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**MISSOURI RIVER
GAVINS POINT TO PONCA STATE PARK**

**Recommendation For Inclusion Under Section
5(d) of the Wild and Scenic Rivers Act**

**Department of the Interior
Bureau of Outdoor Recreation**

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Drawer 35

MISSOURI RIVER -- GAVINS POINT DAM TO PONCA STATE PARK

I. INTRODUCTION

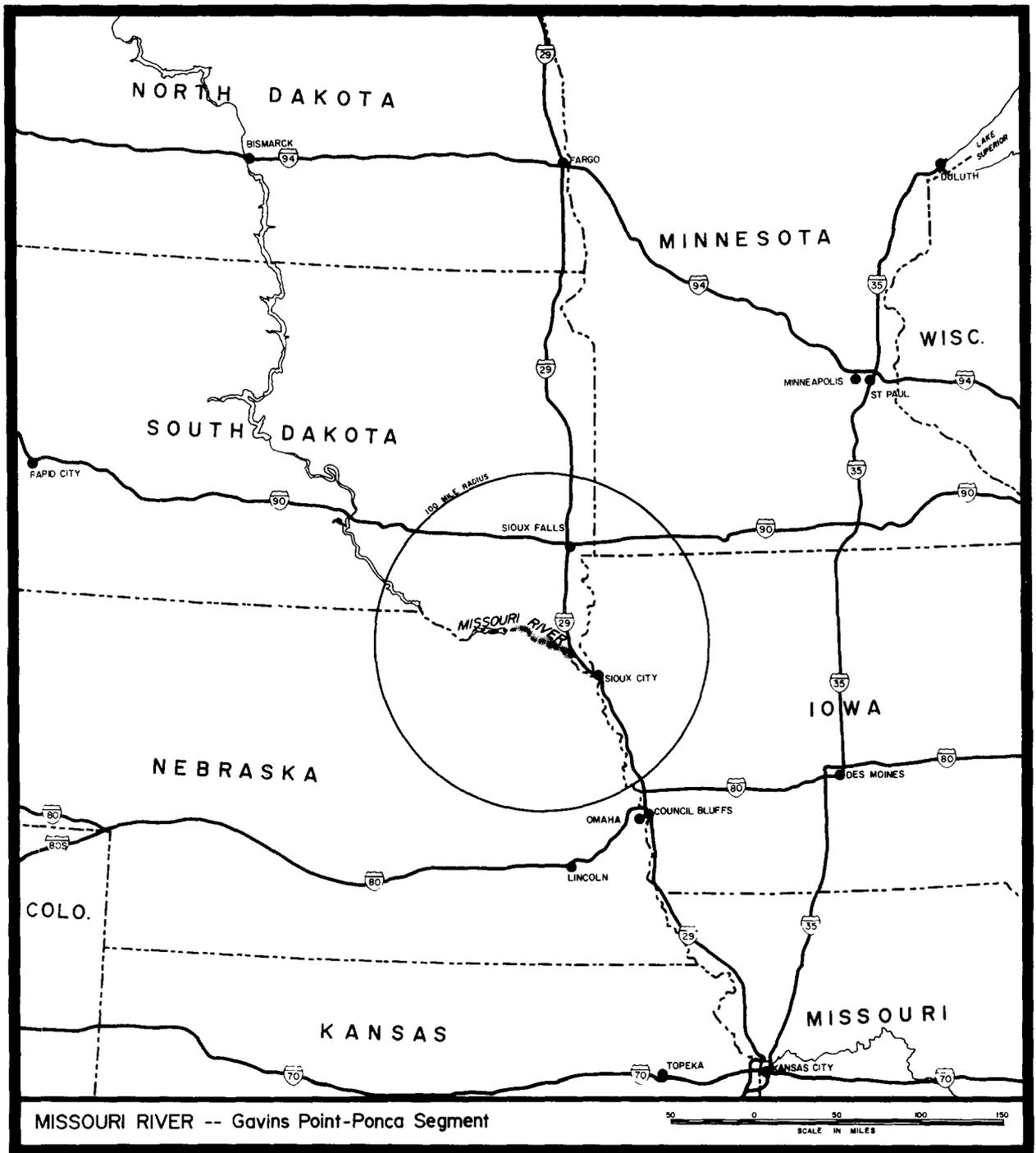
Beginning at Three Forks, Montana, the Missouri River flows southeasterly over 2,300 miles to join the Mississippi a few miles north of St. Louis, Missouri. It ranks as the second longest and, historically, one of the most famous rivers in the United States. It was the primary route of Lewis and Clark on their epic journey of exploration. Long before the advent of transcontinental railways, it shared with the Oregon Trail and the Santa Fe Trail the distinction of being one of the three main thoroughfares to the Far West, witnessing a cavalcade of fur trappers, missionaries, gold miners, and pioneer settlers. But here, instead of covered wagons, conveyance was by pirogue, keelboat and steamboat. It was a wild and unpredictable river that carried millions of pounds of freight.

