of court cases have filled out the ownership as it now is. Louis S. Dennig acquired title to all land by provision of last will and testament.

For a history of Greer Spring Mills, see Appendix 1014. ✓

Water quality studies up to this point have shown Greer Spring with relatively high nutrient levels as compared with other large Ozark springs.

Tracing studies of underground water systems have not divulged the sources of water for Greer, but the work being done has narrowed the area down to that lying due west in the West Plains area.

Existence of a large cave system in the Greer area has not been proven. In a book published in 1898 by Louella Owen, this adventurous woman geologist reports exploring Greer Spring and an associated cave, "But it was growing late in the afternoon, and there was another cave whose entrance was in the perpendicular wall by which we had come. Here we found what is, not doubt, one of the oldest caves known."¹³

Greer Spring has cut a narrow, steep valley from far above its present source to the confluence with the Eleven Point. Because of the steep terrain, any trail into the valley is subject to erosion. The narrow valley makes dispersion of people difficult and concentrates users viewing the spring.

There are a large variety of woody and herbaceous plants, mosses and lichens surrounding the spring area and throughout the valley. Plant life

UNIQUE AREA PLANNING

growing on the margins of springs, such as mosses and lichens, are fragile and susceptible to trampling.

Seven species of rare and endangered crayfish and caddis flies are known to exist in the spring or spring branch (Appendix 1023). With a more thorough investigation, more species may be found.

612.2 - Assumptions

1. Greer Spring and spring branch are fragile sites. Over-use will cause serious physical deterioration.
2. Large numbers of people will desire to see the spring.
3. Visitors should be allowed to visit the spring, but the natural features should be protected from human incursion.

612.3 - Alternatives

None.

612.4 - Policy

1. The spring and spring branch areas will be left in as natural a condition as possible.
2. The Greer Spring area including the valley, spring branch, and watershed, will remain as an experience level two or lower.
3. Developments will be constructed to protect the site, but not to make access easier.

612.5 - Coordinating Requirements

1. Day use only.
2. Hiking use only to Greer Spring and spring branch. Trails will be designed to conform to the landscape and cause a minimum of erosion.

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3. The hiking trail will be rugged and somewhat challenging in order to create a sense of adventure and reduce human impact on the spring.
4. Interpretation, - see VIS, Section 570.
5. Floating will not be allowed in the spring branch.
6. Unless special permission is granted for scientific studies or photography, visitors will not be allowed to leave the confines of any path in the area.
7. Construct and landscape a parking lot to handle 25 automobiles.
8. Remove buildings, except Old Greer Mill, and restore grounds to a natural landscape.
9. Identify water sources for Greer Spring and nutrient inflow into system.
10. Continue water quality monitoring.
11. Investigate possible cave systems in Greer area and insure construction of surface features will not harm underground systems in any manner.
12. Investigate aquatic biology of spring system.
13. Investigate vegetation of spring valley.
14. Investigate archeology of spring area and surroundings.
15. Meet with Dennigs to discuss development plans at regular intervals.
16. Post regulations for use of area clearly.
17. Patrol area regularly to enforce regulations and maintain developments.
18. Fishing will not be allowed in Greer Spring Branch.

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613 - The Narrows

613.1 - Situation

Highly unique physical characteristics make The Narrows a rather impressive property to the point where it is well-known by the general public throughout a rather large region. Its individual characteristics are even further defined by its historical name, "The Narrows." With its four large springs, which flow in excess of one hundred million gallons per day, and its unusual aquatic growth, it has received national recognition in a number of publications over the past few years, the most recent of which is a color layout in the Sunday edition of the St. Louis Post Dispatch, March 15, 1970. The Delta Review, May 1969, carried a three-page article along with the highly detailed analysis on the aquatic growth in the June 1966 issue of Popular Science. The Narrows is perhaps the most unusual property for its size anywhere throughout the country. None of the literally thousands of surrounding acres along the Eleven Point River possess such a high degree and number of unusual characteristics, not to mention the national recognition.

The scenic terrain for this property consists of both open and timbered areas. There is approximately 20 acres of semi-opened land along the highway at the southerly end of the tract to the northwest of the main residence. The bottomland area adjacent to the Blue, Jones, and Sullivan Springs along the river contains approximately 16 acres of open land with approximately 30 acres of open to semi-open land at the extreme north end of the tract immediately south and west of the Morgan Spring and spring branch. The

UNIQUE AREA PLANNING

total open and semi-open land amounts to approximately 68 acres with the balance being in light to heavy timber at approximately 110 acres.

The total spring output is typically referred to as 100,000,000 gallons per day; however, the measurements for Blue Spring, according to "The Large Springs of Missouri," varied from 54 to 100 cubic feet per second during the period from 1925 to 1942, which is a range of from 34,900,000 to 63,300,000 gallons per day.

Morgan Spring, listed as Thomasson Mill Spring, reflects readings from 1925 to 1936, ranging from 14 to 57.5 cubic feet per second. This amounts to 9,050,000 gallons up to 37,200,000 gallons.

One of the sources of Morgan Spring has been traced to Alton Sinkhole dump, nearly sixteen miles away near Alton, Missouri. The sinkhole was formerly used as a trash dumping area by local residents.

In addition to the water sources, as mentioned, there are two ponds located along the westerly side of the property.

Mr. B. B. Morgan, the former owner, resides on the property and engages in the business of harvesting and selling aquatic plants which grow naturally in the springs and spring branches. He has retained use of the plant processing building, the existing roads with some exception, and the spring branches in his special use permit.

All of the timbered area is clean and well maintained with little undergrowth. The greater majority of timber on this tract is various species of oak along with sycamore and a number of young walnut trees. In addition to the natural timber, the former owner planted a number of pine trees along with a row of willow trees in the bottomland area adjacent to the springs.

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A high, narrow ridge is formed at the central part of this property which directly overlooks the Blue Spring and bottomland area approximately 60 feet below. This high, narrow point provides access from the main bodies of the tract on the north and south and is evidently the reason for its name, "The Narrows."

Of the four springs located on this property, Blue Spring is perhaps the best known, due to its size and publicity, being ranked as the eighth largest spring in the State of Missouri. The second largest on this property is Morgan Spring, which was originally the Thomasson Mill Spring, with the two smaller springs being Jones and Sullivan, neither of which are listed in "The Large Springs of Missouri." (Appendix 1027)

A good population of bluebirds exist on the property as a result of construction, placement, and maintenance of bluebird houses in open areas.

Camping, picnicking, and sightseeing are established activities on the property.

613.2 - Assumptions

1. The Narrows will draw increasingly heavy public use.
2. Many of the springs and vegetated areas are fragile sites. Over-use will cause serious physical deterioration.
3. The unique features should be interpreted to the user public.
4. Buford Morgan's privacy should be protected.

613.3 - Alternatives

None

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631.4 - Policy

1. Primarily day use and float camping allowed.
2. The property will be left in as natural a condition as possible.
3. Only hiking and float camping use north of the Narrows between the River and Frederick Creek.
4. The natural history of the area will be interpreted via a variety of media and methods, see VIS, Section 570.
5. Construction of trails and interpretive facilities will take into consideration the old and infirm and the safety of the users.
6. No hunting, off-road vehicles, or horseback riding in the Narrows area.
7. No fishing, wading, swimming, or diving in any spring or spring branch.

613.5 - Coordinating Requirements

1. Post regulations regarding use of the area in parking lots.
2. Prepare a landscape management plan.
3. Investigate archeology of The Narrows area.
4. Investigate aquatic biology of springs and spring branches.
5. Identify water sources for all springs and nutrient inflow into system.
6. Continue water quality monitoring.
7. Investigate vegetation of The Narrows area.
8. Roads beyond Narrows will be open to permittee and Forest Service only.

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9. The trail to Blue Spring overlook will be constructed in a manner to accomodate wheel chairs.

10. A picnic area with facilities will be provided south of The Narrows. Picnicking will be allowed north of The Narrows, but no facilities will be provided.

11. Adequate safety railings will be provided at Blue Spring overlook and Morgan Spring.

12. After closure of aquatic plant permit:

- a. Remove all buildings.
- b. Remove concrete apron around Jones Spring.
- c. Remove powerlines.
- d. Close all roads.
- e. Return Jones and Sullivan Spring branches to natural contours.

13. Provide float camping facilities in the Morgan Spring and Frederick Creek areas. Camps will be located close to sanitary facilities.

614 - Turners Mill Area

614.1 - Situation

Turners Mill is located in a narrow valley split in two by the Eleven Point River, and surrounded by steep tree-covered bluffs and hills. The alluvial bottoms are narrow, ranging in width from 250 to 50 yards on both sides of the river. Bottom soils are Secesh and Alluvial, both good recreation soils.

North Side of River - Turner Mill Spring and Mill Wheel and Surprise School House are attractions with historic interest. The use on the north

UNIQUE AREA PLANNING

side is increasing and deterioration of the spring and river banks is obvious. Human wastes are a problem as there are no sanitary facilities made available on the north or south side. The monitoring site located at Turner Spring has received heavy vandalism in past years. Auto camping is popular at the site provided next to Turner Spring.

Surprise School held classes up to the eighth grade. Land for the school was donated by Clay Turner in 1897. School was last held there in 1945. Dorothy McFry was the teacher, Roscoe McDowell was one of the school board members.

The grist mill was last operated in the 1920's by Clay Turner, who died in 1933. The steel water wheel was installed in 1915 and is an over-shot wheel. The spring furnished power for a grist mill, sawmill, and planer.

South Side of River - The Forest Service has recognized the need to keep Turner Mill South open to the public, mainly for local users who want to launch watercraft and fish. Approximately 18% of the floaters on the river put in or take out their craft at Turner Mill South. Because of the heavy use this narrow bottom area receives, there is serious bank deterioration taking place. Camping also takes place on the south side.

614.2 - Assumptions

1. Fishing and floating use in the Turners Mill area will increase.
2. Camping and sightseeing will increase in the area.
3. With more use, deterioration and vandalism of the area will increase.
4. Roads meeting the river from both north and south create an unusually

UNIQUE AREA PLANNING

heavy impact because of the narrow valley. In order to protect the resource and maintain a quality experience level of two, one of the roads should be closed.

5. The Forest has obligated itself to keep Turner Mill South open. This would allow continued, convenient access for local uses. This obligation will be honored.

6. Because much of the use at Turner Mill South is by john boats, access close to the waters edge is necessary. Therefore, the road must go beyond the parking lot.

7. Allowing a parking lot to be placed in the river bottom at Turners Mill North would not restrict use enough to maintain an experience level two over the long run.

8. Reduction of vandalism to water monitoring equipment and protection of cave and cave fish will come from road closure on north side.

614.3 - Alternatives

1. Auto access on south to river, hiking access on north.
2. Auto access on both sides to river.
3. Auto access on south to river, auto access on north to parking lot.

614.4 - Policy

Auto access on the south to the river, hiking access on the north side.

614.5 - Coordinating Requirements

1. Turner Mill North
 - a. Land contours around the spring branch will be returned to their natural shapes.

UNIQUE AREA PLANNING

- b. Provide sanitary facilities to meet expected recreation use.
 - c. Develop float camp sites at Stinking Pond Hollow.
 - d. Construct a system of hiking trails throughout the area.
 - e. A parking lot large enough to handle six vehicles will be provided outside the zone.
 - f. Close all roads leading into Turner Mill North. Forest Road 3190 will be closed at the Scenic River Zone Boundary. Obliterate and plant Forest Road No. 3190 and associated roads in area.
 - g. A hiking trail will be provided in place of the access road.
 - h. Surprise School House will be maintained as an example of a historic one-room school.
 - i. Gate Turners Mill cave so gate is not obvious to public.
 - j. Maintain an experience level of two.
2. Turner Mill South
- a. Keep Forest Road No. 3153 open to the river. Provide a turning circle and parking lot for 19 autos and trailers.
 - b. Planting of native species will be done to reduce noise and screen human activity.
 - c. Trail reconstruction in fishing areas to reduce bank and vegetation deterioration.
 - d. Barriers will not permit driving outside of the roadway.
 - e. Boats will have to be carried into the water from the turning circle.
 - f. Maintain an experience level of two.
 - g. Post regulations.

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3. Carrying Capacity

a. Carrying Capacity for Turners Mill North:

7 Fishermen

16 Sightseers or hikers

23 Total = 8 Autos at One Time

Fishing - one fisherman every 200 feet. One quarter mile of area is used by fishermen.

$\frac{1,320 \text{ feet}}{200 \text{ feet}} = 6.6$ or 7 Fisherman AOT

b. Carrying Capacity for Turners Mill South: Capacity of parking lot is based on 18% of total usage of floaters on the Eleven Point at carrying capacity, plus bank fishermen.

Carrying Capacity of Eleven Point - $152 \times 18\% = \frac{27 \text{ PAOT}}{3/\text{Car}} = 9 \text{ Cars}$

$\frac{2,000 \text{ feet Shoreline}}{200 \text{ feet Person}} - 10 \text{ Fishermen}$

$\frac{10}{2 \text{ Per Car}} = 5 \text{ Cars}$

Floaters - 9

Hikers - 5

Fishing - 5

Total - 19 Autos AOT

RESEARCH

700 - Research

710 - Research Needs

710.1 - Situation

The Forest Service has limited information on the resource and users of the Eleven Point. The lack of information makes reliable predictions difficult. The information gap is true for other rivers and small streams under management in the Mark Twain National Forest. Some work has been done on water quality, aquatic biology, and spring flow. During the summer of 1971 some basic research on user attitudes was completed. As river-based recreation becomes more popular, the need for definite quantitative information based on research becomes critical.

Although Forest Service research is interested in the problem, they are unable to handle the research load. The best source of expertise on Ozark rivers for research purposes is within area universities, colleges, and the Missouri Department of Conservation.

Overuse is the most imminent problem in our meeting the stated objectives of management and recreational carrying capacity is the priority need for research.

710.2 - Assumptions

1. There is knowledge and expertise available to do research on rivers.
2. Long-range management decisions that are workable must be based on sound quantitative data.

RESEARCH

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710 - Research Needs

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712 - Research Needs

The first section of the report discusses the need for research in the field of research needs. It points out that the current state of knowledge is inadequate and that a systematic approach is needed to identify the research needs of the field. The report then discusses the various methods that can be used to identify research needs, such as surveys, interviews, and focus groups. It also discusses the importance of involving researchers from different disciplines in the process of identifying research needs. The report concludes by stating that the identification of research needs is a continuous process and that it is essential for researchers to stay up-to-date on the latest developments in their field.

RESEARCH

710.3 - Alternatives

None.

710.4 - Policies

1. Establish and encourage a continuing program of research on the Eleven Point:
 - a. Sociological Research
 - b. Ecological Research
2. Coordinate and support research interest from universities, colleges, Missouri Conservation Department, and the Forest Service.
 - a. Insure Forest Service review of research proposals.
 - b. Provide information to help solve management problems on the Eleven Point River and other Ozark river systems.
3. Initiate a comprehensive research problem analysis to accomplish the following:
 - a. Identify the priority research needs. Develop a priority list of specific research projects based on ecologic, sociologic, and archeologic problems.
 - b. Insure research coordination between projects and agencies.

710.5 - Coordinating Requirements

Research Needs - Following is an outline of questions needing answers, which are necessary in order to carry out sound management on the Eleven Point:

1. Sociological
 - a. Identify Attractions and Values
 - (1) What aspects of the resource or the recreation experience does the user value most (least)?

RESEARCH

(2) Why does the user come to the Eleven Point and not to other available rivers?

(3) What quantitative value in dollars does the recreation experience on the Eleven Point provide for the user?

b. Identify Uses

(1) What are the various uses?

(2) Where do these uses occur?

(3) How often do they occur?

(4) When do the uses occur?

(5) What is the quantity of use?

(6) Characteristics of (who is) the user?

c. Identify Impacts

(1) What impacts do the various uses have on the attractions and values?

(2) At what level of impact do values begin to decrease?

(3) How do management decisions affect experience, values, and create impacts?

d. Interaction Analysis

(1) What are optimum levels of use?

(a) For individuals.

(b) For public.

(2) How do levels of use interact and affect experience

levels?

RESEARCH

e. Test Sampling

- (1) Is the set carrying capacity at its proper level?
- (2) Are uses changing?
- (3) Are attitudes towards the resource changing?

2. Ecological Research

a. Vegetation and Soils

- (1) Location.
- (2) Soil vegetation relationships.
- (3) Successional trends.
- (4) Management techniques.
- (5) Recreational deterioration of vegetation.

b. Aquatic

- (1) Aquatic systems identification.
- (2) Ecology of springs.
- (3) Pollution and management.
- (4) Water quality monitoring (continued).
- (5) Management of sport fishing.

c. Wildlife

- (1) Species identification.
- (2) Management of unique, rare, or endangered species.

d. Physical

- (1) Baseline sound study.

RESEARCH

3. Archeologic Research

a. Identification and Analysis

- (1) Pigman Mound
- (2) The Narrows
- (3) General (river-wide).

SCHEDULING AND COSTS

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810 - Planning Priorities

811 - River Development Priority Schedule

820 - Costs

821 - Construction Priorities and Costs

822 - Administrative Impacts

SCHEDULING AND COSTS

810 - Planning Priorities (Plan Period July 1, 1973, to June 30, 1978)

811 - River Development Priority Schedule*

- 61- 1. Whites Creek Float Camp ✓
2. Greer Crossing Access ✓
3. Turner Mill North Closure
4. Hurricane Creek - Turner Mill - Stinking Pond Trail
5. Narrows Development Plan
6. VIS Program Design - Narrows, Greer Crossing, Turners Mill
7. Trail - Turner Mill South
8. Trail - Greer Crossing
9. Horseshoe Bend Float Camp
10. Cane Bluff Float Camp
11. Bliss Spring Float Camp
12. Byrum-Allen Hiking Trail
13. Narrows Development (including Fredrick Creek and Morgan Spring float camps)
14. Turner Mill South
15. VIS Development - Narrows, Greer Crossing, Turners Mill
16. Becky Road - McCormack Lake - Greer Crossing Trail
17. Greer Crossing Float Camp
18. Deadmans Cave Float Camp
19. Cane Bluff - Long Hollow Trail
20. Cane Bluff Access
21. Cane Bluff Swimming Trail

SCHEDULING AND COSTS

22. Riverton Access Development
23. Stinking Pond Hollow Float Camps
24. Pigman Mound Plan
25. Piney Creek Float Camp
26. Highway 142 Access - Swimming Trail
27. Move Greer Crossing Camp Ground
28. Greer Spring Unique Area Plan
29. Greer Spring VIS Plan
30. Turtle Island Spring Float Camp
31. Greenbrier Hollow Float Camp
32. Little Hurricane Creek Float Camp
33. Catlett Cabin Float Camp
34. Turner Mill South - McFry - Horseshoe Bend Trail
35. Horseshoe Bend - Bliss Spring Trail
36. Greer Spring Development
37. Greer Spring VIS Development
38. Boze Mill Road and Site Closure
39. Whites Creek - Boze Mill Trail
40. Pigman Mound VIS Development

*Developments are dependent on availability of funds and land ownership. As land becomes available, those projects which are listed lower on the River Development Priority Schedule, (811), but high on Construction Priority, (821), can be moved ahead. Planning and site design must come before development and the priority schedules must be consulted for logical sequence of planning. Projects were ranked on the Development Schedule according to, (a) demand for use of the site, (b) recreation impact on the resource, and (c) predicted date of acquisition.

* SCHEDULING AND COSTS

820 - Costs

821 - Construction Priorities and Costs

821.1 - Float Camps

	<u>Cost</u>
OK (1) Whites Creek ✓	\$ 6,000
OK 2. Horseshoe Bend ✓	9,000
3. Cane Bluff	3,000
4. Greer Spring	3,000
5. Bliss Spring	3,000
6. Fredrick Creek	3,000
7. Morgan Spring	3,000
8. Boze Mill	3,000
9. Stinking Pond Hollow	6,000
10. Turtle Island Spring	3,000
11. Deadmans Cave	3,000
12. Piney Creek	6,000
13. Braswell Crossing	3,000
14. Greenbrier Hollow	3,000
15. Little Hurricane Creek	3,000
16. Catlett Cabin	3,000
17. Sibkey Spring	<u>3,000</u>
Total	\$66,000

SCHEDULING AND COSTS

821.2 - Closure Sites

1. Turner Mill North	\$ 4,100
2. Boze Mill	16,600
3. Greer Crossing Campground	2,000
4. Woods Roads	<u>5,600</u>
Total	\$28,300

821.3 - Access and Development Sites

	<u>Development Cost</u>	<u>Road Costs</u>
1. Greer Crossing	\$ 4,000	\$ 6,000
2. The Narrows	17,500	20,000
3. Turner Mill South	500	5,000
4. Riverton	20,000	20,000
5. Cane Bluff	2,000	7,000
6. Highway 142 Access	2,000	8,000
7. Thomasville	2,000	8,000
8. Greer Spring	<u>11,000</u>	<u>8,000</u>
Total	\$59,000	\$82,000

SCHEDULING AND COSTS

821.4 - Trail Construction

	<u>Trail Miles</u>
1. Hurricane Creek - Turner Mill - Stinking Pond Hollow	8
2. Becky Road - McCormack Lake - Greer Crossing	9
3. Cane Bluff - Long Hollow	11
4. Byrum - Allen	8
5. Turner Mill South - McFry - Horseshoe Bend	7
6. Horseshoe Bend - Bliss Spring	9
7. Whites Creek - Boze Mill	8
8. Boze Mille - Pigman Mound	<u>7</u>
Total Miles	67
Total Cost	\$39,798
Cost/Mile	\$ 594

821.5 - VIS Development

1. Greer Crossing	\$ 500
2. Turner Mill	1,500
3. The Narrows	75,000
4. Greer Spring	50,000
5. Pigman Mound	<u>2,000</u>
Total	\$129,000

821.6 - Signs

1. Entrance Signs (Highways 99, 19, 160, & 142)	\$ 5,000
2. Other Access	1,000
3. Development Sites	4,000
4. Trails and Information	<u>2,000</u>
Total	\$12,000

SCHEDULING AND COSTS

821.7 - Hiking Camps

1. Brasswell Ford Spring	\$ 2,000
2. Deadmans Cave	2,000
3. Minich Spring	2,000
4. McCormack Bluff	2,000
5. Graveyard Spring	2,000
6. Big Bottom Hollow	2,000
7. Powder Mill Spring	2,000
8. Byrum Slough	2,000
9. Boze Mill	2,000
10. White Oak	<u>2,000</u>
Total	\$20,000

821.8 - DEVELOPMENT PROGRAM COST SUMMARIES
(Five Year Development Program)

Project Year	2		3		4		5	
	P&M	FR&T	P&M	FR&T	P&M	FR&T	P&M	FR&T
<u>Construction</u>								
Float Camps	12,000	18,000	15,000	15,000	15,000	15,000	6,000	
Closure Sites	6,100						16,600	
Access & Development	4,500	26,000	22,000	4,700	4,000	8,000	13,000	16,000
Trails		4,752	6,534	10,098		4,158		14,256
VIS Development	500		75,000		3,500		50,000	
Signing	1,000		2,000		3,000		4,000	
Hiking Camps					10,000		10,000	
Road Closures							5,600	
Corner Re-monumentation ¹ .	20,000		20,000		20,000		20,000	
	44,100 ²	30,752	134,000	14,798	55,500	12,158	125,200	30,256
							414,300	121,798

Land Acquisition Type	Fee	Scenic Easement	Relocations	Annual Program Administration
No. of Cases	79	21	73	
Costs ³ .	\$3,174,830	\$420,890	\$57,580	\$67,000

1. Minimum Program (RO Memo 7150, 4/29/70).
2. These are Force Account or Contract costs. Overhead charges should be added for annual work planning.
3. Based on estimates derived from limited data and subject to adjustment to appraised values when received.

822 - Administrative Impacts

822.1 - Annual Operating Costs

Activity	Fire Protection	Recreation Administration	Law Enforcement	Water Quality Monitoring	Air Quality Monitoring	Wildlife Coordination	VIS Program	
Man-Days	N/A	150	90	63	30	20	140	
Costs ¹	\$3,150	\$13,000	\$6,300	\$4,500	\$2,000	\$1,500	\$4,500	
Total \$34,950/Year								

822.2 - District Staffing Impact

Unit	Grade Level	Present Staffing		Plan Implementation	
		Full Time	Part Time	Full Time	Part Time
Winona RD	GS-11	1		1	
	GS-9	1		1	
	GS-5	3		3	
	GS-4		5		2
	GS-3				5
Dontphan RD	GS-11	1		1	
	GS-7	1		1	
	GS-4	1		1	2

1. These are Force Account or Contract Costs. Overhead charges should be added for annual work planning.

1. The following table shows the results of the tests conducted on the following materials. The results are given in the table below.

Material	Test 1	Test 2	Test 3	Test 4	Test 5
Concrete	10	15	20	25	30
Steel	15	20	25	30	35
Aluminum	20	25	30	35	40
Wood	25	30	35	40	45
Brick	30	35	40	45	50

TABLE - 1: Results of the tests conducted on the following materials.

Material	Test 1	Test 2	Test 3	Test 4	Test 5
Concrete	10	15	20	25	30
Steel	15	20	25	30	35
Aluminum	20	25	30	35	40
Wood	25	30	35	40	45
Brick	30	35	40	45	50

TABLE - 2: Results of the tests conducted on the following materials.

The following table shows the results of the tests conducted on the following materials.

COOPERATIVE RELATIONS

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910 - Cooperative Agreements

COOPERATIVE RELATIONS

910 - Cooperative Agreements

910.1 - Situation

At present, the Forest Service has only one formal cooperative agreement with another agency concerning management activities in the Scenic River Zone. The present agreement is with the Missouri Department of Conservation concerning fire control activities.

The objectives of formal and informal cooperative relations with other governmental and private organizations is to attain more effective management of the Scenic River Area.

Government organizations involved in cooperative activities will include those at the county, regional, State, and Federal levels.

Good cooperative relations must be maintained with private industry, varied interest groups, and concerned individuals to better their understanding and gain their approval, as far as possible, of the management objectives and policies established for the protection, maintenance, and enhancement of the river and immediate environment. The interests of these industries, organizations, and concerned individuals are extremely varied and often conflicting. Only by maintaining close contact with the leaders in these areas, can good working relationships be developed.

910.2 - Assumptions

1. Good cooperative relations will improve management on the Eleven Point and efficiency of all parties involved.

910.3 - Alternatives

None.

COOPERATIVE RELATIONS

910.4 - Policies

1. Formal memoranda or letters of understanding will be executed with all cooperators in the public sector.

2. Good cooperative relations will be maintained with private industry and varied interest groups to gain their approval and cooperation in carrying out objectives and policies on the Eleven Point River.

910.5 - Coordinating Requirements

1. All cooperative agreements will be in writing.

2. Cooperative agreements or memorandums of understanding will:
(1) outline the need for such agreement and illustrate how Scenic River program goals will be coordinated and assisted, (2) define tasks to be performed by each respective organization, (3) determine funding responsibility of each, and (4) serve as an authority for the involvement of each organization. When a formal memorandum of understanding is not executed, a letter may be used with the sanction of the Forest Supervisor. This letter must be specific in authority, tasks, use of funds, and responsibility.

3. Cooperative agreements might be investigated with the following organizations:

- a. Oregon County Court (Road Systems)
- b. Missouri Geological Survey (Water Monitoring)
- c. University of Missouri (Research and Planning)

COOPERATIVE RELATIONS

- d. Missouri Department of Conservation (Planning, Research, Fire Protection, Law Enforcement, Wildlife, Forestry and Fisheries Management)
- e. United States Geologic Survey (Stream Gaging)
- f. Soil Conservation Service (Soil Mapping)
- g. Missouri Highway Department (Highway R.O.W. and Bridge Maintenance)

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1001 - Bibliography

1. Analysis of Travel Data From a June 1967 Survey of Ozark National Scenic Riverways. Thomas E. Brownscombe. September, 1968.
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Executive Order 11507

PREVENTION, CONTROL, AND ABATEMENT OF AIR AND WATER
POLLUTION AT FEDERAL FACILITIES

By virtue of the authority vested in me as President of the United States and in furtherance of the purpose and policy of the Clean Air Act, as amended (42 U.S.C. 1857), the Federal Water Pollution Control Act, as amended (33 U.S.C. 406), and the National Environmental Policy Act of 1969 (Public Law No. 91-190, approved January 1, 1970), it is ordered as follows:

SECTION 1. Policy. It is the intent of this order that the Federal Government in the design, operation, and maintenance of its facilities shall provide leadership in the nationwide effort to protect and enhance the quality of our air and water resources.

SEC. 2. Definitions. As used in this order:

(a) The term "respective Secretary" shall mean the Secretary of Health, Education, and Welfare in matters pertaining to air pollution control and the Secretary of the Interior in matters pertaining to water pollution control.

(b) The term "agencies" shall mean the departments, agencies, and establishments of the executive branch.

(c) The term "facilities" shall mean the buildings, installations, structures, public works, equipment, aircraft, vessels, and other vehicles and property, owned by or constructed or manufactured for the purpose of leasing to the Federal Government.

(d) The term "air and water quality standards" shall mean respectively the quality standards and related plans of implementation, including emission standards, adopted pursuant to the Clean Air Act, as amended, and the Federal Water Pollution Control Act, as amended, or as prescribed pursuant to section 4(b) of this order.

(e) The term "performance specifications" shall mean permissible limits of emissions, discharges, or other values applicable to a particular Federal facility that would, as a minimum, provide for conformance with air and water quality standards as defined herein.

(f) The term "United States" shall mean the fifty States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, and Guam.

SEC. 3. Responsibilities. (a) Heads of agencies shall, with regard to all facilities under their jurisdiction:

(1) Maintain review and surveillance to ensure that the standards set forth in section 4 of this order are met on a continuing basis.

(2) Direct particular attention to identifying potential air and water quality problems associated with the use and production of new materials and make provisions for their prevention and control.

(3) Consult with the respective Secretary concerning the best techniques and methods available for the protection and enhancement of air and water quality.

(4) Develop and publish procedures, within six months of the date of this order, to ensure that the facilities under their jurisdiction are in conformity with this order. In the preparation of such procedures there shall be timely and appropriate consultation with the respective Secretary.

(b) The respective Secretary shall provide leadership in implementing this order, including the provision of technical advice and assistance to the heads of agencies in connection with their duties and responsibilities under this order.

(c) The Council on Environmental Quality shall maintain continuing review of the implementation of this order and shall, from time to time, report to the President thereon.

Sec. 4. Standards. (a) Heads of agencies shall ensure that all facilities under their jurisdiction are designed, operated, and maintained so as to meet the following requirements:

(1) Facilities shall conform to air and water quality standards as defined in section 2(d) of this order. In those cases where no such air or water quality standards are in force for a particular geographical area, Federal facilities in that area shall conform to the standards established pursuant to subsection (b) of this section. Federal facilities shall also conform to the performance specifications provided for in this order.

(2) Actions shall be taken to avoid or minimize wastes created through the complete cycle of operations of each facility.

(3) The use of municipal or regional waste collection or disposal systems shall be the preferred method of disposal of wastes from Federal facilities. Whenever use of such a system is not feasible or appropriate, the heads of agencies concerned shall take necessary measures for the satisfactory disposal of such wastes, including:

(A) When appropriate, the installation and operation of their own waste treatment and disposal facilities in a manner consistent with this section.

(B) The provision of trained manpower, laboratory and other supporting facilities as appropriate to meet the requirements of this section.

(C) The establishment of requirements that operators of Federal pollution control facilities meet levels of proficiency consistent with the operator certification requirements of the State in which the facility is located. In the absence of such State requirements the respective Secretary may issue guidelines, pertaining to operator qualifications and performance, for the use of heads of agencies.

