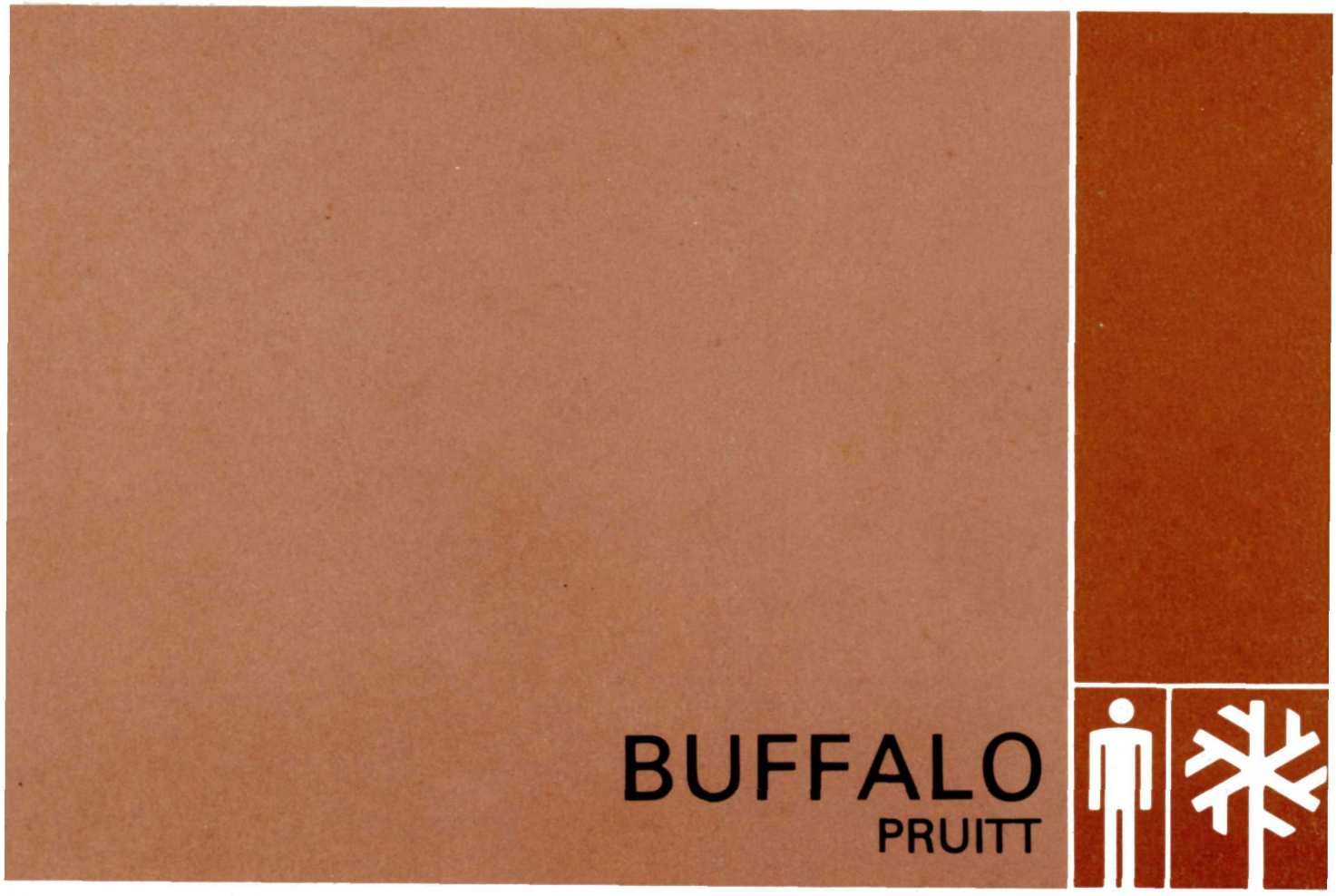
development concept plan

proposal / assessment
january 1980



BUFFALO
PRUITT

NATIONAL RIVER / ARKANSAS

This plan has not yet been approved. Its purpose is to provide planning information for further consideration and discussion, and it may undergo revision.

PROPOSAL/ASSESSMENT
DEVELOPMENT CONCEPT PLAN

PRUITT

BUFFALO NATIONAL RIVER

ARKANSAS

Prepared by
Denver Service Center
National Park Service
United States Department of the Interior

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INTRODUCTION AND PROBLEM STATEMENT

Buffalo National River was authorized by an act of Congress on March 1, 1972 (P.L. 92-237, 86 Stat. 44). Following this authorization, a conceptual master plan was developed to implement the general and specific mandates of Congress, the cooperative agreements, and the administrative policies and management objectives of the National Park Service. This plan, entitled Master Plan, Buffalo National River, was approved on October 16, 1975.

Three major visitor use areas are identified for future development in the Master Plan, each linking Buffalo River to an existing major highway. Pruitt, situated in Newton County at the point where Arkansas 7 crosses the river, is one of these areas. As defined the Master Plan, the purpose for Pruitt is to establish a developed area where visitors can obtain interpretive and outdoor recreational information about the river. The Pruitt developed area will also provide district management facilities for protecting and managing the upper one-third of the Buffalo National River. For the Pruitt area, the facilities suggested for consideration are a district ranger station, a visitor contact station, parking lots, boat accesses, National Park Service housing, a maintenance facility (completed), picnic areas, and a campfire circle.

The Master Plan provides general guidelines for development and use of the park; however, it does not include detailed recommendations for the design and management of specific sites. Furthermore, when Buffalo National River was authorized in 1972, few acres within its boundaries were federally owned. The Pruitt area was entirely in private ownership. Most of the area is now publicly owned, permitting detailed site planning for the first time.

This Development Concept Plan, Pruitt, Buffalo National River addresses the following specific concerns for the development and use of Pruitt:

> Congestion already exists at the present floater put-in/take-out area. Not only is the area congested, but visitors exceed the capacity of the land. Overuse has created environmental degradation of the area (i.e., reduced grass, groundcover, and bank erosion) and management problems.
>
> Substantial seasonal activities occur in the use of the Pruitt area, such as floater put-in/take-out, swimming, and picnicking in the spring and early summer.
>
> Periodic flooding occurs on the lower floodplains, limiting the types of facilities that can be developed close to the river.

Several commercial campgrounds, stores, and the popular amusement park (Dogpatch USA) are located within a few miles of Pruitt. Use and development must complement rather than compete with these privately owned enterprises.

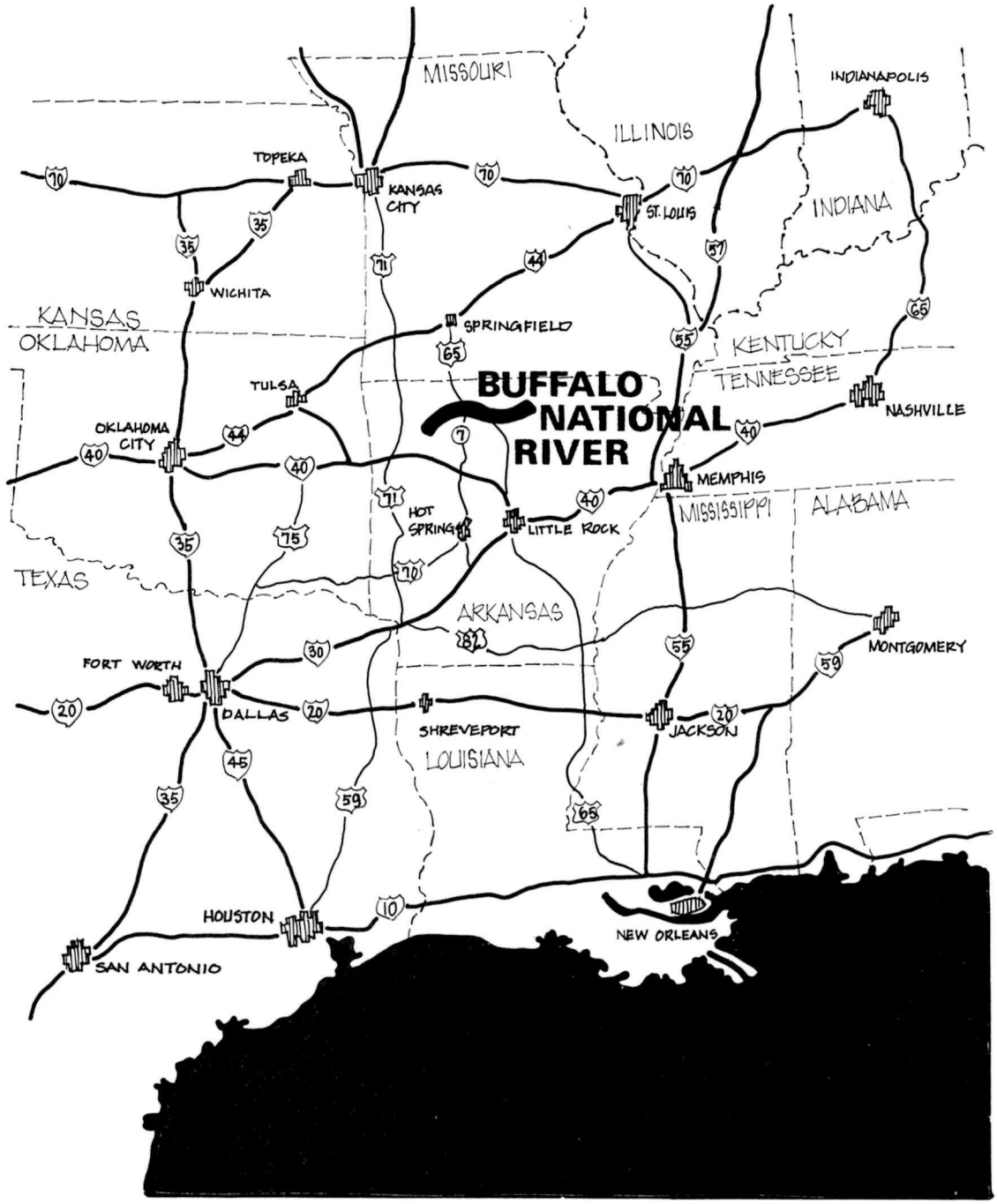
Developments need to be located within easy access of the river resource for visitor convenience, but they must be adequately screened by floodplain vegetation and landforms to visually enhance the floaters' experience.

Although Buffalo National River has been designated as a recreational river--allowing appropriate facility development to support visitor use--development should be designed to permit protection and enhancement of the resource.

Planning and development must consider hikers, campers, sportsmen, and day users, as well as floaters on the Buffalo River.

Accessibility to and use of park facilities by physically and mentally handicapped visitors must be ensured in conformance with applicable provisions of the Design and Construction of Public Buildings to Accommodate the Physically Handicapped Act (P.L. 90-480, 82 Stat. 718) and other applicable laws and regulations.

Consistent with the provisions of the National Environmental Policy Act, the National Historic Preservation Act, and other pertinent directives, the proposal includes an analysis of the anticipated impacts and a cost estimate for development.



REGION

Buffalo National River, Arkansas

N

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United States Department of the Interior / National Park Service

Harrison
Yellville
Buffalo Point
Ponca
Jasper
Silver Hill
Marshall
tyler bend
St. Joe
PRUITT
NEWTON
BOONE CO.
MARION CO.
SEARCY CO.
White River
Buffalo River
OZARK NATIONAL FOREST
OZARK NATIONAL FOREST
OZARK NATIONAL FOREST
65
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43

pruitt district

Buffalo National River, Arkansas

n

0 2 4 6 miles

173 | 40,071
DSC | JUL 78

United States Department of the Interior / National Park Service

the proposal

DESCRIPTION

DEVELOPMENT

The Pruitt area will serve as a district management headquarters, covering the upper one-third of the Buffalo National River.

Under the proposal, the existing Pruitt district headquarters on the south side of the river immediately upstream from the Arkansas 7 bridge will be phased out, and a new district headquarters/ interpretive center will be consolidated and constructed near Arkansas 7 immediately north of the bridge. A 25-car and 5-bus/RV parking lot will be built in association with this facility; in addition, a staff residence will either be attached or constructed in close proximity for protection purposes.

The adjoining plateau and floodplain will be utilized for day use activities and will serve as the primary river put-in point, providing commercial canoe rental for large groups of floaters and the general public. A 75-car and 8-bus/RV parking area will be provided to serve the primary river access point; long-term parking for a 25-car and 2-bus/RV parking lot will also be built above the floodplain for river users and hikers.

To reach the currently accessible swimming beaches along the south riverbank, a pedestrian walkway should be attached to the existing one, or constructed in concert with any future bridge on the highway.

The focal point for onsite interpretation will be off Arkansas 7 at the Ozark floater/hiker campground. This development will serve as a secondary river access point (a convenient put-in for campers and other recreationists) and will include a day use area with a pavilion, swimming, picnicking, and 50 primitive campsites, with a nature trail and campfire circle. A 50-car and 5-bus/RV parking lot will be constructed to serve this development. The existing road will be upgraded and paved.

A new maintenance area has been constructed at a site adjacent to a secondary road leading east from Arkansas 7. The district fire/rescue cache will be located approximately 300 feet east of the maintenance area on the same side of the road. The fire/rescue cache on less than 1/3 acre of land will be enclosed by a security fence. Within the fence, there will be located a heated 1,500-square-foot building for two fire trucks, available potable water for this facility, 800 square feet of covered storage space for rescue boats and fire equipment, canoe storage racks, 600 square feet of graveled parking, and approximately 4,000 square feet of graveled turning space. The remainder of the site will be vegetated.

Three privately owned houses (already constructed) adjoin this road and are within the park boundary. When acquired, they will serve as staff residences (dependent on salvage rights). If existing residences cannot be obtained, personnel necessary for protection will continue to live in existing houses dispersed throughout the district.

The existing Paradise Hill complex (gift shop) is not compatible with approved planning and park management concepts and will be phased out and converted to a scenic overlook with 8- to 10-car parking, restrooms (modify existing building), and 10 picnic tables.

A future option of the proposal will provide a primitive campground and some parking on the river bend directly downstream and across the river from the primary river access point. This property is known locally as the Hamilton tract. A major cultural interpretive effort will be appropriate at this site. Access to this area will be along the existing spur road leading off Arkansas 7, which divides with a secondary road leading to the site. The entire road will be upgraded but not paved. Parking will be provided for 75 cars and 10 buses/RVs.

DEVELOPMENT PRIORITIES

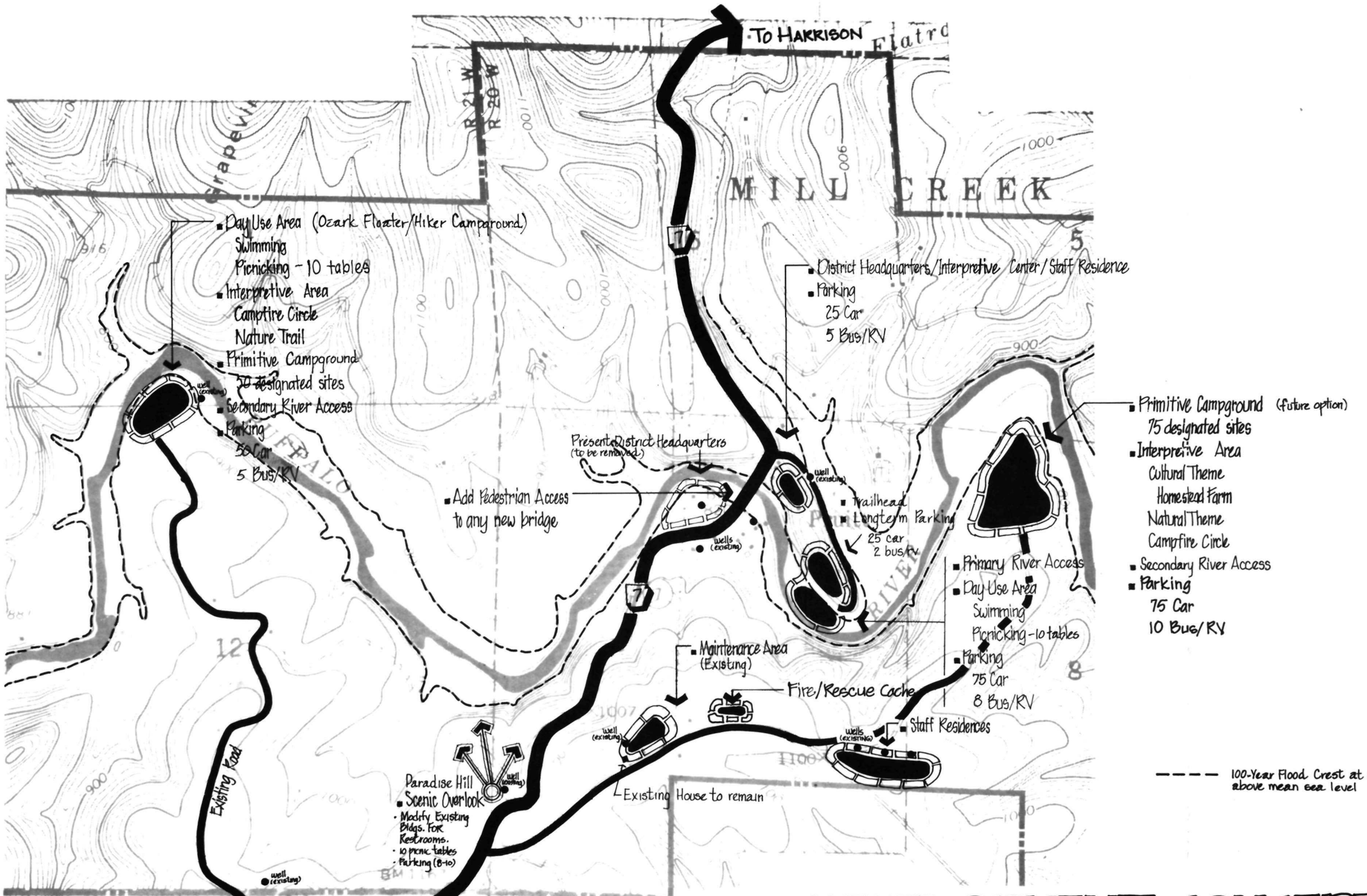
The preliminary features of this development concept plan are listed below in order of development priority. The objectives are to upgrade the Pruitt area's existing conditions and deficiencies and to serve the numbers of visitors anticipated during the next several years.

