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Missouri River
Natural Resources
Bibliography

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by

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and

Sharon B. Whitmore
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Missouri River Natural Resources Bibliography

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Abstract. The Missouri River Natural Resources Bibliography contains 2,232 references pertinent to the Missouri River and its floodplain on the subjects of ecology, biology, geology, geography, hydrology, sociology, policy and law. The geographic area of interest covers seven states from Montana to Missouri. The bibliography was compiled to assist researchers and management agencies in their efforts to locate information on subjects of interest. The bibliography is a product of the U.S. Geological Survey Environmental and Contaminants Research Center’s Lower Missouri River Ecosystem Initiative. It is available in electronic format from the Environmental and Contaminants Research Center’s Internet site at http://www.msc.nbs.gov. Corrections and additions to this bibliography should be sent to the Internet site above.

Key words: Bibliography, floodplain, Iowa, Kansas, Missouri, Missouri River, Montana, Nebraska, North Dakota, reservoirs, South Dakota

Introduction

The Missouri River is the longest river in the United States, traversing seven states and flowing 3,750 kilometers (2,250 miles) from the Rocky Mountains to the Mississippi River and draining one-sixth (~ 1,350,000 km²) of the land mass of the contiguous United States. The importance of the Missouri River as a navigational channel was first recognized by early American explorers, especially Lewis and Clark. By the mid-1800’s, the river was well established as a route for steamboats and barges. During the same period, extensive modifications to the river and floodplain began. Extensive removal of woody debris and establishment of a stable river channel were the predominant modifications to the Missouri River during the latter half of the 19th Century.

The first half of the 20th Century was a period of intense channelization of the river and marked the start of reservoir construction. Soon after the middle of the 20th Century, six major dams had been constructed in the upper reaches of the Missouri River. By 1960 the river had essentially achieved its current hydrological regime.

Concurrent with modifications of the Missouri River were alterations in the floodplain. For much of its length, the Lower Missouri River floodplain is defined by steep bluffs. Prior to the 1900’s most of floodplain was dynamically linked to the river through a regular flood pulse that occurred twice each year. The flood pulse resulted in a dynamic system that supported a high diversity of species in both the river and floodplain.
During the late 1800's farming the fertile soils of the floodplain had begun, but the risks associated with flooding kept such efforts from reaching massive scales. The advent of levees, primarily after World War I, reduced the frequency of floods and led to massive alterations of the floodplain. Between the late 1930's and the 1970's, the vast majority of the lower reaches (below Sioux City, Iowa) of the Missouri River floodplain had been converted from wildlife habitat to row crops. Alteration of the Missouri River and its floodplain has had dramatic effects on the ecological function of the system. By 1990, the river bore little resemblance to the descriptions of Lewis and Clark and much of the floodplain was a complex arrangement of levees and agricultural fields.

During 1993, an extensive period of midwestern thunderstorms raised water levels in the Missouri River beyond previous records and resulted in the "Great Flood of 1993." Levee breaks and resultant flooding of the terrestrial habitats adjacent to the river resulted in massive damage to crops and property along much of the length of the lower river. In response to the flood, numerous private organizations and federal and state agencies began reexamining natural resource questions related to the Missouri River and floodplain.

During 1995, snowmelt in combination with rain resulted in another devastating flood. The results of two floods in less than 24 months, memories of previous floods (e.g., the flood of 1986) and a renewed recognition of the importance of the Missouri River and its floodplain as natural resources have led to considerable amounts of research related to the river system.

This bibliography of over 2,200 records was produced in order to assist with the identification of printed reports and peer-reviewed papers that may be important to researchers and managers working in the Missouri River or its floodplain. The bibliography is one of many projects funded by the U.S. Geological Survey's Lower Missouri River Ecosystem Initiative which is coordinated by the Environmental and Contaminants Research Center in Columbia, Missouri. The main focus of this effort was to produce a bibliography that contained references that are appropriate for citation. Although a substantial amount of effort was put into the Missouri River Natural Resource Bibliography's creation, neither this nor any bibliography should be considered the sole source of documents, papers and reports pertinent to the subject under consideration.

The Missouri River Natural Resources Bibliography should greatly reduce the search time of investigators, especially those new to the region, but we encourage the use of other traditional methods of locating information and personal contact with government agencies if impact assessments and internal reports may be useful to your particular investigation. The natural resource focus of this bibliography is large in scope, but necessary for investigators conducting research at ecosystem, landscape and regional levels. Literature from the areas of biology, geology, geography, hydrology, soil science and policy were included if they contained information pertinent to the Missouri River and its floodplain.

A variety of sources were used to obtain information that is included in this bibliography. Extensive literature searching was done on a variety of computer data bases including: BIOSIS, Water Resources Abstracts, Georef, MARCIVE, NTIS, PapersFirst, Current Contents-Science, Dissertation Abstracts, UnCover, Agricola, and a variety of bibliographies available on the Internet. In addition, any known printed bibliographies related to the study area were thoroughly reviewed as sources. All citations from the Missouri River Bibliography produced by the Missouri River Natural Resources Committee (MRNRC) during 1993 were incorporated into the Missouri River Natural Resource Bibliography. Literature cited sections of books, reports and papers were also extensively examined.

This bibliography was extensively distributed for review and comment. Over 25 individuals received drafts of the bibliography along with comment sheets. Copies of the bibliography were displayed at the 1st Annual Conference on Natural Resources of the Missouri River Basin along with comment sheets to be filled by individuals who noted missing references and other discrepancies. In addition to being available in printed form, the bibliography is available for use on the Internet at http://www.msc.nbs.gov.

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## Missouri River Natural Resources Bibliography

The Missouri River Natural Resources Bibliography contains 2,232 references pertinent to the Missouri River and its floodplain on the subjects of ecology, biology, geology, geography, hydrology, sociology, policy and law. The geographic area of interest covers seven states from Montana to Missouri. The bibliography was compiled to assist researchers and management agencies in their efforts to locate information on subjects of interest. The bibliography is a product of the U.S.G.S. Environmental and Contaminants Research Center's Lower Missouri River Ecosystem Initiative. It is available in electronic format from the Environmental and Contaminants Research Center's Internet site at http://www.msc.nbs.gov. Corrections and additions to this bibliography should be sent to the internet site above.

### Subject Terms
- Bibliography, floodplain, Iowa, Kansas, Missouri, Missouri River, Montana, Nebraska, North Dakota, reservoirs, South Dakota

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