(4) The use, storage, and handling of all materials, including but not limited to, solid fuels, ashes, petroleum products, and other chemical and biological agents, shall be carried out so as to avoid or minimize the possibilities for water and air pollution. When appropriate, preventive measures shall be taken to entrap spillage or discharge or otherwise to prevent accidental pollution. Each agency, in consultation with the respective Secretary, shall establish appropriate emergency plans and procedures for dealing with accidental pollution.

(5) No waste shall be disposed of or discharged in such a manner as could result in the pollution of ground water which would endanger the health or welfare of the public.

(6) Discharges of radioactivity shall be in accordance with the applicable rules, regulations, or requirements of the Atomic Energy Commission and with the policies and guidance of the Federal Radiation Council as published in the Federal Register.

(b) In those cases where there are no air or water quality standards as defined in section 2(d) of this order in force for a particular geographic area or in those cases where more stringent requirements are deemed advisable for Federal facilities, the respective Secretary, in consultation with appropriate Federal, State, interstate, and local agencies, may issue regulations establishing air or water quality standards for the purpose of this order, including related schedules for implementation.

(c) The heads of agencies, in consultation with the respective Secretary, may from time to time identify facilities or uses thereof which are to be exempted, including temporary relief, from provisions of this order in the interest of national security or in extraordinary cases where it is in the national interest. Such exemptions shall be reviewed periodically by the respective Secretary and the heads of the agencies concerned. A report on exemptions granted shall be submitted to the Council on Environmental Quality periodically.

THE PRESIDENT

Sec. 5. Procedures for abatement of air and water pollution at existing Federal facilities. (a) Actions necessary to meet the requirements of subsections (a) (1) and (b) of section 4 of this order pertaining to air and water pollution at existing facilities are to be completed or under way no later than December 31, 1972. In cases where an enforcement conference called pursuant to law or air and water quality standards require earlier actions, the earlier date shall be applicable.

(b) In order to ensure full compliance with the requirements of section 5(a) and to facilitate budgeting for necessary corrective and preventive measures, heads of agencies shall present to the Director of the Bureau of the Budget by June 30, 1970, a plan to provide for such improvements as may be necessary to meet the required date. Subsequent revisions needed to keep any such plan up-to-date shall be promptly submitted to the Director of the Bureau of the Budget.

(c) Heads of agencies shall notify the respective Secretary as to the performance specifications proposed for each facility to meet the requirements of subsections 4 (a) (1) and (b) of this order. Where the respective Secretary finds that such performance specifications are not adequate to meet such requirements, he shall consult with the agency head and the latter shall thereupon develop adequate performance specifications.

(d) As may be found necessary, heads of agencies may submit requests to the Director of the Bureau of the Budget for extensions of time for a project beyond the time specified in section 5(a). The Director, in consultation with the respective Secretary, may approve such requests if the Director deems that such project is not technically feasible or immediately necessary to meet the requirements of subsections 4 (a) and (b). Full justification as to the extraordinary circumstances necessitating any such extension shall be required.

(e) Heads of agencies shall not use for any other purpose any of the amounts appropriated and apportioned for corrective and preventive measures necessary to meet the requirements of subsection (a) for the fiscal year ending June 30, 1971, and for any subsequent fiscal year.

Sec. 6. Procedures for new Federal facilities. (a) Heads of agencies shall ensure that the requirements of section 4 of this order are considered at the earliest possible stage of planning for new facilities.

(b) A request for funds to defray the cost of designing and constructing new facilities in the United States shall be included in the annual budget estimates of an agency only if such request includes funds to defray the costs of such measures as may be necessary to assure that the new facility will meet the requirements of section 4 of this order.

(c) Heads of agencies shall notify the respective Secretary as to the performance specifications proposed for each facility when action is necessary to meet the requirements of subsections 4(a) (1) and (b) of this order. Where the respective Secretary finds that such performance specifications are not adequate to meet such requirements he shall consult with the agency head and the latter shall thereupon develop adequate performance specifications.

(d) Heads of agencies shall give due consideration to the quality of air and water resources when facilities are constructed or operated outside the United States.

Sec. 7. Procedures for Federal water resources projects. (a) All water resources projects of the Departments of Agriculture, the Interior, and the Army, the Tennessee Valley Authority, and the United States Section of the International Boundary and Water Commission shall be consistent with the requirements of section 4 of this order. In addition, all such projects shall be presented for the consideration of the Secretary of the Interior at the earliest feasible stage if they involve proposals or recommendations with respect to

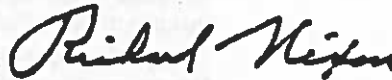
THE PRESIDENT

the authorization or construction of any Federal water resources project in the United States. The Secretary of the Interior shall review plans and supporting data for all such projects relating to water quality, and shall prepare a report to the head of the responsible agency describing the potential impact of the project on water quality, including recommendations concerning any changes or other measures with respect thereto which he considers to be necessary in connection with the design, construction, and operation of the project.

(b) The report of the Secretary of the Interior shall accompany at the earliest practicable stage any report proposing authorization or construction, or a request for funding, of such a water resource project. In any case in which the Secretary of the Interior fails to submit a report within 90 days after receipt of project plans, the head of the agency concerned may propose authorization, construction, or funding of the project without such an accompanying report. In such a case, the head of the agency concerned shall explicitly state in his request or report concerning the project that the Secretary of the Interior has not reported on the potential impact of the project on water quality.

Sec. 8. *Saving provisions.* Except to the extent that they are inconsistent with this order, all outstanding rules, regulations, orders, delegations, or other forms of administrative action issued, made, or otherwise taken under the orders superseded by section 9 hereof or relating to the subject of this order shall remain in full force and effect until amended, modified, or terminated by proper authority.

Sec. 9. *Orders superseded.* Executive Order No. 11282 of May 26, 1966, and Executive Order No. 11288 of July 2, 1966, are hereby superseded.



THE WHITE HOUSE,
February 4, 1970.

(F.R. Doc. 70-1500; Filed, Feb. 4, 1970; 12:53 p.m.)



An Act

To provide for a National Wild and Scenic Rivers System, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) this Act may be cited as the "Wild and Scenic Rivers Act".

Wild and Scenic
Rivers Act.

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

(c) The purpose of this Act is to implement this policy by instituting a national wild and scenic rivers system, by designating the initial components of that system, and by prescribing the methods by which and standards according to which additional components may be added to the system from time to time.

Sec. 2. (a) The national wild and scenic rivers system shall comprise rivers (i) that are authorized for inclusion therein by Act of Congress, or (ii) that are designated as wild, scenic or recreational rivers by or pursuant to an act of the legislature of the State or States through which they flow, that are to be permanently administered as wild, scenic or recreational rivers by an agency or political subdivision of the State or States concerned without expense to the United States, that are found by the Secretary of the Interior, upon application of the Governor of the State or the Governors of the States concerned, or a person or persons thereunto duly appointed by him or them, to meet the criteria established in this Act and such criteria supplementary thereto as he may prescribe, and that are approved by him for inclusion in the system, including, upon application of the Governor of the State concerned, the Allagash Wilderness Waterway, Maine, and that segment of the Wolf River, Wisconsin, which flows through Langlade County.

National wild
and scenic
rivers system.

82 STAT. 906
82 STAT. 907

(b) A wild, scenic or recreational river area eligible to be included in the system is a free-flowing stream and the related adjacent land area that possesses one or more of the values referred to in section 1, subsection (b) of this Act. Every wild, scenic or recreational river in its free-flowing condition, or upon restoration to this condition, shall be considered eligible for inclusion in the national wild and scenic rivers system and, if included, shall be classified, designated, and administered as one of the following:

Eligibility
for inclusion.

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

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

(3) Recreational river areas—Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some

National wild
and scenic
rivers.

development along their shorelines, and that may have undergone some impoundment or diversion in the past.

Sec. 3 (a) The following rivers and the land adjacent thereto are hereby designated as components of the national wild and scenic rivers system:

(1) CLEARWATER, MIDDLE FORK, INDIAN.—The Middle Fork from the town of Kosciusko upstream to the town of Lowell; the Lachsa River from its junction with the Selway at Lowell forming the Middle Fork, upstream to the Powell Ranger Station; and the Selway River from Lowell upstream to its origin; to be administered by the Secretary of Agriculture.

(2) KATYNS POINT, MISSOURI.—The segment of the river extending downstream from Thomasville to State Highway 142; to be administered by the Secretary of Agriculture.

(3) FEATHER, CALIFORNIA.—The entire Middle Fork; to be administered by the Secretary of Agriculture.

(4) RIO GRANDE, NEW MEXICO.—The segment extending from the Colorado State line downstream to the State Highway 96 crossing, and the lower four miles of the Red River; to be administered by the Secretary of the Interior.

82 STAT. 907
82 STAT. 908.

(5) ROOZE, OREGON.—The segment of the river extending from the mouth of the Applegate River downstream to the Lobster Creek Bridge; to be administered by agencies of the Departments of the Interior or Agriculture as agreed upon by the Secretaries of said Departments or as directed by the President.

(6) SAINT CROIX, MINNESOTA AND WISCONSIN.—The segment between the dam near Taylors Falls, Minnesota, and the dam near Gordon, Wisconsin, and its tributary, the Namekagon, from Lake Namekagon downstream to its confluence with the Saint Croix; to be administered by the Secretary of the Interior: *Provided*, That except as may be required in connection with items (a) and (b) of this paragraph, no funds available to carry out the provisions of this Act may be expended for the acquisition or development of lands in connection with, or for administration under this Act of, that portion of the Saint Croix River between the dam near Taylors Falls, Minnesota, and the upstream end of Big Island in Wisconsin, until sixty days after the date on which the Secretary has transmitted to the President of the Senate and Speaker of the House of Representatives a proposed cooperative agreement between the Northern States Power Company and the United States (a) whereby the company agrees to convey to the United States, without charge, appropriate interests in certain of its lands between the dam near Taylors Falls, Minnesota, and the upstream end of Big Island in Wisconsin, including the company's right, title, and interest to approximately one hundred acres per mile, and (b) providing for the use and development of other lands and interests in land retained by the company between said points adjacent to the river in a manner which shall complement and not be inconsistent with the purposes for which the lands and interests in land donated by the company are administered under this Act. Said agreement may also include provision for State or local governmental participation as authorized under subsection (c) of section 10 of this Act.

(7) SALMON, MIDDLE FORK, INDIAN.—From its origin to its confluence with the main Salmon River; to be administered by the Secretary of Agriculture.

(8) WOLF, WISCONSIN. From the Langlade-Menominee County line downstream to Keshena Falls; to be administered by the Secretary of the Interior.

(b) The agency charged with the administration of each component of the national wild and scenic rivers system designated by subsection

(a) of this section shall, within one year from the date of this Act, establish detailed boundaries therefor (which boundaries shall include an average of not more than three hundred and twenty acres per mile on both sides of the river); determine which of the classes outlined in section 2, subsection (b), of this Act best fit the river or its various segments; and prepare a plan for necessary developments in connection with its administration in accordance with such classification. Said boundaries, classification, and development plans shall be published in the Federal Register and shall not become effective until ninety days after they have been forwarded to the President of the Senate and the Speaker of the House of Representatives.

Publication in
Federal Register.

87 STAT. 908

82 STAT. 909

Sec. 4. (a) The Secretary of the Interior or, where national forest lands are involved, the Secretary of Agriculture or, in appropriate cases, the two Secretaries jointly shall study and from time to time submit to the President and the Congress proposals for the addition to the national wild and scenic rivers system of rivers which are designated herein or hereafter by the Congress as potential additions to such system; which, in his or their judgment, fall within one or more of the classes set out in section 2, subsection (b), of this Act; and which are proposed to be administered, wholly or partially, by an agency of the United States. Every such study and plan shall be coordinated with any water resources planning involving the same river which is being conducted pursuant to the Water Resources Planning Act (79 Stat. 244; 43 U.S.C. 1062 et seq.).

Each proposal shall be accompanied by a report, including maps and illustrations, showing among other things the area included within the proposal; the characteristics which make the area a worthy addition to the system; the current status of landownership and use in the area; the reasonably foreseeable potential uses of the land and water which would be enhanced, foreclosed, or curtailed if the area were included in the national wild and scenic rivers system; the Federal agency (which in the case of a river which is wholly or substantially within a national forest, shall be the Department of Agriculture) by which it is proposed the area be administered; the extent to which it is proposed that administration, including the costs thereof, be shared by State and local agencies; and the estimated cost to the United States of acquiring necessary lands and interests in land and of administering the area as a component of the system. Each such report shall be printed as a Senate or House document.

Report, maps,
etc.

Printing as
Senate or
House document.

(b) Before submitting any such report to the President and the Congress, copies of the proposed report shall, unless it was prepared jointly by the Secretary of the Interior and the Secretary of Agriculture, be submitted by the Secretary of the Interior to the Secretary of Agriculture or by the Secretary of Agriculture to the Secretary of the Interior, as the case may be, and to the Secretary of the Army, the Chairman of the Federal Power Commission, the head of any other affected Federal department or agency and, unless the lands proposed to be included in the area are already owned by the United States or have already been authorized for acquisition by Act of Congress, the Governor of the State or States in which they are located or an officer designated by the Governor to receive the same. Any recommendations or comments on the proposal which the said officials furnish the Secretary or Secretaries who prepared the report within ninety days of the date on which the report is submitted to them, together with the Secretary's or Secretaries' comments thereon, shall be included with the transmittal to the President and the Congress. No river or portion of any river shall be added to the national wild and scenic rivers system subsequent to enactment of this Act until the close of the next full session of the State legislature, or legislatures in case more than one

State is involved, which begins following the submission of any recommendation to the President with respect to such addition as herein provided.

(c) Before approving or disapproving for inclusion in the national wild and scenic rivers system any river designated as a wild, scenic or recreational river by or pursuant to an act of a State legislature, the Secretary of the Interior shall submit the proposal to the Secretary of Agriculture, the Secretary of the Army, the Chairman of the Federal Power Commission, and the head of any other affected Federal department or agency and shall evaluate and give due weight to any recommendations or comments which the said officials furnish him within ninety days of the date on which it is submitted to them. If he approves the proposed inclusion, he shall publish notice thereof in the Federal Register.

Publication in
Federal Register.

Potential
additions.
Designation.

Sec. 5. (a) The following rivers are hereby designated for potential addition to the national wild and scenic rivers system:

- (1) Allegheny, Pennsylvania: The segment from its mouth to the town of East Brady, Pennsylvania.
- (2) Bruneau, Idaho: The entire main stem.
- (3) Buffalo, Tennessee: The entire river.
- (4) Chattooga, North Carolina, South Carolina, and Georgia: The entire river.
- (5) Clarion, Pennsylvania: The segment between Ridgway and its confluence with the Allegheny River.
- (6) Delaware, Pennsylvania and New York: The segment from Hancock, New York, to Matamoras, Pennsylvania.
- (7) Flathead, Montana: The North Fork from the Canadian border downstream to its confluence with the Middle Fork; the Middle Fork from its headwaters to its confluence with the South Fork; and the South Fork from its origin to Hungry Horse Reservoir.
- (8) Gasconade, Missouri: The entire river.
- (9) Illinois, Oregon: The entire river.
- (10) Little Beaver, Ohio: The segment of the North and Middle Forks of the Little Beaver River in Columbiana County from a point in the vicinity of Negly and Elkton, Ohio, downstream to a point in the vicinity of East Liverpool, Ohio.
- (11) Little Miami, Ohio: That segment of the main stem of the river, exclusive of its tributaries, from a point at the Warren-Clermont County line at Loveland, Ohio, upstream to the sources of Little Miami including North Fork.
- (12) Maumee, Ohio and Indiana: The main stem from Perrysburg, Ohio, to Fort Wayne, Indiana, exclusive of its tributaries in Ohio and inclusive of its tributaries in Indiana.
- (13) Missouri, Montana: The segment between Fort Benton and Ryan Island.
- (14) Moyie, Idaho: The segment from the Canadian border to its confluence with the Kootenai River.
- (15) Obed, Tennessee: The entire river and its tributaries, Clear Creek and Daddys Creek.
- (16) Penobscot, Maine: Its east and west branches.
- (17) Pere Marquette, Michigan: The entire river.
- (18) Pine Creek, Pennsylvania: The segment from Ansonia to Waterville.
- (19) Priest, Idaho: The entire main stem.
- (20) Rio Grande, Texas: The portion of the river between the west boundary of Hudspeth County and the east boundary of Terrell County on the United States side of the river: *Provided*, That before undertaking any study of this potential scenic river, the Secretary of the Interior shall determine, through the channels of appropriate

executive agencies, that Mexico has no objection to its being included among the studies authorized by this Act.

(21) Saint Croix, Minnesota and Wisconsin: The segment between the dam near Taylors Falls and its confluence with the Mississippi River.

(22) Saint Joe, Idaho: The entire main stem.

(23) Salmon, Idaho: The segment from the town of North Fork to its confluence with the Snake River.

(24) Skagit, Washington: The segment from the town of Mount Vernon to and including the mouth of Bacon Creek; the Cousede River between its mouth and the junction of its North and South Forks; the South Fork to the boundary of the Glacier Peak Wilderness Area; the Suiattle River from its mouth to the Glacier Peak Wilderness Area boundary at Milk Creek; the Sauk River from its mouth to its junction with Elliott Creek; the North Fork of the Sauk River from its junction with the South Fork of the Sauk to the Glacier Peak Wilderness Area boundary.

(25) Suwannee, Georgia and Florida: The entire river from its source in the Okefenokee Swamp in Georgia to the gulf and the outlying Ichetucknee Springs, Florida.

(26) Upper Iowa, Iowa: The entire river.

(27) Youghiogheny, Maryland and Pennsylvania: The segment from Oakland, Maryland, to the Youghiogheny Reservoir, and from the Youghiogheny Dam downstream to the town of Connellsville, Pennsylvania.

(b) The Secretary of the Interior and, where national forest lands are involved, the Secretary of Agriculture shall proceed as expeditiously as possible to study each of the rivers named in subsection (a) of this section in order to determine whether it should be included in the national wild and scenic rivers system. Such studies shall be completed and reports made thereon to the President and the Congress, as provided in section 4 of this Act, within ten years from the date of this Act: *Provided, however*, That with respect to the Suwannee River, Georgia and Florida, and the Upper Iowa River, Iowa, such study shall be completed and reports made thereon to the President and the Congress, as provided in section 4 of this Act, within two years from the date of enactment of this Act. In conducting these studies the Secretary of the Interior and the Secretary of Agriculture shall give priority to those rivers with respect to which there is the greatest likelihood of developments which, if undertaken, would render them unsuitable for inclusion in the national wild and scenic rivers system.

(c) The study of any of said rivers shall be pursued in as close cooperation with appropriate agencies of the affected State and its political subdivisions as possible, shall be carried on jointly with such agencies if request for such joint study is made by the State, and shall include a determination of the degree to which the State or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the national wild and scenic rivers system.

(d) In all planning for the use and development of water and related land resources, consideration shall be given by all Federal agencies involved to potential national wild, scenic and recreational river areas, and all river basin and project plan reports submitted to the Congress shall consider and discuss any such potentials. The Secretary of the Interior and the Secretary of Agriculture shall make specific studies and investigations to determine which additional wild, scenic and recreational river areas within the United States shall be evaluated in planning reports by all Federal agencies as potential alternative uses of the water and related land resources involved.

Land acquisition. Sec. 6. (a) The Secretary of the Interior and the Secretary of Agriculture are each authorized to acquire lands and interests in land within the authorized boundaries of any component of the national wild and scenic rivers system designated in section 3 of this Act, or hereafter designated for inclusion in the system by Act of Congress, which is administered by him, but he shall not acquire fee title to an average of more than 100 acres per mile on both sides of the river.

Lands owned by a State may be acquired only by donation, and lands owned by an Indian tribe or a political subdivision of a State may not be acquired without the consent of the appropriate governing body thereof as long as the Indian tribe or political subdivision is following a plan for management and protection of the lands which the Secretary finds protects the land and assures its use for purposes consistent with this Act. Money appropriated for Federal purposes from the land and water conservation fund shall, without prejudice to the use of appropriations from other sources, be available to Federal departments and agencies for the acquisition of property for the purposes of this Act.

(b) If 50 per centum or more of the entire acreage within a federally administered wild, scenic or recreational river area is owned by the United States, by the State or States within which it lies, or by political subdivisions of those States, neither Secretary shall acquire fee title to any lands by condemnation under authority of this Act.

Nothing contained in this section, however, shall preclude the use of condemnation when necessary to clear title or to acquire scenic easements or such other easements as are reasonably necessary to give the public access to the river and to permit its members to traverse the length of the area or of selected segments thereof.

(c) Neither the Secretary of the Interior nor the Secretary of Agriculture may acquire lands by condemnation, for the purpose of including such lands in any national wild, scenic or recreational river area, if such lands are located within any incorporated city, village, or borough which has in force and applicable to such lands a duly adopted, valid zoning ordinance that conforms with the purposes of this Act. In order to carry out the provisions of this subsection the appropriate Secretary shall issue guidelines, specifying standards for local zoning ordinances, which are consistent with the purposes of this Act. The standards specified in such guidelines shall have the object of (A) prohibiting new commercial or industrial uses other than commercial or industrial uses which are consistent with the purposes of this Act, and (B) the protection of the bank lands by means of screening, frontage, and setback requirements on development.

(d) The appropriate Secretary is authorized to accept title to non-Federal property within the authorized boundaries of any federally administered component of the national wild and scenic rivers system designated in section 3 of this Act or hereafter designated for inclusion in the system by Act of Congress and, in exchange therefor, convey to the grantor any federally owned property which is under his jurisdiction within the State in which the component lies and which he classifies as suitable for exchange or other disposal. The values of the properties so exchanged either shall be approximately equal or, if they are not approximately equal, shall be equalized by the payment of cash to the grantor or to the Secretary as the circumstances require.

(e) The head of any Federal department or agency having administrative jurisdiction over any lands or interests in land within the authorized boundaries of any federally administered component of the national wild and scenic rivers system designated in section 3 of this Act or hereafter designated for inclusion in the system by Act of Congress is authorized to transfer to the appropriate secretary jurisdic-

tion over such lands for administration in accordance with the provisions of this Act. Lands acquired by or transferred to the Secretary of Agriculture for the purposes of this Act within or adjacent to a national forest shall upon such acquisition or transfer become national forest lands.

(f) The appropriate Secretary is authorized to accept donations of lands and interests in land, funds, and other property for use in connection with his administration of the national wild and scenic rivers system.

(g) (1) Any owner or owners (hereinafter in this subsection referred to as "owner") of improved property on the date of its acquisition, may retain for themselves and their successors or assigns a right of use and occupancy of the improved property for noncommercial residential purposes for a definite term not to exceed twenty-five years or, in lieu thereof, for a term ending at the death of the owner, or the death of his spouse, or the death of either or both of them. The owner shall elect the term to be reserved. The appropriate Secretary shall pay to the owner the fair market value of the property on the date of such acquisition less the fair market value on such date of the right retained by the owner.

(2) A right of use and occupancy retained pursuant to this subsection shall be subject to termination whenever the appropriate Secretary is given reasonable cause to find that such use and occupancy is being exercised in a manner which conflicts with the purposes of this Act. In the event of such a finding, the Secretary shall tender to the holder of that right an amount equal to the fair market value of that portion of the right which remains unexpired on the date of termination. Such right of use or occupancy shall terminate by operation of law upon tender of the fair market price.

(3) The term "improved property", as used in this Act, means a detached, one-family dwelling (hereinafter referred to as "dwelling"), the construction of which was begun before January 1, 1967, together with so much of the land on which the dwelling is situated, the said land being in the same ownership as the dwelling, as the appropriate Secretary shall designate to be reasonably necessary for the enjoyment of the dwelling for the sole purpose of noncommercial residential use, together with any structures accessory to the dwelling which are situated on the land so designated.

Sec. 7. (a) The Federal Power Commission shall not license the construction of any dam, water conduit, reservoir, powerhouse, transmission line, or other project works under the Federal Power Act (41 Stat. 1063), as amended (16 U.S.C. 791a et seq.), on or directly affecting any river which is designated in section 3 of this Act as a component of the national wild and scenic rivers system or which is hereafter designated for inclusion in that system, and no department or agency of the United States shall assist by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration. Nothing contained in the foregoing sentence, however, shall preclude licensing of, or assistance to, developments below or above a wild, scenic or recreational river area or on any stream tributary thereto which will not invade the area or unreasonably diminish the scenic, recreational, and fish and wildlife values present in the area on the date of approval of this Act. No department or agency of the United States shall recommend authorization of any water resources project that would have a direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration, or request appropriations to begin

Right of use
and occupancy.

"Improved
property."

Water resources
projects.
Restrictions.

construction of any such project, whether heretofore or hereafter authorized, without advising the Secretary of the Interior or the Secretary of Agriculture, as the case may be, in writing of its intention so to do at least sixty days in advance, and without specifically reporting to the Congress in writing at the time it makes its recommendation or request in what respect construction of such project would be in conflict with the purposes of this Act and would affect the component and the values to be protected by it under this Act.

(b) The Federal Power Commission shall not license the construction of any dam, water conduit, reservoir, powerhouse, transmission line, or other project works under the Federal Power Act, as amended, on or directly affecting any river which is listed in section 5, subsection (a), of this Act, and no department or agency of the United States shall assist by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river might be designated, as determined by the Secretary responsible for its study or approval -

(i) during the five-year period following enactment of this Act unless, prior to the expiration of said period, the Secretary of the Interior and, where national forest lands are involved, the Secretary of Agriculture, on the basis of study, conclude that such river should not be included in the national wild and scenic rivers system and publish notice to that effect in the Federal Register, and

(ii) during such additional period thereafter as, in the case of any river which is recommended to the President and the Congress for inclusion in the national wild and scenic rivers system, is necessary for congressional consideration thereof or, in the case of any river recommended to the Secretary of the Interior for inclusion in the national wild and scenic rivers system under section 2(a)(ii) of this Act, is necessary for the Secretary's consideration thereof, which additional period, however, shall not exceed three years in the first case and one year in the second.

Nothing contained in the foregoing sentence, however, shall preclude licensing of, or assistance to, developments below or above a potential wild, scenic or recreational river area or on any stream tributary thereto which will not invade the area or diminish the scenic, recreational, and fish and wildlife values present in the potential wild, scenic or recreational river area on the date of approval of this Act. No department or agency of the United States shall, during the periods heretofore specified, recommend authorization of any water resources project on any such river or request appropriations to begin construction of any such project, whether heretofore or hereafter authorized, without advising the Secretary of the Interior and, where national forest lands are involved, the Secretary of Agriculture in writing of its intention so to do at least sixty days in advance of doing so and without specifically reporting to the Congress in writing at the time it makes its recommendation or request in what respect construction of such project would be in conflict with the purposes of this Act and would affect the component and the values to be protected by it under this Act.

(c) The Federal Power Commission and all other Federal agencies shall, promptly upon enactment of this Act, inform the Secretary of the Interior and, where national forest lands are involved, the Secretary of Agriculture, of any proceedings, studies, or other activities within their jurisdiction which are now in progress and which affect or may affect any of the rivers specified in section 5, subsection (a), of this Act. They shall likewise inform him of any such proceedings, studies, or other activities which are hereafter commenced or resumed before they are commenced or resumed.

47 Stat. 1133,
16 USC 710a.

Publication
in Federal
Register.

(d) Nothing in this section with respect to the making of a loan or grant shall apply to grants made under the Land and Water Conservation Fund Act of 1965 (74 Stat. 897; 16 U.S.C. 4601-5 et seq.).

Sec. 8. (a) All public lands within the authorized boundaries of any component of the national wild and scenic rivers system which is designated in section 3 of this Act or which is hereafter designated for inclusion in that system are hereby withdrawn from entry, sale, or other disposition under the public land laws of the United States.

(b) All public lands which constitute the bed or bank, or are within one-quarter mile of the bank, of any river which is listed in section 5, subsection (a), of this Act are hereby withdrawn from entry, sale, or other disposition under the public land laws of the United States for the periods specified in section 7, subsection (b), of this Act.

Sec. 9. (a) Nothing in this Act shall affect the applicability of the United States mining and mineral leasing laws within components of the national wild and scenic rivers system except that—

Mineral and
mineral leasing
laws.

(i) all prospecting, mining operations, and other activities on mining claims which, in the case of a component of the system designated in section 3 of this Act, have not heretofore been perfected or which, in the case of a component hereafter designated pursuant to this Act or any other Act of Congress, are not perfected before its inclusion in the system and all mining operations and other activities under a mineral lease, license, or permit issued or renewed after inclusion of a component in the system shall be subject to such regulations as the Secretary of the Interior or, in the case of national forest lands, the Secretary of Agriculture may prescribe to effectuate the purposes of this Act;

(ii) subject to valid existing rights, the perfection of, or issuance of a patent to, any mining claim affecting lands within the system shall confer or convey a right or title only to the mineral deposits and such rights only to the use of the surface and the surface resources as are reasonably required to carrying on prospecting or mining operations and are consistent with such regulations as may be proscribed by the Secretary of the Interior or, in the case of national forest lands, by the Secretary of Agriculture; and

(iii) subject to valid existing rights, the minerals in Federal lands which are part of the system and constitute the bed or bank or are situated within one-quarter mile of the bank of any river designated a wild river under this Act or any subsequent Act are hereby withdrawn from all forms of appropriation under the mining laws and from operation of the mineral leasing laws including, in both cases, amendments thereto.

Regulations issued pursuant to paragraphs (i) and (ii) of this subsection shall, among other things, provide safeguards against pollution of the river involved and unnecessary impairment of the scenery within the component in question.

(b) The minerals in any Federal lands which constitute the bed or bank or are situated within one-quarter mile of the bank of any river which is listed in section 5, subsection (a) of this Act are hereby withdrawn from all forms of appropriation under the mining laws during the periods specified in section 7, subsection (b) of this Act. Nothing contained in this subsection shall be construed to forbid prospecting or the issuance or leases, licenses, and permits under the mineral leasing laws subject to such conditions as the Secretary of the Interior and, in the case of national forest lands, the Secretary of Agriculture find appropriate to safeguard the area in the event it is subsequently included in the system.

82 STAT. 916

Administration.

Sec. 10. (a) Each component of the national wild and scenic rivers system shall be administered in such manner as to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values. In such administration primary emphasis shall be given to protecting its esthetic, scenic, historic, archeologic, and scientific features. Management plans for any such component may establish varying degrees of intensity for its protection and development, based on the special attributes of the area.

16 USC 1111 note.

(b) Any portion of a component of the national wild and scenic rivers system that is within the national wilderness preservation system, as established by or pursuant to the Act of September 3, 1964 (78 Stat. 890; 16 U.S.C., ch. 29), shall be subject to the provisions of both the Wilderness Act and this Act with respect to preservation of such river and its immediate environment, and in case of conflict between the provisions of these Acts the more restrictive provisions shall apply.

(c) Any component of the national wild and scenic rivers system that is administered by the Secretary of the Interior through the National Park Service shall become a part of the national park system, and any such component that is administered by the Secretary through the Fish and Wildlife Service shall become a part of the national wildlife refuge system. The lands involved shall be subject to the provisions of this Act and the Acts under which the national park system or national wildlife system, as the case may be, is administered, and in case of conflict between the provisions of these Acts, the more restrictive provisions shall apply. The Secretary of the Interior, in his administration of any component of the national wild and scenic rivers system, may utilize such general statutory authorities relating to areas of the national park system and such general statutory authorities otherwise available to him for recreation and preservation purposes and for the conservation and management of natural resources as he deems appropriate to carry out the purposes of this Act.