Primary River Access

- Provide for a primary river access (day use), picnic tables (10), swimming area, trailhead, and parking for 75 cars and 8 buses/RVs
- Provide long-term parking for 25 cars and 2 buses/RVs

District Headquarters/Interpretive Center/Staff Residence

- Construct the facility
- Provide parking for 25 cars and 5 buses/RVs
- Tie in to the existing well
- Provide potable water
- Connect to power
- Provide telephone service
- Provide a pedestrian access to new bridge
- Remove the existing district headquarters complex and maintenance area



PROPOSED DEVELOPMENT

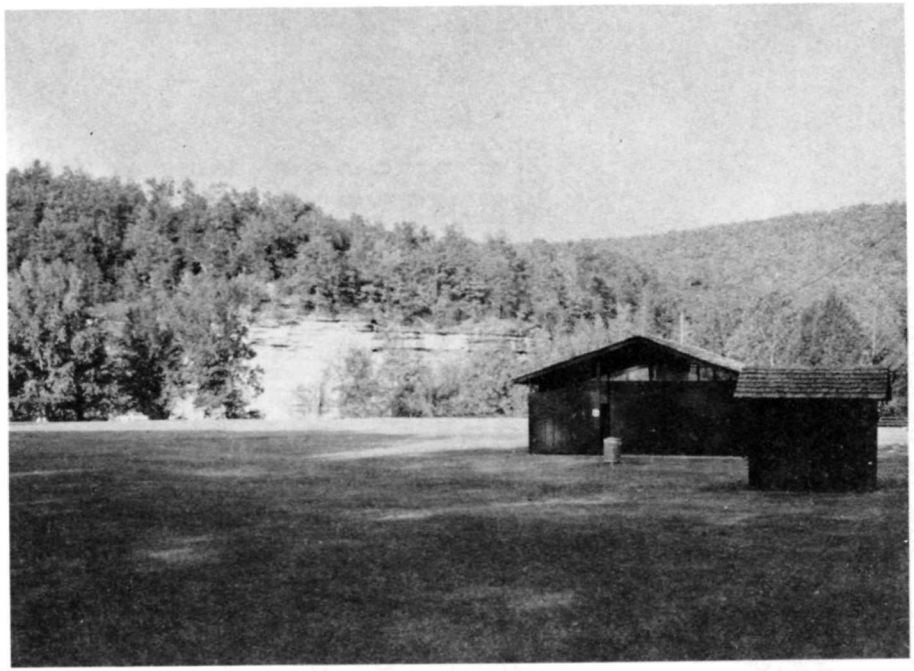
DEVELOPMENT CONCEPT PLAN

PRUITT

BUFFALO NATIONAL RIVER, ARKANSAS

United States Department of the Interior / National Park Service

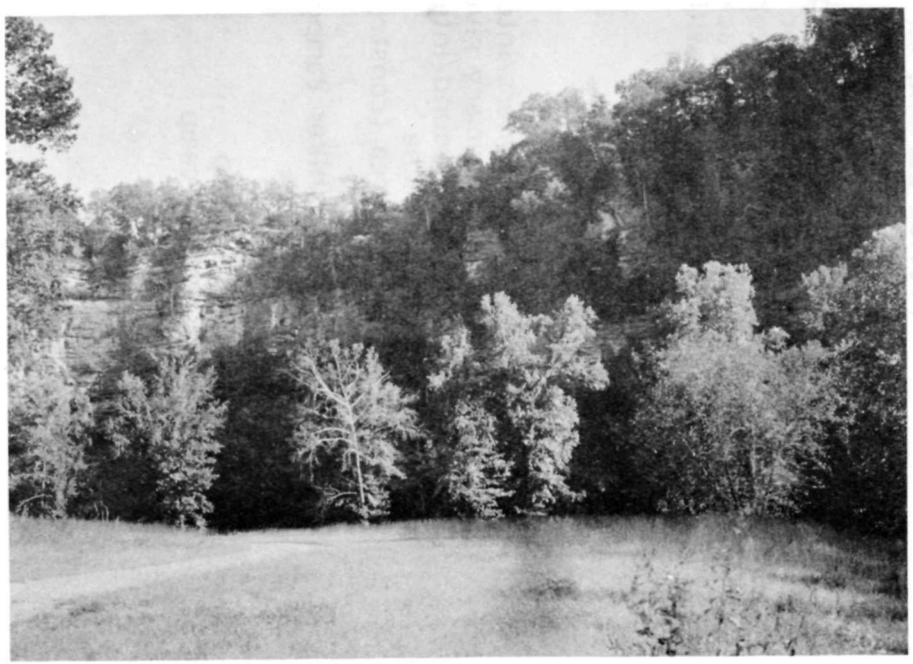
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Day Use Area
(Ozark Floater/Hiker Campground)

Primary Put-In, Arkansas 7





Primary Put-In, Arkansas 7

Scenic Overlook (Paradise Hill)

- Modify the existing buildings for restrooms
- Provide 10 picnic tables
- Provide parking for 8-10 cars

Residence Area

- Provide the staff residences (possibly by obtaining 3 existing residences)

Day Use Area (Ozark floater/hiker campground)

- Construct a primitive campground, 50 designated campsites, a campfire circle, and a nature trail
- Provide a secondary river access
- Provide parking for 50 cars and 15 buses/RVs
- Establish a swimming beach
- Provide 10 picnic tables
- Pave a portion of the existing access road from Arkansas 7 to the day use area

Primitive Campground (future option)

- Provide 75 designated campsites
- Provide a secondary river access by upgrading the existing road
- Stabilize the existing farmstead buildings
- Provide a campfire circle
- Provide parking for 75 cars and 10 buses/RVs

Fire/Rescue Cache

- Construct a 1,500-square-foot building
- Provide parking for three vehicles
- Provide covered storage--800 square feet
- Provide a canoe rack
- Enclose the area with a security fence

LAND USE

	Acres
District headquarters/interpretive center/parking lot Day use area/primary river access/parking lot	28.0
Primitive campground/interpretive area (future option)	35.0
Fire/rescue cache	0.34
Maintenance area (constructed)	2.0
Staff housing	8.5
Ozark floater/hiker campground	12.5
Scenic overlook	1.5
Roads	
to Ozark camp	2.5
to primitive camp	3.5
Total	93.84

INTERPRETATION

The Pruitt area offers a variety of attractions for Ozark visitors, such as spectacular scenic views, spring and fall floral displays, amusement at Dogpatch USA, and an important canoe put-in/take-out point on the Buffalo River. Visitors will be attracted to these amenities, and it is believed that the Pruitt area will become an important visitor contact point when a higher grade of facilities, interpretive programs, and activities are offered.

The prime interpretive contact will be made on the northeastern side of the Arkansas 7 bridge. This centrally located interpretive center will provide easy access to motorists passing through the area. The visitor's principal focal point for general information will be a year-round manned information desk. The information area will also provide a sales counter with publications, maps, postcards, and slides of Buffalo National River.

Interpretive themes will be recreational and cultural sites to visit within the region and things to see and do along the Buffalo River. Other themes will be canoeing, swimming, safety, how to read the river, and ways to protect the resource. Natural history, flora, fauna, and aquatic life will be presented through various forms of exhibit media. A theater with rearview projection, audiovisual equipment, and capabilities for slide and movie programs will be part of the interpretive center. Full length movie features currently in the park's possession and those in production, along with slide programs, will be shown during the day.

Short slide/movie subjects with themes of "Reading the Waters of the Buffalo" and "Enjoying Spring and Fall Color Floral Shows by Hiking or Auto Tours" will be presented. The theater will be used for daytime demonstrations, as well as for evening programs if inclement weather should prevent the scheduled programs at the outdoor campfire.

Facilities at the day use area (Ozark floater/hiker campground) will consist of a campfire circle with about 100 seats and a trailhead for a nature trail. A variety of interpretive demonstrations will be given; however, techniques of canoeing, with strong emphasis on water safety, will be given at regular intervals. From the trailhead, a self-guiding loop nature trail with a booklet will guide visitors to follow the river and return via the floodplain. The booklet will focus on river dynamics and explain river flooding, dry seasons and their association in forming the floodplain, carving of the high riverbanks, and effects of the water on plant communities. Exploring minute animal life along the gravel riverbank will be an important part of this nature walk.

After the facilities have been phased out at Paradise Hill, picnic tables will be placed at the overlook along with an interpretive exhibit. The exhibit will relate to the view of forests below and the history of Indians, trappers, and farmers.

A future option for primitive camping and interpretation exists at the Hamilton property, where farmstead structures could be interpreted. It is important that the structures be maintained in order to use them at some future time.

The exhibit theme here could reveal a brief history of early farm life, harvesting methods, and products raised. A campfire circle will be constructed in proximity to the primitive campground. A variety of folkway demonstrations will be presented, such as the hewing of logs for buildings, yesteryear cooking methods, and varying techniques used by Indians, trappers, and farmboys in gigging for fish and frogs.

This area will also serve as a secondary river access point. At regular intervals, subjects on canoeing safety with explanation of proper canoeing gear and paddling techniques for first-time floaters will be presented.

Small, covered, unmanned kiosks will be located at the Ozark floater/hiker campground, the Pruitt primary river access/day use area, and the Hamilton primitive campground/secondary river access (future option). These kiosks will provide up-to-date information on water levels, weather reports, naturalist programs, and official park and visitor-related notices. Floaters on the river or those putting in would be able to get the latest weather-water information, making for a safer and more enjoyable river experience.

ENVIRONMENTAL IMPACTS

In order to clearly identify the anticipated impacts of the proposal, the impacts section is organized according to the same topic headings used in the "Description of the Environment" section. Under each topic, the relevant impacts of the proposal on various components of the environment are analyzed and, where appropriate, compared. The mitigating measures, unavoidable adverse effects, short-term and long-term relationships, and irreversible and irretrievable commitments of resources are discussed in separate sections following the impacts.

NATURAL ENVIRONMENT

Geology/Topography/Soils

Most of the proposed development will occur on sites already cleared or disturbed during construction of existing structures, roads, parking areas, or pasturelands. Under the proposal, small amounts of land will revert to natural conditions as existing development is removed. Excavating, grading, and compaction associated with new development will disturb about 88.54 acres of land. The following list indicates how the land will be used in the proposal:

	Acres
Existing disturbed area to be upgraded	53.84
Currently undisturbed lands to be developed	48.2
Area to be cleared and allowed to revegetate	-13.5
Total (net area to be disturbed)	88.54

Increased erosion will occur during the construction period and until revegetation takes place. The extent of this erosion will depend upon the amount of rainfall during the period of disturbance. An unknown amount of eroded soil will cause a temporary rise in the silt level in Mill Creek and Buffalo River.

The impacts on soils during the postdevelopment operational phase will be minimal. Slightly more runoff will occur where roads are improved or additional construction takes place. Existing structures where necessary will be removed from the land, and the areas will be allowed to return to natural conditions. This conversion will slightly reduce runoff in those areas.

Climate

Development will not cause any change in local climatic conditions.

Air Quality

Implementation of the proposal is expected to affect air quality as follows:

Vehicle exhaust emissions--Concentrations of carbon monoxide, nitrogen oxides, particulates, and hydrocarbons are expected to increase during the construction phase and as a result of increased vehicle use after completion. Based upon modeling studies elsewhere, no national ambient air quality standards or prevention of significant deterioration class I or class II increments will be exceeded by peak traffic volumes up to approximately 1,000 vehicles per hour.

Atmospheric dust--An increase in dust load will occur due to soil disturbance during construction. This will lead to temporary impairment of visibility at times during this phase.

Campfire smoke--Increased camping activity will produce greater amounts of campfire smoke. This smoke may be responsible for impairment of visibility during times of poor atmospheric mixing.

Water Resources

Development will require the use of existing wells and additional new sources of water for visitor use. To estimate the demand, it has been determined that visitor water use per person will be about 0.1 gallon/day for drinking and an average of 7.5 gallons/day for comfort stations, picnicking, etc.

Daily drinking water and sanitary water volumes as projected from table 3 (see "Visitation Patterns and Statistics" section) are shown as follows:

Headquarters	Primary River Access	Ozark Campground	Primitive Campground
4,760	280	72	150
x 7.6	100	120	x 7.6
36,176 gal/day	20	100	1,140 gal/day
	72	x 7.6	
	120	2,219.2 gal/day	
	592		
	x 7.6		
	4,499.2 gal/day		

Vegetation

Some modification of vegetation will occur during development of the proposed visitor use and access facilities. Less than one-tenth of one percent of the total acreage of the national river system may be affected by various recreational uses as identified in the proposal. A portion of the vegetation in these areas will be removed to provide parking, buildings, picnicking, campsites, and hiking trails. Increased use of streambanks and trails will have adverse effects on sensitive plants, for example, lichens and wildflowers, in the immediate area. However, the overall impact on vegetation will be moderate.

Wildlife

Increased visitation in the developed area and people floating the river will probably affect behavioral patterns of wildlife species. Development may indirectly affect an endangered bat species. There are two caves within 7 miles of Pruitt that are used by Myotis grisescens, the gray bat. During the spring of 1978, Flea Cave, approximately ½ mile away from the Pruitt development, had a small number of gray bats observed in it. There are no signs that the cave is utilized as a maternity cave by gray bats.

Development will increase human use of the area. If people enter the cave and disturb these bats it could cause the bats to discontinue use of this cave.

John Eddings Cave, located 7 miles downstream from Pruitt, is inhabited by a large colony of grey bat males during the spring and summer. Increased river use will mean more people will pass by this cave and perhaps enter it. Increased human entry into John Eddings Cave may have the same effect as in Flea Cave, changing the use patterns by the bats of the cave.

Increased fishing may result in a decline in the quality and/or size of game populations.

Aesthetic Quality

Under the proposal, the removal of the present facilities along the road on the south side of the bridge will result in a better view of the river from this point. The area proposed for the district headquarters/interpretive center complex will be substantially altered to fit the proposed development. This will alter the appearance of this site; however, other developments will be located away from the highway and will not visually intrude upon the river scene.

CULTURAL ENVIRONMENT

Archeological resources have been reported in the Pruitt district of Buffalo National River. During March 12-15, 1979, the Southwest Cultural Resources Center, National Park Service, conducted an archeological survey of proposed development areas within the Pruitt district. The purposes of this survey were to determine if any archeological sites eligible for inclusion in the National Register of Historic Places were within the proposed development areas and to determine if any archeological resources would be threatened by proposed construction.

The SWCRC archeologist covered eight facility areas during the survey: the day use area, horse corral, scenic overlook, maintenance area, staff residences, district headquarters, primary river access, and primitive campground. Four areas--the day use area, district headquarters, primary river access, and primitive campground--contained archeological resources. None of these resources appear to meet the criteria for inclusion on the National Register of Historic Places (36 CFR 60.6). It is the intent of the National Park Service to avoid these sites during proposed construction. In addition, they will be threated in accordance with current National Park Service management policies and guidelines. If unavoidable impacts on any of the sites occur, the National Park Service will institute a data recovery program in accordance with the appropriate management policies, activity standards, and guidelines.

SOCIOECONOMIC ENVIRONMENT

The development and utilization of the Pruitt area will have some predictable but unquantifiable impacts on the local community.

Prime contractors from local counties will generate funds spent largely within the local economy. The labor force for construction will presumably originate in the local area.

In order to protect the natural and potential cultural resources and to provide visitor use of the Pruitt developed area, an increased amount of money will have to be spent for program operation. Moreover, it is anticipated that additional staff members will live in the immediate vicinity and provide a new source of income for the local economy.

Competition for the tourist dollar will lead to additional commercial development just beyond the park boundary.

The primary and secondary river access points and the Ozark floater/hiker primitive campground will be vulnerable to flooding,

because these areas are located in the 100-year floodplain. Although visitors will be within a potential area of flood danger, the only existing permanent facilities that will be located in the floodplain area are the restrooms and picnic pavilion.

MITIGATING MEASURES

Basic sanitation facilities such as vault toilets will be installed at primitive campsites, popular access points, and picnic areas to protect human health and preserve water quality.

Visitors will be notified by flood alert signs of possible flood danger and loss of life; personnel will advise visitors to vacate the area if necessary. Since most visitors will remain within the confines of the developed area, warnings can be immediate.

At areas designed for intensive use, such as the district headquarters/interpretive center, a package sewage treatment plant will be necessary. The sewage disposal system will be designed to meet all federal and state water quality standards and criteria and will minimize adverse impacts on water quality.