Waters of this mighty river that for centuries ran uncontrolled are now harnessed in the upper and middle reaches by a series of multipurpose dams and reservoirs. In its lower reaches, the Missouri has been further tamed by channelization. The net effect of man's endeavors has been improved flood control and navigation, increased hydroelectric power generation, irrigation water and creation of new opportunities for outdoor recreation. However, these worthy projects have also eliminated most of the extraordinary aesthetic, historic and wildlife values associated with the river in its natural condition.

The 59-mile segment of the Missouri from Gavins Point Dam to Ponca State Park in Nebraska represents one of the few remaining reaches of this great river that is free from manmade structures and still offers an example of a free-flowing river in a relatively natural state. As such, it represents a very significant part of this nation's dwindling natural heritage and, therefore, deserves consideration for preservation in its present free-flowing state. The following material briefly describes the river, its regional setting and the values which make it significant.

II. REGIONAL SETTING

The Gavins Point-Ponca segment of the Missouri River falls within the Great Plains Physiographic Province, yet it is generally considered a part of the Corn Belt Economic Region. Glacial activity followed by deposits of wind blown silt (loess) and many cycles of prairie vegetation has left the land as an undulating plain with a deep humus soil. In the immediate vicinity of the river, the



loess deposits are especially thick and they have created a chain of low but very picturesque hills. This section is often referred to as the "Loess Hills" section of the Great Plains Physiographic Province. These loess soil deposits are highly productive, giving the area the characteristics and level of prosperity of the central corn belt despite the fact that it has less moisture and a shorter growing season.

Historically, the principal forested land in this prairie region was found along the Missouri River. The streams and rivers that are tributary to the Missouri River served as the highways by which woodlands have expanded westward. Historical records show that these woodland corridors, except the Niobrara and the Missouri, were minimal and it was not until after protection from fire that most of the stream and river associated woodlands became established. As such, the rivers represent environmental corridors.

The importance of the Missouri River as an environmental corridor cannot be overstated. It serves, among other things, as an ecological niche for a host of plant and animal species which are unique and normally not found on the open prairie. Unfortunately, most of the wooded areas along the Missouri River have either been inundated by the large mainstem reservoirs or gradually diminished by development. The Gavins Point-Ponca section represents one reach where this significant corridor remains mostly intact. Although the woodlands are not as extensive as they once were, there remains fairly good forest cover along the river. The green hillsides and tall trees of the flood plain stand out sharply in contrast to the relatively flat cultivated farmlands and pasture which extend in every direction.

The area adjacent to the corridor is quite rural with farming being by far the leading industry. Dairy and livestock operations along with corn and grain production represent the major types of farming. Industry in the area is located at Sioux City, Iowa. In addition, the city has extensive wholesaling and shipping interests and is a large livestock, grain market and meat packing center. For the most part, the economy of the smaller population centers in the area depends heavily upon the farm activities.

The climate of the area is quite variable and is typical of the interior of a large land mass in the temperate zone. Although the climate is generally favorable, extremes of heat and cold are not uncommon. The average annual precipitation for the area is about 25 inches. Winds of high velocity are normally of short duration and are associated with severe thunderstorms.

As noted previously, the population of the surrounding area is rural and quite sparse. The 1970 population for Knox, Cedar and Dixon Counties in Nebraska, along with Yankton, Clay and Union Counties in South Dakota is approximately 72,973. However, within a 100-mile radius of the river segment, there exists a total population of 1,540,947 people, which includes the Standard Metropolitan Statistical Areas of Sioux Falls, Sioux City, and Omaha. The projected population based on economic projections developed by the Water Resources Council for the area within 100 miles of the river reach is expected to increase to 1,618,000 by 1980 and to 1,804,000 by the year 2000.