(d) The Secretary of Agriculture, in his administration of any component of the national wild and scenic rivers system area, may utilize the general statutory authorities relating to the national forests in such manner as he deems appropriate to carry out the purposes of this Act.

Cooperative agreements with State or local governments.

(e) The Federal agency charged with the administration of any component of the national wild and scenic rivers system may enter into written cooperative agreements with the Governor of a State, the head of any State agency, or the appropriate official of a political subdivision of a State for State or local governmental participation in the administration of the component. The States and their political subdivisions shall be encouraged to cooperate in the planning and administration of components of the system which include or adjoin State- or county-owned lands.

Assistance in financing State and local projects.

16 USC 4601-4 note.

16 USC 4601-4601-3.

Sec. 11. (a) The Secretary of the Interior shall encourage and assist the States to consider, in formulating and carrying out their comprehensive statewide outdoor recreation plans and proposals for financing assistance for State and local projects submitted pursuant to the Land and Water Conservation Fund Act of 1965 (78 Stat. 897), needs and opportunities for establishing State and local wild, scenic and recreational river areas. He shall also, in accordance with the authority contained in the Act of May 28, 1963 (77 Stat. 49), provide technical assistance and advice to, and cooperate with, States, political subdivisions, and private interests, including nonprofit organizations, with respect to establishing such wild, scenic and recreational river areas.

(b) The Secretaries of Agriculture and of Health, Education, and Welfare shall likewise, in accordance with the authority vested in them, assist, advise, and cooperate with State and local agencies and private interests with respect to establishing such wild, scenic and recreational river areas.

Sec. 12. (a) The Secretary of the Interior, the Secretary of Agriculture, and heads of other Federal agencies shall review administrative and management policies, regulations, contracts, and plans affecting lands under their respective jurisdictions which include, border upon, or are adjacent to the rivers listed in subsection (a) of section 5 of this Act in order to determine what actions should be taken to protect such rivers during the period they are being considered for potential addition to the national wild and scenic rivers system. Particular attention shall be given to scheduled timber harvesting, road construction, and similar activities which might be contrary to the purposes of this Act.

Administration and management policies. Review.

(b) Nothing in this section shall be construed to abrogate any existing rights, privileges, or contracts affecting Federal lands held by any private party without the consent of said party.

(c) The head of any agency administering a component of the national wild and scenic rivers system shall cooperate with the Secretary of the Interior and with the appropriate State water pollution control agencies for the purpose of eliminating or diminishing the pollution of waters of the river.

Sec. 13. (a) Nothing in this Act shall affect the jurisdiction or responsibilities of the States with respect to fish and wildlife. Hunting and fishing shall be permitted on lands and waters administered as parts of the system under applicable State and Federal laws and regulations unless, in the case of hunting, those lands or waters are within a national park or monument. The administering Secretary may, however, designate zones where, and establish periods when, no hunting is permitted for reasons of public safety, administration, or public use and enjoyment and shall issue appropriate regulations after consultation with the wildlife agency of the State or States affected.

Fish and wildlife. Jurisdiction under State and Federal laws.

(b) The jurisdiction of the States and the United States over waters of any stream included in a national wild, scenic or recreational river area shall be determined by established principles of law. Under the provisions of this Act, any taking by the United States of a water right which is vested under either State or Federal law at the time such river is included in the national wild and scenic rivers system shall entitle the owner thereof to just compensation. Nothing in this Act shall constitute an express or implied claim or denial on the part of the Federal Government as to exemption from State water laws.

Compensation for water rights.

(c) Designation of any stream or portion thereof as a national wild, scenic or recreational river area shall not be construed as a reservation of the waters of such streams for purposes other than those specified in this Act, or in quantities greater than necessary to accomplish these purposes.

(d) The jurisdiction of the States over waters of any stream included in a national wild, scenic or recreational river area shall be unaffected by this Act to the extent that such jurisdiction may be exercised without impairing the purposes of this Act or its administration.

82 STAT. 917
82 STAT. 918

(e) Nothing contained in this Act shall be construed to alter, amend, repeal, interpret, modify, or be in conflict with any interstate compact made by any States which contain any portion of the national wild and scenic rivers system.

(f) Nothing in this Act shall affect existing rights of any State, including the right of access, with respect to the beds of navigable streams, tributaries, or rivers (or segments thereof) located in a national wild, scenic or recreational river area.

82 STAT. 918.

Easements and
rights-of-way.

(g) The Secretary of the Interior or the Secretary of Agriculture, as the case may be, may grant easements and rights-of-way upon, over, under, across, or through any component of the national wild and scenic rivers system in accordance with the laws applicable to the national park system and the national forest system, respectively: *Provided*, That any conditions precedent to granting such easements and rights-of-way shall be related to the policy and purpose of this Act.

Claim and allow-
ance as chari-
table contri-
bution or gift.
76 Stat. 1034.
68A Stat. 410.

Sec. 14. The claim and allowance of the value of an easement as a charitable contribution under section 170 of title 26, United States Code, or as a gift under section 2522 of said title shall constitute an agreement by the donor on behalf of himself, his heirs, and assigns that, if the terms of the instrument creating the easement are violated, the donee or the United States may acquire the servient estate at its fair market value as of the time the easement was donated minus the value of the easement claimed and allowed as a charitable contribution or gift.

Definitions.

Sec. 15. As used in this Act, the term--
(a) "River" means a flowing body of water or estuary or a section, portion, or tributary thereof, including rivers, streams, creeks, runs, kills, rills, and small lakes.

(b) "Free-flowing", as applied to any river or section of a river, means existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway. The existence, however, of low dams, diversion works, and other minor structures at the time any river is proposed for inclusion in the national wild and scenic rivers system shall not automatically bar its consideration for such inclusion: *Provided*, That this shall not be construed to authorize, intend, or encourage future construction of such structures within components of the national wild and scenic rivers system.

(c) "Scenic easement" means the right to control the use of land (including the air space above such land) for the purpose of protecting the scenic view from the river, but such control shall not affect, without the owner's consent, any regular use exercised prior to the acquisition of the easement.

Appropriations.

Sec. 16. There are hereby authorized to be appropriated such sums as may be necessary, but not more than \$17,000,000, for the acquisition of lands and interests in land under the provisions of this Act.

Approved October 2, 1968.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 1673 accompanying H. R. 18260 (Comm. on Interior & Insular Affairs) and No. 1917 (Comm. of Conference).

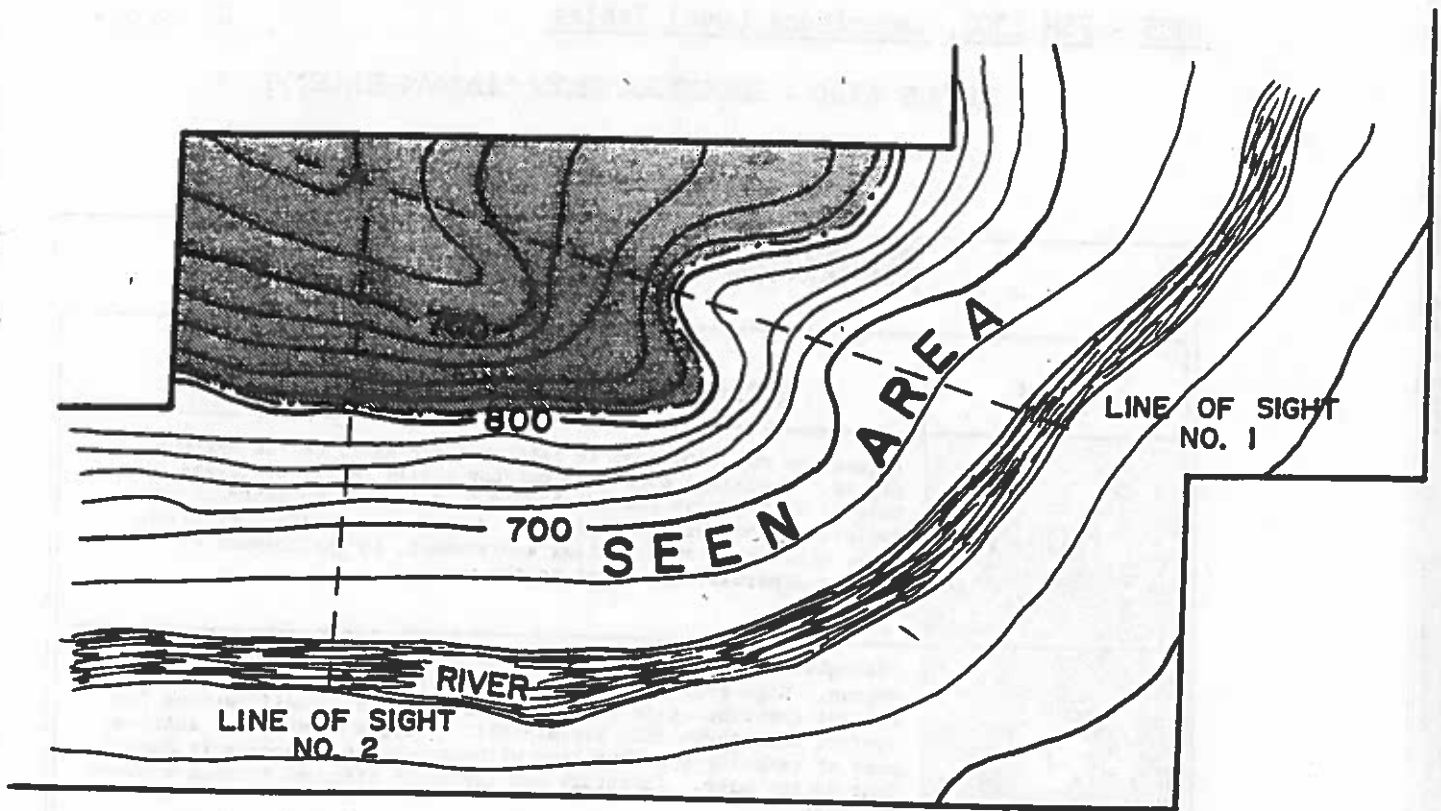
SENATE REPORT No. 441 (Comm. on Interior & Insular Affairs).

CONGRESSIONAL RECORDS:

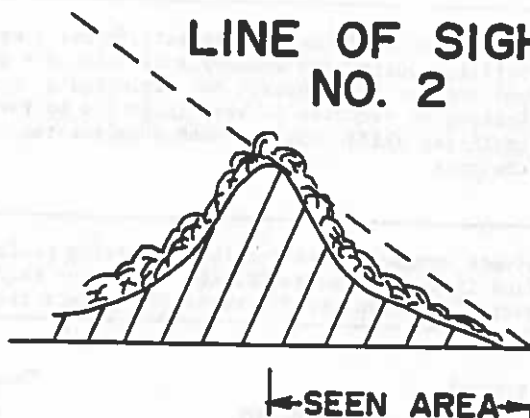
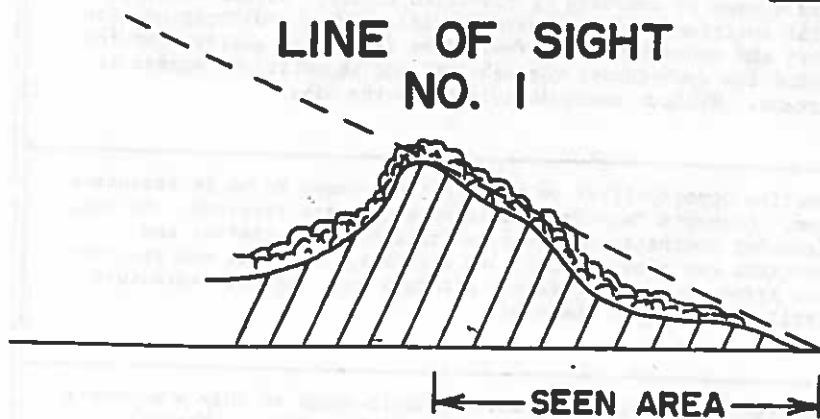
Vol. 113 (1967): Aug. 8, considered and passed Senate.

Vol. 114 (1968): July 15, Sept. 12, considered and passed House, amended, in lieu of H. R. 18260.

Sept. 25, House agreed to conference report.
Sept. 26, Senate agreed to conference report.




METHOD USED IN DETERMINING SEEN AREA



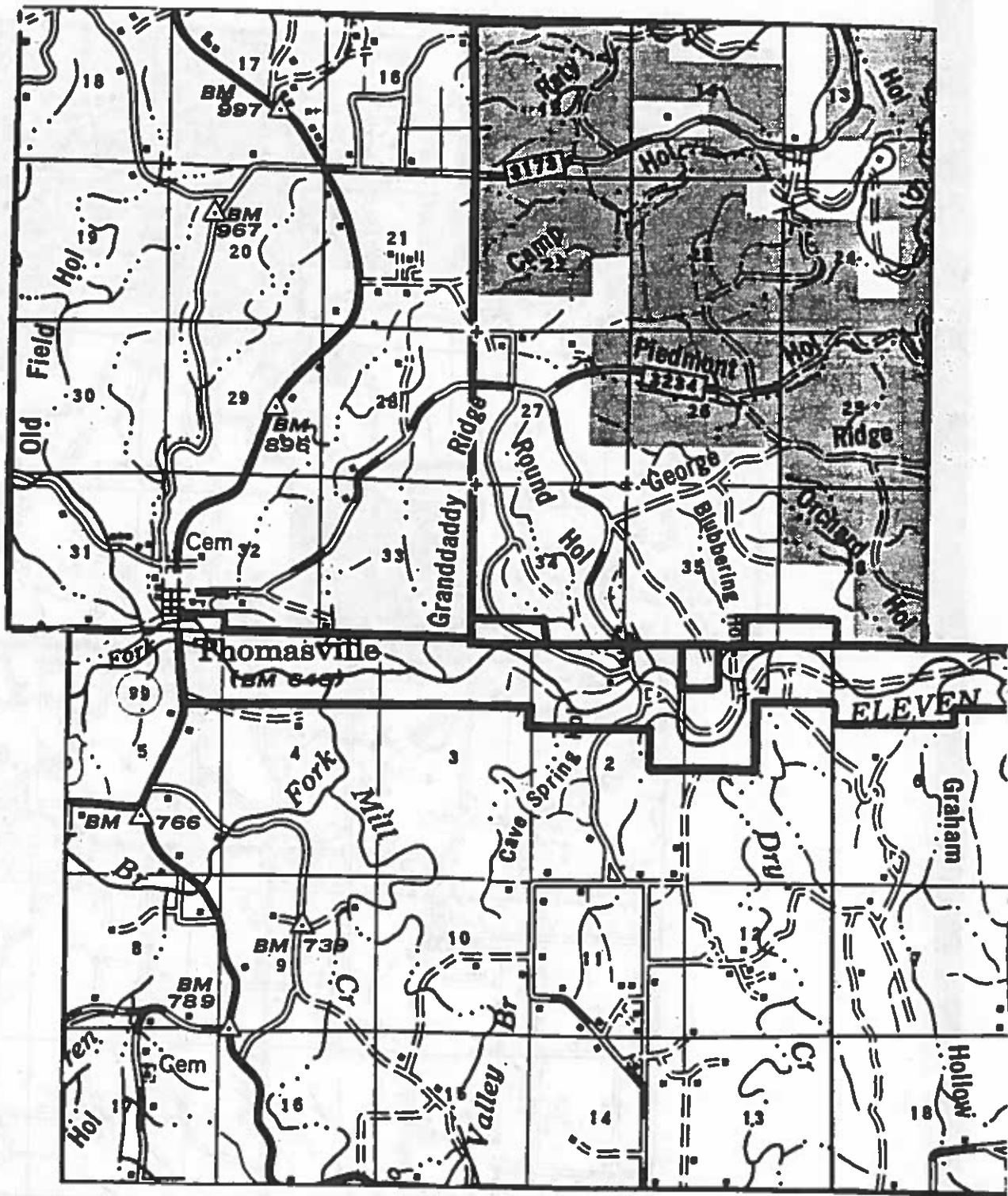
TITLE 2300 - RECREATION MANAGEMENT

*-Exhibit 1

RECREATION EXPERIENCE LEVELS	
LEVEL	DESCRIPTION 
PRIMITIVE	Recreation opportunities to satisfy basic-needs to the maximum degree. A maximum degree of outdoor skills required. Unmodified natural environment and an absence of man-made developments and comfort or convenience facilities dominates. Feelings of adventure, challenge, and physical achievement, in the absence of obvious controls, important to the user.
1	Recreation opportunities to satisfy basic-needs to a near maximum degree. High degree of outdoor skills involved. Little modified natural environment is dominant consideration. Modifications for comfort and convenience are minimal. Feeling of physical achievement at reaching opportunities without mechanized access is important to the user. Adventure and challenge afforded through minimum controls.
2	Recreation opportunities to satisfy basic-needs to near maximum degree except as tempered by motorized access. Little modified natural environment is dominant consideration. Modifications for comfort and convenience are few. Some feeling of achievement for reaching the opportunity through challenging motorized access is important. Minimum controls evident to the user.
3	Recreation opportunities to satisfy basic-needs to an intermediate degree. Moderate degrees of outdoor skills are involved. Natural environment dominates but some modifications for comfort and convenience are also important to the user. Controls and regimentation afford sense of security although some taste of adventure is still important to the user.
4	Recreation opportunities to satisfy basic-needs to only a moderate degree. Moderate degree of activity skills suffice. Natural environment important but modifications for comfort and convenience are more important. Sense of security afforded the user. Regimentation and fairly obvious controls important to the user.
5	Recreation opportunities to satisfy basic-needs to a modest degree. Skills required for outdoor activities are minimal. Natural environment is important but dominated by man-made modifications. Feeling of security is very important to the user. Learning or beginning skills suffice when supplemented by administrative controls.

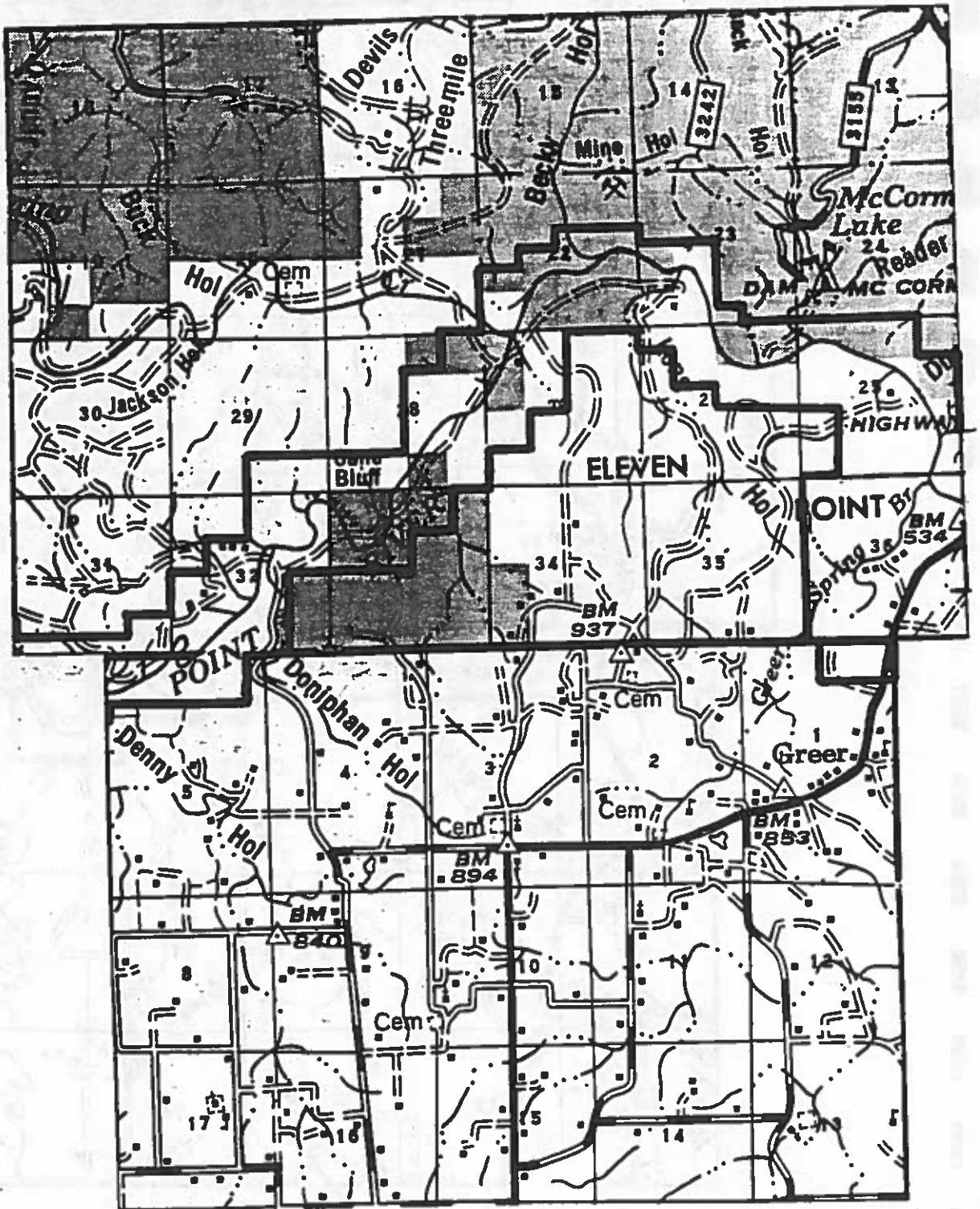
1/ Degrees of outdoor recreation activities satisfying basic-needs of people including needs: to find isolation; to socialize; to achieve self-fulfillment; for identity; for compensating experiences; for aggression outlets and others.

1006 - Eleven Point Boundary



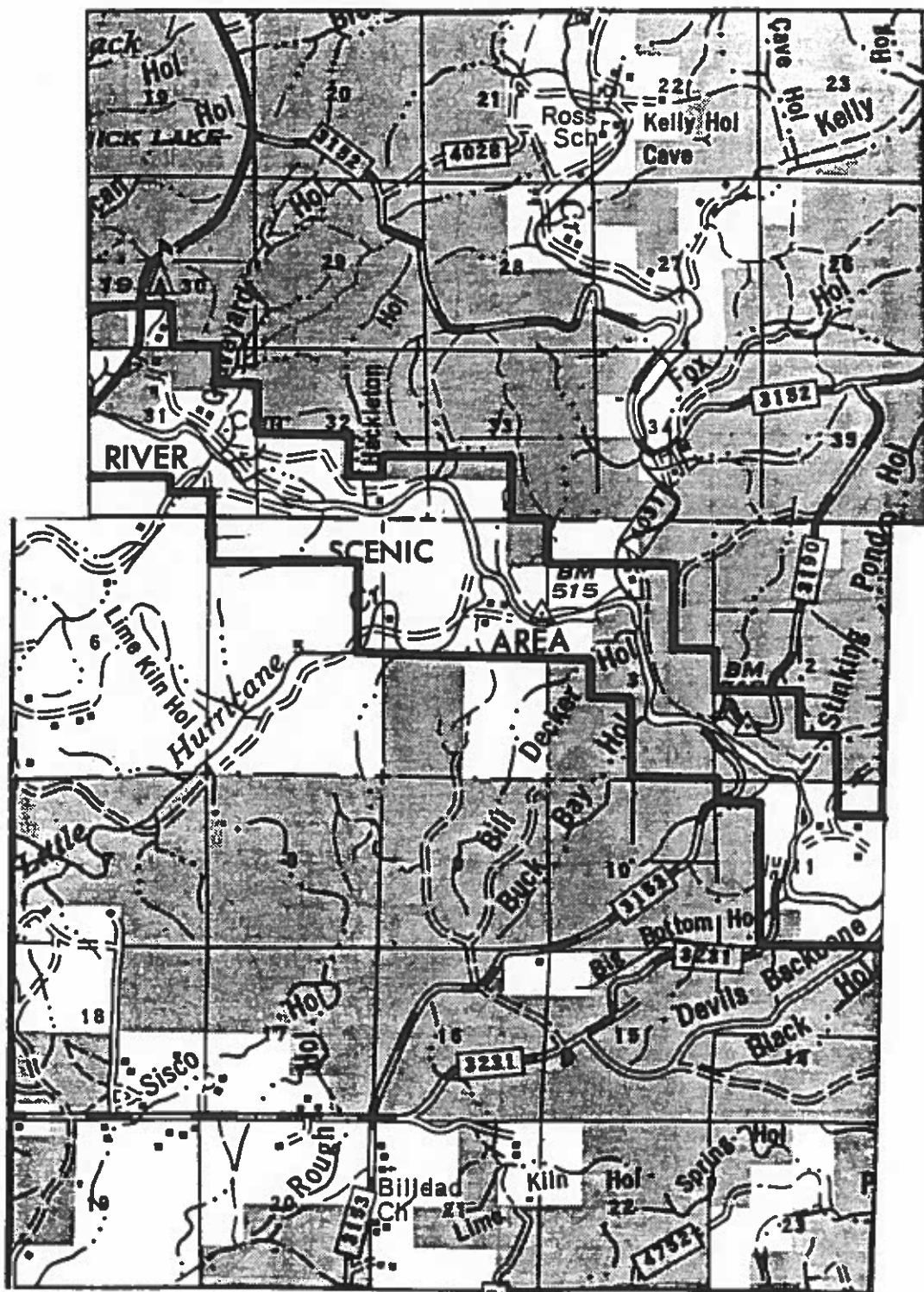
1 inch = 1 mile

1000-21

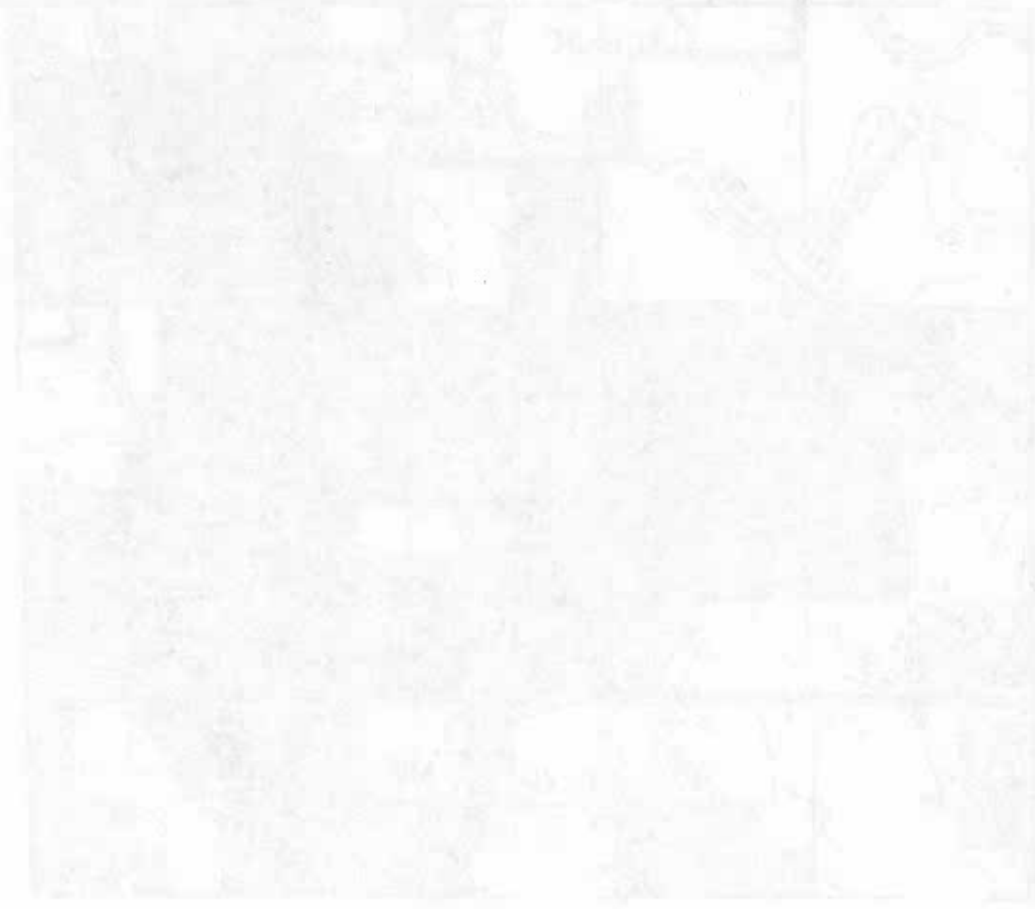
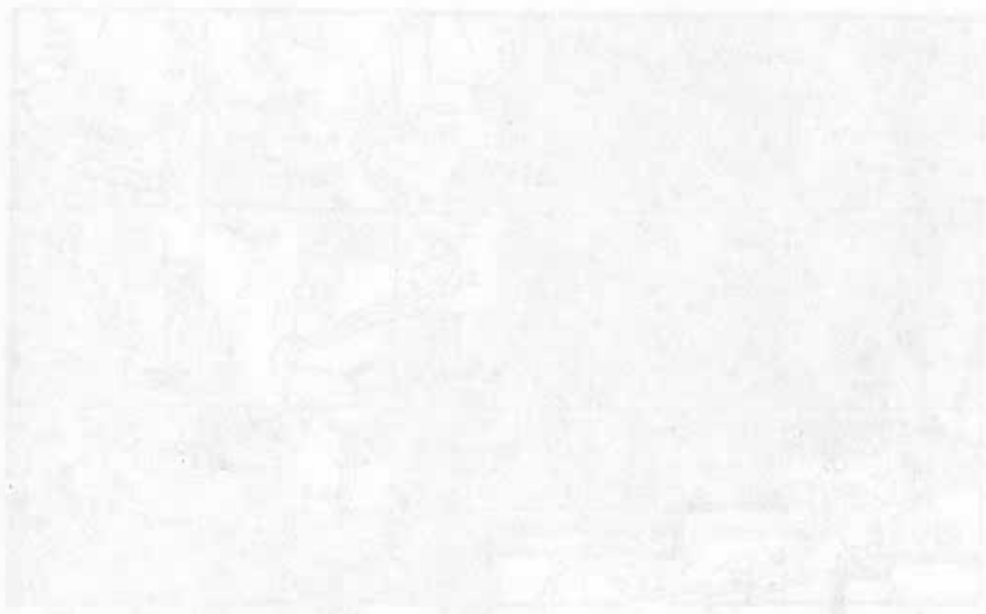