Soil erosion and siltation during initial construction will be minimized as follows: (1) temporary dams and drainage will be constructed to catch silt and allow it to be absorbed into the ground without affecting the quality of the river water; (2) soil disturbance will be restricted to minimum areas required for construction of facilities; (3) disturbed areas will be revegetated as soon as possible; and (4) sites will be carefully selected so that construction will not occur in areas especially prone to erosion. In areas where runoff from paved parking areas may be a problem, critical erosion sites will be sodded or stabilized with appropriate soil conservation techniques.

Marked trails will be provided to confine use to narrow paths, reducing adverse effects of heavy visitor use upon vegetation.

Recreational and support structures will be located where they blend with their surroundings in order to maintain existing scenic qualities. The riverbank cover of trees and shrubs will be maintained where currently intact and allowed to regenerate where denuded.

Archeological and historical inventories will be completed to ensure that any artifacts in undiscovered but possibly important sites are not disturbed during the construction phases of the proposed development. All inventories will be completed prior to the final plan. All impacts (direct and indirect) will be considered and section 106 compliance completed as appropriate.

Sanitation, littering prevention, and air quality protection will be carried out in compliance with all local, state, and federal pollution abatement and environmental quality standards. As air quality baseline data and resource sensitivity data become available, they

will be utilized to mitigate any inadvertent impacts upon air quality related values.

Both bat caves will be monitored for increases in cave use by visitors or decreases in bat populations (Myotis grisescens). If a correlation is found and grey bat populations are being adversely affected, gates will be constructed and the caves or portions of the caves will be closed to public entrance.

UNAVOIDABLE ADVERSE EFFECTS

Unavoidable adverse effects on the natural environment will include increased local air pollution as a result of anticipated increases in automobile traffic, local traffic congestion, and disturbance of the primitive character of the area during initial construction of park facilities and trails. However, the following impacts should be minor in scope.

Some soil erosion will occur during construction or other improvements of the site.

Increased runoff will occur near areas where new structures and compacted parking areas are built.

A temporary, localized increase in noise and decrease in air quality will occur during the period of construction.

SHORT-TERM/LONG-TERM RELATIONSHIPS

Short-term uses will be the development of visitor facilities and road accesses. These short-term uses of the environment will result in visitor use being channeled into small, defined, developed areas; thus, long-term preservation of the remaining lands in an undisturbed state will be encouraged.

IRREVERSIBLE/IRRETRIEVABLE COMMITMENTS OF RESOURCES

NPS commitments to certain land uses (recreational development) will preclude other possible uses and associated economic benefits. Past uses of the land and river--other than those compatible with plan proposals--will be irretrievably precluded because of national river designation.

COST ESTIMATES - PROPOSAL

Primary river access point	
Establish picnic area	$ 10,000
Construct parking area	161,000
Upgrade access road	32,000
District headquarters/interpretive center	
Construct facility	400,000
Construct parking area	45,000
Remove office/contact station	66,000
Revegetate area	6,000
Floater/hiker campground	
Establish facility (50 sites)	50,000
Provide secondary river access	110,000
Construct parking area and upgrade and pave access road	314,000
Primitive campground (future option)	
Establish facility (75 sites)	55,000
Construct parking area	161,000
Upgrade access road	127,000
Revegetate area	4,000
Maintenance area	
Improve existing spur road	75,000
Paradise Hill (phase out)	
Remove buildings (3-4)	17,000
Revegetate area	8,000
Scenic overlook	
Construct parking area	12,000
Provide picnic tables	2,000
Establish fire/rescue cache	127,000
Upgrade and expand utilities (water, power, toilet facilities, telephone)	15,000
Remove existing buildings (6-8)	35,000
Revegetate areas	44,000
Landscape and develop site	99,000
Total Gross Cost	$1,975,000

All costs are gross amounts and include actual expenses plus design and contract supervision. Campfire circles, trail work, etc., will be accomplished by a local YACC group.

assessment of alternatives

ALTERNATIVE A - NO ACTION

DESCRIPTION

Although this is a no-action alternative, several previously planned actions are now being implemented as private land acquisition continues. These actions are included as part of this no-action alternative.

The present Pruitt district headquarters/contact station would remain where it is. Improvements would continue to be made, and the contact station would be upgraded to interpretive center status. A campfire circle and nature trail would be constructed to complement this interpretive facility.

The day use area would remain in its present location, with a 40-car and 5-bus/RV parking area. The existing weekend congestion at this site would be somewhat alleviated by the already planned development of the primary river access on the north side of the Arkansas 7 bridge. This site is already accessible by an unpaved road and has been used by floaters on a fee basis. Existing plans call for an 80-car and 10-bus/RV parking area and minimal day use facilities, as well as widening but not paving the access road.

The existing maintenance building on Arkansas 7 would be phased out because a new maintenance facility has recently been constructed at a site adjacent to a secondary road leading east from the highway. Adjoining this road within the boundary are several privately owned houses that when acquired by the National Park Service would serve as staff residences.

The existing Paradise Hill complex would be phased out under this alternative. The parking area would remain and be utilized as a scenic overlook.

The Ozark floater/hiker campground is currently accessible by a steep substandard road. The campground and access road would remain; however, visitors would only be permitted to hike in and out, as the road would become a maintenance and service road only.

The existing access roads and development on the Hamilton tract would be phased out. All other unneeded secondary roads and structures would be abandoned or removed.

LAND USE

	Acres
District headquarters/interpretive center/ parking lot	1.5
Day use area/parking lot (existing site)	7.0
Primary river access/day use area/parking lot	23.0
Staff housing	8.5
Maintenance area	2.0
Ozark floater/hiker campground	12.5
Scenic overlook (former Paradise Hill site)	1.5
Roads	
to Ozarks	2.5
to maintenance/housing	1.0
Total	59.5

IMPACTS

Natural Environment

Under the no-action alternative, facility construction as proposed would continue to be deferred; therefore, all construction and subsequent impacts in regard to the natural environment would be eliminated.

Under the no-action alternative, there would not be a significant change in the aesthetic quality. The present periodic congestion adjacent to the Arkansas 7 bridge would remain except that the anticipated transfer of the primary put-in site to the downriver side of the bridge would reduce the present weekend crowding.

Cultural Environment

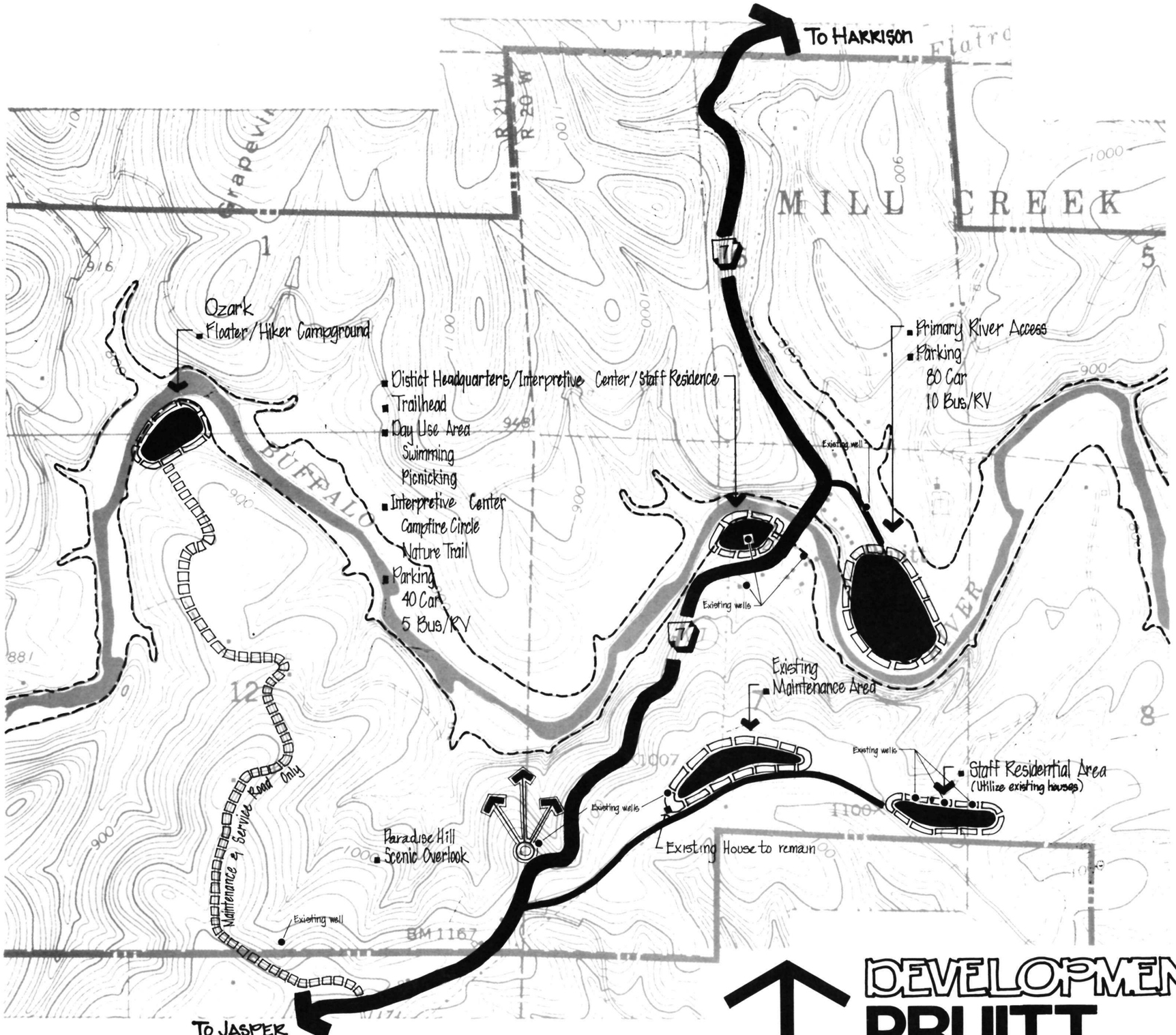
There are no impacts on the cultural resources under this alternative.

Socioeconomic Environment

Under the no-action alternative, visitors would continue to have minimum interpretive and informational contact with the park staff. Visitors would also be minimally informed of the variety of park activities and safety and flooding information.

MITIGATING MEASURES

Improvements could be made to the Pruitt district headquarters/ contact station to upgrade the facility to interpretive center status.



100-Year Flood Crest at about elevation 800 above mean sea level.

ALTERNATIVE A: NO ACTION

DEVELOPMENT CONCEPT PLAN
PRUITT
BUFFALO NATIONAL RIVER, ARKANSAS

United States Department of the Interior / National Park Service

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Planned development of the primary river access on the north side of the Arkansas 7 bridge would help alleviate weekend congestion at this area. Visitor control measures would continue as currently existing, which include visitor-related impacts such as littering, unauthorized parking, removal of vegetation, harassment of wildlife, and hazardous river use.

UNAVOIDABLE ADVERSE EFFECTS

Adverse effects would be related to controlling visitation, and because visitation is expected to rise progressively in the future, it is assumed that visitor-related impacts would also increase. This would include damage, littering, and wildlife disturbance. Safety and sanitation problems would also arise.

SHORT-TERM/LONG-TERM RELATIONSHIPS

With no major actions taken to accommodate the expected numbers of visitors along Buffalo River and in the absence of decisive action to improve recreational and interpretive facilities, management of the area in general would remain difficult. Over the long term with visitor demands on existing facilities and natural resources, it may be necessary to restrict the numbers of visitors to the area.

IRREVERSIBLE/IRRETRIEVABLE COMMITMENTS OF RESOURCES

With the no-action alternative, there would be no irreversible and/or irretrievable commitments of resources.

A L T E R N A T I V E B

DESCRIPTION

This alternative supports several of the ongoing projects described in alternative A but proposes a consolidation of river-oriented activities on the north side of the river. The existing Pruitt district headquarters/contact station would be removed, and a new district headquarters/interpretive center would be constructed near Arkansas 7 immediately north of the bridge. A 25-car and 5-bus/RV parking lot would be built in association with this facility; in addition, a staff residence would be attached or built in close proximity for protection purposes.

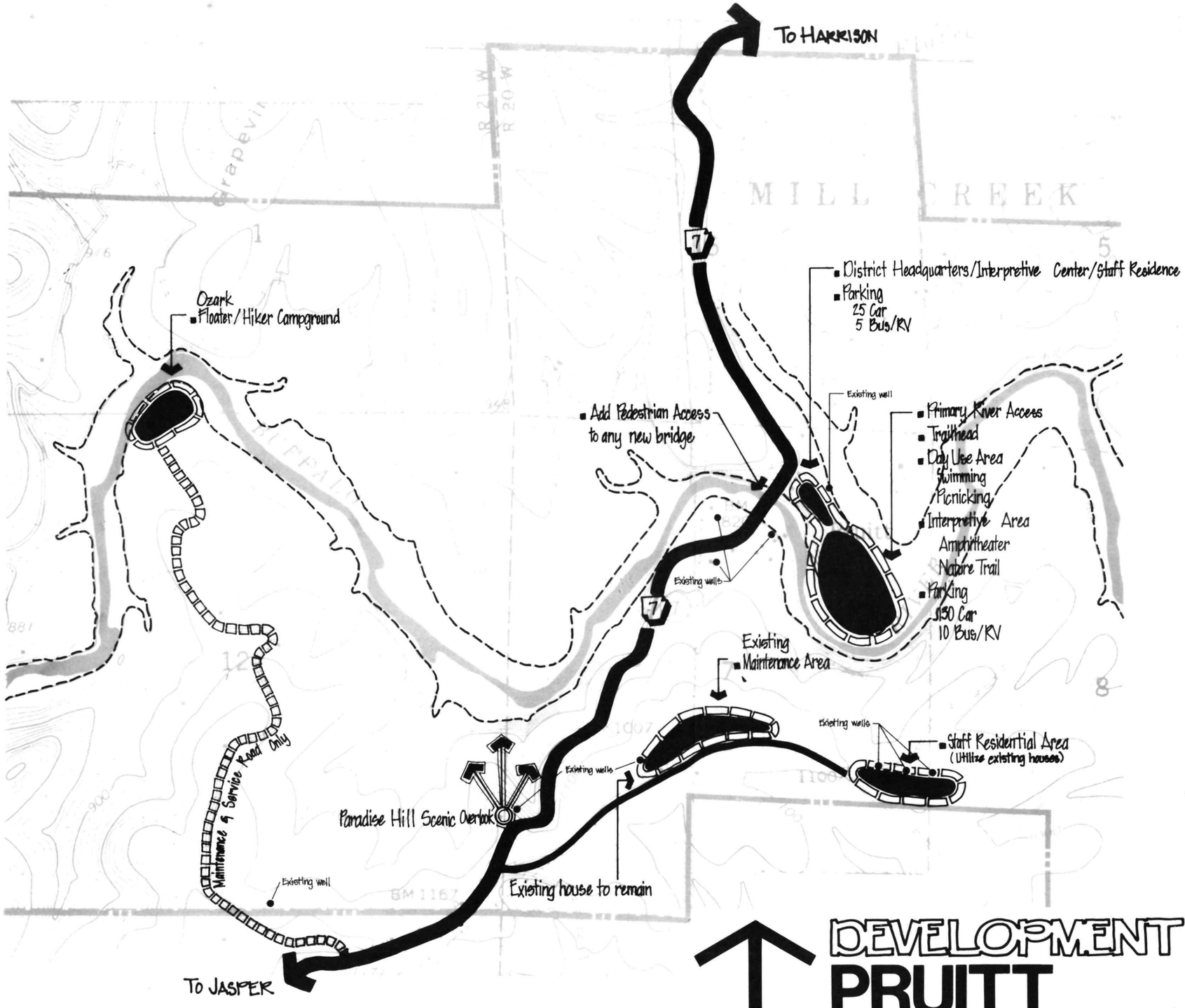
The adjoining plateau and floodplain would be utilized for day use activities (i.e., an amphitheater, nature trail, and primary river access). In addition to the parking lot adjoining this development, a 130-car and 10-bus/RV parking area would be constructed on the floodplain.

This alternative acknowledges the need to provide a means for visitors to reach the currently accessible swimming beaches along the south bank of the river; therefore, a pedestrian walkway would be built to connect the existing, or future bridge, on Arkansas 7.

A new maintenance area has already been constructed at a site adjacent to a secondary road leading east from Arkansas 7. Three privately owned houses adjoin this road and when acquired would serve as staff residences. If existing residences cannot be obtained, new residences would have to be acquired. The Paradise Hill site would be gradually converted to a scenic overlook.

The former Ozark floater/hiker campground would continue to serve this area, with no public road access.

The existing access roads and development on the south side of the river immediately downriver from the bridge would be phased out. All other unused secondary roads and structures would be abandoned or removed.



---- 100-Year Flood Crest at about elevation 800 above mean sea level.