Automobile transportation to the general area is by State Highways 19, 50, and 81 in South Dakota and by State Highways 9, 12, 15, and 81 in Nebraska. Interstate 29 provides access from western Iowa, eastern Nebraska, and southeastern South Dakota. Bus service is available at Yankton, Vermillion, and Sioux City. Regular airline service provides access to Yankton and Sioux City with small plane access at Vermillion.

Recreation opportunities in the area are centered around the Missouri River. Lewis and Clark Lake, with its 100 miles of shoreline and 33,000 surface acres of water, provides excellent water-based recreation. Boating, sailing, water skiing, swimming and fishing are popular activities. In addition, camp and picnic grounds have been developed below the reservoir by the Corps of Engineers.

Gavins Point National Fish Hatchery is located immediately below the dam on the South Dakota side. The hatchery is operated by the Bureau of Sport Fisheries and Wildlife and contains 31 rearing ponds with a capacity to raise 3-1/2 million fingerling-sized fish. As an educational aid and as a matter of public interest, the Bureau maintains a modern aquarium near the hatchery. Many of the 140 native fishes are on display. The aquarium is a popular attraction for summer tourists.

Lewis and Clark State Park, located above Gavins Point Dam, is administered by the South Dakota Department of Game, Fish and Parks. A complete marina along with excellent swimming beaches, picnic and camping areas have been developed within the park.

Union County State Park, also in South Dakota, is a 124-acre park which contains an arboretum with species of trees from all parts of the world. This park is popular for nature study but camping and picnicking are also available. The Clay County recreation area near Vermillion offers boating and fishing opportunities to local residents.

Ponca State Park is located on the Nebraska side of the river and is one of the most popular recreation areas in the state. This 536-acre park is heavily forested and contains a wide variety of recreation facilities. Bridle trails, hiking trails, camp and picnic grounds and access to the Missouri River are provided at the park. A modern swimming pool, playgrounds and rental cabins are also available.

Niobrara State Park is located at the confluence of the Niobrara and Missouri Rivers. This area is also popular as it provides boat access to the river and the headwaters of Lewis and Clark Lake. A seasonal ferry located at Niobrara provides additional access to and from the park.

III. COMPOSITE DESCRIPTION OF RIVER

River and Riverscape

The segment under consideration begins just below the Gavins Point Dam tailrace and extends to a point just downstream from Ponca State Park in Nebraska. The river drops approximately 52 feet along this 59-mile reach. Historically, the river has shifted continually throughout the flood plain. Thus, numerous islands, sandbars, oxbows, backwater sloughs and wetlands have been created. The flood plain varies in width from two to ten miles, and it is evident that the channel has meandered, at one time or another, over at least 60 percent of the flood plain.

The general setting is very serene as the river winds through a pastoral landscape of rolling hills and cultivated farmlands. There is a distinct difference in the character of the South Dakota and Nebraska sides of the river. Along the South Dakota portion the terrain is flat and there is generally an almost continuous, but relatively narrow, fringe of deciduous trees interrupted at intervals by cultivated fields that reach to the water's edge. The fringe of trees is mostly of elm, ash, cottonwood, and willow, and rarely extends more than a half mile from the river. Beyond this area the flood plain is under intensive cultivation. Along the Nebraska side of the river somewhat different conditions prevail. Rolling wooded hills and bluffs broken by many small valleys and hollows extend almost to the river. In many locations, the light-colored bluffs rise abruptly from the river's edge to a height of near 200 feet. In other areas the bluffs may be as far as ten miles from the river.

With the exception of the bluffs, the banks are composed of soil and are highly erodable. The most severe bank erosion has occurred where the original vegetation has been removed and farmlands extended to the edge of the river.

The drainage pattern is very well defined in the bluff and hill areas but less distinct on the flat flood plain. Streams joining the river from Nebraska include Bow, South, and Elk Creeks. Major tributaries flowing into the Missouri from South Dakota include the Vermillion and the James. The Vermillion and James Rivers carry a heavy load of silt as they drain the fertile farmlands of North and South Dakota.

Because of its shifting channel with many sandbars, submerged snags and tree trunks embedded in silt, navigation in this section of the Missouri is very difficult.

There is relatively little development along this section of the river. There are no dams or other manmade structures that detract from the scenic quality and only one bridge crossing. A few cottages and farm buildings can be seen from the river; but, in general, they are not predominant and blend in well with the rural landscape.