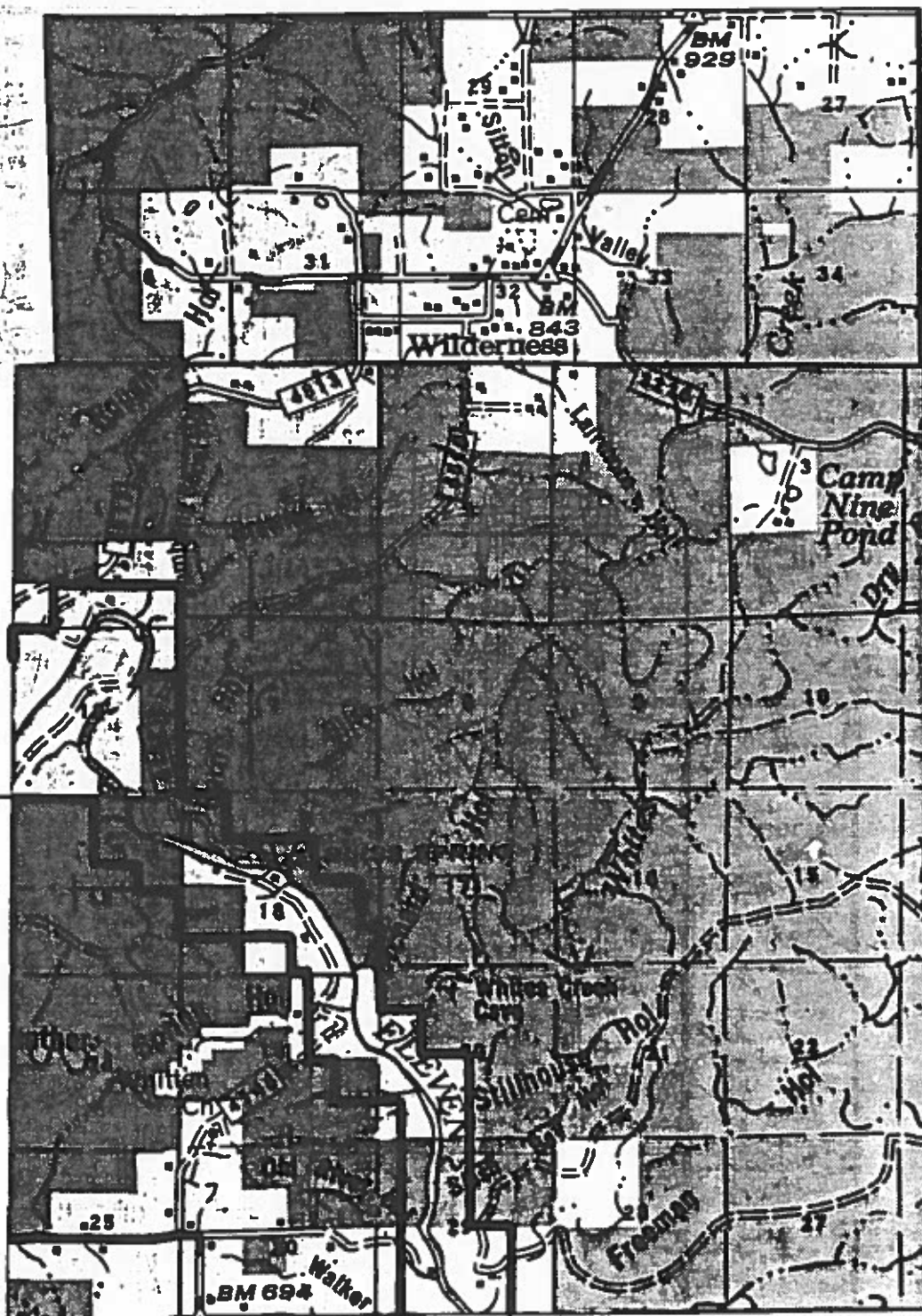
1 inch = 1 mile

1000-22



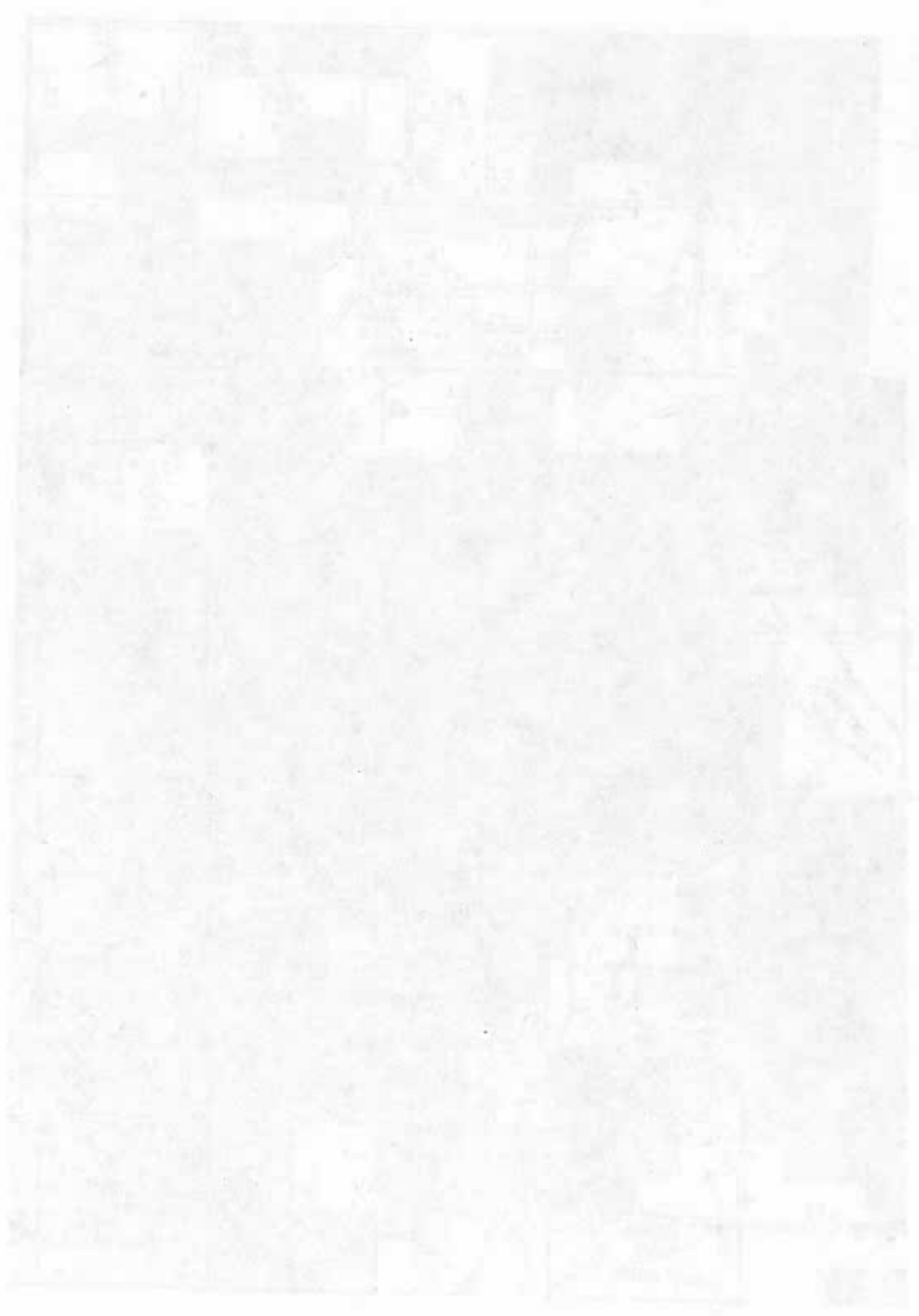
1 inch = 1 mile



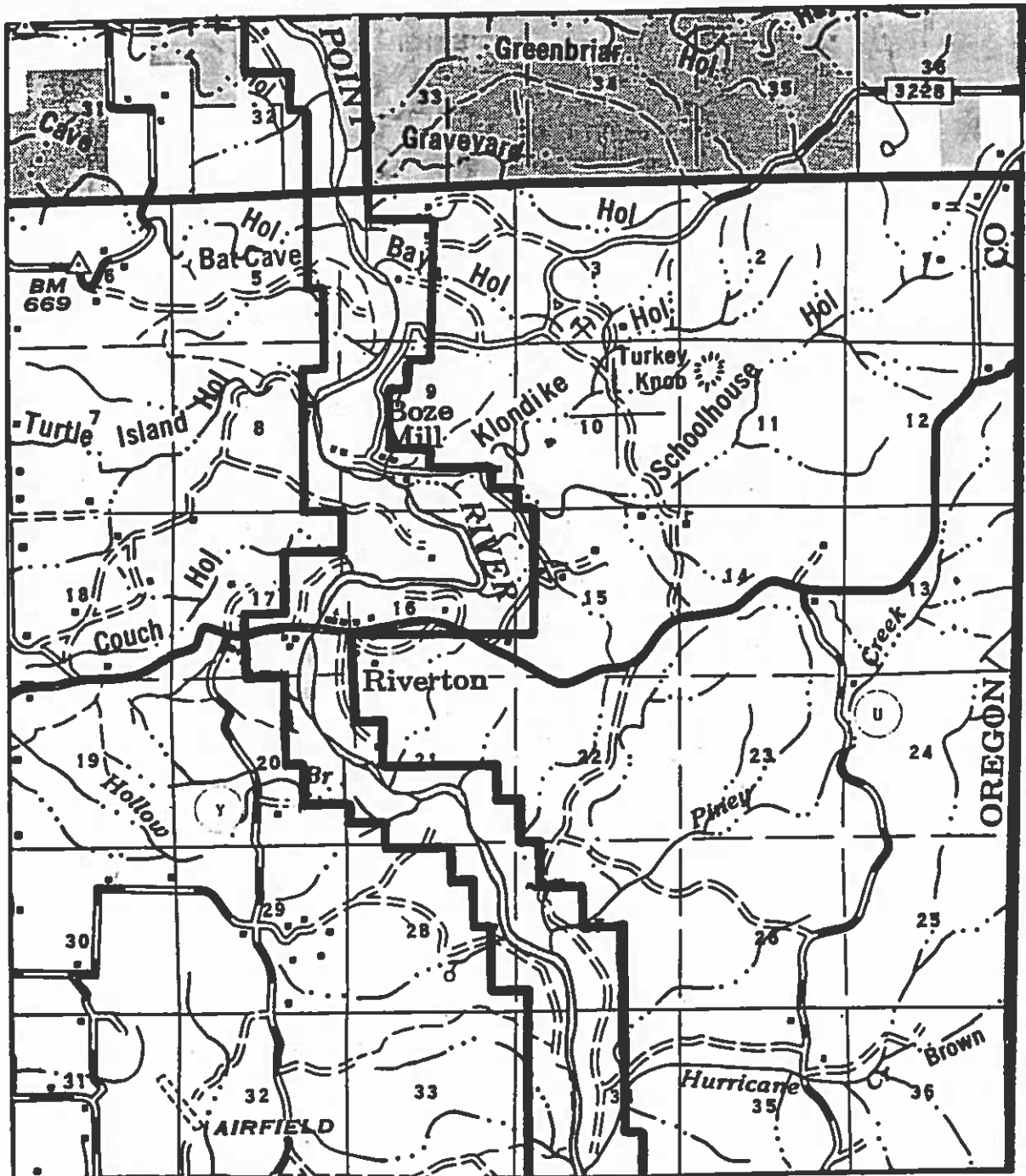


1 inch = 1 mile

.1000-24

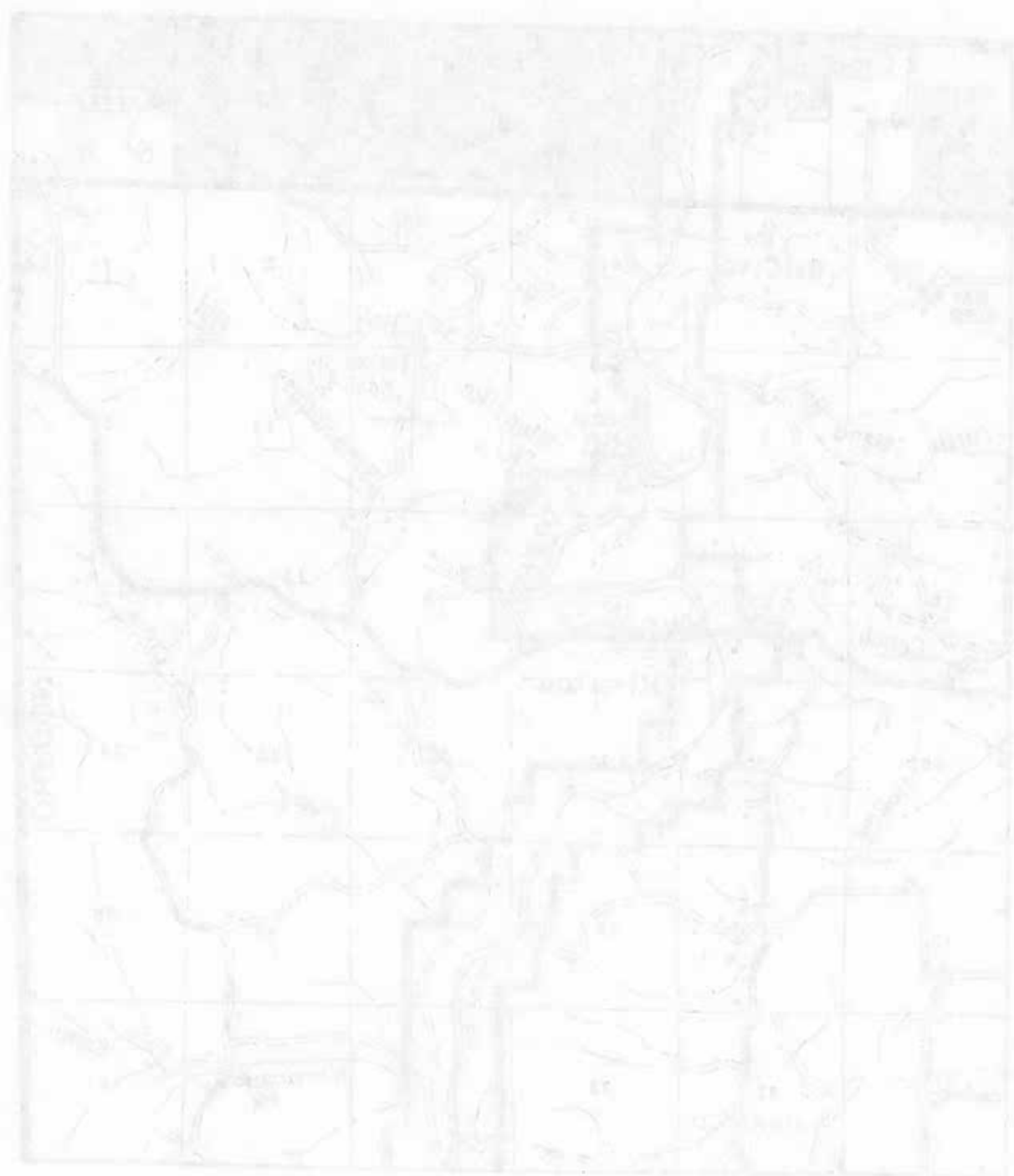


Page 1 of 1



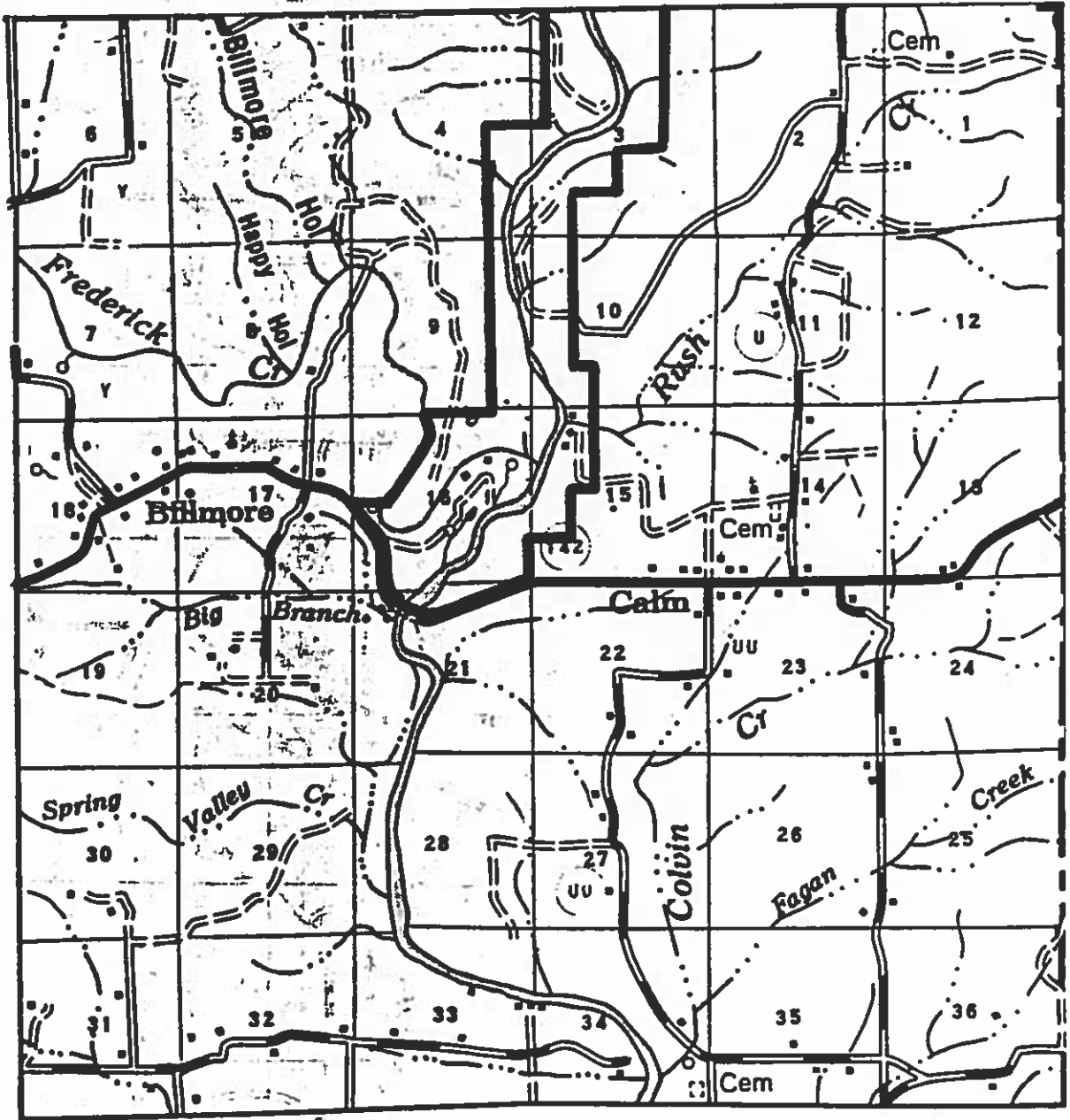
1 inch = 1 mile

1000-25



2

Sheet 1 of 1



1 inch = 1 mile

1000-26



0

Map (e) (iii)

1-11

1007 - Boundary Description, Eleven Point River Exterior Boundary

ELEVEN POINT SCENIC RIVER AREA

MARK TWAIN NATIONAL FOREST

MISSOURI

1969

The Exterior Boundary of the Eleven Point Scenic River Area, Mark Twain National Forest, Eastern Region, as reported to Congress pursuant to Section 3(a) of the Wild and Scenic Rivers Act (Public Law 90-542)

In the following descriptions of the exterior boundaries of the Scenic River area the intent is to define lines which can, if and when necessary, be accurately established and marked on the ground by an authorized land surveyor in accordance with the rules for Dependent Resurveys and Section Subdivision as set forth in the U. S. Department of Interior, Bureau of Land Management, Manual of Surveying Instructions for the Survey of the Public Lands of the United States, and with the Statutes of the State of Missouri pertaining to land surveys. The U. S. Government Public Land Survey corners are controlling throughout for bearings and distances.

Beginning at a point 7.01 chains east of the SW corner of Section 32, T25N, R5W at the intersection of the Township line and center line of State Route 99;

thence $N2^{\circ}W$, 3.40 chains along the highway center line to the bridge abutment;

thence $N0^{\circ}25'E$, 2.92 chains along the highway center line to the bridge pier;

thence $N87^{\circ}00'E$, 3.11 chains to a point;

thence $N72^{\circ}30'E$, 3.06 chains to a point;

thence $N65^{\circ}30'E$, 2.95 chains to a point;

thence $S81^{\circ}E$, 3.68 chains to a point;

2.

thence $S29^{\circ}15'E$, 10.60 chains to a point of intersection of the Township line, Section 32, T25N, R5W;

thence east along the Township line to the section corner common to Sections 33 and 34, T25N, R5W;

thence north to the S-S $1/64$ corner common to Sections 33 and 34, T25N, R5W;

thence east to the C-S-S $1/64$ corner of Section 34, T25N, R5W;

thence south to the $S\frac{1}{2}$ corner of Section 34, T25N, R5W;

thence east along the Township line to the section corner common to Sections 1 and 2, T24N, R5W;

thence south along the section line between Sections 1 and 2, T24N, R5W to SW corner of Lot 4 of the $NW\frac{1}{4}$, Section 1, T24N, R5W;

thence east along the south boundary of said Lot 4 to the east boundary of $W\frac{1}{2}$ of said Lot 4, $NW\frac{1}{4}$, Section 1, T24N, R5W;

thence north along the east boundary of the $W\frac{1}{2}$ of said Lot 4 to the Township line between T24N and T25N, R5W;

thence east along the Township line to the E $1/16$ corner on the south section line of Section 35, T25N, R5W;

thence north to the C-S-SE $1/64$ corner of Section 35, T25N, R5W;

thence east to the SE-SW $1/64$ corner of Section 36, T25N, R5W;

thence south to the E-W $1/64$ corner on the south section line of Section 36, T25N, R5W;

thence east along the Township line between T24N and T25N, R5W to the SE corner of Section 36, T25N, R5W;

thence north along the Range line between R4W and R5W to S-S $1/64$ corner on the west section line of Section 31, T25N, R5W;

thence east to the C-S-SE $1/64$ corner of Section 31, T25N, R4W;

thence north to the SE $1/16$ corner of Section 31, T25N, R4W;

thence east to the S $1/16$ corner common to Sections 31 and 32, T25N, R4W;

3.

thence north along the section line between Sections 31 and 32, T25N, R4W to the $\frac{1}{4}$ corner common to Sections 31 and 32, T25N, R4W;

thence east along the $\frac{1}{4}$ line to the C-W $\frac{1}{16}$ corner of Section 32, T25N, R4W;

thence north to the NW $\frac{1}{16}$ corner of Section 32, T25N, R4W;

thence east to the C-N $\frac{1}{16}$ corner of Section 32, T25N, R4W;

thence north along the center quarter line to the C-S $\frac{1}{16}$ corner of Section 29, T25N, R4W;

thence east to the C-S $\frac{1}{16}$ corner of Section 28, T25N, R4W;

thence north along the center quarter line to the C-N $\frac{1}{16}$ corner of Section 28, T25N, R4W;

thence east to the NE $\frac{1}{16}$ corner of Section 28, T25N, R4W;

thence north to the E $\frac{1}{16}$ corner common to Sections 21 and 28, T25N, R4W;

thence east along the section line to the section corner common to Sections 21, 22, 27 and 28, T25N, R4W;

thence north along the section line to the N-S $\frac{1}{64}$ corner common to Sections 21 and 22, T25N, R4W;

thence east to the C-N-SW $\frac{1}{64}$ corner of Section 22, T25N, R4W;

thence north to the C-W $\frac{1}{16}$ corner of Section 22, T25N, R4W;

thence east to the C $\frac{1}{4}$ corner of Section 22, T25N, R4W;

thence north to the C-S-N $\frac{1}{64}$ corner of Section 22, T25N, R4W;

thence east to the S-N $\frac{1}{64}$ corner common to Sections 22 and 23, T25N, R4W;

thence south along the section line to the $\frac{1}{4}$ corner common to Sections 22 and 23, T25N, R4W;

thence east to the center $\frac{1}{4}$ corner of Section 23, T25N, R4W;

thence south to the C-S-S $\frac{1}{64}$ corner of Section 23, T25N, R4W;

4.

thence east to the SW-SE 1/64 corner of Section 23, T25N, R4W;

thence south to the W-E 1/64 corner common to Sections 23 and 26, T25N, R4W;

thence east along the section line to the E 1/16 corner common to Sections 24 and 25, T25N, R4W;

thence south to the NE 1/16 corner of Section 25, T25N, R4W;

thence east to the N 1/16 corner on the east section line of Section 25, T25N, R4W;

thence south along the Range line between R3W and R4W to the S 1/16 corner on the west section line of Section 30, T25N, R3W;

thence east to the C-S 1/16 corner of Section 30, T25N, R3W;

thence south to the $\frac{1}{4}$ corner common to Sections 30 and 31, T25N, R3W;

thence east along the section line to the E 1/16 corner common to Sections 30 and 31, T25N, R3W;

thence south to the NE 1/16 corner of Section 31, T25N, R3W;

thence east to the N 1/16 corner common to Sections 31 and 32, T25N, R3W;

thence south along the section line to the $\frac{1}{4}$ corner common to Sections 31 and 32, T25N, R3W;

thence east to the C $\frac{1}{4}$ corner, Section 32, T25N, R3W;

thence south to the C-S 1/16 corner of Section 32, T25N, R3W;

thence east to the SE 1/16 corner of Section 32, T25N, R3W;

thence north to the C-N-SE 1/64 corner of Section 32, T25N, R3W;

thence east to the C-N-S 1/64 corner of Section 33, T25N, R3W;

thence south to the S $\frac{1}{4}$ corner on the Township line of Section 33, T25N, R3W;

thence east along the Township line between T24N and T25N to the section corner common to Sections 3 and 4, T24N, R3W;

5.

thence south along the section line between Sections 3 and 4 to the south boundary of Lot 4, NW $\frac{1}{4}$, Section 3, T24N, R3W;

thence east along the south boundary of said Lot 4 to the east boundary of the W $\frac{1}{2}$ of Lot 3 of the NE $\frac{1}{4}$, Section 3, T24N, R3W;

thence south to the north boundary of the E $\frac{1}{2}$ of Lot 1, NE $\frac{1}{4}$ of Section 3, T24N, R3W;

thence east along the north boundary of the E $\frac{1}{2}$ of Lot 1, NE $\frac{1}{4}$, Section 3 to the section line common to Sections 2 and 3, T24N, R3W;

thence south along the section line to the $\frac{1}{4}$ corner common to Sections 2 and 3, T24N, R3W;

thence east to the C $\frac{1}{2}$ corner, Section 2, T24N, R3W;

thence south to the C-S 1/16 corner, Section 2, T24N, R3W;

thence east to the SE 1/16 corner, Section 2, T24N, R3W;

thence south to the NE 1/16 corner, Section 11, T24N, R3W;

thence east to the N 1/16 corner common to Sections 11 and 12, T24N, R3W;

thence north along the section line to the section corner common to Sections 1, 2, 11 and 12, T24N, R3W;

thence east along the section line to the W 1/16 corner common to Sections 1 and 12, T24N, R3W;

thence north to the SW 1/16 corner of Section 1, T24N, R3W;

thence east to the S 1/16 corner of Section 1 on the Range line between R2W and R3W, T24N;

thence south along the Range line between R2W and R3W to the section corner common to Sections 7 and 18, T24N, R2W;

thence east along the section line between Sections 7 and 18, T24N, R2W, to the east boundary of Lot 2 of the NW $\frac{1}{4}$ of Section 18, T24N, R2W;

thence south along the west boundary of the N $\frac{1}{2}$ of Lot 1 to the south boundary of the N $\frac{1}{2}$ of said Lot 1, NW $\frac{1}{4}$, Section 18, T24N, R2W;

6.

thence east along south boundary of $N\frac{1}{2}$ of Lot 1, $NW\frac{1}{4}$, Section 18, T24N, R2W to C-N $1/16$ corner of the $NW\frac{1}{4}$ of said Section 18, T24N, R2W;

thence continuing east to the C-W-NE $1/64$ corner, Section 18, T24N, R2W;

thence south to the C-W-E $1/64$ corner of Section 18, T24N, R2W;

thence east to the C-E-E $1/64$ corner of Section 18, T24N, R2W;

thence south to the C-E-SE corner of Section 18, T24N, R2W;

thence east to the S $1/16$ corner common to Sections 17 and 18, T24N, R2W;

thence south along the section line to the N $1/16$ corner common to Sections 19 and 20, T24N, R2W;

thence east to the NW $1/16$ corner, Section 20, T24N, R2W;

thence south to the C-W $1/16$ corner, Section 20, T24N, R2W;

thence east to the $C\frac{1}{2}$ corner, Section 20, T24N, R2W;

thence south to the $C\frac{1}{2}$ corner, Section 29, T24N, R2W;

thence east to the C-E $1/16$ corner, Section 29, T24N, R2W;

thence south to the E $1/16$ corner common to Sections 29 and 32, T24N, R2W;

thence east along the section line to the section corner common to Sections 28, 29, 32 and 33, T24N, R2W;

thence south to the section corner common to Sections 32 and 33, T24N, R2W;

thence west along the Township line between T23N and T24N to the north section corner common to Sections 4 and 5, T23N, R2W;

thence south along the section line between Sections 4 and 5, T23N, R2W to the north boundary of Lot 1 of the $NW\frac{1}{4}$ of Section 4, T23N, R2W;

7.

thence east along the north boundary of Lot 1 to the east boundary of said Lot 1 of NW $\frac{1}{4}$, Section 4, T23N, R2W;

thence south along the east boundary of said Lot 1 of NW $\frac{1}{4}$, Section 4, T23N, R2W to the C-N-N $\frac{1}{64}$ corner of Section 9, T23N, R2W;

thence west to the NE-NW $\frac{1}{64}$ corner of Section 9, T23N, R2W;

thence south to the C-E-NW $\frac{1}{64}$ corner of Section 9, T23N, R2W;

thence west to the NW $\frac{1}{16}$ corner of Section 9, T23N, R2W;

thence south to the C-N-SW $\frac{1}{64}$ corner of Section 9, T23N, R2W;

thence east to the C-N-S $\frac{1}{64}$ corner of Section 9, T23N, R2W;

thence south to the C-S $\frac{1}{16}$ corner, Section 9, T23N, R2W;

thence east to the C-E-SE $\frac{1}{64}$ corner, Section 9, T23N, R2W;

thence south to the SE-SE $\frac{1}{64}$ corner, Section 9, T23N, R2W;

thence east to the S-S $\frac{1}{64}$ corner common to Sections 9 and 10, T23N, R2W;

thence south along the section line to the section corner common to Sections 9, 10, 15 and 16, T23N, R2W;

thence east along the section line between Sections 10 and 15, T23N, R2W to the W-W $\frac{1}{64}$ corner common to Sections 10 and 15, T23N, R2W;

thence south to the C-W-SW $\frac{1}{64}$ corner, Section 15, T23N, R2W;

thence west to the S $\frac{1}{16}$ corner common to Sections 16 and 17, T23N, R2W;

thence south along the section line to the N $\frac{1}{16}$ corner common to Sections 20 and 21, T23N, R2W;

thence east to the NW $\frac{1}{16}$ corner, Section 21, T23N, R2W;

thence south to the C-W $\frac{1}{16}$ corner, Section 21, T23N, R2W;

thence east to the C-E-E $\frac{1}{64}$ corner, Section 21, T23N, R2W;

thence south to the C-E-SE $\frac{1}{64}$ corner, Section 21, T23N, R2W;

8.

thence east to the S 1/16 corner common to Sections 21 and 22,
T23N, R2W;

thence south along the section line between Sections 21 and 22,
T23N, R2W to the section corner common to Sections 21, 22, 27 and
28, T23N, R2W;

thence east along the section line between Sections 22 and 27,
T23N, R2W to the W-W 1/64 corner common to Sections 22 and 27,
T23N, R2W;

thence south to the C-W-NW 1/64 corner of Section 27, T23N, R2W;

thence east to the C-E-NW 1/64 corner of Section 27, T23N, R2W;

thence south to the C-E-W 1/64 corner of Section 27, T23N, R2W;

thence east along the center quarter line to the C-W-E 1/64 corner
of Section 27, T23N, R2W;

thence south to the C-W-SE 1/64 corner of Section 34, T23N, R2W;

thence east to the SE 1/16 corner, Section 34, T23N, R2W;

thence south to the E 1/16 corner on the south section line of
Section 34, T23N, R2W;

thence east along the Township line between T23N and T22N to the
east boundary of Lot 7, Section 3, T22N, R2W;

thence south along the east boundary of Lot 7, continuing south
along the east boundary of Lot 10, continuing south along the east
boundary of Lot 11 to the C-E 1/16 corner of Section 3, said corner
being common to Lots 11 and 12 and the SE 1/4, Section 3, T22N, R2W;

thence west to the east boundary of Lot 13, Section 3, T22N, R2W;

thence south along the east boundary of Lot 13 to the north boundary
of Lot 14, Section 3, T22N, R2W;

thence west along the north boundary of Lot 14 to the west boundary
of Lot 14, Section 3, T22N, R2W;

thence south along the west boundary of Lot 14 to the section line
common to Sections 3 and 10, continuing south to the SW 1/16 corner
of Section 10, T22N, R2W;