ALTERNATIVE B

0 250 1,000 2,000
100 500
north

DEVELOPMENT CONCEPT PLAN

PRUITT

BUFFALO NATIONAL RIVER, ARKANSAS

United States Department of the Interior / National Park Service

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DSC | JUL 78

LAND USE

	Acres
District headquarters/interpretive center/ parking lot Primary river access/day use area/parking lot	2.8
Maintenance area	2.0
Staff housing	8.5
Ozark floater/hiker campground	12.5
Scenic overlook	1.5
Roads	
to Ozark campground	2.5
to maintenance/staff area	1.0
Total	30.8

COST ESTIMATES - ALTERNATIVE B

Primary river access point	
Establish picnic area	$ 10,000
Construct parking area	171,000
Upgrade access road	32,000
District headquarters/interpretive center	
Construct facility	400,000
Construct parking area	66,000
Remove office/contact station	8,000
Revegetate area	6,000
Floater/hiker campground	
Establish facility (20 sites)	19,000
Maintenance area	
Improve existing road	75,000
Paradise Hill (phase out)	
Remove buildings (4)	23,000
Revegetate area	8,000
Scenic overlook	
Construct parking area	12,000
Upgrade and expand utilities	15,000
Remove existing buildings (6-8)	35,000
Revegetate areas	44,000
Landscape and develop site	94,000
Total Gross Cost	$1,018,000

ALTERNATIVE C

DESCRIPTION

This alternative is similar to alternative B except the focal point for onsite interpretation would shift from the major development along Arkansas 7 to the Ozark floater/hiker campground. This would expand the Ozark development to include a day use area, interpretation (including a nature trail and campfire circle), 50 primitive campsites, and a secondary river access. A 75-car and 10-bus/RV parking lot would be constructed to serve this development. The existing access road would be upgraded and paved under this alternative.

The Pruitt district headquarters/interpretive center/staff residence complex and the adjoining day use area/primary river put-in point would remain as described in alternative B except the nature trail and amphitheater would be eliminated. Long-term parking would be located above the 100-year flood crest. Pedestrian access (walkway on Arkansas 7 bridge) to cross the river to the swimming beaches would remain under this alternative. The maintenance area and staff residences would remain as proposed in alternative B. The Paradise Hill scenic overlook would be upgraded to the same level as was recommended in the proposal.

The existing access road and development on the south side of the river immediately downriver from the bridge would be phased out. All other unneeded secondary roads and structures would be abandoned or removed.

LAND USE

	Acres
District headquarters/interpretive center/parking lot Day use area/primary river access/parking lot	28.0
Maintenance area	2.0
Staff housing	8.5
Scenic overlook	1.5
Ozark day use area/parking lot	12.5
Roads	3.0
Total	55.5

TO HARRISON

MILL CREEK

R 21 W
R 20 W

OZARK FLOATER/HIKER CAMPGROUND
- DAY USE AREA
  Swimming & Picnicking
- INTERPRETIVE AREA
  Campfire Circle & Nature Trail
- PRIMITIVE CAMPING
  50 designated sites
- SECONDARY RIVER ACCESS
- PARKING
  75 Car & 10 Bus/RV

DISTRICT HEADQUARTERS · INTERPRETIVE CENTER · STAFF RESIDENCE
- PARKING
  25 Car & 5 Bus/RV

LONG TERM PARKING & TRAILHEAD
- PARKING
  25 Car & 2 Bus/RV

ADD PEDESTRIAN ACCESS TO ANY NEW BRIDGE

Existing well

Existing wells

PRIMARY RIVER ACCESS
- DAY USE AREA
  Swimming & Picnicking (10 tables)
- PARKING
  75 Car & 8 Bus/RV

Existing wells

STAFF RESIDENTIAL AREA

Existing wells

Existing house to remain

PARADISE HILL SCENIC OVERLOOK
- RESTROOMS
- PICNICKING
  10 Tables
- PARKING
  8 Cars & 2 Bus/RV

Improve Existing Road

Existing well

EXISTING MAINTENANCE AREA

TO JASPER

BUFFALO

RIVER

BM 1167

---- 100-Year Flood Crest at about elevation 800 above mean sea level.

0 250 1,000 2,000
100 500

north

ALTERNATIVE C

DEVELOPMENT CONCEPT PLAN

PRUITT

BUFFALO NATIONAL RIVER, ARKANSAS

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DSC | MAR 79

COST ESTIMATES - ALTERNATIVE C

Primary river access point	
Establish picnic area	$ 10,000
Construct parking area	161,000
Upgrade access road	32,000
District headquarters/interpretive center	
Construct facility	400,000
Construct parking area	45,000
Remove office/contact station	66,000
Revegetate area	6,000
Floater/hiker campground	
Establish facility (20 sites)	19,000
Provide secondary river access	110,000
Construct parking area and upgrade and pave access road	314,000
Maintenance area	
Improve existing road	75,000
Paradise Hill (phase out)	
Remove buildings (4)	23,000
Revegetate area	8,000
Scenic overlook	
Construct parking area	12,000
Upgrade and expand utilities	15,000
Remove existing buildings (6-8)	35,000
Revegetate area	44,000
Landscape and develop site	99,000
Total Gross Amount	$1,474,000

IMPACTS OF ALTERNATIVES B AND C

NATURAL ENVIRONMENT

Under alternatives B and C, most of the proposed development would occur on sites already cleared or disturbed during the construction of existing buildings, roads, parking areas, or pasturelands. Under each alternative, small amounts of land would revert to natural conditions as existing development was removed.

Excavating, grading, and compaction associated with development would disturb 55.5 acres. The following list indicates the acreages that would be involved in each alternative:

	Acres - Alternatives B and C
Existing disturbed area to be upgraded	53.5
Currently undisturbed lands to be developed	15.5
Area to be cleared and allowed to revegetate	-13.5
Total (net area to be disturbed)	55.5

Increased erosion would occur during the construction period and until revegetation took place. The extent of this erosion would depend upon the amount of rainfall during the period of disturbance. An unknown amount of eroded soil would cause a temporary rise in the silt level in Mill Creek and Buffalo River.

The impact on soils during the postdevelopment operational phase would be minimal. Slightly more runoff would occur where roads were improved or additional construction took place.

Under each of the alternatives, some existing structures would be removed, and the areas would be allowed to return to natural conditions. This conversion would slightly reduce runoff in those areas.

Alternatives B and C would require drinking water and sanitary water volumes similar to those projected in "Impacts of Water Resources" subsection.

Developments proposed under alternatives B and C would be located away from the highway and would not visually intrude upon the river scene.

The impacts on vegetation and wildlife would be the same as those in the proposal.

CULTURAL ENVIRONMENT

The impacts on the cultural environment would be the same as those described in the proposal.

SOCIOECONOMIC ENVIRONMENT

The impacts on the socioeconomic environment would be the same as those in the proposal.

MITIGATING MEASURES

Mitigating measures would be the same as detailed in the proposal.

UNAVOIDABLE ADVERSE EFFECTS

Unavoidable adverse effects would be the same as described in the proposal.

SHORT-TERM/LONG-TERM RELATIONSHIPS

Short-term and long-term relationships would be the same as those described in the proposal.

IRREVERSIBLE/IRRETRIEVABLE COMMITMENTS OF RESOURCES

Irreversible/irretrievable commitments of the resources would be the same as detailed in the proposal.

description of the environment

P R U I T T

EXISTING DEVELOPMENT AND USE

The Pruitt district encompasses the upper one-third of Buffalo National River, and the Pruitt development area serves as district management headquarters.

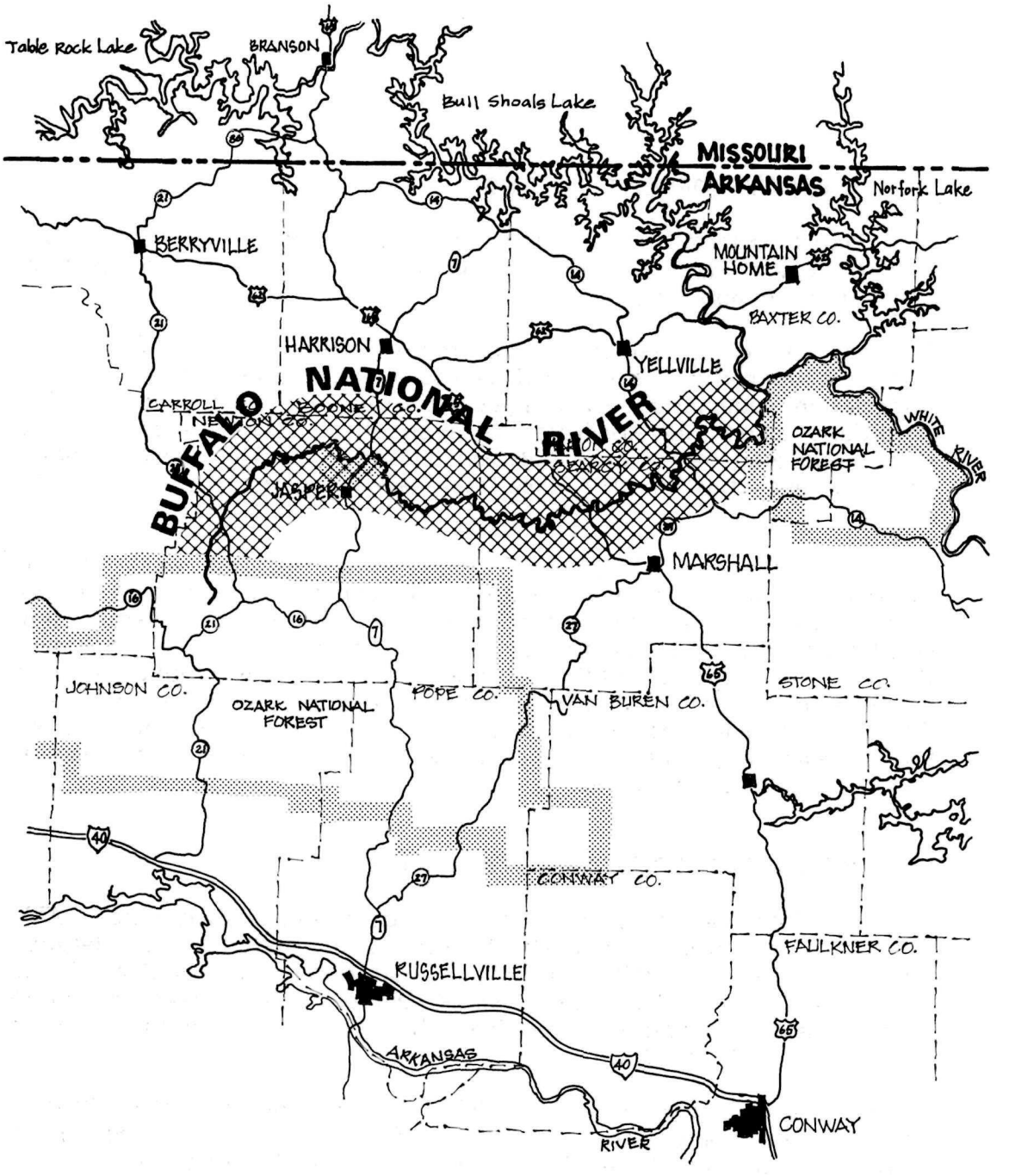
A former private residence immediately south of the Arkansas 7 bridge is currently being used as the headquarters/contact station. Information regarding recreational activities in the area and floating conditions along Buffalo River is available. Floater access to the river is located here where between 80 and 100 cars can be parked. Day use activities of this area include swimming, picnicking, and hiking.

A floater campground (Ozark campground) located west of the Arkansas 7 bridge is available to floaters from the river and from a steep substandard road from the highway. Canoe rental and shuttle service are provided by local business on a daily fee basis. Canoe launching is on NPS-owned land. Visitors also make use of a scenic overlook (Paradise Hill) about a mile south of the highway. The former maintenance building on Arkansas 7 will be utilized for a temporary fire station and rescue cache until a permanent facility can be constructed.

VISITATION PATTERNS AND STATISTICS

Since Buffalo National River has only been established since 1972, there are no lengthy statistical records of visitation or detailed profiles of typical visitor groups. Visitation statistics and visitor use records have been kept since October 1973, and recording methods and procedures have been continually updated to improve the accuracy of the data.

Tables 1 and 2 summarize 1974-1978 visitation for the entire Buffalo National River and the Pruitt district. Statistics for the Pruitt district include the Steel Creek-Lost Valley and Pruitt areas; these statistics have been kept since 1974 for the Steel Creek-Lost Valley area and since April 1975 for the Pruitt area. Visitation to the Pruitt area has been estimated at 40 percent of the Pruitt district total.



VICINITY

Buffalo National River, Arkansas

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United States Department of the Interior / National Park Service

Table 1

VISITATION SUMMARY
Buffalo National River

	1974	1975	1976	1977	1978
January	1,452	2,768	4,927	1,611	1,952
February	2,404	2,436	5,244	3,991	4,749
March	7,570	10,881	13,684	16,750	19,658
April	17,687	19,483	27,311	38,258	60,423
May	25,525	29,341	39,865	50,414	57,564
June	36,630	43,387	43,447	55,247	114,834
July	49,502	45,929	66,232	56,345	152,619
August	31,392	37,165	55,586	51,087	97,070
September	12,663	11,636	24,133	23,833	42,327
October	14,512	14,632	19,871	20,474	39,828
November	4,301	5,238	9,881	8,974	35,118
December	2,223	1,145	5,582	4,562	19,201
Total	205,861	224,041	315,763	331,546	645,343

Table 2

PRUITT DISTRICT VISITATION

	1974	1975	1976	1977	1978
January	364	1,232	2,578	505	487
February	973	1,103	2,420	1,159	1,059
March	2,821	5,156	6,308	7,522	6,806
April	5,166	7,393*	12,411	14,323	27,633
May	5,016	6,723	14,475	8,943	9,305
June	4,358	5,313	5,965	7,961	23,017
July	3,451	4,774	12,373	7,103	22,890
August	3,635	4,369	9,550	7,632	12,547
September	2,450	1,756	8,294	7,251	9,728
October	5,818	4,837	6,063	5,868	8,978
November	1,918	1,731	3,829	4,291	9,407
December	718	515	3,092	2,065	4,079
Total	36,688	44,902	87,358	74,623	135,936

*Figures prior to April 1975 are for Steel Creek/Lost Valley only. Figures for April 1975-December 1977 include both Steel Creek/Lost Valley and Pruitt.

Visitation to the national river has followed a seasonal pattern since 1974, with approximately 64-69 percent arriving in the four summer months, May through August. Visits during the peak month of July constitute approximately 21 percent of the yearly total. From 1974 to 1977 visitation to the national river increased by approximately 61 percent. This increase can be attributed to (1) normal increases in visitation (5 percent/year), (2) opening of new areas, and (3) refinement of recording methods and procedures. From 1977 to 1978 visitation increased by 95 percent. The primary reason for this substantial increase was the refinement of recording methods and procedures and the recording of visitation to previously unrecorded areas.

Between March and October, monthly visitation to the Pruitt district averages about 11 percent of the total visitation to Buffalo National River, with a peak of 16 percent during April. The spring months (March, April, and May) account for approximately 38 percent of the total Pruitt district visitation, the summer months (June, July, and August) for 34 percent, and the fall months (September, October, and November) for 22 percent. Out of the 135,939 visits to the Pruitt district in 1978, it is estimated that approximately 54,000 were to the Pruitt area.

It is difficult to predict what added attraction the proposed facilities in Buffalo National River will have. Assuming a 5 percent annual increase, starting with 645,343 in 1978, visitation to Buffalo National River in 1980 would be about 712,000, and in 1985 it would be about 908,000 under existing conditions. With proposed developments in the Pruitt district (Steel Creek-Lost Valley and Pruitt) and the Silver Hill district (Tyler Bend) and improvements in the Buffalo Point district, visitation to Buffalo National River should increase by even greater percentages.

Because relatively little development currently exists in the Pruitt area and visitor use data is minimal, precise visitation projections cannot be made. However, based on proposals in this Development Concept Plan for the Pruitt area, the possible number of visits per year can be estimated. As shown in table 3, proposed developments will be able to accommodate approximately 90,000 visitors per year.

Table 3

CONCEPTUAL ESTIMATE/VISITS PER YEAR

ACTIVITY	UNIT RESOURCE	STANDARD	PERSONS AT ONE TIME	TURNOVER DAY	VISITORS/ DAY	ACTIVITY/ DAY	VISITOR DAYS/YR	VISITORS/ YEAR
Headquarters Area								
Short-term parking	17 cars	3.5 persons/car	60	40.0				
	1 bus	35 persons/bus	35	40.0				
	4 RVs	4 persons/RV	16	40.0				
Park Staff	2 cars	4 persons/car	8	40.0				
			119					
Primary River Access & Day Use								
Floaters	80 cars	3.5 persons/car	280	1.0	280	122	81	22,680
	5 buses	20 persons/bus	100	1.0	100	122	81	8,100
	5 RVs	4 persons/RV	20	1.0	20	122	81	1,620
Picnicking	2 acres	5 sites/acre 4 persons/site	40	1.8	72	138	92	6,624
Swimming	1 acre	60 persons/acre	60	2.0	120	102	68	8,160
			500					
Ozark Camping & Day Use								
Picnicking	2 acres	5 sites/acre 4 persons/site	40	1.8	72	138	92	6,624
Swimming	1 acre	60 persons/acre	60	2.0	120	102	92	8,160
Camping	50 sites	2 persons/site	100	1.0	100	245	163	16,300
			200					
Primitive Camping								
Camping	75 sites	2 persons/site	150	1.0	150	245	163	12,225
								90,493
						Estimated Visitation		90,000

N A T U R A L E N V I R O N M E N T

The Pruitt area is situated in the Springfield-Salem plateaus section of the Ozark plateaus province of the Interior Highlands of northwestern Arkansas. The area to be developed is located approximately 15 miles south of Harrison from the Arkansas 7 bridge. Elevations range from 790 feet at the river up to 1,100 feet above mean sea level at the ridges near the highway.

