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Missouri River Case Study

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River Basin Studies

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Preface

Those who will understand, explain, revise or reform the operation of the Missouri River must be prepared to deal with a daunting complex of history, nature, science, technology, ethics, law and policy, as well as a tangled web of interdependent economic, social and governmental arrangements. A willingness to engage in broad and deep interdisciplinary work is required. The laws and policies which govern management of the Missouri River today originate in the period of the Articles of Confederation and the War of 1812, and follow on a line to the present.

There are admirable studies, articles, books, essays and historical documents which help explain the River and its complex history; the Bibliography appended to this Case Study, as well as the sources cited in the several chapters, are meant to do credit to them. A remarkable roster of scientists, explorers, naturalists, artists, writers, poets, technologists, policy makers, and public citizens have been inspired by the River and have contributed significantly to our understanding of it. Indeed, a life-long study of the River and of the works of those who have been inspired by it would offer a rich career indeed.

So, why this case study? In many if not most studies of the River focus is on a single topic, such as ecology, law, flood control, Indian communities, hydropower production or the stimulation of regional economies. Few studies attempt to weave the many themes into a single, useful, strand. Those who will protect the River by bringing about meaningful reforms in management must understand these many interrelated themes; it is not enough to bring to the task only the segmented methodologies of the economist, scientist, lawyer, business leader or environmentalist. What is required is a willingness to accept the challenge of E.O. Wilson, to unite the natural sciences with the humanities and the social sciences; only then will we have the capacity to manage our great rivers properly.

The near future holds major and controversial decisions involving the use and allocation of the Missouri River's waters. Those responsible will need to draw upon a deep background of the River and its history. The goal here is to prepare that new generation of decision-makers.

Another goal of this case study is to encourage river studies generally. In the United States and internationally, there is a tendency to organize history, public policy and natural history analysis around nation states, which can lead to misleading and short-term analysis. A more logical framework is provided by the river basins around which most societies have developed. This observation becomes increasingly apparent as regional shortages of basic natural resources combine with population, economic growth and climate to challenge the relevance of contemporary political boundaries. A focus on the Missouri River is one good example of this, but the discipline acquired through close study of the Missouri River can be transferred to most other large river basins in the world.

John H. Davidson
January 2013

I. LARGE RIVER ECOLOGY

- National Research Council, THE MISSOURI RIVER ECOSYSTEM: EXPLORING THE PROSPECTS FOR RECOVERY 11-18, 55-61 (2002) [Hereafter: "NRC – Missouri River Ecosystem"] ISBN 0-309-08314-1

- U.S. Geological Survey, ECOLOGICAL STATUS AND TRENDS OF THE UPPER MISSISSIPPI RIVER SYSTEM 1998: A Report of the Long Term Resource Monitoring Program. [Chapters 1 and 2.]

- Barry L. Johnson et al., "Past, Present, and Future Concepts in Large River Ecology," 45 BIOSCIENCE No. 3 (March, 1995).

- James A. Gore and F. Douglas Shields, Jr., "Can Large Rivers Be Restored?" 45 BIOSCIENCE No. 3 (March, 1995).

- Peter B. Bayley, "Understanding Large River-Floodplain Ecosystems**,"** 45 BIOSCIENCE No. 3 (March, 1995).

Notes and Questions

1. Identify the essential natural functions of the large river. When left unaltered by human development, how might these features be of practical, economic, value to humans? Which of these values were lost when main stem dams and channels were constructed?

2. Consider how rivers achieve their own equilibrium. With dams, the river still will want, segment-by-segment, to establish equilibrium. Consider also the role of energy from river flows, and how human attempts to alter flows transfer that energy to other places in the system.

3. What is the role of tributaries, riparian bottomlands and wetlands in these studies? In planning human activities in a river basin?

4. What is the role of sediment in the large river system? In what ways are water and sediment flows interdependent, if at all?

5. Imagine future uses of the large river by humans. Is there a way to manage rivers without interfering with natural functions?