9.

thence east to the C-E-SW 1/64 corner of Section 10, T22N, R2W;

thence south to the C-E-W 1/64 corner of Section 15, T22N, R2W;

thence west to the C-W 1/16 corner, Section 15, T22N, R2W;

thence south to the SW 1/16 corner, Section 15, T22N, R2W;

thence west to the S 1/16 corner on the west section line of Section 15, T22N, R2W;

thence south along the section line to the section corner common to Sections 15, 16, 21 and 22, T22N, R2W;

thence continuing south 0.80 chains along the section line between Sections 21 and 22, T22N, R2W, to the center line of State Route 142 which is a point on a 2°00' curve to the left which has a central angle of 25°55';

thence 787.4 feet along said curve;

thence S66°11'W 2047.3 feet;

thence 768.6 feet along a 7°00' curve to the right which has a central angle of 53°48';

thence N60°10'W 831.5 feet;

thence 1062.5 feet along a 6°00' curve to the right which has a central angle of 63°45';

thence N3°35'E 445.2 feet;

thence 596.7 feet along an 8°00' curve to the left which has a central angle of 47°44';

thence N44°09'W 385.5 feet;

thence 408.3 feet along a 6°00' curve to the right which has a central angle of 24°30';

thence N19°39'W 574.3 feet;

thence 38.6 feet along a 6°00' curve to the left which has a central angle of 64°00' to a point on the E-W 1/4 line of Section 16, 153 feet east of the 1/4 corner common to Sections 16 and 17, T22N, R2W;

10.

thence N83°E, 13.18 chains along E-W $\frac{1}{4}$ line to the center thread of Frederick Creek described as;

thence N22°E, 4.75 chains to a point;

thence N39°E, 10.30 chains to a point;

thence N32°E, 5.18 chains to a point;

thence N20°W, 5.15 chains to a point;

thence S40°W, 2.90 chains to a point;

thence N44°W, 3.65 chains to a point;

thence N14 $\frac{1}{2}$ °E, 2.45 chains to a point;

thence N23°E, 3.23 chains to a point;

thence N38°E, 3.50 chains to a point;

thence S36°E, 10.00 chains to a point;

thence N16°E, 8.50 chains to a point;

thence N5°W, 13.93 chains to the section line common to Sections 9 and 16, T22N, R2W;

thence east along the section line to the E $\frac{1}{16}$ corner common to Sections 9 and 16, T22N, R2W;

thence north to the C-E $\frac{1}{16}$ corner of Section 4, T22N, R2W;

thence continuing north on the west boundary of the E $\frac{1}{2}$ of Lot 1 of the NE $\frac{1}{4}$, Section 4, T22N, R2W to the north boundary of said Lot 1, Section 4, T22N, R2W;

thence east along the lot line between Lots 1 and 2 of the NE $\frac{1}{4}$, Section 4, T22N, R2W to the section line common to Sections 3 and 4, T22N, R2W;

thence north along the section line common to Sections 3 and 4 to the Township line common to T22N and T23N, R2W;

11.

thence east along the Township line common to T22N and T23N, R2W to the W-W 1/64 corner of Section 34, T23N, R2W;

thence north to the SW-SW 1/64 corner of Section 34, T23N, R2W;

thence west to the SE-SE 1/64 corner of Section 23, T23N, R2W;

thence north to the C-E-E 1/64 corner of Section 28, T23N, R2W;

thence east along the quarter line to the C-E 1/16 corner of Section 28, T23N, R2W;

thence north to the NE 1/16 corner of Section 28, T23N, R2W;

thence east to the C-W-NE 1/64 corner of Section 28, T23N, R2W;

thence north to the W-E 1/64 corner common to Sections 21 and 28, T23N, R2W;

thence east along the section line to the W 1/16 corner common to Sections 21 and 28, T23N, R2W;

thence north to the C-S-SW 1/64 corner of Section 21, T23N, R2W;

thence west to the S-S 1/64 corner common to Sections 20 and 21, T23N, R2W;

thence north along the section line to S 1/16 corner common to Sections 20 and 21, T23N, R2W;

thence west to the SE 1/16 corner of Section 20, T23N, R2W;

thence north to the C-E 1/16 corner of Section 20, T23N, R2W;

thence west to the C-W-E 1/64 corner of Section 20, T23N, R2W;

thence north to the W-E 1/64 corner common to Sections 17 and 20, T23N, R2W;

thence west along the section line to the $\frac{1}{4}$ corner common to Sections 17 and 20, T23N, R2W;

thence north to the C-N-S 1/64 corner of Section 17, T23N, R2W;

thence east to the NW-SE 1/64 corner of Section 17, T23N, R2W;

thence north to the C-W-NE 1/64 corner of Section 17, T23N, R2W;

12.

thence east to the N 1/16 corner common to Sections 16 and 17, T23N, R2W;

thence north along the section line to the section corner common to Sections 8, 9, 16 and 17, T23N, R2W;

thence west along the section line to the E 1/16 corner common to Sections 8 and 17, T23N, R2W;

thence north to the C-N-NE 1/64 corner of Section 8, T23N, R2W;

thence east to the NE-NE 1/64 corner of Section 8, T23N, R2W;

thence north to the NE-SE 1/64 corner of Section 5, T23N, R2W;

thence east to the C-N-SE 1/64 corner of Section 5, T23N, R2W;

thence north to the C-E 1/16 corner of Section 5, T23N, R2W;

thence continuing north along the east boundary of the W $\frac{1}{2}$ of Lot 1 of NE $\frac{1}{4}$, Section 5, T23N, R2W to the north boundary of Lot 1 of the NE $\frac{1}{4}$, Section 5, T23N, R2W;

thence continuing north along the east boundary of the W $\frac{1}{2}$ of Lot 2 of the NE $\frac{1}{4}$, Section 5, T23N, R2W to the Township line common to T23N and T24N, R2W;

thence east along the Township line to the W-E 1/64 corner on the south line of Section 32, T24N, R2W;

thence north to the C-W-E 1/64 corner of Section 32, T24N, R2W;

thence west to the C $\frac{1}{2}$ corner of Section 32, T24N, R2W;

thence north to the C-N 1/16 corner of Section 32, T24N, R2W;

thence east to the NW 1/16 corner of Section 32, T24N, R2W;

thence north to the W 1/16 corner common to Sections 29 and 32, T24N, R2W;

thence west along the section line to the W-W 1/64 corner common to Sections 29 and 32, T24N, R2W;

thence north to the C-W-SW 1/64 corner of Section 20, T24N, R2W;

13.

thence west to the SE 1/16 corner of Section 19, T24N, R2W;

thence north to the C-E 1/16 corner of Section 19, T24N, R2W;

thence west to the C-W-E 1/64 corner of Section 19, T24N, R2W;

thence north to the W-E 1/16 corner common to Sections 18 and 19, T24N, R2W;

thence west along the section line to the $\frac{1}{4}$ corner common to Sections 18 and 19, T24N, R2W;

thence north to the C-S 1/16 corner of Section 18, T24N, R2W;

thence west along the south boundary of the $N\frac{1}{2}$ of Lot 1 of the $SW\frac{1}{4}$ of Section 18, T24N, R2W, to the lot line between Lots 1 and 2 of the said section;

thence continuing west along the south boundary of the $N\frac{1}{2}$ of Lot 2 of the $SW\frac{1}{4}$ of Section 18, T24N, R2W, to the lot line between Lots 2 and 3 of the said section;

thence continuing west along the south boundary of the $N\frac{1}{2}$ of Lot 3 of the $SW\frac{1}{4}$, Section 18, T24N, R2W to the Range line common to Range. 2 and 3 west;

thence north along the range line to the $\frac{1}{4}$ corner on the east line of Section 13, T24N, R3W;

thence west to the C-E 1/16 corner of Section 13, T24N, R3W;

thence north to the C-S-NE 1/64 corner of Section 13, T24N, R3W;

thence west to the C-S-N 1/64 corner of Section 13, T24N, R3W;

thence north to the $\frac{1}{4}$ corner common to Sections 12 and 13, T24N, R3W;

thence west along the section line to the W 1/16 corner common to Sections 11 and 14, T24N, R3W;

thence north to the NW-NW 1/64 corner of Section 11, T24N, R3W;

thence west to the N-N 1/64 corner of Section 11, T24N, R3W;

thence north along the section line to the section corner common to Sections 2, 3, 10 and 11, T24N, R3W;

14.

thence west along the section line to the $\frac{1}{4}$ corner common to Sections 3 and 10, T24N, R3W;

thence north to the C $\frac{1}{4}$ corner of Section 3, T24N, R3W;

thence west to the C-W $\frac{1}{16}$ corner of Section 3, T24N, R3W;

thence north along the west boundary of the E $\frac{1}{2}$ of Lot 1 of the NW $\frac{1}{4}$, Section 3, T24N, R3W to the south boundary of the W $\frac{1}{2}$ of Lot 2 of the NW $\frac{1}{4}$, Section 3, T24N, R3W;

thence west along the lot line between Lots 1 and 2 to the west boundary of the E $\frac{1}{2}$ of the E $\frac{1}{2}$ of Lot 2 of the NE $\frac{1}{4}$, Section 5, T24N, R3W;

thence north along the west boundary of the said E $\frac{1}{2}$ of the E $\frac{1}{2}$ of Lot 2 of the NE $\frac{1}{4}$, Section 5, T24N, R3W to the south boundary of the W $\frac{1}{2}$ of the E $\frac{1}{2}$ of Lot 4 of the NE $\frac{1}{4}$, Section 5, T24N, R3W;

thence along the lot line between Lots 3 and 4 of Section 5, T24N, R3W to the SW corner of Lot 4 on the section line between Sections 5 and 6, T24N, R3W;

thence north along the section line between Sections 5 and 6, T24N, R3W to the Township line, T24N and T25N, R3W;

thence east along the Township line to the E $\frac{1}{16}$ corner on the south line of Section 31, T25N, R3W;

thence north to the C-S-SE $\frac{1}{64}$ corner, Section 31, T25N, R3W;

thence west to the C-S-S $\frac{1}{64}$ corner, Section 31, T25N, R3W;

thence north to the C-S $\frac{1}{16}$ corner, Section 31, T25N, R3W;

thence west to the S $\frac{1}{16}$ corner on the west line of Section 31, T25N, R3W;

thence south along the section line to the SW corner of Section 31, T25N, R3W;

thence west along the Township line common to T24N and T25N, R3W to the Range line common to R3W and R4W;

thence south along the Range line between Sections 1 and 6, T24N to the south boundary of Lot 4, NE $\frac{1}{4}$, Section 1, T24N, R4W;

15.

thence west along the south boundary of Lot 4, NE $\frac{1}{4}$, Section 1, T24N, R4W to the west boundary of said Lot 4, Section 1, T24N, R4W;

thence north along the west boundary of Lot 4, NE $\frac{1}{4}$, Section 1, T24N, R4W to the Township line common to T25N and T24N, R4W;

thence west along the Township line to the section corner common to Sections 35 and 36, T25N, R4W;

thence north along the section line to the section corner common to Sections 25, 26, 35 and 36, T25N, R4W;

thence east along the section line to the W 1/16 corner common to Sections 25 and 36, T25N, R4W;

thence north to the C-W 1/16 corner of Section 25, T25N, R4W;

thence west to the C $\frac{1}{2}$ corner of Section 26, T25N, R4W;

thence north to the C-S-N 1/64 corner of Section 26, T25N, R4W;

thence west to the C-S-NW 1/64 corner of Section 26, T25N, R4W;

thence north to the C-N-NW 1/64 corner of Section 26, T25N, R4W;

thence west to the N-N 1/64 corner common to Sections 26 and 27, T25N, R4W;

thence north along the section line to the section corner common to Sections 22, 23, 26 and 27, T25N, R4W;

thence west along the section line to the $\frac{1}{4}$ corner common to Sections 22 and 27, T25N, R4W;

thence south to the C $\frac{1}{2}$ corner of Section 27, T25N, R4W;

thence west to the C-W 1/16 corner of Section 27, T25N, R4W;

thence south to the SW 1/16 corner of Section 27, T25N, R4W;

thence west to the S 1/16 corner common to Sections 27 and 28, T25N, R4W;

thence south along the section line to the section corner common to Sections 27, 28, 33 and 34, T25N, R4W;

thence west along the section line to the E 1/16 corner common to Sections 28 and 33, T25N, R4W;

16.

thence south to the NE $\frac{1}{16}$ corner of Section 33, T25N, R4W;

thence west to the C-N $\frac{1}{16}$ corner of Section 33, T25N, R4W;

thence south to the C $\frac{1}{4}$ corner of Section 33, T25N, R4W;

thence west to the C-E $\frac{1}{16}$ corner of Section 32, T25N, R4W;

thence south to the E $\frac{1}{16}$ corner on the south section line of Section 32, T25N, R4W;

thence west along the Township line between T24N and T25N to the east boundary of the W $\frac{1}{2}$ of the E $\frac{1}{2}$ of Lot 4 of the NE $\frac{1}{4}$, Section 5, T24N, R4W;

thence south along the east boundary of the W $\frac{1}{2}$ of the E $\frac{1}{2}$ of Lot 4 of the NE $\frac{1}{4}$, Section 5, T24N, R4W to the south boundary of said lot;

thence west along the south boundary of Lot 4 of the NE $\frac{1}{4}$, Section 5, T24N, R4W to the SW corner of said Lot 4 of the NE $\frac{1}{4}$, Section 5, T24N, R4W;

thence continuing west along the south boundary of Lot 4, NW $\frac{1}{4}$, Section 5, T24N, R4W to the section line common to Sections 5 and 6, T24N, R4W;

thence continuing west along the lot line between Lots 3 and 4, NE $\frac{1}{4}$, Section 6, T24N, R4W to the east boundary of the W $\frac{1}{2}$ of Lot 3, NE $\frac{1}{4}$, Section 6, T24N, R4W;

thence south along the east boundary of the W $\frac{1}{2}$ of Lot 3, NE $\frac{1}{4}$, Section 6, T24N, R4W to the south boundary of the W $\frac{1}{2}$ of Lot 3, NE $\frac{1}{4}$, Section 6, T24N, R4W;

thence west along the south boundary of the W $\frac{1}{2}$ of Lot 3, NE $\frac{1}{4}$, Section 6, T24N, R4W;

thence continuing west along the south boundary of Lot 3, NW $\frac{1}{4}$, Section 6; T24N, R4W to the Range line between Ranges 4 and 5 west;

thence north on the Range line between Ranges 4 and 5 west to the south boundary of the N $\frac{1}{2}$ of Lot 3, NE $\frac{1}{4}$, Section 1, T24N, R5W to the west boundary of the S $\frac{1}{2}$ of the E $\frac{1}{2}$ of Lot 3, NW $\frac{1}{4}$, Section 1, T24N, R5W;

thence south along the S $\frac{1}{2}$ of the E $\frac{1}{2}$ of Lot 3, NW $\frac{1}{4}$, Section 1, T24N, R5W to the lot line between Lots 2 and 3, NW $\frac{1}{4}$, Section 1, T24N, R5W, continuing south along the east boundary of Lot 2, NW $\frac{1}{4}$, Section 1, T24N, R5W to the south boundary of Lot 2, NW $\frac{1}{4}$, Section 1, T24N, R5W;

17.

thence west along the said lot line between Lots 1 and 2, NW $\frac{1}{4}$, Section 1, T24N, R5W to the section line common to Sections 1 and 2, T24N, R5W, continuing west along the lot line between Lots 2 and 3, NE $\frac{1}{4}$, Section 2, T24N, R5W to the west boundary of the E $\frac{1}{2}$ of Lot 2, NE $\frac{1}{4}$, Section 2, T24N, R5W;

thence north along the west boundary of the E $\frac{1}{2}$ of Lot 2, NE $\frac{1}{4}$, Section 2, T24N, R5W to the south boundary of Lot 3 of said NE $\frac{1}{4}$, Section 2, T24N, R5W;

thence west along the lot line between Lots 2 and 3, NE $\frac{1}{4}$, Section 2, T24N, R5W to the SW corner of Lot 3, NE $\frac{1}{4}$, Section 2, T24N, R5W;

thence continuing west along the lot line between Lots 2 and 3, NW $\frac{1}{4}$, Section 2, T24N, R5W to the section line between Sections 2 and 3, T24N, R5W;

thence north along the section line between Sections 2 and 3, T24N, R5W to the south boundary of the N $\frac{1}{2}$ of Lot 3, NE $\frac{1}{4}$, Section 3, T24N, R5W;

thence west along the south boundary of the N $\frac{1}{2}$ of Lot 3, NE $\frac{1}{4}$, Section 3, T24N, R5W, continuing west along the south boundary of the N $\frac{1}{2}$ of Lot 3, NW $\frac{1}{4}$, Section 3, T24N, R5W to the section line between Sections 3 and 4, T24N, R5W;

thence continuing west along the south boundary of the N $\frac{1}{2}$ of Lot 3, NE $\frac{1}{4}$, Section 4, T24N, R5W, continuing west along the south boundary of the N $\frac{1}{2}$ of Lot 3, NW $\frac{1}{4}$ of said Section 4, T24N, R5W to the section line common to Sections 4 and 5, T24N, R5W;

thence continuing west along the south boundary of the N $\frac{1}{2}$ of Lot 3, NE $\frac{1}{4}$, Section 5, T24N, R5W to a point where it intersects the center line of State Route 99;

thence in a northerly direction along the center line of State Route 99, 241.6 feet along a 4⁰⁰' curve to the left which has a central angle of 31⁰³¹';

thence N9⁰⁴⁰'W 498.9 feet'

thence 292.2 feet along a 3⁰⁰' curve to the right which has a central angle of 8⁰⁴⁶';

thence N0⁰⁵⁴'W 823.0 feet;

thence 182.5 feet along a 2⁰⁰' curve to the left which has a central angle of 3⁰³⁹';

18.

thence $N4^{\circ}33'W$ 364.1 feet to the Point of Beginning, which is a point on the center line of State Route 99 on Township line which is located 7.01 chains east of the SW corner of Section 32, T25N, R5W.

APPENDIX

1008 - Resource Potential of Sport Fisheries*

Production (Pounds/Acre)	30 lbs. average for entire river.
Percent Harvested	50%
Pounds/Man Day (4 Hrs. Fishing)	1.5
Man Days/Acre Potential	10 Man Days or 40 Hours/Acre/Year
Total Acres (Greer to 142 - Eleven Point)	676 Acres
Total Acres (Thomasville to Greer)	90 Acres
Total Acres (676) X 10 = 6,760	
Man Days or Hours of Sport Fisheries Potential	Total 90 X 10 = 900
$\frac{6,760}{3 \text{ VD}}$ - 2,253 Visitor Days	
$\frac{900}{3}$ = 300 Visitor Days	2,553 Visitor Days Total Potential

*Missouri Department of Conservation

APPENDIX

1009 - Duffield Study - Attitudes of Floaters

Question 9

What was the high point of your float trip:

179 Responses

Quality Natural Environment	42%
General Activities	30%
Adventure and Challenge	20%
Solitude	8%

Question 10

What were the low points of your float:

Lack of Solitude	44%
Acts of Nature	26%
Degraded Environment	19%
Administration	11%

Question 11

Why did your group select the Eleven Point:

Canoe Availability, Location, Recommendation, Happenstance	31%
Challenge	7%
Solitude and Remoteness	12%
Desirable Floating Characteristics	8%
Past Experience or New Experience	30%
Scenery, Fishery	12%

APPENDIX

Question 19

What changes have you noticed since your first Eleven Point float:
(35% of sample were veterans, 317 people). Based on 127 interviews
and 64 responses.

Increase in People	48%
Increase in Trash	16%
No Changes	16%
Better Administration	6%
More Access	3%
No Cattle	2%
Less Fish	2%
Deeper Water	2%
No Response	13%
Increase in Cabins	5%

Question 20

Did you see more trash on this float than previous: 64 Responses

Yes	30%
No	34%
Some	36%

Question 21

Did you see more people in this float:

Yes	66%
No	20%
Some	14%

APPENDIX

Question 22

Does the country seem less wild, less remote and more disturbed than on previous float?

No	55%
Yes	44%
No Response	1%

Reasons - 28 Respondents of Yes Group:

More People	21%
More Cabins	14%
More Access	14%
More Trash	11%
Other	11%
No Reason	26%
Vegetation Deterioration	4%
Cut Snags	4%

Question 23

Does the Eleven Point have any special attractions or features that other streams do not have: Responses 112, 12 No, 88 Yes

Reasons:

High Quality Water	25%
Adventure and Challenge	20%
Solitude	15%
Quality Natural Environment	28%
Fishing	8%

APPENDIX

Easy Access	1%
Swimming	1%
Nice Campsites	1%

Question 27

Of streams you have floated, which streams were more wild, more remote, and less disturbed by man: None - 61%, Responses - 104

Jacks Fork	13%
North Fork	10%
Bryant Creek	4%
Current	5%
Other	8%

Groups selected the Eleven Point because it met their qualifications for enjoyable floating:

Challenge	7%
Solitude and Remoteness	12%
Past Experience	30%
Quality Scenery, Fishing	12%

People are noticing increases in numbers of people and a corresponding increase in litter:

Said Yes to More People	66%
Noted a Change Since Last Trip	48%

Eleven Point has special features that draw people:

- I. Quality of Natural Environment
- II. High Quality Water

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III. Adventure and Challenge

IV. Solitude

From an experience level standpoint we may be at the break even point. About half of the people interviewed feel that the river is less remote and more disturbed than their last float, half noticed no change:

Reasons:

More People

Cabins

Access

Trash

On Experience Level:

From the floaters' point of view, the five most important components of their experience level are as follows starting with the most important:

(1) the natural surroundings, (2) solitude, (3) the activities they engage in, (4) adventure and challenge, and (5) administration.

APPENDIX

1010 - ORDER OF THE REGIONAL FORESTER
SETTING FORTH CONDITIONS OF OCCUPANCY AND USE
ELEVEN POINT SCENIC RIVER AREA
MARK TWAIN NATIONAL FOREST
MISSOURI

Pursuant to the Secretary of Agriculture's Regulations 36 CFR 251.25, 261.4 (h) and (i), and 261.11 (j) and subject to existing private rights, the occupancy and use of the following described National Forest lands, known as the Eleven Point Scenic River Area, are subject to the special restrictions set out below.

"The Eleven Point Scenic River Area as reported to Congress pursuant to Section 3(a) of the Wild and Scenic Rivers Act (Public Law 90-542) includes the segment of the Eleven Point River and land adjacent thereto extending downstream from Thomasville to State Highway 142. It is more specifically described as being that part along and within each side of the Eleven Point River in Townships 24-25 North, Range 4-5 West; Townships 24-25 North, Range 3 West; Townships 22-23-24 North, Range 2 West, of the fifth principal meridian, Oregon County, Missouri and containing 14,191 acres, more or less. The Eleven Point Scenic River Area including 3,000 acres, more or less, of National Forest lands is as shown on the attached map dated _____, 197_, which is made a part of this order as Exhibit A."

SPECIAL RESTRICTIONS
GOVERNING OCCUPANCY AND USE
IN THE
ELEVEN POINT SCENIC RIVER AREA
MARK TWAIN NATIONAL FOREST

For the general purpose of meeting the management objectives of the Wild and Scenic River Act and subject to existing private rights; the following special restrictions apply to public use and occupancy of the Eleven Point Scenic River Area.

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1. The following is prohibited on all National Forest lands, roads, and trails within the Eleven Point Scenic River Area:
 - a. The use of all forms of motorized vehicles except on major highways thru the area and for ingress and egress on Forest Service roads to developed areas.
 - b. Discharging a firearm from a boat, canoe, etc. and/or over the water surface.
 - c. Overnight camping: Except on those sites developed and designated by the Forest Service and as shown on the attached map, Exhibited A, or camping on gravel bars.
 - d. The building of fires outside of stoves, grills, fireplace, or fire rings provided by the Forest Service, except that portable heaters or cooking stoves using processed fuels such as alcohol, gas, or gasoline will be permitted, as well as campfires on gravel bars.
 - e. The abandonment of refuse brought to the Eleven Point Scenic River Area by a visitor.
 - f. The establishment of commercial enterprise, permanent or semi-permanent camp or erection of structures.
 - g. The establishment of permanent and/or temporary roads or trails.
 - h. The cutting, killing, destroying, girdling, chipping, chopping, injuring, or otherwise damaging or removing of any living vegetation.
2. The Forest Supervisor, Mark Twain National Forest, may temporarily, in writing, waive application of any of the above restrictions to named individuals involved in a special or unusual situation when public interest justifies.

The following explanations and conditions apply to this order:

1. The purpose of this order is to:
 - a. Help carry out the provisions of the Eleven Point Scenic River Area Management Plan and thereby provide for recreation activities in a near natural environment along a scenic river.
 - b. Protect and enhance the scenic recreational, geologic, fish and wildlife, historic, cultural, archeological, scientific,

APPENDIX

and other values; and to protect the river and its immediate environments for the benefit and enjoyment of present and future generations.

- c. Prohibit methods of travel and uses not compatible with management objectives for the area.
 - d. Administer the area for its renewable resources in accordance with the Multiple Use and Sustained Yield Act of 1960 and the National Environmental Policy Act of 1969.
2. The Forest Supervisor, Mark Twain National Forest, may prescribe measures necessary to fire control, insects, and disease; measures necessary to protect and administer the area; measures which may be used in emergencies involving the health and safety of persons, or of damage to property; and may require permits for, or otherwise limit or regulate, any use of National Forest land, including disposal of waste, camping, and campfires.
 3. A copy of this order will be maintained for public reference in the offices of the Regional Forester, Forest Supervisor, and District Rangers having jurisdiction.
 4. The effective date of this order shall be _____.
 5. "Motorized Equipment," as used in this order, shall include any machine activated by a non-living power source, except that small battery-powered, hand-carried devices such as flashlights, shavers, Geiger counters, etc. are not classed as motorized equipment.
 6. Holders of reserved rights are priveleged, but only to the extent of terms of the covenant legally conveying the specific right.
 7. Nothing in this order shall be construed as affecting the jurisdiction or responsibility of Missouri with respect to wildlife and fish in the National Forest area.
 8. It is directed that the Forest Supervisor of the Mark Twain National Forest shall cause notices of the special restrictions to be posted at all entrances to this area.

The notice will conform to Exhibit B dated _____, which is attached to and made part of this order.

Signed at Milwaukee, Wisconsin this _____ day of _____, 197_.

Regional Forester

APPENDIX

**SPECIAL RESTRICTIONS
GOVERNING OCCUPANCY AND USE**

**IN THE
ELEVEN POINT SCENIC RIVER AREA
MARK TWAIN NATIONAL FOREST**

You are welcome to use this National Forest area. It has been established to provide outdoor experiences along a free-flowing river in a natural environment. To help meet this objective, the following special restrictions and prohibitions apply to public use and occupancy of the area behind this sign.

The following is prohibited:

1. The use of all forms of motorized vehicles except on major highways thru the area and for ingress and egress on Forest Service roads to developed areas.
2. Discharging a firearm from a boat, canoe, etc. and/or over the water surface.
3. Overnight camping, except on those sites developed and designated by the Forest Service, or camping on gravel bars.
4. The building of fires outside of stoves, grills, fireplace or fire rings provided by the Forest Service, except that portable heaters or cooking stoves using processed fuel such as alcohol, gas, or gasoline will be permitted, as well as campfires on gravel bars.
5. The abandonment of refuse brought to the Eleven Point Scenic River Area by a visitor--carry out what you carry in.
6. The erection of structures, permanent or semi-permanent camps or establishment of commercial enterprise.
7. The cutting, killing, destroying, girdling, chipping, chopping, injuring, or otherwise damaging or removing living vegetation.
8. The establishment of permanent and/or temporary roads or trails.

The Forest Supervisor, Mark Twain National Forest, may temporarily, in writing, waive application of any of the above restrictions to named individuals involved in a special or unusual situation when public interest justifies.

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A copy of the official order and area map setting forth the conditions of occupancy and use of the Eleven Point River Area is available (area map) in the offices of the U. S. Forest Service listed below:

District Ranger
Winona Ranger District
Winona, Missouri

Forest Supervisor
Mark Twain National Forest
Springfield, Missouri

Regional Forester
Eastern Region
Milwaukee, Wisconsin

District Ranger
Doniphan Ranger District
Doniphan, Missouri

District Ranger
Van Buren Ranger District
Van Buren, Missouri

These rules are authorized by the Regulations of the Secretary of Agriculture as set forth in 36 CFR 251.25, 261.4 (h) and (i), and 261.11 (j). Violators are subject to a fine of not more than \$500 or imprisonment for not more than six months or both.

APPENDIX

1011-

NATIONAL WILD AND SCENIC RIVERS SYSTEM

SCENIC RIVER AREA EASEMENT

THIS EASEMENT DEED, dated this _____ day of _____, 19____, by and between _____, hereinafter called the Grantor, and the UNITED STATES OF AMERICA, hereinafter called Grantee, _____ County,

WHEREAS, Public Law 90-542 (82 Stat. 906) provided for the establishment of a Wild and Scenic Rivers System, and designated that portion of the Eleven Point River in Missouri from Thomasville to Missouri State Highway #142 as a component of the National Wild and Scenic Rivers System. The law provides for this section of the river to be administered by the Secretary of Agriculture as part of the National Forest System.

WHEREAS, the Grantor is an owner of certain land which is within the established boundaries of the Eleven Point Scenic River component of the National Wild and Scenic Rivers System, Mark Twain National Forest and located in Oregon County, State of Missouri, and

WHEREAS, the Grantee through the Forest Service in accordance with P.L. 90-542 (82 Stat. 906), desires to administer such land, to protect the scenic, recreational, geologic, fish and wildlife, historic, cultural, and other similar values of the free flowing Eleven Point River and its immediate environment and to prevent any developments that will tend to mar or detract from their scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, and to that end exercise such reasonable controls over the land within the restricted areas described herein as may be necessary to accomplish such objectives.

WHEREAS, the present use existing on the herein described land is for _____ purposes.

NOW THEREFORE, the Grantors for and in consideration of the sum \$_____, the receipt of which is hereby acknowledged, and in consideration of the covenants herein contained, do hereby grant and convey unto the Grantee and its assigns and easement and right in perpetuity to and over any and all portions of the following described lands:

The acquiring agency is the Forest Service, Department of Agriculture.

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I. USE BY GRANTEE

- A. The Grantee, its authorized representatives and/or assigns, is hereby granted the right to go upon the land described above in this easement for the following purposes:
1. To inspect for violations of this easement and to clean up any trash, debris, garbage, junk or other such materials which may be found on the above described land.
 2. To mark, cut, and remove all dead, dying, diseased or insect infested trees and shrubs, which in the opinion of the authorized representative of the grantee detract from the esthetics of the above described land.
 3. To plant and/or selective cut or prune trees and shrubs to restore or maintain the scenic view and for the purpose of disease prevention measures. Any merchantable timber so cut shall, unless otherwise agreed, be cut into logs of standard lengths for disposal by the landowner. The property owner shall be informed prior to initiation of such operations.
 4. To perform such other scenic, esthetic, historical, fish and wildlife, and sanitation restoration as may be deemed necessary or desirable. The landowner shall be consulted prior to initiation of such projects.
- B. The Grantee, its authorized representatives and/or assigns, is hereby granted the right to permit and authorize public access to the first 50 feet of land from the water's edge so that the public may be permitted to traverse the length of that area as the area may be designated along the river bank.