GEOLOGY/TOPOGRAPHY/SOILS

The surface geology of the Pruitt area is sedimentary, dating to the middle Ordovician period. St. Peter sandstone and the Everton formation predominate, but the Boone formation exists to a lesser degree and is apparent on the hillsides and bluffs. Caves and springs occur in these limestone formations.

Steep hillsides and bluffs characterize this area. The total acreage of the Pruitt area is 2,104 acres. However, developable area (land from 0 to 10 percent slope) accounts for only 392 acres (18.6 percent). Of the developable area, 325 acres are located outside of the 100-year floodplain.

The soils in this part of Newton County have evolved from limestone formations and are generally categorized as Ozark Highlands limestone soils. These soils tend to be well to somewhat excessively drained and from very slow to moderate rapid permeability.

The surface soils are loamy. Ridgetops and sideslopes are silt loam or sandy loams and are stony or cherty. The floodplains or low terraces are mostly silt loam or sandy loam. Twelve general soil series occur on the site.

Arkana - Moko Complex

- Slopes from 8 to 40 percent, well-drained, very slow to moderate permeability
- Surface layer--very cherty to stony silt loam, 2 to 7 inches thick
- Subsurface layer--very cherty to stony clay and silt loam, 4 to 8 inches thick
- Subsoil--
  - Upper - very cherty silt clay, 4 inches thick
  - Middle - cherty clay, 6 inches thick
  - Lower - clay, 6 inches thick
- Underlying material--limestone bedrock

Steep slopes, shallow depth to bedrock, and presence of clay combine to severely limit development on these soils.

Brockwell

Slopes from 8 to 20 percent, well-drained soils with moderate permeability
Surface and subsurface layers--fine sandy loam, 12 inches thick
Subsoil--extends to 80 inches
Upper - fine sandy loam
Middle - fine sandy loam
Lower - sandy clay loam

This soil has good potential for development. There are no significant limitations for most uses except as moderate erosion hazard or exposed areas during construction.

Noark

Slopes from 3 to 45 percent, deep, well-drained, soils moderate to slow permeability
Surface and subsurface layers--cherty silt loam, 10 inches thick
Subsoil--
Upper - cherty silty clay loam, 7 inches thick
Middle - cherty clay, 13 inches thick
Lower - cherty clay

Depth to bedrock is 72 inches or more. This soil has fair potential for most development. Slope is a moderate limitation for buildings and a severe limitation for large structures. Low strength and slope are moderate limitations for local roads and streets. Slope and slow permeability are moderate limitations for septic tank absorption fields.

Healing

Slopes from 0 to 3 percent, deep, well-drained, moderately permeable soil on stream terraces and floodplains
Surface layer--silt loam, 15 inches thick
Subsoil--
Upper - silt loam, 12 inches thick
Middle - silt loam
Lower - silt loam

Frequent and severe flooding of this bottomland soil severely limits its use for most development.

Clarksville

Slopes from 20 to 40 percent, deep, very cherty, somewhat excessively drained soils on steep sideslopes and narrow ridgetops
Surface layer-very cherty silt loam, 13 inches thick
Subsoil--
Upper - very cherty silty clay loam, 34 inches thick
Lower - very cherty silty clay, 49 inches thick
Underlying material--very silty cherty clay loam

Development on this soil is severely limited by the steepness of the slopes on which it occurs.

Nixa

Slopes from 3 to 12 percent, deep, very slowly permeable soils on upland ridgetops and sideslopes
Surface and subsurface layers--very cherty silt loam, 8 inches thick
Subsoil--
Upper - very cherty silt loam, 10 inches thick
Lower - brittle fragipan of very cherty silt loam
Underlying material--massive chert bed or cherty clay

Low strength and 8 to 12 percent slopes and course fragments are moderate factors limiting development on this soil.

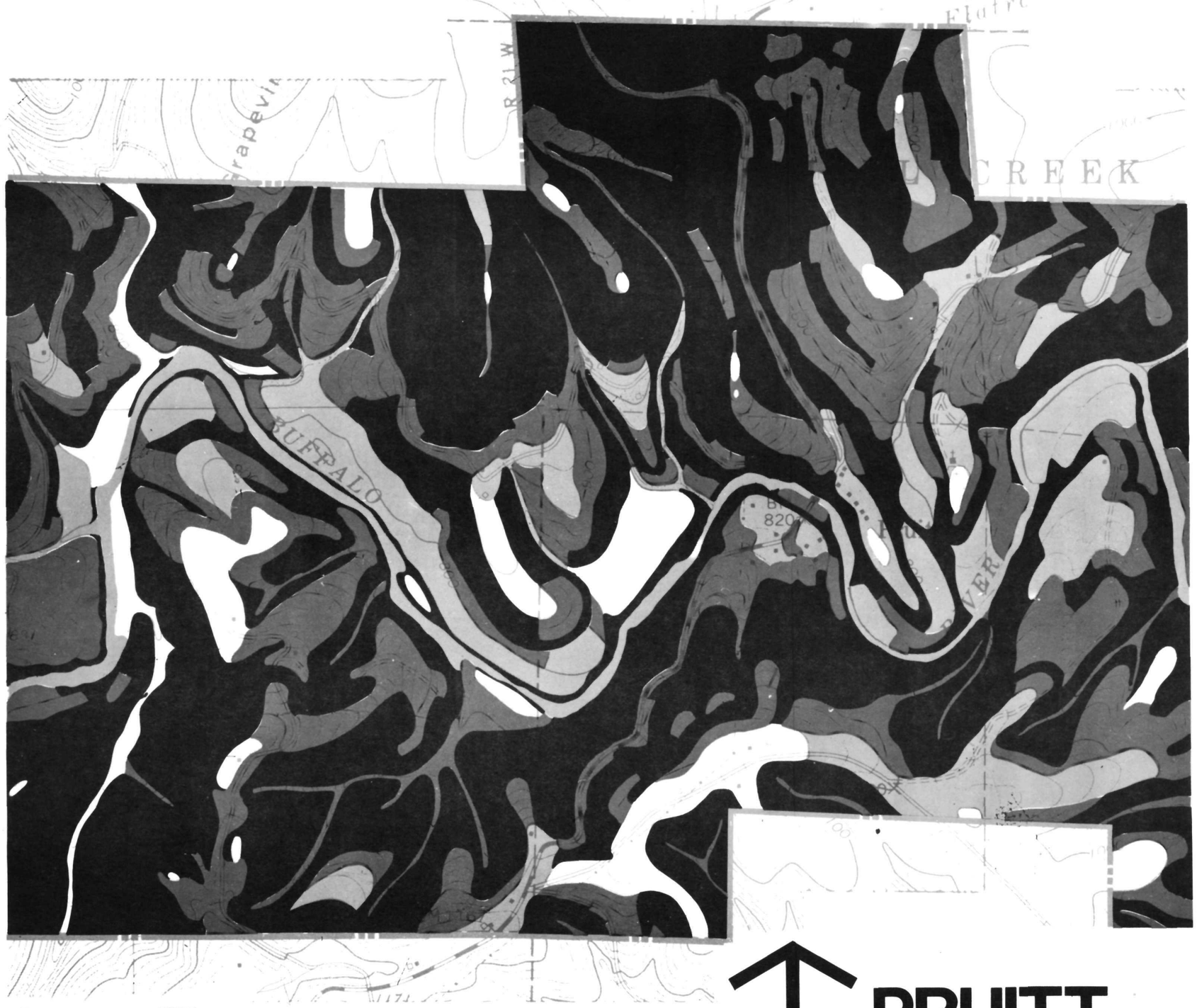
Portia

Slopes from 8 to 12 percent, deep, well-drained, moderate to slow permeable soil on uplands
Surface layer--fine sandy loam, 7 inches thick
Subsurface layer--fine sandy loam, 3 inches thick
Subsoil--
Upper - loam, 14 inches thick
Middle - clay loam, 22 inches thick
Lower - sandy clay, 24 inches thick

This soil has good potential for most development. Shrink/swell potential and low strength are moderate limitations. Moderately slow permeability is a moderate limitation for septic tank absorption fields.

Razort

Slopes from 0 to 3 percent, deep, well-drained, moderately permeable soil on low terraces, floods common
Surface layer--silt loam, 8 inches thick
Subsoil--silt loam, 46 inches thick
Underlying material--gravelly silt loam



Percent Slope

0-5

5-10

10-20

+20

SLOPE ANALYSIS

0 250 1,000 2,000

100 500

north

PRUITT

BUFFALO NATIONAL RIVER, ARKANSAS

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These soils have poor potential for most development. Flooding is a severe hazard for dwellings, large structures, local roads and streets, and septic tank absorption fields.

Mountainburg

Slopes from 1 to 40 percent, shallow, well-drained, moderately to rapidly permeable soils
Surface layer--stony fine sandy loam, 1 inch thick
Subsurface layer--very gravelly fine sandy loam, 5 inches thick
Subsoil--very gravelly sandy clay loam, 12 inches thick
Underlying material--sandstone bedrock less than 20 inches deep

This soil has poor potential for most development. Depth to bedrock and surface stones are severe limitations for buildings, large structures, local roads and streets, and septic tank absorption fields. These limitations are very difficult to overcome.

Boden - Moko Complex

Slopes from 8 to 40 percent, deep, well-drained, moderately to slowly permeable soil
Surface and subsurface layers--very stony clay loam to fine sandy loam, 7 inches thick
Subsoil--
Upper - sandy to stony clay loam, 4 inches thick
Middle - sandy to stony clay, 21 inches thick
Lower - sandy to stony clay loam, 10 inches thick
Underlying material--fine sandy loam and limestone bedrock

Steep slopes and the presence of clay and large stones limit development on these soils.

Britwater

Slopes from 1 to 12 percent, deep, well-drained, moderately permeable soil
Surface layer-gravelly silt loam, 6 inches thick
Subsoil--
Upper - gravelly silty clay loam, 16 inches thick
Middle - very gravelly silty clay loam, 38 inches thick
Lower - very gravelly silty clay

This soil has good potential for most development. Moderate limitations exist for some uses because of low bearing strength and limitations are slight for septic tank absorption fields.

Lindside

Slopes from 0 to 3 percent, deep, well-drained, moderately permeable soils on floodplains
Surface layer--silt loam, 8 inches thick
Subsoil--
Upper - silt loam, 9 inches thick
Upper middle - silty clay loam, 13 inches thick
Lower middle - silt loam, 14 inches thick
Lower - silt loam and silty clay loam, 16 inches thick

The flood hazard limits the desirability of development on these soils.

The Soil Suitability chart indicates the relative suitability of the above soil series for certain types of use. Ratings of slight, moderate, or severe are relative gradations, indicative of the amount of effort required to accommodate a particular use on a particular soil. Slight limitations indicate few, if any, problems for a use. Moderate limitations indicate that there are some incompatabilities between a soil and a use, but careful engineering design, construction, and maintenance can mitigate the problems. Severe limitations portend extensive engineering and mitigation to adapt a use to a soil.

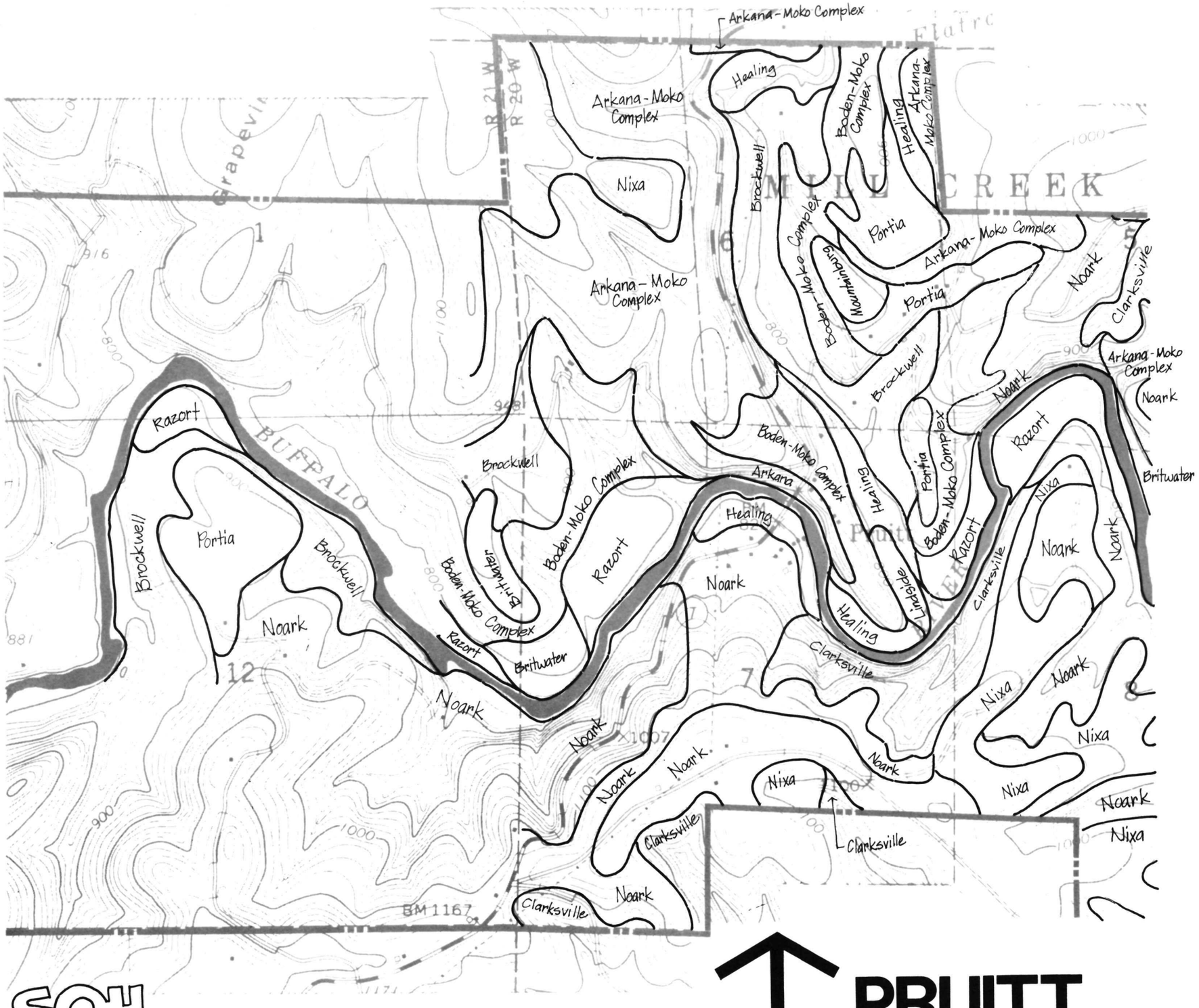
CLIMATE

The climate of the Buffalo River is temperate. The average annual temperature is 58 degrees Fahrenheit, and the average day-night temperature difference is approximately 29 degrees. Summers are long and warm, with July temperatures averaging about 80 degrees. The frost-free season averages 199 days.

The average annual precipitation is 46 inches with distribution relatively uniform throughout the year, although spring months receive slightly higher amounts. From records that date back to 1900, the greatest annual precipitation was 82 inches a year in 1927, and the least was 30 inches in 1901. Snowfall averages 12 inches a year and may occur from November through March.

There is some variability in annual rainfall at local measuring stations: Compton Station recorded 44 inches; the Jasper station recorded 46 inches. Compton is 14 miles away from the Pruitt ranger station and Jasper 5 miles away.

Temperatures have been recorded at the following three stations in the Buffalo River area: Harrison - 13 air-miles from Pruitt; Gilbert - 24 air-miles from Pruitt; and Marshall - 31 air-miles from Pruitt. Gilbert, Marshall, and Harrison temperatures are generally comparable. Gilbert, being within the immediate Buffalo River



SOIL SURVEY

0 250 1,000 2,000

100 500

north

PRUITT

BUFFALO NATIONAL RIVER, ARKANSAS

United States Department of the Interior / National Park Service

173 | 40,073

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soil suitability

SOIL SERIES	Recreation	Development	Sanitary Fac.	Water Mgmt.	Source Mat'l.	Comments
Arkana-Moko Complex	■	■	■	■	■	Steep slopes
Boden-Moko Complex	■	■	■	■	■	Steep slopes
Brockwell	◪	■	◪	■	■	Slopes 8-20%
Noark	■	■	■	□	■	Stones & Clay
Healing	□	■	■	◪	◪	Floods
Clarksville	■	■	■	■	■	Sideslopes
Nixa	■	◪	■	■	■	Ridgetops
Portia	◪	◪	◪	◪	◪	Upland
Razort	□	■	■	◪	◪	Low terraces
Mountainburg	■	■	■	■	■	Shallow bedrock
Britwater	□	□	◪	□	■	
Lindside	◪	■	■	■	■	Floods

LIMITATIONS

- □ Slight
- ◪ Moderate
- ■ Severe

pruitt

DEVELOPMENT CONCEPT PLAN
Buffalo National River - Arkansas

valley, is generally 1 or 2 degrees warmer than Marshall or Harrison. Temperature extremes of 114 degrees and -23 degrees have been recorded at Gilbert.

Prevailing southerly winds are moderate. Drought conditions, common to the Great Plains, often extend into the Ozarks and affect streamflow and plant and animal life.