Flow Characteristics

The flow for this segment of the river is regulated according to the operation plan at Gavins Point Dam by the Corps of Engineers. A minimum of 30,000 cfs is released during the spring, summer and fall months to accommodate the navigation needs below Ponca State Park. Additional water enters the river below the dam through the tributary streams. The average width of the river is 2,500 feet but may spread to a width of one mile during periods of high flow. The depth generally ranges from 3 feet to 20 feet with a depth of 60 feet recorded at one location.

Water Quality

The river water quality for this segment of the Missouri is substantially in compliance with standards set by the States of Nebraska and South Dakota. The river along the South Dakota-Nebraska line has been found to be acceptable as a source of domestic water for both states. Although some bacteriological pollution is present, it does not prevent water contact sports. There are several sewage treatment plants which discharge into the Missouri or its tributaries, most of which provide secondary treatment.

Access to the River

Public access to the river is severely restricted. On the Nebraska side, the only public access points are at Gavins Point Dam and at Ponca State Park. Although some Nebraska county roads are located near the river, none extend completely to the river, but rather terminate at farmsteads some distance back. In South Dakota, the river can also be reached at Gavins Point Dam and at Clay County Park south of Vermillion.

Land Ownership

The majority of the land adjacent to the Missouri from Gavins Point Dam to Ponca State Park is in private ownership. A breakdown of the ownership pattern by river miles is shown below.

	Nebraska		South Dakota	
	River Miles	Percent of Total	River Miles	Percent of Total
Federal	1.0	1.7	1.0	1.7
State	1.0	1.7	0.0	---
Other Public	---	---	0.3	0.5
Quasi Public	---	---	0.0	---
Private	57.0	96.6	57.7	97.8
Total	59.0	100.0	59.0	100.0

Significant Historic and Natural Values

This segment of the Missouri River is very rich in historical, fish and wildlife, recreation and other related values. As mentioned earlier, the Missouri River played a principal role in the development of the West as it served, among others, the explorer, the fur trader, the miner, and the homesteader. For years, it was the principal transportation route between the populous cities of the East and vast resources of the West.

The Missouri River from St. Louis to its headwaters was the main route traveled by the Lewis and Clark Expedition of 1804-1806. Due, in part, to the excellent maps, journals and diaries prepared by the explorers, this expedition is one of the most interesting of all American exploratory expeditions. This epic journey is considered by many historians as the single most important event in the development of the western United States. Politically, it secured the recent

American purchase of the Louisiana Territory and extended American claims to the Pacific. Economically, it provided the first knowledge of the resources which eventually led to the opening of the western lands for development and settlement. The segment from Gavins Point Dam to Ponca State Park is one of only several reaches of the entire Missouri River main stem that still retains much of the original characteristics. It therefore offers an excellent opportunity for those persons interested in retracing part of the route traveled by these famous explorers. Certain highways near the river in this segment have been identified as part of the designated Lewis and Clark Trail Highway. Eight Lewis and Clark campsites are located along the 59-mile reach. In addition, remnants of old Indian civilizations, including arrowheads and pieces of pottery can be found along the shore.

The Gavins Point-Ponca segment is very valuable as a fishery resource. It provides good-to-excellent sports fishing and also supports a sizeable commercial fishery. The presence of pools and slack water areas, as well as riffles, gravel bars and rapids are necessary habitat types for many species of fish. Included are relatively scarce species such as the lake sturgeon, shovel-nosed sturgeon, pallid sturgeon, blue catfish, blue sucker, and the paddle fish, the later of which is found only in the Yangtze River in China and the Missouri and Mississippi Rivers. Being the last remaining relatively natural reach of the Missouri River below the mainstem reservoirs, it serves as a vital spawning and rearing area for certain species of fish. For some species, it represents the only habitat remaining where they can propagate. It is also an important production area for the channelized sections downstream. Thus, the populations of certain species of fish far downstream are dependent on this part of the river for maintenance of their present population levels.