II. RESTRICTIONS ON LAND USE BY GRANTOR

- A. The lands within the easement area shall be used exclusively for agriculture and/or timber growing purposes. Said land shall not be subdivided and sold as smaller tracts.
- B. No building or any structure may be constructed, erected, or moved onto said lands, except as may be authorized in writing by the Secretary of Agriculture or his duly authorized representative. Such authorization will be given only for buildings and structures which are necessary for agriculture and/or timber growing purposes and which are designed and will be located in a manner harmonious with the landscape and general surroundings.

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- C. Additional and/or replacement buildings, structures, and utility poles shall be subject to the following requirements:
1. Adequate provisions for disposal of waste and sewage shall be made to fully comply with applicable Federal, State and local regulations for sanitation and water pollution control. The waste and sewage disposal facilities shall be approved in writing by the Secretary of Agriculture or his duly authorized representative, prior to the construction, erection, or moving of new or additional buildings and structures onto said lands.
 2. Roofs shall be constructed of non-reflective material or painted and maintained with earth tone color.
 3. Additional or replacement structures and/or utility poles and television antennae placed on said land shall not extend more than thirty (30) feet above the ground as measured from the natural grade at the middle front of the structure to the highest point.
- D. No commercial use shall be made of the land and/or buildings in the scenic easement area except for prior uses as defined in sec. 15(c) of P.L. 90-542.
- E. Subject to valid outstanding interests existing in third parties, no mining or industrial activities shall be conducted on the lands within the scenic easement area.]
- F. No disposal of trash, ashes, garbage, sewage, sawdust, or any unsightly or offensive material shall be placed upon the easement area.
- G. No changes in the general topography of the landscape or land surface will be permitted except for those caused by the forces of nature, and those given by written approval of the Secretary of Agriculture or his duly authorized representative. No permission shall be required to drill water wells or to lay, operate, maintain, repair, or remove water and sewer pipelines, conduits, or drains below the surface of the easement area insofar as such activities do not permanently impair or ruin the natural beauty of said easement area.
- H. No trees or shrubs shall be pruned, removed, or destroyed on the land in the easement area except those authorized in writing by the Secretary of Agriculture or his duly authorized representative. Permission need not be obtained to cut dead trees for

APPENDIX

firewood or on an individual selection basis to remove hazardous trees for reasons of safety. Likewise, seedling trees or seedling shrubbery may be grubbed up or cut down in accordance with good farm practice on lands presently being cultivated or for residential maintenance purposes. Cultivated crops, including orchard fruit and nut trees, may be pruned, sprayed, harvested and otherwise maintained in accordance with good farm practice.

- I. No signs, billboards, outdoor advertising structures, or advertisements of any kind or nature shall hereafter be erected, displayed, placed or maintained upon or within the easement area. Existing use for any such purpose shall be terminated and any such signs shall be removed on or before six months after the date of this instrument.
- J. Archaeological or paleontological explorations shall be conducted only by a reputable museum, university, college or recognized scientific or educational institution as authorized by a permit from the Secretary of Agriculture or his duly authorized representative. All specimens or materials of archaeological or paleontological interest shall be adequately and permanently safeguarded and preserved for scientific study and public observation. The excavated land or ruins shall be restored to near natural condition or such other steps shall be taken to safeguard and conserve the excavated sites as may be necessary to preserve their residual scientific values.

PUBLIC ENTRY

Except as noted in the provisions of subsection I-B, the granting of this easement is not intended to permit or in any way give the public the general right to enter upon the land for any purpose.

No public vehicular access will be provided or permitted across the above described easement area.

This easement and rights herein granted shall terminate in the event the easement area is eliminated from the boundaries of the Eleven Point River component of the National Wild and Scenic Rivers System.

TO HAVE AND TO HOLD the easement hereby granted, unto the Grantee, and its assigns forever. This grant shall be binding upon the heirs and assigns of the Grantor and shall constitute a servitude upon the above-described land.

IN WITNESS WHEREOF, the Grantor has hereunto set his hand and seal on the day and year first above written.

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1012 - Individual Tract Justification

<u>Tract Number</u>	<u>Justification and Development</u>
222-1 Pigman	1652.02 acres in M.Z. 136.32 to be acquired in fee. Pigman Mound. Cultural archeologic area. Piney Creek Float Camp of four family units, one toilet building, 12 miles of river frontage.
222-2 Taylor Heirs	1 1/4 miles of frontage in "Narrows," four large springs, scenic vista, protection of natural features.
222-6 Ark-Mo	River frontage. Probable non-compatible use or development.
222-7 Netherland	Cabin lot, contamination control, probable non-compatible use.
222-8 Branum	Cabin lot, contamination control, probable non-compatible use.
222-9 Dalton	1 mile river frontage, access to Narrows Boat Launching Ramp.
222-11 Voorhees	Cabin lot, non-compatible use, contamination control.
232-2 Kitchen	Potential subdivision, 1/4 mile frontage, potential non-compatible use.
232-3 Bolling	1/4 mile river frontage, portion of Riverton Boat Launching Area, including portion of 30-car parking lot, two toilets, and landscaping. Potential non-compatible commercial use, existing cabin is non-compatible use.
232-4 Hufstedler, C.R.	1/4 mile frontage, non-compatible commercial enterprise, portion of Riverton Boat Launching Area, portion of 30-car parking lot, boat launch ramp, two toilets.
232-6 Williams	1/2 mile frontage, non-compatible industry (sawmill) large sawdust pile, noise and environmental contamination.
232-7 R. Thompson	Cabin, access from Highway 160, non-compatible use.

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<u>Tract Number</u>	<u>Justification and Development</u>
232-8 Conner, A.R.	1 1/2 miles frontage, easement to protect scenic recreation, fish and wildlife values.
232-9 Bennett, John	1/2 mile river frontage, subdivision probability potential.
232-10 Conner, Jasper	1/4 mile frontage, subdivision possibility, environmental protection.
232-12 Heiskell	Cabin, sanitation, non-compatible use, 1/2 mile of river frontage.
232-13 Mitchell	Cabin site, potential non-compatible use prevent adverse effect on environment.
232-14 Larson	Cabin is non-compatible, prevent adverse effect on environment, and contamination of river.
232-9A Bennett	Potential subdivision and non-compatible use, 1/4 mile frontage.
232-9B	1 mile frontage, Dark Hollow Float Camp site, includes construction of four family units, and one toilet building.
232-16	1 mile frontage, non-compatible commercial campground, cabin and subdivision potential. Historical value of old Grist Mill with remains of water wheel and dam. Boze Mill Spring.
232-17 Adams	3/8 mile frontage, Highway 160 access, potential non-compatible cabin use, to prevent contamination of environment.
232-18 Johnson	1/2 mile frontage, 3/8 mile highway frontage at Riverton, non-compatible residence, buffer for development.
232-19 Adams	1/2 mile frontage, 1/8 mile highway frontage at Riverton, buffer for development, potential subdivision, scenic easement.
232-20 Leamon	3/8 mile frontage, easement, potential non-compatible development.

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<u>Tract Number</u>	<u>Justification and Development</u>
232-21 Allen	1-1/4 miles frontage, prior non-compatible use over grazing; erosion, unrestricted livestock use of river, riverbank and woods.
232-22 Orr	River frontage lot in subdivision, potentially non-compatible residential or cabin site.
232-23 Cooper	Highway frontage at Riverton, development buffer, probable non-compatible use.
232-24 Frey	River frontage lot, spring, non-compatible residential or cabin potential, house trailer on site.
232-25 Karnes	River frontage lot, potential non-compatible cabin site, having adverse effect on environment and river.
232-26 Cunningham	1/8 mile frontage, cabin on tract has adverse effect on environment.
232-27 Bates	River frontage lot, one of 16 cabin sites in 5.5 acres congested Boze Mill subdivision, adverse effect on river, needed to prevent contamination.
232-28 Meng	River frontage lot, one of 16 cabin sites in 5.5 acres congested Boze Mill subdivision, adverse effect on river, needed to prevent contamination.
232-29 (opt.) Shaw	River frontage lot, non-compatible cabin site.
232-30 Cotton	River frontage lot, one of 16 cabin sites in 5.5 acres congested Boze Mill subdivision, adverse effect on river, needed to prevent contamination.
232-31 McClellan	River frontage lot, one of 16 cabin sites in 5.5 acres congested Boze Mill subdivision, adverse effect on river, needed to prevent contamination.
232-32 Boren	River frontage lot, one of 16 cabin sites in 5.5 acres congested Boze Mill subdivision, adverse effect on river; needed to prevent contamination.
232-33 Johnson	River frontage lot, one of 16 cabin sites in 5.5 acres congested Boze Mill subdivision, adverse effect on river, needed to prevent contamination.

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<u>Tract Number</u>	<u>Justification and Development</u>
232-34 Cotton	River frontage lot, one of 16 cabin sites in 5.5 acres congested Boze Mill subdivision, adverse effect on river, needed to prevent contamination.
232-35 Gum	River frontage lot, one of 16 cabin sites in 5.5 acres congested Boze Mill subdivision, adverse effect on river, needed to prevent contamination.
232-36 Wilson	River frontage lot, one of 16 cabin sites in 5.5 acres congested Boze Mill subdivision, adverse effect on river, needed to prevent contamination.
232-37 (opt.) Trainor	River frontage lot, one of 16 cabin sites in 5.5 acres congested Boze Mill subdivision, adverse effect on river, needed to prevent contamination.
232-38 (opt.) Prinz	River frontage lot, one of 16 cabin sites in 5.5 acres congested Boze Mill subdivision, adverse effect on river, needed to prevent contamination.
232-39 Crook	River frontage lot, one of 16 cabin sites in 5.5 acres congested Boze Mill subdivision, adverse effect on river, needed to prevent contamination.
232-40 Edington	River frontage lot, one of 16 cabin sites in 5.5 acres congested Boze Mill subdivision, adverse effect on river, needed to prevent contamination.
232-42 (opt.) Thompson	River front cabin site, non-compatible use.
232-43 Sprayberry	River frontage lot, one of 16 cabin sites in 5.5 acres congested Boze Mill subdivision, adverse effect on river, needed to prevent contamination.
232-44 Glenn	River frontage lot, one of 16 cabin sites in 5.5 acres congested Boze Mill subdivision, adverse effect on river, needed to prevent contamination.
232-45 (opt.) Wilson	Cabin on river front having adverse effect on environment.
232-46 Hufstедler	1/2 mile river frontage, scenic easement needed to protect scenic, recreational, fish and wildlife values.

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Tract Number Justification and Development

232-47 Potential non-conforming use, needed for protection
Lepper of environment and to preserve scenic quality of
 landscape.

232-48 Potential non-conforming use, needed for protection
Siegel of environment and to preserve scenic quality of
 landscape.

[232-49 Potential non-conforming use, needed for protection
Hufstedler of environment and to preserve scenic quality of
 landscape.

232-50 Potential non-conforming use, needed for protection
Johnson of environment and to preserve scenic quality of
 landscape.

242-1 1/2 mile river frontage, easement needed to protect
Loyd scenic, fish, wildlife, and recreation values, poten-
 tial non-compatible use.

242-3 River front lot, potential non-compatible development.
Ferguson

242-4 River front property, potential adverse development,
Lawson possible float camp site.

242-5 1 1/2 miles river frontage, float camp at Whites Creek
Jolliff consisting of eight family units and two toilet
 buildings, potential adverse use.

242-6 River front lot with non-compatible cabin having
Williams adverse effect on environment.

242-7 River front lot with non-compatible cabin having
Dorris adverse effect on environment.

* 242-8 1/2 mile river frontage, [easement] needed to protect
Williams scenic, recreation, fish and wildlife values. ^{does not have WRAP}

242-9 River front lot with non-compatible cabin which has
Barton adverse effect on environment.

242-10 1/8 mile frontage, cabin site has adverse effect on
Norman environment.

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<u>Tract Number</u>	<u>Justification and Development</u>
242-11 Fanning	River frontage, potential non-compatible cabin sites or subdivision.
242-12 Wiggs	River front lot, potential non-compatible cabin site.
242-13 Blankenship	1/4 mile river frontage, non-compatible subdivision potential.
242-14 Whitten ^(David) _(Davis)	1/4 mile river frontage, potential non-compatible cabin site or subdivision. ✓
244-1 Staak	2 1/4 miles river frontage, non-compatible prior use, unrestrictive livestock use of river and riverbanks, erosion, overgrazing, need to prevent contamination and protect aesthetic qualities.
244-2	2+ miles of river frontage, easement needed to protect scenic, wildlife, fish and recreation values.
244-3 Catlett	River front lot, cabin is non-compatible use having adverse effect on environment.
245-2 Shaw	Portion of Thomasville Boat Launching Site, which includes boat launching ramp, ten-unit parking lot, signs, VIS bulletin board.
245-2A Shaw	Scenic easement, two miles river frontage, need to protect fish, wildlife, scenic and recreation values.
245-3 Boyd	1/2 mile river frontage, scenic easement needed to protect fish, wildlife, scenic and recreation values.
245-4 Boyd	Portion of Thomasville Boat Launching Site which includes boat launching ramp, ten-unit parking lot, signs, VIS bulletin board.
245-5 Brookwood Farms	Portion of Thomasville Boat Launching Site which includes boat launching ramp, ten-unit parking lot, signs, VIS bulletin board.
253-2 Cline	Highway frontage, potential non-compatible development.

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<u>Tract Number</u>	<u>Justification and Development</u>
253-3 Eleven Point Club	River front lot, cabin is non-compatible and has adverse effect on environment.
253-4 (opt.) Cline	Highway frontage, cabin is non-compatible use and has adverse effect on environment.
253-5 Cline	Potential non-compatible development.
254-3 Palmer	2 miles river frontage, Braswell-Cane Bluff float camp consisting of four family units and one toilet building. Braswell ford carry-in boat launching site consisting of two toilet buildings, well, 20-car parking lot. Incompatible prior use, unregulated livestock use of river and river banks has resulted in erosion and fertilizer contamination. Bridge crossing on property is only man-made obstacle to river travel.
255-3 Childers	Thomasville subdivision lot, potential non-compatible use, need to protect environment.
255-4 Miller	Thomasville subdivision lot, potential non-compatible use, need to protect environment.
255-5 Bales	Thomasville subdivision lot, potential non-compatible use, need to protect environment.
2358-VB (opt.) McDowell	1+ miles of shoreline, non-compatible development (i.e. cabin, barn, residence), needed to protect scenic bluffs and other aesthetic values.
2349-W McFry	3 miles river frontage, potential non-compatible developments and use, protection of scenic quality of river.
2365-W	6+ miles river frontage, large spring (Greer) and Spring Branch provide fastest navigable canoe run in Missouri. This spring provides 44% of total Eleven Point River flow at a distance of 20 miles from spring. Historically important old Greer Mill and estate house remain. VIS building, 12 miles of trail system, and a four-family unit float camp with one toilet building to be constructed. Highway frontage on State Highway 19 provides excellent access. Potential non-compatible development including commercial and subdivision.

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<u>Tract Number</u>	<u>Justification and Development</u>
2377-W Gray	1/4 mile highway frontage, potential non-compatible development or subdivision.
2397-VB Taylor	1 1/2 miles river frontage, scenic easement, need to protect scenic, geologic, wildlife, fish, and recreation values.
2412-W McGibney	1/4 mile river frontage, cabin is non-compatible use and adversely effects the environment, probable additional adverse development.
2413-W Disbrow	1/4 mile frontage, cabin is non-compatible and adversely effects environment. Probable additional adverse development.
2424-VB	3/8 mile river frontage, potential adverse development with corresponding adverse affect on environment.

**MARK TWAIN NATIONAL FOREST
ELEVEN POINT NATIONAL SCENIC RIVER
SINGLE TRIP TRAVEL PERMIT**

FOREST SERVICE - U.S. DEPARTMENT OF AGRICULTURE

PERMIT NUMBER (1-4)	DATE MO. (5-9) DAY (7-8) YR. (9-10)
NAME - PRINT LAST NAME FIRST NAME MIDDLE INITIAL	
ADDRESS STREET AND NUMBER	
CITY	STATE ZIP CODE (11-15)
THERE ARE (16-17) PEOPLE IN MY PARTY. WE PLAN TO (18-20) SPEND HOURS ON THE ELEVEN POINT RIVER.	
WE PLAN TO START ON MO. (21-22) DAY (23-24)	FROM ACCESS (25-27) CANOES / BOATS.
POINT NO. (28)	WE HAVE (29)
WE PLAN TO FINISH AT ACCESS POINT NO. (30)	
I AGREE, as party leader, to abide by the rules listed on the reverse side of this permit, and to assure that other party members follow these rules.	
SIGNATURE OF PERMITTEE SEE RULES ON REVERSE	

NO.	ACCESS POINT	INSTRUCTIONS
1	THOMASVILLE	Select one person in your party as party leader. The party leader will complete the top part of this form, read the rules on the reverse side of the yellow copy, and then sign the permit. Deposit the original in the collection box at the access point, where you begin your float. Retain the yellow copy in your possession while on the river. When your trip is completed, deposit the yellow copy in the permit station collection box at the access point where you leave the river.
2	CANE BLUFF	
3	GREER CROSSING	
4	TURNER'S MILL	
5	RIVERTON	
6	HIGHWAY 142	
7	OTHER	

PLEASE FOLLOW THESE RULES

- Do not cut, kill, destroy, girdle, chip, chop, injure or otherwise damage or remove living vegetation.
- Never leave a fire unattended. Make sure it is out - Dead Out!
- Do not abandon refuse. Carry out what you carry in.
- Do not discharge a firearm from a boat or canoe and/or over the water surface.
- Use cord instead of nails and wire at campsites.
- Select existing campsites where additional clearing is not required.
- Leave a clean campsite.
- Obey all state and local laws and regulations.
- Respect the rights of others.



THE ELEVEN POINT SCENIC RIVER AREA NEEDS YOUR HELP! PLEASE COOPERATE IN HELPING TO PROTECT THE QUALITY AND NATURAL BEAUTY THAT ATTRACTED YOU HERE.

THANK YOU,
FOREST SUPERVISOR
MARK TWAIN NATIONAL FOREST
SPRINGFIELD, MISSOURI

100068

APPENDIX

1014 - VIS Story Inventory

Canoeing-Camping and Hiking on the Eleven Point

Many people come to enjoy the Eleven Point River not knowing a great deal about the more rugged outdoor activities, or what activities are available to them. The safety and enjoyment of visitors can be increased through information and training on these subjects.

Management of the river can be accomplished only if the visitor understands regulations governing recreational activities.

1. Canoe handling and safety.
2. How to camp and the camping facilities available.
3. Backpacking and hiking along the Eleven Point.

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APPENDIX

Natural History of the Eleven Point River

Topography, soils, and water make the Ozarks somewhat unique when compared to other surrounding areas. Certainly the Eleven Point is different from any other river; it has its own "personality." The Scenic Zone abounds in wildlife and a variety of forest types typical of the Ozarks plateau. Typical of the variety of life to be seen are wild turkey, opossum, pileated woodpeckers, vultures, beavers, copperhead, osprey, and white tail deer.

1. Soils
2. Geology
3. Topography and Environment
4. Lowland Forests
5. Plants and Trees
6. Animals and Birds

The American Bald Eagle and Ospreys are winter residents along the Eleven Point River.

APPENDIX

Early Man on the Eleven Point

The Pigman Mound is the most outstanding archaeological site now known in the Current-Eleven Point area and might well be similar to the Sprio Mound of Oklahoma, one of the most outstanding sites in North America (Hamilton, 1952)*. Evidences of man from early times until the historic Indian are found throughout the Eleven Point watershed. Downstream from Pigman Mound, at the Narrows, is a burial mound of the Middle Mississippi people who built around the Blue Spring.

Spear points, arrowheads, pottery and other mounds are evident in the area and add an ingredient of excitement and discovery to the visitor.

*Chapman, Carl H., 1960. A Proposal, Ozark Rivers National Monument.

APPENDIX

Modern Man on the Eleven Point

1. Turners Mill
2. Greer Spring Mill and Remnants
3. Falling Springs Mill
4. Thomassen Mill (The Narrows)
5. Mary Decker Shoals
6. Irish Wilderness
7. Surprise Schoolhouse

There are a number of interesting historic sites on the Eleven Point that deserve further interpretation. The Mill at Greer Spring is still standing, as is the original water wheel at Turners Mill. Surprise Schoolhouse is still in good condition, and is a good example of a one-room country schoolhouse. Because evidence of these structures can be seen today, we have an excellent chance to bring history to life for future generations.

8. Pigman Ranch
9. Eleven Point Ranch

APPENDIX

Springs of the Eleven Point

1. Interpretation of karst topography.
2. Dye tracing studies, including studies on spring flow and water quality.
3. Springs of the Eleven Point.
4. Natural history of spring environments and the River.

Springs are the life blood of the Eleven Point Scenic River. Without springs the valleys of the Ozarks would be dry. Our springs are the outgrowth of a unique geology (karst) that is found only rarely in the United States. Because of the constant flow of clear, cold water, the River and springs themselves have developed unique natural communities. Springs are important to the future management of our environment, they are the reason for creation of the Eleven Point Scenic River. On the Eleven Point we have some of the largest and most beautiful springs in Missouri.

APPENDIX

Management of a Scenic River

Public funds are being used to implement a management plan for the Eleven Point River. People want to know, and should know, what the plan of management is and how the Forest Service is proceeding on the implementation of the plan.

1. Wild and Scenic Rivers Law
2. Eleven Point Management Plan
3. River Maintenance and Rehabilitation
4. Construction
5. Acquisition and Planning

APPENDIX

Four Seasons

Summer is the heaviest use season on the river, but the other seasons offer a variety of beauties and enjoyments.

Spring - Warm and dry, migration of many birds, wild flowers and, of course, redbud, dogwood, wildplum, and the virbrande of a new year.

Summer - Warm and humid, the vegetation closes in over the river and shields the floater from the outside world. The sounds of the night become an unforgettable experience.

Fall - Warm lazy days and cool nights. The multicolored leaves floating to the water provide new and beautiful patterns in nature. The river water clears.

Winter - Cold, now the visitor gets a new perspective on the topography. Cliffs, iccles, hills, trees, and caves. Snow creates a wonderland few people ever stop to see.

As resource managers, we must help the visitor to see and appreciate the many beauties around us.

Greer Spring and Mill Being Widely Publicized

Greer Spring and its old water powered mills, are receiving a good deal of publicity these days. The Daily American Republic of Poplar Bluff carried a half page of pictures, along with the following write-up in its issue of Saturday August 20. Part of the pictures are also reproduced here:

**Third Largest in State
Greer Spring May Be Part Of
Proposed National Monument.**
By Lucile Masnor

Greer, Mo. — One of the most beautiful spots in the Missouri Ozarks is Greer Spring, just off Highway 19 in Oregon County one mile west of the highway bridge that spans Eleven Point River.

Hundreds of people visit this area each summer. The place is marked beside the highway on the top of the hill by the old Greer grist and flour mill, built in 1899.



Captain Samuel W. Greer

Captain Samuel W. Greer, who came to Oregon County from Smith County, Tennessee in 1859 and operated a mill at Greer Spring until 1861 when he enlisted in the State Militia with General McBride's division, being the second man to enlist. He served six months as First Lieutenant in Co. D of the Second Regiment.

After the battle of Wilson's Creek, he was promoted to the rank of Captain, Second Missouri Cavalry, Company C, of the Confederate Army. He surrendered at Jacksonport, May 5, 1865.

Later Captain Greer was selected to supervise construction of a Court House for Oregon County at Alton, to replace the one which was burned October 21, 1863, during the Civil War. It served the county until about twenty years ago, when it was torn down and replaced with the present building. The contract for construction of that building was awarded to J. F. Kidwell on June 27, 1871, and the contract price was \$5,795.00, according to historical information obtained by Hon. Lewis A. W. Simpson.

At two different times Captain Greer was elected Representative of Oregon County, serving in the 30th General Assembly in 1879-80 and in the 36th in 1891-92.

But the mill is the secondary attraction, and of interest only after having visited the spring that powered it. A plaque, located at the gate, tells you that you are about to enter private property and that you are welcome. It also tells you that the property is maintained by the owner, Louis S. Denny, and that he endeavors to keep the territory in its natural state of beauty.

Greer Spring is the third largest spring in the Ozark area and its surrounding territory has not been made into a park, but remains as wild and rugged as when the Indians wound their way down this same rough mountain trail hundreds of years ago. There is no sign of humans having passed this way except for a continuous opening through the dense forest that allows you passage along the mountain side.

In passing through the gate you have stepped back to what Missouri was like when the first pioneers arrived from the east. The forest trees have not been cut for over a half century. They stand and reach their limbs high to the sun and then fall to decay on the forest floor.

The distant murmuring that is heard as you start down the trail grows ever louder as you descend down the layers of dolomite stone that forms a natural staircase that the ages have rounded and grayed with time.

The roar is the rushing of the 214 million gallons of water that passes each day over the fallen boulders and among the moss-covered logs that obstruct its passage down the gorge where it drops 62 feet before entering Eleven Point river one and one-half miles to the east.

The first spring flows from a small cave in the bluff and is barred from approach by boulders and deep water. About 300 feet down the gorge is the second spring which boils up with much force.

This source of water power is what led Thomas Simpson to the spring about the year of 1850. He

sold the tract to T. C. Simpson in 1856 for \$25, who later sold the forty acres to Samuel W. Greer, a millwright, whom Thomas Simpson had arranged to come from Tennessee in 1859 to build and operate the mill along the spring branch at the foot of the hill.

The swiftness of the flowing water turned the water wheel that turned the homemade stone burs that ground the corn into meal. It also slowly moved the saw back and forth to cut its way into an upright log suspended for above. It took so long for the crude saw-mill to cut a board that the workers would go up the hill to the house and eat dinner and return before the saw had cut one board from the log.

Things moved so slowly in those days that time was no object and their swiftest mode of transportation was by ox team. A team of oxen hitched to a cart would haul the meal, ground at the mill, up the rugged hill road to the house on the hill where the customers sometimes waited. The outstanding thing about this team of oxen was that they had no driver to guide them up the mountain side. They made the trip alone and turned around and returned to the mill, this time bringing grain to be ground.

In 1899 Captain Greer sold an interest in the grist mill to G. W. Mainprize and the big mill was built up on the hill near the Greer house, where it still stands. This mill ground flour as well as cornmeal, and was powered by the water from the spring a quarter of a mile down the ravine. The water turned the mill wheel in the creek branch which in turn moved the steel cables which extended up the mountain side and entered the back of the mill and turned the mill wheel there that gave power to the lesser wheels that ground the grain.

This building is constructed of hand-planed lumber, presumably sawed in the mill on the creek branch. The entire construction is of the finest of knot-free virgin

pine.

Remnants of the old machinery still remains in the mill to be seen and one can almost hear the footsteps of the workers as they climb the broad sturdy stair steps that connect the different floors, and the musty odor of grain still lingers in the large silent rooms, and even here the pigeons still wing back and forth, probably waiting with hope in their hearts that the old mill will run again.

There is no charge for seeing Greer Springs, but here is one place that you earn the treat, because you have to walk, for there is no other entrance to the area except through the small gate beside the mill house. Eight hundred acres of rugged mountains, bluffs and timberland protect the spring from encroachment by man's modern way of life.

APPENDIX

The most complete lists of animals life applicable to the Eleven Point Scenic River Area has been prepared by Hartowicz (8) and Pflieger (11) for the Current River. Because of the close proximity and similarity between the two rivers and their respective watersheds, it is believed that these lists are reasonably accurate for the Eleven Point Scenic River Area.

1015 - Birds of the Riverways Region

The following list of birds is not complete, particularly in the case of several groups of migrants. Habitat appealing to shorebirds and water fowl, particularly during the fall migration, is lacking or rare in the park area. Symbols used to denote status are: common - C; uncommon - U; rare - R. Birds are listed by resident groups and migrants and not necessarily in taxonomic order.

I. Permanent Residents

Great Blue Heron	C	Tufted Titmouse	C
Mallard	U	Mockingbird	C
Wood Duck	C	Robin	C
Turkey Vulture	C	Bluebird	C
Red-Tailed Hawk	C	Cedar Waxwing	U
Red-Shouldered Hawk	C	Loggerhead Shrike	U
Coopers Hawk	U	Starling	C
Sharp-Shinned Hawk	C	Meadowlark	U
Sparrow Hawk	U	Redwing Blackbird	C
Bobwhite Quail	U	Common Grackle	C
Mourning Dove	C	Cowbird	C

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Great Horned Owl	C	Cardinal	C
Barred Owl	C	American Goldfinch	C
Flicker	C	Rufous-Sided Towhee	C
Pileated Woodpecker	C	Chipping Sparrow	U
Red-Headed Woodpecker	C	Field Sparrow	U
Red-Bellied Woodpecker	C	Song Sparrow	C
Hairy Woodpecker	C	Carolina Wren	C
Downy Woodpecker	C	II. <u>Summer Residents</u>	
Bluejay	C	Double Crested Cormarrant	U
Yellow-Bellied Sapsucker	U	Green Heron	C
Belted Kingfisher	C	Little Blue Heron	U
Crow	C	Common Egret	U
Carolina Chickadee	C	Black-Crowned Night Heron	U
Eastern Wild Turkey	C		

APPENDIX

1016 - Mammals of the Riverways Region

Mammals:

Opposum (Didelphis marsupialis): A common inhabitant of the area, it is an omnivorous feeder and the only marsupial (Young carried in pouch).

Short-tailed Shrew (Blarina brevicauda): Generally found in moist woods, their number fluctuates violently. They feed on a variety of animal foods which includes almost anything they can overpower.

Least Shrew (Cryptotis parva): Generally associated more with open fields, they are common and feed largely on invertebrates.

Eastern Mole (Scalopus aquaticus): Common where soil conditions permit. Foods are invertebrates for the most part. Moles are preyed upon by several avian and mammalian predators.

Little Brown Bat (Myotis lucifugus): Second most common species in the area, they form large winter colonies in caves. Bats are almost entirely insectivorous.

Gray Bat (M. grisescens): Common, this bat spends the entire year in caves.

Keens Bat (M. keeni): An uncommon to rare resident, it is found in caves in winter.

Indiana Bat (M. sodalis): A rare summer resident but common winter resident, it is found in large colonies in caves.

Least Bat (M. subulatis): Rare, it uses caves in winter.

Silver-haired Bat (Lasionycteris noctivagans): A tree dwelling bat that commonly winters to the south of Missouri.

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Eastern Pipistrelle (Pipistrellus subflavus): A common species found around bluffs in summer and in caves in winter.

Big Brown Bat (Eptesicus fuscus): Another common bat, they use bluffs year around but can be found in caves in winter.

Red Bat (Lasiurus borealis): Uncommon, it is a tree dwelling, mainly solitary, migratory species.

Hoary Bat (L. cinereus): Similar to Red Bat.

Evening Bat (Nycticeius humeralis): A warm weather uncommon resident. It is solitary, tree dwelling, and migratory.

Western Lump-nosed Bat (Corynorhinus rafinesquii): Has been found only in winter in caves, but thought to occur in the summer as well.

Eastern Lump-nosed Bat (C. macrotis): A rare but potential summer resident.

Eastern Cottontail (Sylvilagus floridanus): Common even in wooded areas but associated with "edge". Preyed upon by most of the large predators.

Woodchuck (Marmota monax): Common in fields, along woodland edge, around bluffs and old sawmill sites. Sometimes use caves or crevices, but usually dig dens.

Eastern Chipmunk (Tamias striatus): Common in open woods and around openings. Feeds largely on nuts, seeds, and berries. A common prey animal of predatory snakes, birds, and mammals.

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Gray Squirrel (Sciurus carolinensis): The common tree squirrel of the region, its numbers fluctuate relative to the abundance of acorns. Prefers dense timber with understory. Preyed upon by arboreal snakes, hawks and owls, raccoons, bobcats and foxes.