Table 4

MONTHLY AND ANNUAL PRECIPITATION

MONTH	AVERAGE PRECIPITATION (Inches)	AVERAGE ANNUAL PRECIPITATION (Percent)
January	3.4	7.0
February	3.1	6.4
March	3.8	7.8
April	5.2	10.7
May	5.9	12.1
June	4.4	9.1
July	4.2	8.6
August	4.3	8.9
September	3.9	8.0
October	3.6	7.4
November	3.3	6.8
December	3.5	7.2
Annual	48.6	100.0

AIR QUALITY

Measurements of air quality parameters in Buffalo National River are generally nonexistent. Waggoner (1978) has provided data on particle scattering extinction coefficient for the period November 4 - December 4, 1975, at Hall Mountain, near Huntsville, Arkansas. These nephelometer measurements of bsp ranged from about 0.9×10^{-6} m^{-1} to 2×10^{-4} m^{-1} at 550 nanometers. These values correspond to visual ranges of between 170 and 20 kilometers.* The values are distributed bimodally, with a broad, primary mode at approximately 87 kilometers and at a narrow mode 27 kilometers.

Local sources of air pollution include motor vehicle emissions, smoke from occasional clearing of pasturelands, and unsurfaced roads, which are responsible for fugitive dust.

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*assuming visual range = $\frac{3.92}{b_{sp}}$

A coal-fired electrical generating plant will be constructed at Newark, approximately 75 miles to the east. The plant will generate up to 1,000 megawatts of power, and it may have an impact on air quality in Buffalo National River unless adequate control technology is utilized at the plant.

Additional visibility measurements are planned for 1979, and particulate sampling is underway. When available, the results of these analyses will help to provide baseline data on air quality.

WATER RESOURCES

Surface Water Sources

Buffalo River--which originates in the Boston Mountains almost 2,400 feet above mean sea level--drains an area of approximately 1,400 square miles as it meanders eastward to join White River. Major tributaries to Buffalo River include Little Buffalo River, Richland Creek, Bear Creek, and Big Creek.

Average annual streamflow in Buffalo River at the St. Joe gauging station is 1,059 cubic feet per second. Flow in the river is lowest in late summer and early fall and highest in spring and early summer. The 100-year flood, a streamflow with a 1 percent chance of occurring in any one year, has an estimated discharge of approximately 32,242 cfs at Pruitt; the flood crest here is approximately 800 feet above mean sea level. Such flooding may occur in the Buffalo River drainage at any time of year.

Surface Water Quality

The Buffalo River is one of the few remaining free-flowing rivers in Arkansas. The river is nationally known for its scenic beauty and recreational opportunities. The Arkansas Department of Pollution Control and Ecology has designated the entire river as a class AA stream for smallmouth bass fish. A class AA stream is described as having extraordinary recreational and aesthetic value and is suitable for primary contact recreation, propagation of desirable species of fish, wildlife, and other aquatic life, raw water source for public water supplies, and other compatible uses.

In accordance with the provisions of section 208 of P.L. 92-500, the state of Arkansas has been monitoring the water quality of Buffalo River at stream mile 97, which is 7 stream miles below the Arkansas 7 and bridge at Pruitt. Data show that Buffalo River has excellent water quality at this point; however, one dissolved oxygen violation was measured at 5.69 mg/l in August 1974.

A more comprehensive University of Arkansas study, sponsored by the National Park Service, substantiates the state of Arkansas results to date. All data indicate that existing water quality exceeds the water quality standards set by the state of Arkansas.

Interim regulations (title 40, Code of Federal Regulations) require a reclassification of all stream segments in accordance with the following criteria: water quality segments and effluent limited class segments. By definition, a water quality segment is any segment where water quality is meeting and will continue to meet water quality standards after the application of best practicable technology for industry and secondary treatment for municipalities. An effluent limited class segment is any segment where it is known that water quality does not meet applicable water quality standards even after the application of technology for industry and secondary treatment for municipalities.

The state of Arkansas has classified the first 126.5 stream miles (from the confluence of Buffalo and White rivers to Ponca) as an effluent limited class segment and from Ponca to the origin of Buffalo River (22 miles) as a water quality segment. All major tributaries to Buffalo River are classified as water quality segments with the exception of Little Buffalo, which has been classified as follows: confluence of Little Buffalo with Buffalo River to Henson Creek (7.2 miles), effluent limited segment; Henson Creek to the origin of Little Buffalo (15 miles), water quality segment.

Groundwater Sources

Groundwater in the area is obtained from shallow aquifers of Mississippian and Pennsylvanian age and from deeper aquifers of Cambrian and Ordovician age. The shallow aquifers commonly yield 2-6 gallons per minute, but in highly fractured zones and along bedding planes, yields of 25-50 gallons per minute may be encountered. Deep artesian acquifers commonly yield 150-300 gallons per minute; however, yields are highly variable, and yields up to 500 gallons per minute have occasionally been encountered. The deep aquifers are most dependable as a source of water for municipal, industrial, and agricultural uses.

Recharge to the shallow aquifers is by a combination of local precipitation and upward vertical movement of groundwater from the deeper aquifers.

Groundwater Quality

Information on groundwater quality for each aquifer underlying the Pruitt area is not available. The common practice when drilling

wells in the region is to encase the upper 20 feet of the well to keep the soil overburden from sloughing into the well. The remaining portion of the well, if it is drilled through hard rock, is left uncased. Grout is seldom if ever used to seal the annular space between the casing and borehole. Completing wells in this fashion allows water from all aquifers intercepted by the borehole to mix. Surface waters may also be introduced into the well because of the absence of grout.

The location of the nearest well completed by the National Park Service in accordance with EPA standards is located at Pruitt and is locally known as residence 4-9. Tables found in appendix F reflect the quality of water that may be expected when all water-producing zones from the formations at St. Joe to Jefferson City are mixed.

Availability of Water

In the floodplain area, the water table fluctuates in response to the level of Buffalo River. Results of pumping performed in test holes indicate that the infiltration rate is rapid.

In 1978, the National Park Service drilled five test holes in the area. Aquifer testing of the wells has not been completed to date. It is estimated, based on nearby wells that have been tested in the region, that a specific amount of 0.13 gallons per minute per foot of drawdown may be expected, with readily attainable yields of 10 to 20 gallons per minute.

Waste Discharge

Within the Buffalo River watershed there are two municipalities having central sewage collection and treatment facilities. Jasper, Arkansas, is served by an extended aeration plant with chlorination and tertiary filters. Marshall, Arkansas, is served by a single-stage trickling filter plant. In addition, there are four treatment plants discharging nonmunicipal domestic wastes into the watershed. A review of National Pollutant Discharge Elimination System discharge permits of the watershed identifies them as follows:

National Park Service
    Buffalo Point (lower plant)
    Buffalo Point (upper plant)
Nation's Camper Park
Recreational Enterprises, Inc., Arkansas (Dogpatch USA)

The Buffalo River Flooring Company at Marshall (the only known source of industrial waste) treats its sawdust leachate and runoff in a two-stage aerated lagoon.

Nonpoint sources of water pollution are due to widespread and diffused sources as opposed to point sources, which are readily traceable to a single outlet.

Water quality studies on Buffalo River by the University of Arkansas for the National Park Service have identified the following as the principal nonpoint sources of pollution: (1) cattle, (2) septic tank effluent from the many nonincorporated towns and farmhouses within the watershed, and (3) visitor use of the river (wading and boat trips).

A continuing effort by the state of Arkansas and the National Park Service to identify all nonpoint sources of pollution as mandated under section 208 (P.L. 92-500) is underway.

Tables found in appendix E reflect the chemical analysis of the Buffalo River near St. Joe, Arkansas.

VEGETATION

Floodplain

Vegetation found in the floodplain are green ash, silver maple, and boxelder. These species occur on low, relatively flat terraces and are subject to flooding almost yearly. Streamside species include sycamore, black river birch, black willow, or cottonwood. Gravel bar species include ward's willow or sandbar willow. Because streamside communities are too narrow and gravel bar communities too small for accurate delineation on a map, they have been described here.

Pasture, Meadow, and Cultivated Field

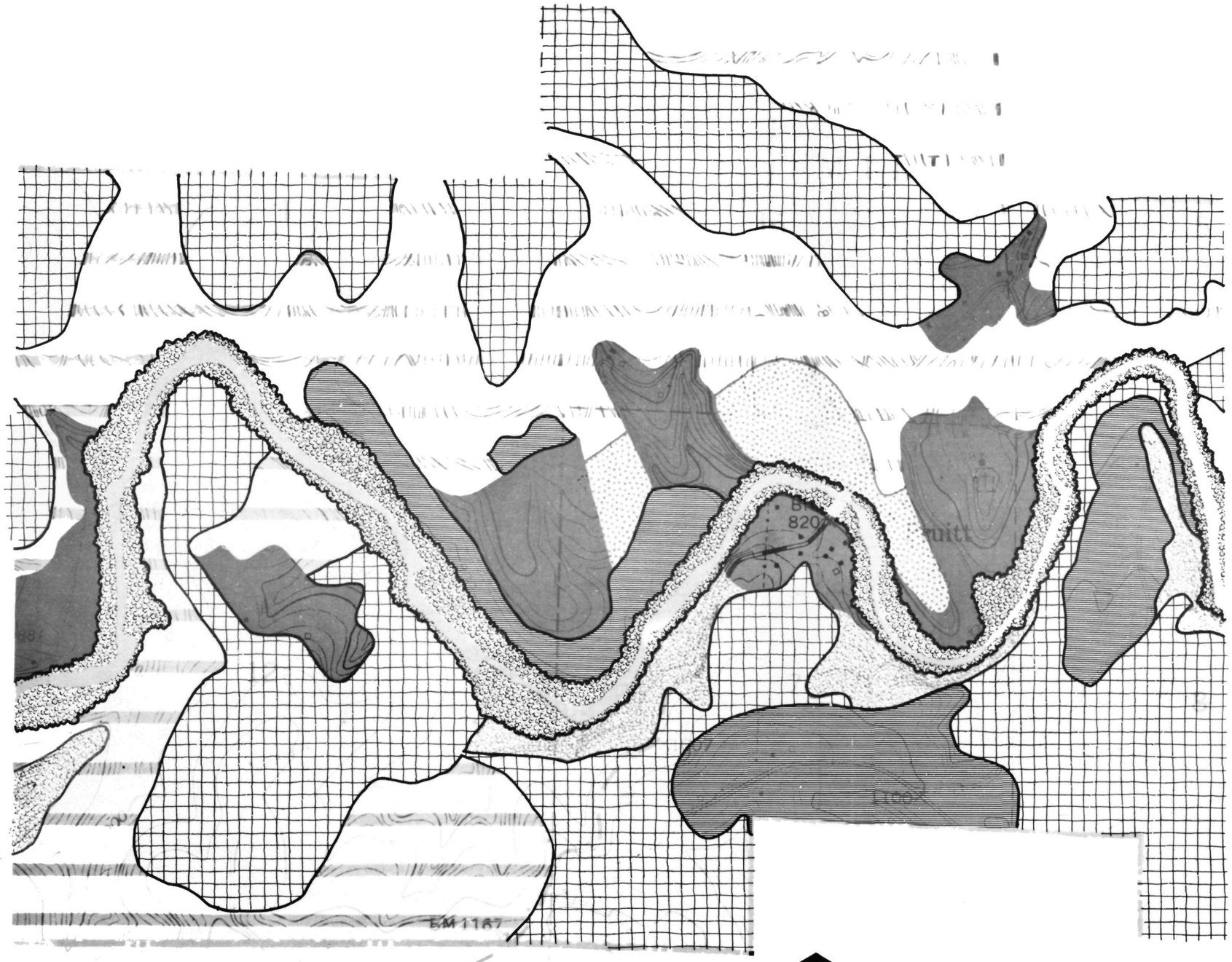
Pastures, meadows, and cultivated fields are open areas with few or no trees; management practices have occurred or are occurring here.

Cutover Area

Cutover can refer to any forest vegetation. Usually such areas are dominated by dense stands of small trees.

Disturbed Area

Disturbed areas are those other than cutover areas, pastures, meadows, or cultivated fields; however, they may contain cultural features such as buildings, campgrounds, etc.



Floodplain Forest

Pasture, Meadow, & Cultivated Field

Oak/Hickory Forest

Disturbed Area

Mixed Hardwood

Cutover Area

Cedar Glade

VEGETATION

0 250 1,000 2,000

100 500

north

PRUITT

BUFFALO NATIONAL RIVER, ARKANSAS

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Mixed Hardwood

Generally, mixed hardwoods provide a transition between the floodplain and oak/hickory or cedar glade vegetation. They occur typically in moist areas on north-facing slopes above the river and along small mesic streams and upland ravines. Such areas are frequently steep sided with a northerly exposure. Oak/hickory species occupy the uplands. Floodplain or lowland species include American elm, green ash, silver maple, sweetgum, white ash, bitternut hickory, hackberry, black gum, black walnut, shumard oak, and white oak.

Cedar Glade

Cedar glades exist almost exclusively as narrow bands of vegetation on the tops or steep sides of limestone or dolomite bluffs. Glades have a variable vegetative composition, with drier areas supporting mainly red and some white cedar, prairie grasses (if undisturbed), or weedy grasses and forbs (if heavily grazed). More mature glades support oak/hickory forests with little cedar.

No rare, threatened, or endangered vascular plants have been identified within the Pruitt area (Babcock 1977, 1978).

WILDLIFE

Wildlife present along Buffalo River is typical of the deciduous forest biome. In general, the forest habitat has decreased in recent decades as a result of continued clearing of forested lands for pastureland. Consequently, the quantity of wildlife has decreased.

Arkansas game animals present in Buffalo National River are white-tailed deer, squirrel, rabbit, bobwhite quail, mourning dove, and wild turkey. Fur-bearing animals found in the Pruitt area are beaver, opossum, raccoon, mink, bobcat, gray fox, skunk, muskrat, and otter. Hunting is permitted in season within the national river boundaries but prohibited within the developed area. Red fox is a protected species and may not be hunted. Mountain lion and black bear are also found in small numbers and are not listed as game animals but are protected.

A number of species have been extirpated from the region: timber wolf, elk, and bison. The red wolf is an endangered species. His existence in the region is in doubt. The black bear, bobwhite quail, and wild turkey were once nearly extirpated in Arkansas, but these have been successfully reestablished.

Buffalo River is noted for its smallmouth bass fishing. Other game fish present are the largemouth bass, spotted black bass, rockbass, walleye, suckers, catfish, bluegills, green perch, and sunfish. In a species survey in 1977, there were 59 species of fish recorded in the Buffalo River. Among the more unusual are the studfish, chestnut lamprey, darters, and gar.

Over 250 species of birds have been reported in the Buffalo River area. These include many migratory waterfowl, which are seen during spring and fall migrations.

The gray bat (Myotis grisescens) and the Indiana bat (Myotis sodalis) are known to live in the region, and both are on the federal endangered species list. Keen's bat (Myotis keenii), a rare species, is known to hibernate in Bat Cave at Boxley, Arkansas.

The Buffalo National River and development sites were examined in July and September 1978 by a study team (Memphis State University 1978) that produced an annual report identifying a number of bat caves and the number of individual bat species inhabiting these caves. In addition to the endangered species mentioned above, the following common species inhabit caves in the area: eastern pipistrelle (Pipistrellus subtlavus), red bat (Lasiurus borealis), and big brown bat (Eptesicus fuscus).

Boxley Bat Cave houses the largest known hibernating colony of Indiana bats in Arkansas, numbering about 2,000. It also contains a small hibernating colony of gray bats. The cave is heavily visited by people from the area and should be protected. Efforts in the past to have the cave designated as critical habitat for the Indiana bat have been to no avail.

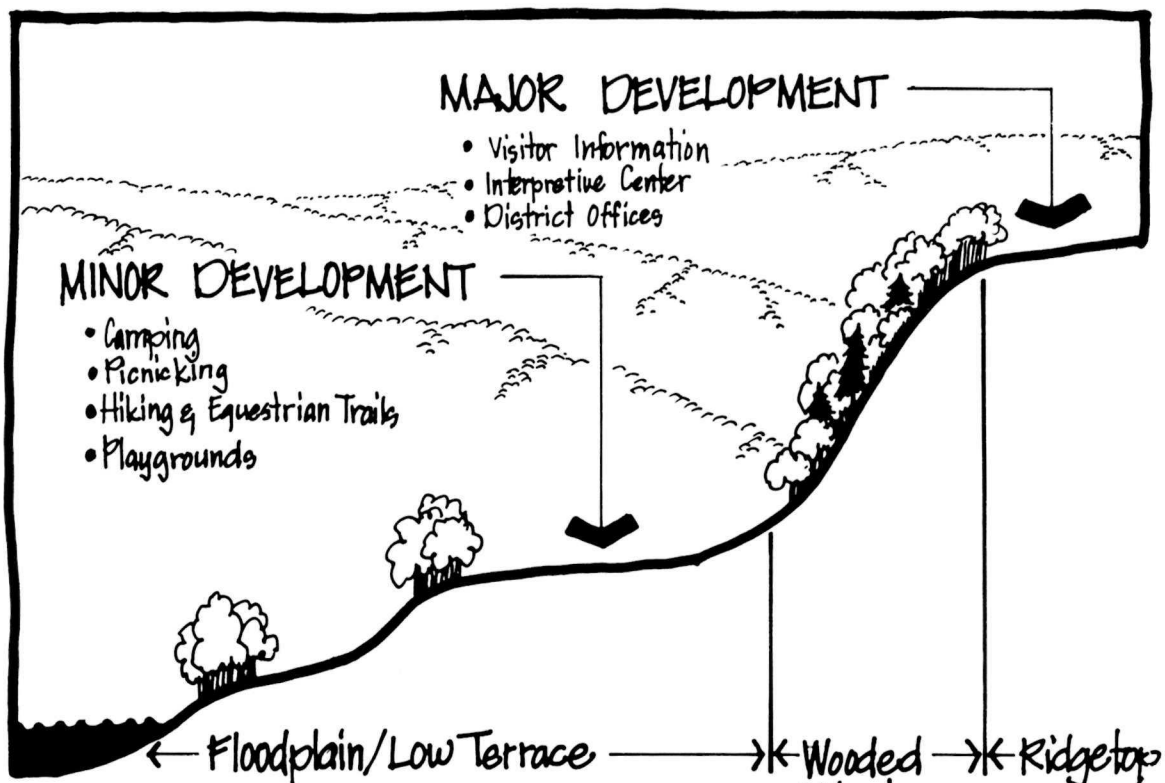
AESTHETIC QUALITY

Prominent bluffs, steep hillsides, narrow ridgetops, abundant vegetation, animals, caves, springs, cultures, historic structures, people, and the river itself are features that contribute to the aesthetic quality of Buffalo National River.