The most important wildlife resource in the area, whether measured by qualitative or quantitative standards, is migratory waterfowl, especially geese. The sandbars, sandy islands and barren sand points of the Missouri River have traditionally been the resting sites for several hundred thousand geese and ducks during the spring and fall migrations. Originally, these birds were scattered along several hundred miles of the river, but reservoir construction above and navigation improvements below the Gavins Point-Ponca reach has concentrated the birds on the remaining remnant of the original habitat. As a result, this area now serves as a highly concentrated wildlife

refuge, feeding ground and transit stop. Important species of ducks that are found here are mallards, pintails, green-winged and blue-winged teal, scoup, gadwalls, and ballpates. However, blue, snow, and Canada geese constitute the core of the quality waterfowl hunting. There are approximately 100 active blinds along the Gavins Point-Ponca segment. The vast array of waterfowl and other birds are important to the ecological balance and to the sightseer and photographer.

The brushy wooded areas adjacent to the river provide badly needed winter cover for pheasants as well as quail and benefit a much larger area than just the unfarmed land along the river. Deer hunting is also very heavy along the Gavins Point-Ponca segment. Approximately one-half of the deer taken in Yankton, Clay and Union Counties in South Dakota, for example, were harvested along the river or were dependent on the river area for winter cover. Trapping of beaver and other fur-bearing animals is another activity that is still available along the river.

The Gavins Point-Ponca segment provides a fine base for a number of recreational activities. In addition to the hunting and fishing opportunities previously discussed, the river has been growing in popularity for pleasure boating, and provides limited opportunities for water skiing and swimming. Despite the inherent opportunities offered by the river, use is limited at the present time. The major reason for this is the lack of adequate public access as mentioned earlier.

Camping and picnicking in developed areas is presently limited to the public use areas near Gavins Point Dam and at Ponca State Park. These areas have proved very popular. The primitive camping that takes place now is limited since most of the adjacent lands and larger wooded islands are in private ownership. There are excellent opportunities for developing additional access to the river, including camp and picnic facilities. Adequate access facilities would allow more boaters, water skiers, fishermen, picnickers and sightseers the opportunity to enjoy the beauty of the river.

With appropriate development and management, the Gavins Point-Ponca segment could provide substantial recreational opportunities for people living in and near Sioux City and Council Bluffs, Iowa; Sioux Falls, South Dakota; and Lincoln and Omaha, Nebraska. The recreation opportunities offered by the Gavins Point-Ponca reach are distinctive, of high quality, in a natural environment, and not readily available elsewhere.

Proposals Affecting the River

The most immediate threat to the Gavins Point-Ponca segment of the Missouri is a proposal by the Corps of Engineers to channelize it for navigation and undertake bank stabilization. Except for this 59-mile segment, the entire Missouri River below the mainstem dams has already been channelized -- straightened, deepened and controlled. The general plan for the Gavins Point-Ponca segment is very similar. It would involve the construction of a channel with a uniform width of 300 feet and a depth of 9 feet. To stabilize bank erosion and control the direction of flow, dikes and bank revetment structures would be installed at 300 to 600 foot intervals. The system of dikes and revetments would utilize the hydraulic characteristics of the flow to achieve efficient velocity distribution in the main channel to maintain navigation depths.

A project of this nature would have adverse effects on the free-flowing and natural characteristics of the river.

IV. SUMMARY

This brief analysis of the segment of the Missouri River between Gavins Point Dam and Ponca State Park indicates that the river appears to have the natural values and public outdoor recreation potential worthy of consideration for inclusion in the national wild and scenic rivers system. This segment of the Missouri River was identified in the Nebraska State Water Plan, dated May, 1971 as one which possesses attributes which would qualify it for preservation in its existing free-flowing state. The importance of this section as a free-flowing stream was also identified in the Missouri River Basin Comprehensive Framework Study.

This portion of the river has important associations with the Lewis and Clark Expedition and with subsequent events in the nation's westward expansion and development. In addition it serves as an environmental corridor for a host of plant and animal species as well as providing natural habitat for ducks, geese, pheasants, deer and spawning areas for several endangered species of fish. As more rivers in the area succumb to progress through impoundment and/or channelization, free-flowing rivers become increasingly more valuable for recreational, aesthetic and scientific purposes. This segment, which is representative of a meandering, prairie-type river, offers a unique type of recreation opportunity which is associated with the quiet beauty of a free-flowing stream.

The values of the Gavins Point-Ponca segment are such that it should be given status under Section 5(d) of the Wild and Scenic Rivers Act. This would assure that any future planning and programs involving this segment proceed on the basis of a complete recognition of the natural values of the river and a clear understanding of how these values would be affected.