Eastern Fox Squirrel (Sciurus niger): Common but less so than the gray, fox squirrels are found in more open upland timber and prefer areas with an open understory. Their abundance is also tied to the acorn crop.

Southern Flying Squirrel (Glaucomys volans): Common but rarely seen because of their nocturnal habits; they prefer dense timber with an abundance of dead snags. Foods are nuts, seeds, and berries.

Beaver (Castor canadensis): Common but not abundant, Ozark streams do not provide optimum habitat because of rockiness, limited food, and floods.

Western Harvest Mouse (Reithrodontomys megalotis): Found in old fields, it is one of the more common rodents that provides the bulk of most predators' diet.

White-footed Mouse (Peromyscus maniculatus): Restricted to open areas where it is common.

Woodland White-footed Mouse (P. leucopus): One of the most abundant animals of the region.

Golden Mouse (P. nuttalli): Associated with moist woods and the edge of broomsedge fields, it is somewhat arboreal.

APPENDIX

Cotton Rat (Sigmodon hispidus): Associated primarily with old fields, their distribution and abundance is spotty.

Eastern Wood Rat (Neotoma floridana): Common among bluffs and large hillside rock outcrops, it feeds on a variety of plant materials. Its bulky nests are easily seen.

Southern Lemming Mouse (Synaptomys cooperi): Uncommon, it is found in low areas of grass sod or heavy woodland litter.

Prairie Meadow Mouse (Microtus ochrogaster): Found in open fields, their number fluctuates cyclically. It is uncommon in wooded habitats.

Pine Mouse (M. pinetorum): Associated with oak-hickory forests, they build branching tunnels beneath leaf litter. Abundance varies.

Muskrat (Ondatra zibethica): Common, but not abundant; Ozark streams do not provide ideal habitat.

Meadow Jumping Mouse (Zapus hudsonius): It is tentatively included in the regions fauna, but no records from the area occur.

Coyote (Canis latrans): A common predator that has increased in the Ozarks in recent years. Cottontails and mice make up the bulk of the diet.

Red Fox (Vulpes fulva): Generally associated with more open country, they are still common but not as abundant as gray foxes.

Gray Fox (Urocyon cinereoargenteus): Common, it is normally associated with woodlands.

Raccoon (Procyon lotor): Common to abundant, these highly adaptable animals live in a variety of habitats and are omnivorous feeders.

APPENDIX

Black Bear (Euarctos americanus): Rare in the region, but occasionally reported; these sightings may be the result of recent restocking efforts by the state of Arkansas.

Long-Tailed Weasel (Mustela frenata): Rare, it is found in a variety of habitats.

Mink (M. vison): Locally scarce to common, associated with stream habitat. They are occasionally seen during the daytime on more remote streams.

Badger (Taxidea taxus): Rare, a badger is reported every few years in the area.

Spotted Skunk (Spilogale putorius): Uncommon, it is generally associated with more open country. Known locally as a "civet", "civet cat", or "civic cat".

Striped Skunk (Mephitis mephitis): Common, it is found in a variety of habitats and is an omnivorous feeder. Insects make up a large part of the warm weather diet and small conical "diggings" are often seen where skunks are searching for grubs.

Bobcat (Lynx rufus): Presently common, they have increased in recent years. Rabbits and mice make up the bulk of the diet.

White-tailed Deer (Odocoileus virginianus): Common, but well below the potential of the range. Illegal hunting and free ranging dogs are partly responsible, but range conditions locally may vary.

APPENDIX

1017 - Amphibians of the Riverways Region

Salamanders:

Hellbender (Cryptobranchus alleganiensis): A completely aquatic salamander associated with running water. Primarily nocturnal; it feeds on crustaceans, fishes and insects.

Spotted Salamander (Ambystoma maculatum): Found under rocks and logs in moist woods, by day it feeds on arthropods, mollusks and annelids at night.

Marbled Salamander (A. opacum): Similar to Maculatum, but can be found in drier woodlands.

Small-Mouthed Salamander (A. texanum): A common salamander found in a wide variety of habitats.

Eastern Tiger Salamander (A.t. tigrinum): Widespread and nocturnal, it is reported to feed on anything it can overpower.

Central Newt (Nolophthalmus viridescens): As an adult, it has both a terrestrial and an aquatic stage, it is found in typical salamander habitat and feeds on invertebrates.

Long-Tailed Salamander (Eurycea l. longicauda): Common along swift, rocky forest streams; foods are mainly arthropods.

Dark-Sided Salamander (E. l. melanopleura): Differs from the long-tailed only in that it may be found in caves more frequently.

Cave Salamander (E. lucifuga): Not restricted to caves, but may be found in damp, rocky areas; nocturnal.

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Red-Backed Salamander (Plethodon cinereus): Frequents rocky, forested hillsides early in the season and retires to more moist habitat as summer progresses.

Slimy Salamander (P. glutinosus): Similar to Red-Backed.

Mud Puppy (Necturus m. maculosus): A large aquatic salamander found in both still and running water, they feed on fishes, arthropods, annelids, and mollusks.

Western Lesser Siren (Siren intermedia): A large eel-like salamander of backwater sloughs and ditches.

Toads and Frogs:

American Toad (Bufo a. americanus): A common inhabitant of the region found in a variety of habitats and feeding on insects and worms. Call, high musical trill.

Fowlers Toad (B. woodhousei fowleri): Similar to American Toad, but call is different.

Blanchards Cricket Frog (Acris crepitans): Both aquatic and terrestrial but not arboreal, they feed on small arthropods. Their call is a metallic "gick, gick, gick".

Upland Chorus Frog (Pseudacris treseriata feriarum): Locally common in the spring in temporary pools and ditches. Call similar to rubbing a fingernail across the teeth of a comb.

Northern Spring Peeper (Hyla c. crucifer): An arboreal frog of mesic forests. Call, a soft, bird-like whistle.

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Eastern Gray Tree Frog (H. v. versicolor): The commonly heard treefrog of Missouri forests. Call loud, guttural trill.

Bullfrog (Rana catesbeiana): Found in a variety of aquatic habitats, crustaceans and insects make up the bulk of the diet.

Green Frog (R. clamitans): Similar to bullfrog, but frequents clear streams.

Pickereel Frog (R. calustris): Another frog associated with clear streams and springs.

Leopard Frog (R. cipiens): Found in a variety of habitats, often in wet meadows.

APPENDIX

1018 - Reptiles of the Riverways Region

Turtles:

Common Snapping Turtle (Chelydra s. serpentina): Almost entirely aquatic, it is an omnivorous feeder, plant material making up one-third of the diet.

Alligator Snapping Turtle (Macrocllemys temmincki): Normally associated with slow sluggish streams, it may occasionally be found in the lower portion of the river. Fish make up a large part of the diet.

Stinkpot or Musk Turtle (Sternotherus odoratus): Normally found in still water, but often found in streams, it spends most of its time in the water feeding on fish, arthropods and mollusks.

Three-toed Box Turtle (Terrapene carolina): The most common box turtle of the Ozarks, it is found in a variety of habitats. Omnivorous feeder.

Ornate Box Turtle (T. o. ornata): More often found in open fields.

Map Turtle (Graptemys geographica): Found in larger rivers, one of the turtles commonly seen basking on partially submerged logs. Mollusks are a major food.

Mississippi Map Turtle (G. koni): Similar to map turtle.

Ouachita Map Turtle (G. pseudographica): Also called the False Map Turtle. Similar to other map turtles, but almost solely plant feeders.

Western Painted Turtle (Chrysemys picta): One of the more abundant turtles seen sunning on logs. Omnivorous feeders.

Slider (Pseudemys concinna): A large aquatic turtle generally associated with quiet water. Another of the turtles commonly seen sunning on logs.

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Missouri Slider (P. floridana): Uncommon, similar habits to above.

Red-Eared Turtle (P. scripta): Common, habits similar to Slider.

Smooth Softshell (Trionys m. muticus): The common soft-shelled turtle of Ozark streams, almost completely carnivorous.

Western Spring Softshell (T. spinifer hartwegi): Less common in the Ozarks. It prefers sandy or mud bottom streams. Both softshells are agile on both land and in the water and are vicious when captured.

Lizards:

Eastern Collared Lizard (Crotaphytus c. collaris): A large lizard up to one foot in length, it is locally common along bluffs and glades.

Northern Fence Lizard or Swift (Sceloporus undulatus): Probably the most abundant lizard in the region, it is commonly found on open timbered hillsides. Insectivorous.

Western Slender Glass Lizard (Ophisaurus a. attenuatus): An uncommon limbless lizard.

Six-Lined Racerunner (Cnemidophorus sexlineatus): Normally associated with glades and dry hillsides.

Ground Skink (Scincella laterale): A common lizard of wooded areas.

Five-Lined Skink (Eumeces faciatus): Another common lizard, it is found in moist woods.

Broad-Headed Skink (E. laticeps): Similar to the Five-Lined, but more arboreal.

Southern Coal Skink (E. anthracinus): Found in moist woods close to water.

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Snakes:

Diamond-Backed Water Snake (Natrix r. rhombifera): A large heavy-bodied water snake; most abundant in quiet water, it is primarily a fish and frog eater.

Midland Water Snake (N. sipedon pleuralis): Associated with clear flowing Ozark streams, it may be commonly seen swimming.

Northern Red-Bellied Snake (Storeria o. occipitomaculata): A small uncommon snake found in moist woods. Feeds on mollusks and annelids.

Midland Brown Snake (S. dekayi): Similar to above in habits, but more common; both are secretive.

Western Ribbon Snake (Thamnophis sauritus proximus): A medium-size slender snake often found near water, but also in woodland and near blue in the fall. Relatively common, it feeds on frogs, fish, and other small animals.

Eastern Garter Snake (T. s. sirtalis): A common snake found in a variety of habitats, and feeds on a variety of small vertebrates.

Western Earth Snake (Virginia valeriae elegans): A small snake found under rocks on timbered hillsides and in the forest litter, it feeds on Arthropods and Annelids.

Eastern Hognose Snake (Heterodon platyrhinos): A medium-sized, stout-bodied snake generally found on dry rocky hillsides. Feeds largely on toads and frogs.

Prairie Ringneck Snake (Diadophis punctatus arnyi): A small snake, it is common, and generally found under rocks on wooded hillsides. Feeds on salamanders, arthropods and annelids.

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Mississippi Ringneck Snake (D. p. stictogenys): Similar to above.

Western Worm Snake (Carpophis amoenus vermis): A small snake found under rocks and logs in moist woods.

Eastern Yellow-Bellied Racer (Coluber constrictor flaviventris): A large, slender snake commonly found in open to brushy fields. Feeds upon a variety of invertebrates and vertebrates.

Eastern Coachwhip (Masticophis f. flagellum): A large, slender snake found in open, rough, rocky ground. It is common; food habits similar to racer.

Great Plains Rat Snake (Eiapha guttata emoryi): A common, large, slender snake of rocky, timbered hillsides, it feeds largely on small birds and mammals.

Black Rat Snake (E. o. obsoleta): A large common snake, it is found in more moist woods and is an excellent climber. Food habits, birds and mammals.

Rough Green Snake (Ophedrys aestivus): A common slender snake, it is arboreal and usually near water. It feeds on arthropods.

Prairie Kingsnake (Lampropeltis c. calligaster): A large, slender snake commonly found in old fields where it feeds mainly on small rodents.

Speckled Kingsnake (L. getulus holbrooki): A large, slender snake found in oak-hickory uplands, it is relatively common and feeds on small vertebrates.

Red Milk Snake (L. triangulum sypila): An uncommon snake associated with moist, but sparsely timbered, hillsides and limestone ledges.

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Northern Flat-Headed Snake (Tantilla gracillia hallowellii): A small snake found under rocks on dry, sandy soil.

Western Cottonmouth (Agkistrodon piscivorus leucostomus): Found in Ozark streams, it is largely nocturnal and feeds on a variety of vertebrates.

Northern Copperhead (A. contortrix mokasen): Common on rocky, wooded hillsides, it becomes nocturnal when temperatures exceed 90°. Most likely to strike when temperature nears or exceeds 80°.

Timber Rattlesnake (Crotalus h. horridus): Uncommon in the Ozarks, but may be locally common, particularly near denning sites.

Canebrake Rattlesnake (Crotalus horridus atricaudatus): Uncommon, but may occur along bluffs near water.

Western Pigmy Rattlesnake (Sistrurus miliarius streckeri): Uncommon found in areas of mixed pine and hardwoods with brushy understory.

APPENDIX

1019 - A Checklist of the Fishes of Current River in Missouri. Compiled by William L. Pflieger, June, 1969. (11)

Petromyzontidae (Lampreys)

Ichthyomyzon castaneus (Girard) chestnut lamprey

Lampetra lamottei (Lesueur) American brook lamprey

Lampetra aepyptera (Abbott) least brook lamprey

Acipenseridae (Sturgeons)

Scaphorhynchus platyrhynchus (Rafinesque) shovelnose sturgeon

Polyodontidae (Paddlefishes)

Polyodon spathula (Walbaum) paddlefish

Lepisosteidae (Gars)

Lepisosteus platostomus (Rafinesque) shortnose gar

Lepisosteus osseus (Linnaeus) longnose gar

Clupeidae (Herrings)

Alosa chrysochloris (Rafinesque) skipjack herring

Dorosoma cepedianum (Lesueur) gizzard shad

Salmonidae (Trouts)

Salmo gairdneri (Linnaeus) rainbow trout

Salmo trutta (Linnaeus) brown trout

Hiodontidae (Mooneyes)

Hiodon tergisus (Lesueur) Mooneye

Esocidae (Pikes)

Esox americanus vermiculatus (Lesueur) grass pickerel

Esox niger(Lesueur) chain pickerel

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Cyprinidae (Minnows)

<u>Cyprinus caprio</u> (Linnaeus)	carp
<u>Notemigonus crysoleucas</u> (Mitchill)	golden shiner
<u>Semotilus atromaculatus</u> (Mitchill)	. . . . .	creek chub
<u>Chrosomus erythrogaster</u> (Rafinesque)	. . . . .	southern redbelly dace
<u>Opsopoeodus emiliae</u> (Hay)	. . . . .	pugnose minnow
<u>Hybopsis biguttata</u> (Kirtland)	. . . . .	hornyhead chub
<u>Hybopsis amblops</u> (Rafinesque)	. . . . .	bigeye chub
<u>Hybopsis dissimilis</u> (Kirtland)	. . . . .	streamline chub
<u>Hybopsis x-punctata</u> (Hubbs and Crowe)	. . . . .	gravel chub
<u>Notropis fumeus</u> (Evermann)	. . . . .	ribbon shiner
<u>Notropis umbratilis</u> (Girard)	. . . . .	redfin shiner
<u>Notropis atherinoides</u> (Rafinesque)	. . . . .	emerald shiner
<u>Notropis rubellus</u> (Agassiz)	. . . . .	rosyface shiner
<u>Notropis zonatus</u> (Agassiz)	. . . . .	bleeding shiner
<u>Notropis chrysocephalus chrysocephalus</u> (Rafinesque)	. . . . .	striped shiner
<u>Notropis greeni</u> (Hubbs and Ortenburger)	. . . . .	wedgespot shiner
<u>Notropis telescopus</u> (Cope)	. . . . .	telescope shiner
<u>Notropis texanus</u> (Girard)	. . . . .	weed shiner
<u>Notropis venustus venustus</u> (Girard)	. . . . .	western blacktail shiner
<u>Notropis galacturus</u> (Cope)	. . . . .	whitetail shiner
<u>Notropis whipplei</u> (Girard)	. . . . .	steelcolor shiner
<u>Notropis boops</u> (Gilbert)	bigeye shiner
<u>Notropis ozarcanus</u> (Meek)	Ozark shiner

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- Dionda nubilata (Forbes) Ozark minnow
Hybognathus nuchalis (Agassiz). Central silvery minnow
Pimephales notatus (Rafinesque) bluntnose minnow
Campostoma anomalum pullum (Agassiz) central stoneroller
Campostoma oligolepis (Hubbs and Greene). largescale stoneroller

Catostomidae (Suckers)

- Cycleptus elongatus (Lesueur) blue sucker
Ictiobus cyprinellus (Valenciennes) bigmouth buffalo
Ictiobus niger (Rafinesque) black buffalo
Ictiobus bubalus (Rafinesque) smallmouth buffalo
Carpiodes carpio carpio (Rafinesque) river carpsucker
Carpiodes velifer (Rafinesque) highfin carpsucker
Catostomus commersoni (Lacepede) white sucker
Hypentelium nigricans (Lesueur) northern hog sucker
Moxostoma duquesnei (Lesueur) black redhorse
Moxostoma erythrurum (Rafinesque) golden redhorse
Moxostoma anisurum (Rafinesque) silver redhorse
Moxostoma macrolepidotum northern redhorse
Moxostoma carinatum (Cope) river redhorse
Minytrema melanops (Rafinesque) spotted sucker
Erimyzon sucetta (Lacepede) lake chubsucker
Erimyzon oblongus claviformis (Girard) western creek chubsucker

Ictaluridae (Catfishes)

- Ictalurus punctatus (Rafinesque) channel catfish
Ictalurus melas (Rafinesque) black bullhead

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<u>Ictalurus natalis</u> (Lesueur)	yellow bullh
<u>Pylodictis olivaris</u> (Rafinesque)	flathead catf
<u>Noturus albater</u> (Taylor)	Ozark mad
<u>Noturus flavater</u> (Taylor)	checkered madto
<u>Noturus nocturnus</u> (Jordan and Gilbert)	freckled mad
<u>Noturus exilis</u> (Nelson)	slender m
Anguillidae (Eels)	
<u>Anguilla rostrata</u> (Lesueur)	American
Cyprinodontidae (Topminnows)	
<u>Fundulus catenatus</u> (Storer)	northern studf
<u>Fundulus olivaceus</u> (Storer)	blackspotted topmin
Poeciliidae (Livebearers)	
<u>Gambusia affinis</u> (Baird and Girard)	mosquitof
Aphredoderidae (Pirate Perches)	
<u>Aphredoderus sayanus</u> (Gilliams)	pirate pe
Amblyopsidae (Cavefishes)	
<u>Typhlichthys subterraneus</u> (Girard)	southern cave
Centrarchidae (Sunfishes)	
<u>Micropterus punctulatus</u> (Rafinesque)	spotted b
<u>Micropterus dolomieu</u> (Lacepede)	smallmouth
<u>Micropterus salmoides</u> (Lacepede)	largemouth b
<u>Chaenobryttus gulosus</u> (Cuvier)	warmo
<u>Lepomis cyaneilus</u> (Rafinesque)	green sun
<u>Lepomis punctatus miniatus</u> (Jordan)	spotted sunf

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<u>Lepomis microlophus</u> (Gunther)	redeer sunfish
<u>Lepomis megalotis</u> (Rafinesque)	longear sunfish
<u>Lepomis macrochirus</u> (Rafinesque)	bluegill
<u>Ambloplites rupestris</u> (Rafinesque)	rock bass
<u>Pomoxis nigromaculatus</u> (Lesueur)	black crappie
<u>Pomoxis annularis</u> (Rafinesque)	white crappie
<u>Centrarchus macropterus</u> (Lacepede)	flier
Percidae (Perches)	
<u>Stizostedion vitreum vitreum</u> (Mitchill)	walleye
<u>Stizostedion canadense</u> (Smith)	sauger
<u>Percina maculata</u> (Girard)	blackside darter
<u>Percina caprodes carbonaria</u> (Baird and Girard)	southern logperch
<u>Percina evides</u> (Jordan and Gilbert)	gilt darter
<u>Percina uranidea</u> (Jordan and Gilbert)	stargazing darter
<u>Etheostoma nigrum</u> (Rafinesque)	johnny darter
<u>Etheostoma stigmaeum</u> (Jordan)	speckled darter
<u>Etheostoma euzonum erizonum</u> (Hubbs and Black)	Current River saddled darter
<u>Etheostoma zonale</u> (Cope)	banded darter
<u>Etheostoma blennioides</u> (Rafinesque)	greenside darter
<u>Etheostoma punctulatum</u> (Agassiz)	stippled darter
<u>Etheostoma caeruleum</u> (Storer)	rainbow darter
<u>Etheostoma spectabile uniporum</u> (Distler)	Current River orangethroat darter
<u>Etheostoma flabellare flabellare</u> (Rafinesque)	barred fantail darter
<u>Etheostoma proeliare</u> (Hay)	cypress darter

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Sciaenidae (Drums)

Aplodinotus grunniens (Rafinesque) freshwater d

Cottidae (Sculpins)

Cottus bairdi (Girard): mottled scul

Cottus carolinae (Gill) banded sculp

Atherinidae (Silversides)

Labidesthes sicculus (Cope) brook silversi

APPENDIX

1020 - Limitations of Soils for Some Recreational Developments

The number rating denotes the degree of the limitation, the letter(s) denotes the hazard. Symbol definitions are in the footnotes of this table.*

Soil Series and Map Symbol	Picnic Areas	Playgrounds	Camp Areas	Paths and Trails	Cottages and Utility Buildings
Alluvial Land, Loamy Aa	3-f	3-f,v,z	3-f,v,z	3-f,z	3-f,y
Alluvial Land Mixed Am	3-d,f	3-f,v	3-f,v,z	3-f,z	3-f,y
Ashton AtB	2-f	2-f	3-f	1	3-f,y
Captina CaB	2-W,Z	2-W	2-W,Z	2-W,Z	3-d,w
CbB	2-W,Z	2-W	2-W,Z	2-W,Z	3-d,w
CbD	2-W,Z	3-S	2-W,Z	2-W,Z	3-d,w
Clarksville CcB	3-C	3-C	3-C	2-C	2-C
CcD	3-C	3-C,S	3-C	2-C	2-C
CcE	3-C,S	3-C,S	3-C,S	2-C,S	3-C,S
CcF	3-S	3-S	3-S	3-S	3-S

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Soil Series and Map Symbol	Picnic Areas	Playgrounds	Camp Areas	Paths and Trails	Cottages and Utility Buildings
Coulstone					
ChB	3-C	3-C	3-C	2-C	2-C
ChD	3-C	3-C,S	3-C	2-C	2-C
ChE	3-C,S	3-C,S	3-C,S	2-C,S	3-C,S ^A
ChF	3-S,S ^A	3-S	3-S	3-S	3-S ^A
Coulstone- Clarksville Rockland					
CvD					
CvE					
CvF					
(Refer to individual soil series).					
Doniphan					
DoB	2-C	2-C	2-C	1	1
DoD	3-C,S	2-C	2-C	1	2-S
DoE	3-S	3-S	3-S	2-S	3-S
Macedonia					
MaB	1	1	1	1	1
MaD	2-S	3-S	2-S	1	1
Midco					
MdB	2-f,v	3-c,v	3-d,f,v	1	3-f,y

APPENDIX

Soil Series and Map Symbol	Picnic Areas	Playgrounds	Camp Areas	Paths and Trails	Cottages and Utility Buildings
Mindale					
MvB	1	1	1	1	1
MvD	2-s	2-s	2-s	1	2-s
Newark					
NeA	3-f,w	3-f,w	3-f,w	3-w	3-f,w
Opequon					
OpD	3-d,r,s	3-d,r,s	3-d,r,s	2-d,r,s	3-d,r,s
OpE	3-d,r,s	3-d,r,s	3-d,r,s	3-d,r,s	3-d,r,s
OpF	3-d,r,s	3-d,r,s	3-d,r,s	3-d,r,s	3-d,r,s
Poynor					
PyB	3-c	3-c	3-c	2-c	2-c
PyD	3-c	3-c,s	3-c	2-c	2-c
PyE	3-c,s	3-c,s	3-c,s	2-c,s	3-c,s
PyF	3-s	3-s	3-s	3-s	3-s
Rockland					
RoD	3-d,r	3-d,r	3-d,r	2-d,r	3-d,r
RoE	3-d,r,s	3-d,r,s	3-d,r,s	3-d,r,s	3-d,r,s
RoF	3-d,r,s	3-d,r,s	3-d,r,s	3-d,r,s	3-d,r,s
Secesh					
SeB	1	1	1	1	1

APPENDIX

Soil Series and Map Symbol	Picnic Areas	Playgrounds	Camp Areas	Paths and Trails	Cottages and Utility Buildings
Viraton VCB	2-W	2-W	2-W	1	2-W
Wilderness WdB WdD	2-C 3-C	2-C 3-C,s	2-C,d 3-C,s	1 1	2-C,d 2-C,d

*A 1 rating denotes none or a slight limitation; 2 denotes a moderate limitation; 3 denotes a severe limitation. Types of limitations are denoted as follows: c - coarse fragments; d - depth; f - flooding; r - rockiness; s - slope; w - wetness; and y - pollution hazard to nearby streams.

APPENDIX

1021 - Soil Vegetation - Units (Alluvium Mixed and Alluvium Loamy)

Plant Associates - Elm, Ash

Trees

American Elm (<i>Ulmus americana</i>)	Paw Paw (<i>Asimina triloba</i>)
Green Ash (<i>Fraxinus pennsylvanica</i>)	Hickory (<i>Carya cordiformis</i>)
Box Elder (<i>Acer negundo</i>)	Hackberry (<i>Celtis occidentalis</i>)
Sycamore (<i>Plantanus occidentalis</i>)	Chiquapin Oak (<i>Quercus muhlenbergii</i>)
Cottonwood (<i>Populus deltoides</i>)	Linden (<i>Tilia americana</i>)
Sugar Maple (<i>Acer saccharum</i>)	Elm (<i>ulmus rubra</i>)

Shrubs, Vines, and Small Trees

Wards Willow (<i>Salix longipes</i> var. <i>Wardii</i>)	Blue Ash (<i>Carpinus caroliniana</i>)
Buttonbush (<i>Cephananthrus occidentalis</i>)	Spice Bush (<i>Lindera benzoin</i>)
Grape (<i>Vitis cordifolia</i>)	Black Haw (<i>Viburnum prunifolium</i>)
Grape (<i>Vitis aestivalis</i>)	Greenbriar (<i>Smilax tamedes</i> var. <i>hispida</i>)
Woodvine (<i>Parthenocissus quinquefolia</i>)	Corral Berry (<i>Symphoricarpus orbicularis</i>)
	Wildrose (<i>Rose setigera</i> var. <i>tamentosa</i>)

Forbs, Grasses, and Sedges

Honewort (<i>Cryptotaonia canadensis</i>)	Tickseed Sunflower (<i>Bidens polylepis</i>)
Virginia Knot Weed (<i>Polygonum virginianum</i>)	Panic Grass (<i>Panicum capillare</i>)
Beefsteak (<i>Perilla furtesens</i>)	Pinkweed (<i>Polygonum pensylvanicum</i>)
Fowl meadow grass (<i>Glyciria striata</i>)	Cocklebur (<i>Xathium Chinense</i>)
Giant cane (<i>Arundinaria gigantea</i>)	Caroinal Flower (<i>Lobelia cardinalis</i>)
Satin Grass (<i>Muhlenbergia mexicana</i>)	Wood Mint (<i>Blephilia hirsuta</i>)
Spike grass (<i>Uniola latifolia</i>)	Sweet-scented Bedstraw (<i>Calium triflorum</i>)
Sorrel (<i>Oxalis stricta</i>)	Avens (<i>Geum canadense</i> var. <i>camporum</i>)
Ragweed (<i>Ambrosia artemisifolia</i>)	Mist Flower (<i>Eupatorium coelestinum</i>)
Swith grass (<i>Panicum virgatum</i>)	Pokeweed (<i>Phytolacca americana</i>)
Wood Nettle (<i>Laportea canadensis</i>)	Bloodroot (<i>Sanquinaria canadensis</i>)
5-Leaved Ivy (<i>Parthenocissus quinque folia</i>)	Frost Weed (<i>Verbesina virginia</i>)
	Mood Seed (<i>Menispermum canadensis</i>)

APPENDIX

Soil Vegetation - Units (Ashton Secesh)

Plant Associes - Sugar Maple, Bitter Nut Hickory

Trees

- | | |
|--|---|
| Sugar Maple (<i>Acer saccharum</i>) | Shingle Oak (<i>Quercus imbricaria</i>) |
| Bitternut Hickory (<i>Carya cordiformis</i>) | Linden (<i>Tilia glabra</i>) |
| Paw Paw (<i>Asimina triloba</i>) | Northern Red Oak (<i>Quercus borealis</i> var. <i>maxima</i>) |
| Walnut (<i>Juglans nigra</i>) | Honey locust (<i>Gleditsia triacanthos</i>) |
| Chinquapin Oak (<i>Quercus muhlenbergii</i>) | Hackberry (<i>Celtis occidentalis</i>) |
| White Oak (<i>Quercus alba</i>) | Bur Oak (<i>Quercus macrocarpa</i>) |
| Sour Gum (<i>Nyssa sylvatica</i>) | Winged Elm (<i>Ulmus alata</i>) |
| Butternut (<i>Juglans cinerea</i>) | Black Cherry (<i>Prunus serotina</i>) |
| Red Mulberry (<i>Morus rubra</i>) | Sycamore (<i>Plantanus occidentalis</i>) |

Shrubs, Vines, and Small Trees

- | | |
|--|--|
| American Hornbeam (<i>Carpinus carolinana</i>) | Red Flowered Buckeye (<i>Aesculus discolor</i> var. <i>mollis</i>) |
| Coralberry (<i>Symphoricarpos orbiculatus</i>) | Bladder Nut (<i>Staphylea trifolia</i>) |
| Flowering Dogwood (<i>Cornus florida</i>) | Hophornbeam (<i>Ostrya virginiana</i>) |
| Spicebush (<i>Lineria benzoin</i>) | Elderberry (<i>Sambucus canadensis</i>) |
| Greenbriar (<i>Smilax hispida</i>) | Black Haw (<i>Viburnum rufidulum</i>) |
| Leather wood (<i>Dicra palustris</i>) | Chittim-wood (<i>Bumelia lanuquinosa</i>) |
| Hazel Nut (<i>Corylus americana</i>) | Moonseed (<i>Menispermum canadensis</i>) |
| Redbud (<i>Cercis canadensis</i>) | Ohio Buckeye (<i>Aesculus glabra</i>) |
| Hawthorne (<i>Crataegus</i>) | Woodvine (<i>Parthenocissus quinquefolia</i>) |
| Poison Ivy (<i>Toxicodendron radicans</i>) | |

Forbs, Grasses, and Sedges

- | | |
|--|---|
| Yellow Ironweed (<i>Actinomeris alternifolia</i>) | Passion Flower (<i>Passiflora lutea</i>) |
| Hog Peanut (<i>Amphicarpa bracteata</i>) | Beefsteak Plant (<i>Perilla frutescens</i>) |
| Wild Ginger (<i>Asarum Canadense</i> Var. <i>Acuminatum</i>) | Blue Phlox (<i>Phlox divaricata</i> var. <i>Laphamii</i>) |
| Woodmint (<i>Blephilia hirsuta</i>) | Pokeweed (<i>Phytolacca americana</i>) |
| Blatter (<i>Cystopteris fragilis</i> Var. <i>protrusa</i>) | Grey Clearweed (<i>Pilea pumila</i> var. <i>Deamii</i>) |
| Yam (<i>Dioscorea villosa</i>) | Small Flowered Crowfoot (<i>Ranunculus abortivus</i>) |
| Boneset (<i>Eupatorium purpureum</i>) | Bloodroot (<i>Sanguinaria canadensis</i>) |
| Throughwort (<i>Eupatorium urticacifolium</i>) | Bur Cucumber (<i>Silvos angulatus</i>) |
| | White Brown-Beard (<i>Verbesina virginica</i>) |

APPENDIX

Forbs, Grasses, and Sedges (Cont.)