Development to accommodate visitors must be located close to the river. Minor development like camping, picnicking, restrooms, hiking and equestrian trails, which do not entail substantial construction, can be placed within the floodplain where native streamside vegetation will help screen these areas. However, because of almost yearly flooding of the low terraces (and in compliance with Executive Order 11988, Floodplain Management, dated May 24, 1977), substantial developments like visitor information facilities, interpretive centers, and district offices must be located well above the 100-year floodplain. Such major

development will be designed to blend with the landforms and be screened from the river by native vegetation (see Land Profile).

The design concepts discussed above will help to preserve the aesthetic quality of Buffalo National River.



LAND PROFILE

CULTURAL ENVIRONMENT

PREHISTORY

On the basis of archeological research in the area, it is believed that the first inhabitants of the Buffalo River region arrived during the Paleo-Indian period (ca. 10,000-6,000 B.C.). The subsistence of these early people is characterized by the hunting of large game animals, such as mammoth and bison. They were organized in small mobile bands or extended family units. They possessed a highly developed chipped stone industry, which included the manufacture of spear and dart points as well as scrapers, gravers, and knives.

During the following stage, the Archaic period (ca. 6,000-1,000 B.C.), the Paleo-Indian hunters were forced to adjust to a changing environment. Because the Pleistocene megafauna became extinct, the scope of subsistence had to be widened to include the hunting of smaller animals and the gathering of natural vegetable foods. They tended to be somewhat more restricted in their settlement pattern but continued to move around in order to take advantage of seasonal animal and vegetable resources. Bluff areas and rock-shelters were utilized for habitation.

During the Woodland period (ca. 1,000 B.C.-A.D. 700), the basic resource exploitation pattern of the preceding period was retained, but the manufacture of pottery was added, along with an increasingly sedentary settlement pattern. Sometime after A.D. 1, the bow and arrow came into use in the Buffalo River area. Toward the close of the Woodland period, agriculture came into practice--a revolutionary development that continued into the following Mississippian period (ca. A.D. 700-1,700).

The elaborate ceremonialism and erection of large temple mounds and associated towns that characterized the Mississippian period in the Mississippi Valley and surrounding areas did not appear in the Buffalo River region, so far as is known. In general, the patterns of life developed during the Archaic and Woodland periods appear to have continued with little change until the arrival of European settlers in the early 19th century.

HISTORY

Northwestern Arkansas was sparsely settled by the early 1800s. Hunters, trappers, and traders were lured there by the abundant game. Some lead-mining enterpreneurs were also early residents. The rugged terrain offered little for settlers interested in farming. Ridgetops are narrow and rocky; low river terraces are limited in

size but do offer deep rich soil. A few individuals did begin to settle within the Buffalo River watershed during the 1920s and 1930s, clearing fields and raising small herds of domestic animals. Hunting helped the early settlers supplement their diet, allowing them to eke out a meager existence.

One of the major engagements of the Civil War west of the Mississippi took place at Pea Ridge, Arkansas, 65 miles northwest of Harrison. Several of the small lead-mining and processing operations in the area were taken over by the Confederates, as was a saltpeter mine upriver. Generally, the Pruitt area was physically untouched by the war.

Following the war, area residents continued their subsistence living and began to augment their income with cash crops like cotton. However, inadequate roads, lack of rail service, and small acreages, all the result of the hilly landscape, prevented residents from raising their lifestyle above that of subsistence farming.

Lead and zinc mining and smelting development further downriver only slightly affected the Pruitt area. Timber harvesting for cord wood to fire the smelters and for commercial purposes depleted the easily accessible stands by the 1920s.

The depression of the 1930s, coupled with a drought during the early portion of that decade, brought hard economic times to Buffalo River once again, but subsistence farming saw most residents through this crisis.

Throughout the last 40 years, subsistence farming has characterized the lifestyle of northwestern Arkansas where today as in the 1830s the counties of the Buffalo River watershed remain among the least populated counties of the state. Within the last 20 years, economic progress has come to the area--mostly in the form of light-manufacturing companies, but also through the construction and development of four large reservoirs.

Regionally at least, northwestern Arkansas has become a favorite outdoor recreation area where the existing lifestyle remains as relaxed and uncomplicated as it must have been 100 years ago.

ARCHEOLOGICAL SITES

The Pruitt area of Buffalo National River is now being systematically surveyed for archeological sites. Such sites are known to exist, having been reported by amateur investigators and recorded by the state of Arkansas. No sites within the Pruitt district are currently listed on the National Register. However,

recorded sites will receive evaluation to determine eligibility for such listing.

HISTORIC SITES

The only extant early structure is the Floyd Hawkinsmith cabin. Although this cabin has been rebuilt, its logs were originally used in the post-Civil War era. This cabin is located ½ mile northeast of the Arkansas 7 bridge. It reflects the material and construction techniques typical of an Ozark pioneer cabin and may be a significant historic structure.

SOCIOECONOMIC ENVIRONMENT

TRANSPORTATION

Arkansas 7 leads south from Bull Shoals Lake near the Arkansas/ Missouri border through Harrison and Jasper and south to I-40 at Russellville. While not as heavily used as U.S. 65, Arkansas 7 (2,000 vehicles per day, 1976) is noted as a scenic drive through the Ozark and Ourchita mountain country.

To the north, Harrison is only 15 miles away. The community of Jasper is situated 5 miles south of the Arkansas 7 bridge and is the county seat for Newton County. Continuing south, no major community exists until the junction of Arkansas 7 with I-40 some 70 miles away.

Though commercial bus service travels Arkansas 7, automobiles are expected to continue to be the major means of access.

LAND USE

Historically, the Pruitt area was a mixed area of bottomland farms surrounded by forest. In 1970, Pruitt was incorporated as a town, with approximately 20 permanent residences and about 10 business enterprises. In 1972, 77 people resided there, although less than 3 percent of the incorporated area was developed. Currently, three privately owned houses are within the Pruitt developed area, and about 8 miles of gravel and dirt roads provide access to the area.

POPULATION

Pruitt is situated in the sparsely populated Newton County. Total population of the county was 5,844 in 1970, down from the 1960 total of 5,963. Newton County's density of 7.4 people/square mile make it the most thinly populated of the nine counties in northwestern Arkansas, although it is the fourth largest in terms of area. The largest community in the county is Jasper, with a 1970 population of 394.

ECONOMIC DEVELOPMENT

Newton County remains a rural county with a largely agricultural economic base. As with much of the Buffalo River drainage, the farmland is no longer sufficiently productive to support substantially larger populations. Most residents supplement their incomes with jobs in nearby towns. As agriculture declines, tourism industry becomes an important part of the local economy.

consultation and coordination

This Development Concept Plan will be circulated to the following organizations and individuals for comments:

FEDERAL AGENCIES

Advisory Council on Historic Preservation
Department of Agriculture
    Forest Service
    Soil Conservation Service
Department of the Army
    Corps of Engineers
Department of Housing and Urban Development
Department of the Interior
    Bureau of Indian Affairs
    Bureau of Land Management
    Bureau of Mines
    Bureau of Reclamation
    Fish and Wildlife Service
    Geological Survey
    Heritage Conservation and Recreation Service
Environmental Protection Agency
Federal Power Commission

STATE AGENCIES

Arkansas Department of Parks and Tourism
State of Arkansas, Department of Planning
Arkansas State Historic Preservation Office
Arkansas Game and Fish Commission
Arkansas Committee on Stream Preservation
Arkansas Forestry Commission
Arkansas Archeological Survey
Northwest Arkansas Economic Development District, Inc.

OTHER INDIVIDUALS AND ORGANIZATIONS

Oxford Hamilton, Newton County, Chancery and Circuit Court
Bob Daniels, Newton County Assessor
Alton Campbell, Newton County Judge
Ray Watkins, Newton County Sheriff
Sierra Club, Group Chairman, Headwaters Group,
  Fayetteville, Arkansas
Sierra Club, Conservation Chairman, Headwaters Group,
  Fayetteville, Arkansas
Ozark Society, Pulaski Chapter
American Rivers Conservation Council
Ozark Society, Bayou Chapter
University of Arkansas, College of Engineering
American Rivers Resources Council

appendixes/bibliography/planning team

APPENDIX A: LEGISLATION

Public Law 92-237
92nd Congress, S. 7
March 1, 1972

An Act

86 STAT. 44

To provide for the establishment of the Buffalo National River in the State of Arkansas, and for other purposes.

Buffalo National River, Ark. Establishment.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That for the purposes of conserving and interpreting an area containing unique scenic and scientific features, and preserving as a free-flowing stream an important segment of the Buffalo River in Arkansas for the benefit and enjoyment of present and future generations, the Secretary of the Interior (hereinafter referred to as the "Secretary") may establish and administer the Buffalo National River. The boundaries of the national river shall be as generally depicted on the drawing entitled "Proposed Buffalo National River" numbered NR-BUF-7103 and dated December 1967, which shall be on file and available for public inspection in the offices of the National Park Service, Department of the Interior. The Secretary is authorized to make minor revisions of the boundaries of the national river when necessary, after advising the Committees on Interior and Insular Affairs of the United States House of Representatives and the United States Senate in writing, but the total acreage within such boundaries shall not exceed ninety-five thousand seven hundred and thirty acres.

Lands and waters, acquisition.

SEC. 2. (a) Within the boundaries of the Buffalo National River, the Secretary may acquire lands and waters or interests therein by donation, purchase or exchange, except that lands owned by the State of Arkansas or a political subdivision thereof may be acquired only by donation: *Provided*, That the Secretary may, with funds appropriated for development of the area, reimburse such State for its share of the cost of facilities developed on State park lands if such facilities were developed in a manner approved by the Secretary and if the development of such facilities commenced subsequent to the enactment of this Act: *Provided further*, That such reimbursement shall not exceed a total of $375,000. When an individual tract of land is only partly within the boundaries of the national river, the Secretary may acquire all of the tract by any of the above methods in order to avoid the payment of severance costs. Land so acquired outside of the boundaries of the national river may be exchanged by the Secretary for non-Federal lands within the national river boundaries, and any portion of the land not utilized for such exchanges may be disposed of in accordance with the provisions of the Federal Property and Administrative Services Act of 1949 (63 Stat. 377; 40 U.S.C. 471 et seq.), as amended. With the concurrence of the agency having custody thereof, any Federal property within the boundaries of the national river may be transferred without consideration to the administrative jurisdiction of the Secretary for administration as part of the national river.

Retention rights.

(b) Except for property which the Secretary determines to be necessary for the purposes of administration, development, access or public use, an owner or owners (hereafter referred to as "owner") of any improved property which is used solely for noncommercial residential purposes on the date of its acquisition by the Secretary or any owner of lands used solely for agricultural purposes (including, but not limited to, grazing) may retain, as a condition of the acquisition of such property or lands, a right of use and occupancy of such property for such residential or agricultural purposes. The term of the right retained shall expire upon the death of the owner or the death of his spouse, whichever occurs later, or in lieu thereof, after a definite term which shall not exceed twenty-five years after the date of acquisition. The owner shall elect, at the time of conveyance, the term of the right

reserved. The Secretary shall pay the owner the fair market value of the property on the date of such acquisition, less the fair market value of the term retained by the owner. Such right may, during its existence, be conveyed or transferred, but all rights of use and occupancy shall be subject to such terms and conditions as the Secretary deems appropriate to assure the use of such property in accordance with the purposes of this Act. Upon a determination that the property, or any portion thereof, has ceased to be used in accordance with such terms and conditions, the Secretary may terminate the right of use and occupancy by tendering to the holder of such right an amount equal to the fair market value, as of the date of the tender, of that portion of the right which remains unexpired on the date of termination.

"Improved property."

(c) As used in this section the term "improved property" means a detached year-round one-family dwelling which serves as the owner's permanent place of abode at the time of acquisition, and construction of which was begun before September 3, 1969, 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 Secretary shall designate to be reasonably necessary for the enjoyment of the dwelling for the sole purpose of noncommercial residential use.

Hunting and fishing, rules and regulations.

SEC. 3. The Secretary shall permit hunting and fishing on lands and waters under his jurisdiction within the boundaries of the Buffalo National River in accordance with applicable Federal and State laws, except that he may designate zones where and establish periods when, no hunting or fishing shall be permitted for reasons of public safety, administration, fish or wildlife management, or public use and enjoyment. Except in emergencies, any rules and regulations of the Secretary pursuant to this section shall be put into effect only after consultation with the Arkansas Fish and Game Commission.

Water resource projects, restriction.

SEC. 4. 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 the Buffalo National River 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 is established, as determined by the Secretary. Nothing contained in the foregoing sentence, however, shall preclude licensing of, or assistance to, developments below or above the Buffalo National River 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 is established, as determined by the Secretary, nor shall such department or agency request appropriations to begin construction on any such project, whether heretofore or hereafter authorized, without, at least sixty days in advance, (i) advising the Secretary, in writing, of its intention so to do and (ii) reporting to the Committees on Interior and Insular Affairs of the United States House of Representatives and the United States Senate, respectively, the nature of the project involved and the manner in which such project would conflict with the purposes of this Act or would affect the national river and the values to be protected by it under this Act.

Administration.

SEC. 5. The Secretary shall administer, protect, and develop the Buffalo National River in accordance with the provisions of the Act of August 25, 1916 (39 Stat. 535; 16 U.S.C. 1 et seq.), as amended and supplemented; except that any other statutory authority available

to the Secretary for the conservation and management of natural resources may be utilized to the extent he finds such authority will further the purposes of this Act.

Area review; report to President.

SEC. 6. Within three years from the date of enactment of this Act, the Secretary shall review the area within the boundaries of the national river and shall report to the President, in accordance with subsections 3(c) and 3(d) of the Wilderness Act (78 Stat. 890; 16 U.S.C. 1132 (c) and (d)), his recommendation as to the suitability or nonsuitability of any area within the national river for preservation as a wilderness, and any designation of any such area as a wilderness, shall be accomplished in accordance with said subsections of the Wilderness Act.

Appropriation.

SEC. 7. For the acquisition of lands and interests in lands, there are authorized to be appropriated not more than $16,115,000. For development of the national river, there are authorized to be appropriated not more than $283,000 in fiscal year 1974; $2,923,000 in fiscal year 1975; $3,643,000 in fiscal year 1976; $1,262,000 in fiscal year 1977; and $1,260,000 in fiscal year 1978. The sums appropriated each year shall remain available until expended.

Approved March 1, 1972.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 92-807 accompanying H. R. 8382 (Comm. on Interior and Insular Affairs).
SENATE REPORT No. 92-130 (Comm. on Interior and Insular Affairs).
CONGRESSIONAL RECORD:
Vol. 117 (1971): May 21, considered and passed Senate.
Vol. 118 (1972): Feb. 7, considered and passed House, amended, in lieu of H. R. 8382.
Feb. 9, Senate concurred in House amendment.

APPENDIX B: FLOODPLAIN MANAGEMENT

THE PRESIDENT

Executive Order 11988 • May 24, 1977

APPENDIX B

FLOODPLAIN MANAGEMENT

By virtue of the authority vested in me by the Constitution and statutes of the United States of America, and as President of the United States of America, in furtherance of the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.), the National Flood Insurance Act of 1968, as amended (42 U.S.C. 4001 et seq.), and the Flood Disaster Protection Act of 1973 (Public Law 93-234, 87 Stat. 975), in order to avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative, it is hereby ordered as follows:

Section 1. Each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for (1) acquiring, managing, and disposing of Federal lands and facilities; (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

Sec. 2. In carrying out the activities described in Section 1 of this Order, each agency has a responsibility to evaluate the potential effects of any actions it may take in a floodplain; to ensure that its planning programs and budget requests reflect consideration of flood hazards and

floodplain management; and to prescribe procedures to implement the policies and requirements of this Order, as follows:

(a)(1) Before taking an action, each agency shall determine whether the proposed action will occur in a floodplain -- for major Federal actions significantly affecting the quality of the human environment, the evaluation required below will be included in any statement prepared under Section 102(2)(C) of the National Environmental Policy Act. This determination shall be made according to a Department of Housing and Urban Development (HUD) floodplain map or a more detailed map of an area, if available. If such maps are not available, the agency shall make a determination of the location of the floodplain based on the best available information. The Water Resources Council shall issue guidance on this information not later than October 1, 1977.

(2) If an agency has determined to, or proposes to, conduct, support, or allow an action to be located in a floodplain, the agency shall consider alternatives to avoid adverse effects and incompatible development in the floodplains. If the head of the agency finds that the only practicable alternative consistent with the law and with the policy set forth in this Order requires siting in a floodplain, the agency shall, prior to taking action, (i) design or modify its action in order to minimize potential harm to or within the floodplain, consistent with regulations issued in accord with Section 2(d) of this Order, and (ii) prepare and circulate a notice containing an explanation of why the action is proposed to be located in the floodplain.

(3) For programs subject to the Office of Management and Budget Circular A-95, the agency shall send the notice, not to exceed three pages in length including a location map, to the state and areawide A-95 clearinghouses for the geographic areas affected. The notice shall include: (i) the reasons why the action is proposed to be located in a floodplain; (ii) a statement indicating whether the action conforms to applicable state or local floodplain protection standards and (iii) a list of the alternatives considered. Agencies shall endeavor to allow a brief comment period prior to taking any action.

(4) Each agency shall also provide opportunity for early public review of any plans or proposals for actions in floodplains, in accordance with Section 2(b) of Executive Order No. 11514, as amended, including the development of procedures to accomplish this objective for Federal actions whose impact is not significant enough to require the preparation of an environmental impact statement under Section 102(2)(C) of the National Environmental Policy Act of 1969, as amended.

(b) Any requests for new authorizations or appropriations transmitted to the Office of Management and Budget shall indicate, if an action to be proposed will be located in a floodplain, whether the proposed action is in accord with this Order.

(c) Each agency shall take floodplain management into account when formulating or evaluating any water and land use plans and shall require land and water resources use appropriate to the degree of hazard involved. Agencies shall include adequate provision for the evaluation and consideration of flood hazards in the regulations and operating procedures for the licenses, permits, loan or grants-in-aid programs that they administer. Agencies

shall also encourage and provide appropriate guidance to applicants to evaluate the effects of their proposals in floodplains prior to submitting applications for Federal licenses, permits, loans or grants.

(d) As allowed by law, each agency shall issue or amend existing regulations and procedures within one year to comply with this Order. These procedures shall incorporate the Unified National Program for Floodplain Management of the Water Resources Council, and shall explain the means that the agency will employ to pursue the nonhazardous use of riverine, coastal and other floodplains in connection with the activities under its authority. To the extent possible, existing processes, such as those of the Council on Environmental Quality and the Water Resources Council, shall be utilized to fulfill the requirements of this Order. Agencies shall prepare their procedures in consultation with the Water Resources Council, the Federal Insurance Administration, and the Council on Environmental Quality, and shall update such procedures as necessary.

Sec. 3. In addition to the requirements of Section 2, agencies with responsibilities for Federal real property and facilities shall take the following measures:

(a) The regulations and procedures established under Section 2(d) of this Order shall, at a minimum, require the construction of Federal structures and facilities to be in accordance with the standards and criteria and to be consistent with the intent of those promulgated under the National Flood Insurance Program. They shall deviate only to the extent that the standards of the Flood Insurance Program are demonstrably inappropriate for a given type of structure or facility.

(b) If, after compliance with the requirements of this Order, new construction of structures or

facilities are to be located in a floodplain, accepted floodproofing and other flood protection measures shall be applied to new construction or rehabilitation. To achieve flood protection, agencies shall, wherever practicable, elevate structures above the base flood level rather than filling in land.

(c) If property used by the general public has suffered flood damage or is located in an identified flood hazard area, the responsible agency shall provide on structures, and other places where appropriate, conspicuous delineation of past and probable flood height in order to enhance public awareness of and knowledge about flood hazards.

(d) When property in floodplains is proposed for lease, easement, right-of-way, or disposal to non-Federal public or private parties, the Federal agency shall (1) reference in the conveyance those uses that are restricted under identified Federal, State or local floodplain regulations; and (2) attach other appropriate restrictions to the uses of properties by the grantee or purchaser and any successors, except where prohibited by law; or (3) withhold such properties from conveyance.

Sec. 4. In addition to any responsibilities under this Order and Sections 202 and 205 of the Flood Disaster Protection Act of 1973, as amended (42 U.S.C. 4106 and 4128), agencies which guarantee, approve, regulate, or insure any financial transaction which is related to an area located in a floodplain shall, prior to completing action on such transaction, inform any private parties participating in the transaction of the hazards of locating structures in the floodplain.

Sec. 5. The head of each agency shall submit a report to the Council on Environmental Quality and to the Water Resources Council on June 30, 1978, regarding the status of their procedures and the impact of this Order on the agency's operations. Thereafter, the Water Resources Council shall periodically evaluate agency procedures and their effectiveness.

Sec. 6. As used in this Order:

(a) The term "agency" shall have the same meaning as the term "Executive agency" in Section 105 of Title 5 of the United States Code and shall include the military departments; the directives contained in this Order, however, are meant to apply only to those agencies which perform the activities described in Section 1 which are located in or affecting floodplains.

(b) The term "base flood" shall mean that flood which has a one percent or greater chance of occurrence in any given year.

(c) The term "floodplain" shall mean the lowland and relatively flat areas adjoining inland and coastal waters including floodprone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year.

Sec. 7. Executive Order No. 11296 of August 10, 1966, is hereby revoked. All actions, procedures, and issuances taken under that Order and still in effect shall remain in effect until modified by appropriate authority under the terms of this Order.

Sec. 8. Nothing in this Order shall apply to assistance provided for emergency work essential to save lives and protect property and public health and safety, performed pursuant to Sections 305 and 306 of the Disaster Relief Act of 1974 (88 Stat. 148, 42 U.S.C. 5145 and 5146).

THE PRESIDENT

Sec. 9. To the extent the provisions of Section 2(a) of this Order are applicable to projects covered by Section 104(h) of the Housing and Community Development Act of 1974, as amended (88 Stat. 640, 42 U.S.C. 5304(h)), the responsibilities under those provisions may be assumed by the appropriate applicant, if the applicant has also assumed, with respect to such projects, all of the responsibilities for environmental review, decisionmaking, and action pursuant to the National Environmental Policy Act of 1969, as amended.

Jimmy Carter

THE WHITE HOUSE,
May 24, 1977

APPENDIX C:
MANAGEMENT OBJECTIVES

FROM THE STATEMENT FOR MANAGEMENT (Approved 2/77)

To preserve the natural river scene and maintain a free-flowing, nonpolluted river and to protect the historical, archeological, and cultural remains from loss through the securing of a land base within the authorized boundaries through acquisition or other means; the implementation of a viable research program; the initiation of programs of stabilization, maintenance, and protection; and, as needed, the modification of management practices and other means of eliminating conditions having adverse effects.

To provide significant recreational opportunities for visitors to the national river by reducing congestion at river put-in and take-out areas during periods of heavy visitation; permitting hunting and fishing (in designated areas in accordance with appropriate laws and consistent with the park's purpose); analyzing and evaluating the three primitive areas nominated for wilderness and encouraging backcountry use therein within yet-to-be-established carrying capacities; and providing a varied and balanced interpretive program, which emphasizes the river and the historical and archeological past and enhances visitor understanding of and interest in the past and present life in the Ozark Highlands and environment, which are still undergoing change.

To coordinate, encourage, and administer a viable research program, emphasizing the inventorying, identifying, and monitoring of the scenic, geologic, historic, hydrological, archeological, and general scientific values, as well as the physiographic and geologic condition of the river; the reintroduction of extirpated species where feasible; the maintenance of open fields where scenic and wildlife habitat will be enhanced; and the promotion of special protection for all rare and endangered species.

To maintain and foster close liaison and cooperation with governmental and nongovernmental entities and individuals who have an interest in the national river and its surroundings in order to achieve the area's purpose through the most harmonious integration possible of activities inside and outside of the national river boundaries.

APPENDIX D:
MEMORANDUM OF AGREEMENT

Advisory Council
On Historic Preservation
1522 K Street N.W. Suite 430
Washington D.C. 20005

MEMORANDUM OF AGREEMENT

WHEREAS, the Department of the Interior, National Park Service proposes to adopt the Buffalo National River Master Plan and make a Wilderness Recommendation for the Buffalo National River; and,

WHEREAS, the Department of the Interior, National Park Service has determined that these undertakings as proposed could have an adverse effect upon cultural resources that appear to be eligible for inclusion in the National Register of Historic Places, and pursuant to Section 2(b) of Executive Order 11593, has requested the comments of the Advisory Council on Historic Preservation; and,

WHEREAS, pursuant to the procedures of the Advisory Council on Historic Preservation (36 C.F.R. Part 800), representatives of the Advisory Council on Historic Preservation, the National Park Service, and the Arkansas State Historic Preservation Officer have consulted and reviewed the undertaking to consider feasible and prudent alternatives to satisfactorily mitigate the potential adverse effects; now,

THEREFORE: It is mutually agreed that implementation of the undertaking, in accordance with the attached "National Park Service proposal to remove and/or mitigate any adverse effects on cultural resources within the Buffalo National River that might result from the Buffalo River Master Plan and Wilderness Recommendation," submitted by letter dated December 24, 1974 from Theodore R. Thompson, Acting Regional Director, Southwest Region, National Park Service, will satisfactorily mitigate any adverse effect on the above-mentioned properties.

Robert R. Garvin Jr. 2/13/75 (date)
Executive Director
Advisory Council on Historic Preservation

Theodore R. Thompson 2-14-75 (date)
National Park Service
Department of the Interior

Orval E. Henderson 2-25-75 (date)
Arkansas State Historic Preservation Officer

Glenn A. Silvestro 3/13/75 (date)
Chairman
Advisory Council on Historic Preservation

The Council is an independent unit of the Executive Branch of the Federal Government charged by the Act of October 15, 1966 to advise the President and Congress in the field of Historic Preservation.

APPENDIX E: CHEMICAL ANALYSIS OF BUFFALO RIVER

Chemical Analysis
Buffalo River near St. Joe, Arkansas
October 1974 to September 1977

	# SAMPLES	AVERAGE	RANGE minimum - maximum
SPECIFIC CONDUCTANCE	40	207	126 - 291
pH	40	7.9	7.4 - 8.2
Water Temperature(°C)	54	16.2	(-)3 - 31
Color	39	7.7	0 - 35
Turbidity	28	7.2	2 - 30
Dissolved Oxygen	39	9.1	5.6 - 13.8
% Saturation	27	85.	67 - 97
BOD	39	0.9	0 - 2.3
Hardness(CaMg)	11	109	72 - 180
Non Carbonate	11	8	0 - 49
Calcium	11	78	50 - 110
Magnesium	9	4.4	1.7 - 13.
Sodium	12	2.4	1.1 - 4.0
Potassium	12	1.4	.1 - 7.0
Bicarbonate	6	130.	77. - 160.
Carbonate	5	0.	0. - 0.
Alkalinity	6	106	63. - 131.
Carbon Dioxide	5	2.8	1.5 - 5.6
Sulfate	32	4.8	1.0 - 7.0
Chlorides	28	4.5	3.5 - 7.0
Total Dissolved Solids	39	131.	82 - 187
Nitrate	39	0.16	0.05 - .42
Phosphorous	39	0.01	.01 - .04
	Trace Elements (ppb)		
Arsenic	19	< 2.7	<1 - <3
Cadmium	24	< 4.5	0 - 10
Chromium	23	< 1.7	0 - 3
Copper	39	< 34	0 - 200
Iron	24.	<189	<20 - 1100
Lead	38	< 86.	0 - 480
Manganese	40	< 46.	11 - 130
Zinc	39	10	0 - 167
Mercury	1	1.4	

Chemical Analysis
Buffalo River near St. Joe, Arkansas
October 1953 to September 1957

	# SAMPLES	AVERAGE	RANGE minimum - maximum
SILICA	31	4.2	1.2 - 6.2
IRON	30	.02	0.00 - 0.15
CALCIUM	70	35.	21. - 50.
MAGNESIUM	70	3.5	1.2 - 6.9
SODIUM	70	2.4	1.1 - 4.2
POTASSIUM	48	1.1	0.5 - 2.3
BICARBONATE	78	122.	.66 - 240.
SULFATE	78	6.0	2.0 - 16.
CHLORIDE	78	3.1	1.0 - 31.
FLUORIDE	30	0.1	.0 - 0.3
NITRATE	78	1.4	.1 - 5.7
Total Dissolved Solids	78	130.	77. - 219.
HARDNESS			
Ca.-Mg.	78	103.	62. - 204.
Non Carbonate	78	7.6	0. - 30.
Specific Conductance	78	211.	138. - 238.
pH	78	7.8	7.3 - 8.6
Color	67	8.3	3. - 36.

Samples collected and analyzed by U.S. Geological Survey for the period October 1953 to September 1957. Data furnished by U.S. Geological Survey as part of their program of water resources investigations in Arkansas made in cooperation with the Arkansas Geological Commission.

APPENDIX F: WATER QUALITY

ENVIRONMENTAL CONSULTANTS, INC.
391 NEWHAN AVE. · P.O. BOX 37 · CLARKSVILLE, INDIANA 47130 · TEL.(812) 282-8481

From: Mr. Gary Moore
U.S. Department of the Interior
National Park Service
Southwest Regional Office
1100 Old Santa Fe Trail
Post Office Box 728
Santa Fe, New Mexico 87501

Date: 25 October 1976

Sample Description:
Buffalo River
Brown Residence, Well #4-9
E.C.I. #7690

P.O. No. PX 7029-6-01158

Job No.: 7612-02

Alkyl benzene sulfonates	<0.005 mg/l	Manganese	<0.008 mg/
Arsenic	<0.002 mg/l	Mercury	0.008 mg/
Barium	<0.03 mg/l	Nitrate--Nitrogen	1.22 mg/
Bicarbonate, as $CaCO_3$	115 mg/l	Nitrite--Nitrogen	0.001 mg/
Cadmium	0.092 mg/l	pH	7.37
Calcium	118.185 mg/l	Phenols	<0.001 mg/
Carbonate, as $CaCO_3$	0 mg/l	Phosphates:	
Chloride	14.68 mg/l	Total filterable (dissolved) and non-filterable phosphate	0.092 mg/
Chromium, hexavalent	<0.008 mg/l	Total filterable and non-filterable ortho phosphate	0.026 mg/
Copper	0.024 mg/l	Total filterable and non-filterable acid hydrolizable phosphate	0.069 mg/
Cyanide	<0.03 mg/l	Total organic phosphate	<0.001 mg/
Fluoride	<0.1 mg/l	Selenium	<0.005 mg/
Iron	<0.01 mg/l	Silica, as SiO_2	0.53 mg/
Lead	<0.025 mg/l		
Magnesium	2.0117 mg/l		

Remarks:

Analyses Reviewed By Robert E. Stucker

ENVIRONMENTAL CONSULTANTS, INC.
391 NEWHAN AVE. · P.O. BOX 37 · CLARKSVILLE, INDIANA 47130 · TEL.(812) 282-8481

Date- 25 October 1976

From
Mr. Gary Moore
U.S. Department of the Interior
National Park Service
Southwest Regional Office
1100 Old Santa Fe Trail
Post Office Box 728
Santa Fe, New Mexico 87501

P.O. No. PX 7029-6-01158

Sample Description-
Buffalo River
Brown Residence, Well #4-9
E.C.I. #7690

Job No.- 7612-02

Silver	<0.002 mg/l	Total dissolved solids	294
Sodium	13.858 mg/l	Total hardness as $CaCO_3$	855
Specific conductance	400 $\mu mho/cm^3$	Turbidity	<2
Sulfate	3.60 mg/l	Zinc	0.507
Total alkalinity as $CaCO_3$, to pH	115.0 mg/l 8.3		
Inflection point at pH	8.3		

Analyses Reviewed By Robert E. Gard

Herbicides & Pesticides (ppb)					
Aldrin	5	0		-	
DDE	5	0		-	
DDT	5	< 0.4	0		2.0
Dieldrin	5	0		-	
Endrin	5	< 0.4	0	-	< 2.0
Lindane	5	< 0.2	0	-	< 1.0
Methyl Parathion	5	< 1.4	0	-	< 7.0
Toxaphene	5	< 0.2	0	-	< 1.0
Bacteriological (colonies/100 ml)					
Diate Coliform	31	< 145	< 10	-	760
Fecal Coliform	22	< 80	< 7	-	830
Streptococci	16	< 79	< 4	-	704

Samples collected and analyzed by the State of Arkansas Department of Pollution Control and Ecology in compliance with Section 208 of PL 92-500 as amended. The above tabulation was reduced from Water Quality Reports 1975-1977 inclusive as published by the U.S. Geological Survey.

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PLANNING TEAM AND CONSULTANTS

PLANNING TEAM

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John Murphy, Landscape Architect, Team Captain, Denver Service Center
Lorraine Mintzmyer, Former Park Superintendent
Jack Turney, Park Superintendent, Buffalo National River
Larry Walling, Landscape Architect, Denver Service Center
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Craig Cellar, Cultural Resource Management Specialist, Denver Service Center
M. Dean Harper, Soil Scientist, U.S. Department of Agriculture, Soil Conservation Service, Harrison, Arkansas

As the nation's principal conservation agency, the Department of the Interior has basic responsibilities to protect and conserve our land and water, energy and minerals, fish and wildlife, and parks and recreation areas, and to ensure the wise use of all these resources. The department also has major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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