Sweet-Scented Bedstraw (<i>Galium triflorum</i>)	Violet (<i>Viola eriocarpa</i>)
Spring Aven (<i>Geum canadense</i> Var. <i>camperum</i>)	Pale Violet (<i>Viola striata</i>)
Wood Nettle (<i>Laportea canadensis</i>)	
Stickseed (<i>Lappula virginiana</i>)	

APPENDIX

Soil Vegetation - Units (Rockland)

Plant Associes - Side-Oats Grama, Blackeyed Susan

Trees

Shrubs, Vines, and Small Trees

Forbs, Grasses, and Sedges

Side oats grama (<i>Bouteloua</i> <i>curtipendula</i>)	Bluets (<i>Houstonia angustifolia</i>)
Blackeyed Susan (<i>Rubeckia</i> <i>missouriensis</i>)	False Aloe (<i>Agave virginica</i>)
Primose (<i>Oenothera missourensis</i>)	Heliotrope (<i>Heliotropium tenellum</i>)
Blue Indigio (<i>Baptisia vespertina</i>)	Tragia (<i>Tragia urticifolia</i>)
Sandwort (<i>Areraria patula</i>)	Calamit (<i>Satureja glabra</i>)
Wild Hyacinth (<i>Camassia hyacinthina</i>)	Aster (<i>Aster oblongifolius</i>)
Purple Cone Flower (<i>Echinacea</i> <i>pallia</i>)	Aster (<i>Aster sericeus</i>)
Wild Onion (<i>Allium stellatum</i>)	Little Bluestem (<i>Andropogon scoparius</i>)
Switch Grass (<i>Panicum virgatum</i>)	Poverty Grass (<i>Sporobolus vaginiflorus</i>)
Melic Grass (<i>Melica nitens</i>)	Poverty Grass (<i>Sporobolus neglectus</i>)
Big Blue Stem (<i>Andropogon gernadia</i>)	Witch Grass (<i>Panicum capillave</i>)

APPENDIX

Soil Vegetation - Units (Rockland)

Plant Associes - Fragrant Sumac, Redcedar, Chittim Wood, Black Haw

Trees

Red Cedar (Juniperus virginiana)
Persimmon (Diospyros virginiana)
Hackberry (Celtis laevigata var. texana)
Hackberry (Celtis pumila var. georgiana)
Red Cedar (Juniperus virginia)
Persimmon (Diospyros virginiana)

Shrubs, Vines, and Small Trees

Fragrant Sumac (Rhus trilobata var. scrotina)	Winged Elm (Ulmus alata)
Chittim Wood (Bumelia languinosa)	Swamp Dogwood (Cornus obliqua)
Blackhaw (Viburnum prunifolium)	Rough-Leaf Dogwood (Cornus asperifolia)
Greenbrier (Smilac bona-nox)	Chittim Wood (Bumelia languinosa)
Supplejack (Berchemia scandens)	Black Haw (Vibrurnum rufidulum)
Hawthorne (Crataegus)	Greenbrier (Smilax pona-nox)
Indian Cherry (Rhammus caroliniana)	Supplejack (Berchemia scandens)
	Hawthorne (Crataegus)

Forbs, Grasses, and Sedges

Melic Grass (Melica nitens)
Switch Grass (Panicum virgatum)
Big Bluestem (Andropogon gerardi)
Little Bluestem (Andropogon scoparius)
Oblong-leaf Aster (Aster oblongifolius)

APPENDIX

Soil Vegetation - Units (Rockland)

Plant Associates - Winged Elm, Indiana Cherry

Trees

Hackberry (*Celtis laevigata* var. *texana*)
White Ash (*Fraxinus americana*)
Red Cedar (*Juniperus virginiana*)

Shrubs, Vines, and Small Trees

Possum How (*Ilex decidua*)

Forbs, Grasses, and Sedges

APPENDIX

Soil Vegetation - Units (Opequon)

Plant Associes - Chimquapin, Oak, White Ash

Trees

Chinquapin Oak (*Quercus muhlenbergii*)
White Ash (*Fraxinus americana*)
Slippery elm (*Ulmus fulva*)
Red Oak (*Quercus shumardii* Var. *schneckii*)
Blue Ash (*Fraxinus quadranqulata*)
Winged elm (*Ulmus alata*)
Sugar maple (*Acer saccharum*)
White oak (*Quercis alba*)

Shrubs, Vines, and Small Trees

Hop hornbeam (<i>Ostrya virginiana</i>)	Chittimwood (<i>Bumelia lanuginosa</i>)
Red bud (<i>Cercis canadensis</i>)	Indiana Cherry (<i>Rhamus caroliniana</i>)
Green brier (<i>Smilax bona-nox</i>)	Fragrant Sumac (<i>Rhus trilobalia</i>)
Blackhaw (<i>Vibrurunum rufidulem</i>)	

Forbs, Grasses, and Sedges

Care (<i>Carex eburnea</i>)	Onio (<i>Allium mutabile</i>)
Muhly (<i>Muhlembergia</i>)	Milkweed (<i>Aselepias stenophylla</i>)
Beau V (<i>Brachyelytrum erectum</i>)	Prairie Spurge (<i>Euphorbia Missuriea</i>)
Spike Grass (<i>Uniola latifolia</i>)	Heleotrope (<i>Heleotropium tenellum</i>)
Wild rye (<i>Elymus virginicus</i>)	Sunflower (<i>Helianthus Maximillani</i>)
Chess (<i>Brom purgans</i>)	Bluets (<i>Houstonia nigrecans</i>)
Fisene (<i>Festuca nutans</i>)	False Pennyroyal (<i>Isamthus brachiatus</i>)
Bottlebush (<i>Hystrix patula</i>)	Blazing star (<i>Liatris cylindracea</i>)
Wedge Grass (<i>Sphenopholis intermedia</i>)	False mallow (<i>Maluaetrum angustum</i>)
Clearweed (<i>Pilea pumila</i> Var. <i>Deamii</i>)	Four O'Clock (<i>Mirabilis albidus</i>)
Waterleaf (<i>Hydrophyllum appendiculatum</i>)	Scurf pea (<i>Psoralea tenuiflora</i>)
Bellflower (<i>Campamula americana</i>)	Skullcap (<i>Scutellaria paroula</i>)
Leafcup (<i>Polyminia canadensis</i>)	Golden rod (<i>Solidago drummondii</i>)
Sedge (<i>Carex eburnea</i>)	Goldenrod (<i>Solidago radula</i>)

APPENDIX

Soil Vegetation - Units (Clarksville, Coulstone, Poynor, and Wilderness-Southwest Slopes and Narrow Ridges)

Plant Associates - Sassafras, Winged Sumac, Blackjack, Post Oak, Pine Huckleberry, Oak-Pine

Trees

Sassafras (<i>Sassafras albidum</i>)	Sassafras (<i>sassafras albidum</i>)
Blackjack (<i>Quercus marilandica</i>)	Winged Elm (<i>Ulmus alata</i>)
Post Oak (<i>Quercus stellata</i>)	Shortleaf Pine (<i>Pinus echinata</i>)
Ozark Hickory (<i>Carya buckleyi</i> Var. <i>Arkansana</i>)	Red Oak (<i>Quercus rubra</i>)
	White Oak (<i>Quercus alba</i>)

Shrubs, Vines, and Small Trees

Winged Sumac (<i>Rhus capallina</i>)	Juneberry (<i>Amelanchier arborea</i>)
Low Bush Huckleberry (<i>Vaccinium vacellans</i>)	Redbud (<i>Cercis canadensis</i>)
Highbush Huckleberry (<i>Vaccinium stamineum</i>)	Black Haw (<i>Virburnun prunifolium</i>)
Flowering Dogwood (<i>Cornus florida</i>)	Poison Ivy (<i>Rhus radicans</i>)
	Grape (<i>Vitis aestivalis</i>)

Forbs, Grasses, and Sedges

Oats Grass (<i>Damthonia spicata</i>)	Lespedeza (<i>Lespedeza procumbens</i>)
Slender Fescue (<i>Festuca octoflora</i>)	Aster (<i>Aster Patens</i>)
Sedge (<i>Cyperus filiculmis</i>)	Ascyrum (<i>Ascyrum hypericoides</i> Var. <i>Multicaule</i>)
Panic grass (<i>Panicum linearifolium</i>)	Tick Trefoil (<i>Desmodium rotundifolium</i>)
Dittany (<i>Cunila Orgianoides</i>)	Prairie Acacia (<i>Acacia augustissima</i> Var. <i>Hirta</i>)
Broom Sedge (<i>Andropogon virginicus</i>)	Panic grass (<i>Panicum uichotomum</i>)
Goats Rue (<i>Tephrosia virginiana</i>)	Sedger (<i>Carex hirsutella</i>)
Little Bluestem (<i>Andropogon scoparius</i>)	Elm-leaf Goldenrod (<i>Solidago ulmifolia</i>)
Pussy Toes (<i>Antennaria plantagini-folia</i>)	
Cinquefoil (<i>Potentilla smilax</i> Var. <i>Genuina</i>)	

APPENDIX

Soil Vegetation - Units (Clarksville, Coulstone, Poynor, Wilderness--North and East Slopes and Captina, Doniphan, and Macedonia)

Plant Associes - Black Oak, Black Jack Oak, Post Oak, Scarlet Oak, White Oak, Hickory, Oak Pine, Pine

Trees

White Oak (<i>Quercus alba</i>)	White Hickory (<i>Carya tomentosa</i>)
Black Oak (<i>Quercus velutina</i>)	Black Gum (<i>Nyssa sylvatica</i>)
Red Oak (<i>Quercus rubra</i>)	White Ash (<i>Fraxinua americana</i>)
Butternut Hickory (<i>Carya texana</i>)	Scarlet Oak (<i>Quercus coccinea</i>)
Shagbark Hickory (<i>Carya ovata</i>)	Shortleaf Pine (<i>Pinuw echinata</i>)

Shrubs, Vines, and Small Trees

Ironwood (<i>Carpinus varolinina</i>)	Poison Ivy (<i>Rhus radicans</i>)
Spice Bush (<i>Lindera benzoin</i>)	Leatherwood (<i>Dirca palustris</i>)
Redbud (<i>Cercis canadensis</i>)	Ninebark (<i>Physocarpus opulifalius</i>)
Hop Hornbeam (<i>Ostrya virgina</i>)	Lowbush Huckleberry (<i>vaccinium</i>
New Jersey Tea (<i>Ceanothus</i>	<i>Vacillans</i>)
<i>americanus</i>)	Deerberry (<i>Vaccinium stamineum</i>)
Winged Sumac (<i>Rhus copallina</i>)	Woodbine (<i>Parthenocissus quinquedoil</i>)
Aromatic Sumac (<i>Rhus aromatica</i>)	Catbrier (<i>Smilax bona-nox</i>)
Grape (<i>Vitis aestrualis</i>)	Moonseed (<i>Menispemum candense</i>)

Forbs, Grasses, and Sedges

Pussy's Toes (<i>Antennaria</i>	Maiden hair Fern (<i>Adiantum pedotum</i>)
<i>plantaginifolia</i>)	Goat's Rue (<i>Tephrosia birginia</i>)
Wild Licorice (<i>Galium circaezans</i>)	Argrimony (<i>Argrimonia rostellata</i>)
Tick Trefail (<i>Desmodium nudiform</i>)	Sunflower (<i>Helianthus hirsutus</i>)
Horsemint (<i>Monarda russeliana</i>)	Flowering Spurge (<i>Euphorbia corollata</i>)
Panic grass (<i>Panicum boscii</i>)	Five-Finger Cinuefoil (<i>Potentilla</i>
Elm leaf Goldenrod (<i>Solidago</i>	<i>simplex</i>)
<i>ulifolia</i>)	White Anemone (<i>Amone canadensis</i>)
Gerardia (<i>Gerardia flava</i>)	Stiff-Leaf Aster (<i>Limariifolius</i>)
Aster (<i>Aster anomalus</i>)	Bastard Toadflax (<i>Comandra richardson-</i>
Spreading Aster (<i>Aster patens</i>)	<i>iana</i>)
Dittany (<i>Cunila origanoides</i>)	Sedge (<i>Varex convoluta</i>)
Spleenwort (<i>Asplenium platyneuron</i>)	Bottlebush (<i>Hystrix patula</i>)
False Solomon's Seal (<i>Smilacine</i>	Blue-stem Goldenrod (<i>Solidago caesia</i>)
<i>racemosa</i>)	Goldenrod (<i>Solidago arguta</i>)
Black Snakeroot (<i>Cimicifuga</i>	Wild Geranium (<i>Geranium maculatum</i>)
<i>racemosa</i>)	Rue Anemone (<i>Anemonella thalic-</i>
Bracken Fern (<i>Pteridium aquilinum</i>)	<i>troides</i>)

APPENDIX

Forbs, Grasses, and Sedges

Sharplobed Liverleaf (<i>Heptica acutioba</i>)	Black-eyed Susan (<i>Rudbeckia hirta</i>)
Muhly grass (<i>Muhlenbergia soboi-</i>	American Feverfew (<i>Parthenium hispidum</i>)
Red Root (<i>Geum canadense</i>)	Skullcap (<i>Scutellaria ovata</i>)
Starry Rosin Weed (<i>Silphium asterisus</i>)	
Mandrake (<i>Podophyllum peltatum</i>)	
Bedstraw (<i>Galium Arkansanum</i>)	
St. Andrew's Cross (<i>Ascrum hypercoides</i>)	

APPENDIX

Soil Vegetation - Units (Midco)

Plant Associates - Willow, Witch-Hazel

Trees

Sycamore (*Platanus occidentalis*)

Shrubs, Vines, and Small Trees

Ward Willow (*Salix longipes* var. *Wardii*)

Witch Hazel (*Hamamelis vernalis*)

Alder (*Alnus rugosa*)

Sand grape (*Vitis rupestris*)

Ninebark (*Physocarpus opulifolius* var. *intertnedius*)

Trumpet Creeper (*Campis radicans*)

Swamp Dogwood (*Cornus obliqua*)

Forbs, Grasses, and Sedges

Panic grass (*Panicum clandestinum*)

Blue Phlox (*Phlox divaricata* var. *Laphimii*)

Wild Petunia (*Ruellia strepens*)

Goldenrod (*Solidago serotina*)

Common Violet (*Viola papilionacca*)

Cocklebur (*Xanthium pensylvanicum*)

APPENDIX

Soil Vegetation - Units (Alluvial Mixed and Alluvial Loamy)

Plant Associes - Silver Maple, Cotton Wood

Trees

Silver Maple (*Acer saccharium*)
Cottonwood (*Populus deltoides*)
River Birch (*Betula nigra*)
Black Willow (*Salix nigra*)
Sycamore (*Platanus occidentalis*)

Shrubs, Vines, and Small Trees

Buttonbush (*Cephalanthus occidentalis*)
Ward Willow (*Salix longipes* var. *Wardii*)
Wild Grape (*Vitis cordiflora*)
Poison Ivy (*Toxicodendron rudicans*)

Forbs, Grasses, and Sedges

Grey Clearweed (<i>Pilea pumpila</i>)	Balsam Apple (<i>Echinocystis leбата</i>)
Stiff-leaf Aster (<i>Aster</i>)	Spotted Touch-Me-Not (<i>Impatient biflor</i>)
Wild Goldenglow (<i>Rudbeckia</i>)	Beefsteak Plant (<i>Perrilla frutescens</i>)
White grass (<i>laersia virginica</i>)	Wild Petunia (<i>Ruellia strepens</i>)
3-seed Mercury (<i>Acalypha rhombodea</i>)	Mad-Dog Skullcap (<i>Scutellaria laterifl</i>)
Beggar Ticks (<i>Bidens fromdosa</i>)	Catbrier (<i>Similax hispida</i>)
False Nettle (<i>Boehmeria cylindriia</i>)	Black Nightshade (<i>Solanum nigrum</i>)
Wood Reed Grass (<i>Cinna arundinacea</i>)	Goldenrod (<i>Solidago sertina</i>)
Day-Flower (<i>Commelina virginica</i>)	Veronia (<i>Veronia altissima</i>)
	Common Violet (<i>Viola papilionacea</i>)

Use of Off-Road Vehicles on the Public Lands

1022

An estimated 5 million off-road recreational vehicles—motorcycles, minibikes, trail bikes, snowmobiles, dune-buggies, all-terrain vehicles, and others—are in use in the United States today, and their popularity continues to increase rapidly. The widespread use of such vehicles on the public lands—often for legitimate purposes but also in frequent conflict with wise land and resource management practices, environmental values, and other types of recreational activity—has demonstrated the need for a unified Federal policy toward the use of such vehicles on the public lands.

NOW, THEREFORE, by virtue of the authority vested in me as President of the United States by the Constitution of the United States and in furtherance of the purpose and policy of the National Environmental Policy Act of 1969 (42 U.S.C. 4321), it is hereby ordered as follows:

SECTION 1. Purpose. It is the purpose of this order to establish policies and provide for procedures that will ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands.

SEC. 2. Definitions. As used in this order, the term:

(1) "public lands" means (A) all lands under the custody and control of the Secretary of the Interior and the Secretary of Agriculture, except Indian lands, (B) lands under the custody and control of the Tennessee Valley Authority that are situated in western Kentucky and Tennessee and are designated as "Land Between the Lakes," and (C) lands under the custody and control of the Secretary of Defense;

(2) "respective agency head" means the Secretary of the Interior, the Secretary of Defense, the Secretary of Agriculture, and the Board of Directors of the Tennessee Valley Authority, with respect to public lands under the custody and control of each;

(3) "off-road vehicle" means any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swainland, or other natural terrain; except that such term excludes (A) any registered motorboat, (B) any military, fire, emergency, or law enforcement vehicle when used for emergency purposes, and (C) any vehicle whose use is expressly authorized by the respective agency head under a permit, lease, license, or contract; and

(4) "official use" means use by an employee, agent, or designated representative of the Federal Government or one of its contractors in the course of his employment, agency, or representation.

SEC. 3. Zones of Use. (a) Each respective agency head shall develop and issue regulations and administrative instructions, within six months of the date of this order, to provide for administrative designation of the specific areas and trails on public lands on which the use of off-road vehicles may be permitted, and areas in which the use of off-road vehicles may not be permitted, and set a date by which such designation of all public lands shall be completed. Those regulations shall direct that the designation of such areas and trails will be based upon the protection of the resources of the public lands, promotion of the safety of all users of those lands, and minimization of conflicts among the various uses of those lands. The regulations shall further require that the designation of such areas and trails shall be in accordance with the following—

(1) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, or other resources of the public lands.

(2) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats.

(3) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.

(4) Areas and trails shall not be located in officially designated Wilderness Areas or Primitive Areas. Areas and trails shall be located in areas of the National Park system, Natural Areas, or National Wildlife Refuges and Game Ranges only if the respective agency head determines that off-road vehicle use in such locations will not adversely affect their natural, aesthetic, or scenic values.

(b) The respective agency head shall ensure adequate opportunity for public participation in the promulgation of such regulations and in the designation of areas and trails under this section.

(c) The limitations on off-road vehicle use imposed under this section shall not apply to official use.

Sec. 4. Operating Conditions. Each respective agency head shall develop and publish, within one year of the date of this order, regulations prescribing operating conditions for off-road vehicles on the public lands. These regulations shall be directed at protecting resource values, preserving public health, safety, and welfare, and minimizing use conflicts.

Sec. 5. Public Information. The respective agency head shall ensure that areas and trails where off-road vehicle use is permitted are well marked and shall provide for the publication and distribution of information, including maps, describing such areas and trails and explaining the conditions on vehicle use. He shall seek cooperation of relevant State agencies in the dissemination of this information.

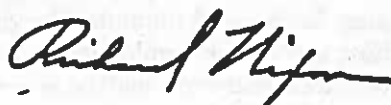
Sec. 6. Enforcement. The respective agency head shall, where authorized by law, prescribe appropriate penalties for violation of regulations adopted pursuant to this order, and shall establish procedures for the enforcement of those regulations. To the extent permitted by law, he may enter into agreements with State or local governmental agencies for cooperative enforcement of laws and regulations relating to off-road vehicle use.

Sec. 7. Consultation. Before issuing the regulations or administrative instructions required by this order or designating areas or trails as required by this order and those regulations and administrative instructions, the Secretary of the Interior shall, as appropriate, consult with the Atomic Energy Commission.

Sec. 8. Monitoring of Effects and Review. (a) The respective agency head shall monitor the effects of the use of off-road vehicles on lands under their jurisdictions. On the basis of the information gathered, they shall from time to time amend or rescind designations of areas or other actions taken pursuant to this order as necessary to further the policy of this order.

(b) The Council on Environmental Quality shall maintain a continuing review of the implementation of this order.

THE WHITE HOUSE,
February 8, 1972.



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1000-116

1023 - Results of Water Quality Monitoring at Greer Springs and the Eleven Point River Near Bardley

Parameter	Units	Greer Springs			Eleven Point River Near Bardley		
		Maximum	Minimum	Mean	Maximum	Minimum	Mean
Water Temp	OF	59.60	58.40	59.22	73.60	48.40	60.79
Turbidity Specific	Jackson Candle Units	21.00	.81	3.16	13.00	.65	3.15
Conductance Dissolved	(Micromhos/cm)	388.00	184.00	317.82	398.00	283.00	325.61
Oxygen	(mg/l)	10.73	7.10	8.83	12.61	8.38	10.20
Laboratory pH Dissolved		7.98	7.31	7.53	8.49	2.86	7.89
Carbon Dioxide Total	(mg/l)	31.60	6.00	13.36	12.40	1.70	6.93
Nitrogen	(mg/l)	.85	.29	.57	1.93	.18	.49
Ammonia	(mg/l)	.20	.01	.06	.27	.02	.07
Nitrate Total	(mg/l)	.78	.25	.46	.56	.15	.32
Phosphate	(mg/l)	.09	.03	.06	.09	.01	.04
Orthophosphate	(mg/l)	.06	.02	.03	.05	.00	.02
Calcium	(mg/l)	41.00	24.60	35.08	41.20	28.80	35.67
Magnesium	(mg/l)	27.00	13.50	21.68	28.00	16.80	21.74
Potassium	(mg/l)	1.08	.93	1.00	.99	.80	.92
Chloride	(mg/l)	2.25	.39	1.36	2.70	.39	1.29
Sulfate	(mg/l)	116.00	.30	24.84	17.60	.50	4.49
Total Iron Fecal	(mg/l)	360.00	30.00	126.88	440.00	10.00	138.18
Coliform Bicarbonate	per 100 ml)	173.00	1.00	26.60	452.00	1.10	38.41
Alkalinity	(mg/l)	308.60	138.90	178.86	250.00	130.50	186.37

APPENDIX

1024 - Results of Water Quality Monitoring at Hurricane Weir and Thomasville

Parameter	Units	Hurricane Creek Weir			Thomasville		
		Maximum	Minimum	Mean	Maximum	Minimum	Mean
Water Temp.	OF	72.10	46.90	59.70	79.30	40.40	59.00
Turbidity	Jackson Candle						
Specific	Units	4.40	.28	1.22	15.60	.60	3.00
Conductance	(Micromhos/cm)	535.00	272.00	361.00	367.00	243.00	308.90
Dissolved							
Oxygen	(mg/l)	13.60	4.40	8.90	12.10	6.40	9.20
Laboratory pH	(mg/l)	8.20	7.50	7.80	18.00	7.40	7.80
Dissolved							
Carbon Dioxide	(mg/l)	28.50	1.10	11.00	14.50	1.00	8.80
Total							
Nitrogen	(mg/l)	.49	.07	.23	1.00	.10	.30
Ammonia	(mg/l)	.35	.05	.13	.51	.04	.25
Nitrate	(mg/l)	---	---	---	---	---	---
Total							
Phosphate	(mg/l)	.08	.01	.03	.15	.02	.04
Orthophosphate	(mg/l)	.04	.00	.01	.13	.00	.02
Calcium	(mg/l)	46.00	28.80	40.10	41.90	27.50	35.80
Magnesium	(mg/l)	---	---	---	---	---	---
Potassium	(mg/l)	1.90	.60	.90	1.08	.78	.94
Chloride	(mg/l)	1.88	.39	1.23	2.35	.58	1.52
Sulfate	(mg/l)	15.10	2.20	4.30	9.40	.10	4.30
Total Iron	(mg/l)	400.00	30.00	98.70	380.00	20.00	158.00
Fecal	(colonies						
Coliform	per 100 ml)	438.00	1.00	46.60	1300.00	1.00	110.00
Bicarbonate	(meq/l)						
Alkalinity							

EXHIBIT G

EVALUATION OF AQUATIC VEGETATION

To: Mr. Hubert Riebold
Riebold-Withers Company
1960 S. Glenstone
Springfield, Missouri 65804

From: Paul L. Redfearn, Jr. Ph.D.
Department of Life Sciences
Southwest Missouri State College
Springfield, Missouri 65802

Subject: Evaluation of the aquatic vegetation of the Blue Spring and Morgan (Thomasson Mill) Spring complex (sec. 16, T. 22 N., R. 2 W., Oregon County, Mo.) and Boze Mill Spring (sec. 16, T. 23 N., R. 2 W., Oregon County, Mo.).

March 5, 1970

1. Blue Spring and Morgan Spring Complex.

This complex of springs is located at the base of a narrow ridge which separates Fredericks Creek and the Eleven Point River. Both of the major springs of this complex have a reasonably constant and substantial flow of cool spring water. Based on measurements reported by Beckman and Hinchey (The Large Springs of Missouri, Mo. Geol. Survey, 1944), Blue Spring flows about twice as fast and produces about twice as much water (in gallons per day) as Morgan Springs. Perhaps the most critical feature of both of these springs is their long spring branches or runs that lead into the Eleven Point River (ca. 1000 feet for Blue Spring and perhaps slightly shorter for Morgan Spring). These long spring runs provide an extensive area that has a uniform environment because of the relative constancy of chemical composition, temperature, and velocity of the spring water. Under these conditions the standing crop biomass (total dry weight of organisms present at any one time) is not only high, but constant. This is because the excess biomass, as well as the waste products produced by such a biomass, are constantly removed by the flowing water. In turn, the constant flow of water replaces the nutrients utilized by the rapidly growing biomass. Furthermore, evidence from data of other springs (see: Odum, E. P. 1959. Fundamentals of Ecology, 2nd Ed. pp. 64-65) indicates that nearly one-half of the total plant biomass of cool springs is potentially available as food for other populations of organisms, or in the case of this spring complex, may be harvested.

The spring runs of both major springs also have additional features that enhance their productivity. Both have deep sandy-sud bottoms and banks with both muddy and sandy conditions. The deepness of the spring runs maintains a slow flowing pattern conducive to the growth of aquatic plants, particularly such species as milfoil (Myriophyllum) and water-weed (Elodea canadensis). Variable soil conditions along the banks and bottoms of the spring runs also tends to support a number of other aquatic plants. (See also Elodea nuttallii)

for example, are common on the shallow muddy substratum along the edge of the spring runs while water cress (Nasturtium officinale) is more abundant in shallow water over sand-mud bottoms. It is obvious that this spring complex can, like all cool water springs, support a large plant biomass per unit of area and because of the length of the spring runs, the total productivity is large. Furthermore, because these spring runs have a variety of substrates ranging from deep to shallow mud and sandy-mud bottoms, they can and do support several different types of aquatic plants.

At the time of my visit (Feb. 28, 1970) to the Blue-Morgan Spring complex, the following aquatic plants were abundant:

- Milfoil (Myriophyllum heterophyllum Michx. and M. brasiliense Camb.)
- Small leaf water-weed (Elodea nuttallii Planch)
- Large leaf water-weed (Elodea canadensis Michx.)
- Water cress (Nasturtium officinale R. Br.)
- Horned pondweed (Zannichellia palustris L.)
- Water starwort (Callitriche heterophylla Pursh)
- Pondweed (Potamogeton foliosus Raf.)
- Broad leaf pondweed (Potamogeton amplifolius Tuckerm.)
- Hornwort (Ceratophyllum demersum L.)
- Water moss (Amblystegium riparium (Hedw.) B. S. P. G.)
- Leafy liverwort (Porella pinnata L.)
- Thalloid liverwort (Riccia fluitans L.)

The following plants were also present, but less abundant than the ones listed above:

- Ellgrass (Vallisneria)
- Water pennywort (Hydrocotyle)
- Water hyssop (Bacopa rotundifolia (Michx.) Wettst.)
- Water purslane (Ludwigia palustris (L.) Ell.)

The latter plants were growing mainly in a concrete aqueduct leading from the dam at Morgan Spring.

While any of the above species might be used in aquaria, the ones most commonly used are milfoil, small and large leaf water-weeds, ellgrass, water hyssop, water purslane, water moss, the leafy liverwort and the thalloid liverwort. In the commercial operation at the Blue-Morgan Spring complex, the most important species harvested are apparently milfoil and large leaf water-weed. These plants are also probably the most abundant species present in the spring runs.

Water cress is abundant and is in demand by many restaurants. However, it is my understanding that this plant is not presently being harvested to any extent.

Since only the young tips of water-weed and milfoil are sold commercially, considerable waste is left from the plants that are harvested. This waste is now allowed to wash out to the Eleven Point River. It could be composted and sold as a fertilizer.

As I understand the problem of appraising these springs, there are two questions to which I, as a botanist, can speak. First, is the present commercial operation now harvesting all the aquatic plants that it should without damaging the productivity of the springs, and second, are there other nearby springs where a similar commercial operation could be established? The answer to the first question must be a qualified one since there are no records of productivity on this spring complex. However, it is my opinion that the present removal of aquatic plants is doing no damage to the vegetation of the springs and that the harvest rate could be increased by a factor of 40-60% without reducing the sustained yield. Only experience with increased harvesting in these springs could give definitive results. An accurate prediction of the maximum harvest rate for these springs is further complicated by the fact that yields would vary with fluctuations in annual water flow. It does appear, however, that more plants can be harvested with little or no additional investment or maintenance problems.

The answer to the second question concerning the availability of other spring in Missouri where such an operation could be carried out is yes. Although many suitable springs are located on public owned land, for example Alley, Round; or Big Springs, other springs, in my judgement, are or could be developed for the commercial growing of aquatic plants. These are:

Hazeleton Spring (Texas County)
Hahatonka Spring (Camden County)
Clarkson Spring (Lawrence County)
Gravois Mill Spring (Morgan County)
Rockbridge Spring (Douglas County)
Crystal Spring (Douglas County)
Paydown Spring (Maries County)
Blue Spring (LaCledde County)
Double Spring (Ozark County)
Bartlett Mill Spring (Pulaski County)
Keener Spring (Butler County)
Hodgson Mill Spring (Ozark County)

2. Boze Mill Spring

This spring has a rich aquatic flora. At the time of my visit (Feb. 28, 1970) the following plants were abundant along the spring run behind the dam:

Milfoil (Myriophyllum heterophyllum Michx.)
Water starwort (Callitriche heterophylla R. Br.)
Water cress (Nasturtium officinale R. Br.)
Horned pondweed (Zannichellia palustris L.)
Thalloid liverwort (Riccia fluitans L.)
Leafy liverwort (Porella pinnata L.)
Duckweed (Lemna triscula L.)
Water moss (Amblystegium riparium (Hedw.) B.S.G.)
Water Plantain (Alisma sp.)
Fissidens debilis Schwaegr. (a moss)
Arrowhead (Sagittaria sp.)

Water-weed (Elodea nuttallii Planch)
Pondweed (Potamogeton foliosus Tuckerm.)

Because of the relative short spring run of this spring, it is doubtful that aquatic plants could be harvested in the quantity necessary to make a profitable operation. This is, however, one of the most attractive small springs and spring runs in Missouri.

Paul L. Redfearn, Jr.
Paul L. Redfearn, Jr. Ph.D.
Professor of Life Science