6. Supplemental Readings:

> Richard E. Sparks, "Need for Ecosystem Management of Large Rivers and their Floodplains," 45 BIOSCIENCE No. 3 (March, 1995)

Franklin K. Ligon, "Downstream Ecological Effects of Dams," 45 BIOSCIENCE, No. 3 (March, 1995)

Paul S. Giller & Bjorn Malmqvist, THE BIOLOGY OF STREAMS AND RIVERS (1999). ISBN 0198549784.

J. David Allan, STREAM ECOLOGY: STRUCTURE AND FUNCTION OF RUNNING WATERS (2d Edition, 2007). ISBN 9781402055829.

Larry W. Hesse and Wes Sheets, "The Missouri River Hydrosystem," 18 FISHERIES (May, 1993).

Fred Bosselman, "What Lawmakers Can Learn From Large-Scale Ecology," 17 J. LAND USE & ENVT'L L. 207 (2002).

AQUATIC ECOSYSTEMS SYMPOSIUM, Report to the Western Water Policy Review Advisory Commission, W.L. Minckley, ed., Sept. 1997). HD 1695 .A17 A68.

National Research Council, RESTORATION OF AQUATIC ECOSYSTEMS: SCIENCE, TECHNOLOGY, AND PUBLIC POLICY (1992)

II. The Flood Control Act of 1944

- NRC – Missouri River Ecosystem, 21-38.

- John P. Guhin, "The Law of the Missouri River," 30 S.D. L. REV. 347, 354-380 (1985) [Hereafter "Guhin"]

Notes and Questions

1. What political, social and economic facts and policies led to the adoption of the FCA 1944? Are those facts and policies still compelling? What were the alternatives available to the Congress at the time, and why did it choose this one? What activities does the FCA 1944 make mandatory on the Corps, and what activities are discretionary? Does the FCA 1944 provide a procedural role for the states and tribes? Does the FCA 1944 deal out the states and tribes altogether?

2. FCA 1944 appears to be the result of a series of compromises**;** compromises between upstream and downstream interests, federal and state control over waters, and between the Bureau of Reclamation (irrigation) and the U, S. Army Corps of Engineers (navigation and flood control). Is it accurate to say, as one observer does, that "the Corps got the here and now, and BuRec got the then and later?"

3. To what extent and in what ways did Congress exercise its constitutional power?

4. Was the intent of Congress to dedicate the entire river to industrial, agricultural and economic development purposes? Reading through the FCA 1944, is there any space remaining for natural functions of the River?

5. Supplemental Readings:

S.F. Bates, D.H. Getches, L.J. MacDonnell, C.F. Wilkinson, SEARCHING OUT THE HEADWATERS: CHANGE AND REDISCOVERY IN WESTERN WATER POLICY (Nat. Res. L. Center, U. Colorado School of Law, 1993).

John V. Krutilla & Otto Eckstein, MULTIPLE PURPOSE RIVER DEVELOPMENT: STUDIES IN APPLIED ECONOMIC ANALYSIS (Johns Hopkins, 1958). HN15.R43.

Herbert S. Schell, HISTORY OF SOUTH DAKOTA 304-05 (3rd ed. 1975).

III. Upstream-Downstream I

- Joseph L. Sax, WATER LAW, PLANNING & POLICY: CASES AND MATERIALS, xxxi-xxxii (common water resources terms) and 1-3 (riparianism and appropriation).
- NRC Missouri River Ecosystem 37-53.
- California v. United States, 438 U.S. 645, 98 S.Ct. 2985, 57 L.Ed.2d 1018 (1978).
- Dan Tarlock, "The Law of Equitable Apportionment Revised, Updated, and Restated," 56 U. COLO. L. REV. 381, 385-400 (1985).
- Guhin, 383-410.
- Dan Tarlock, "The Missouri River: The Paradox of Conflict Without Scarcity," 2 GREAT PLAINS NAT. RES. J. 1 (1997)

Notes and Questions

1. How, if at all, does the FCA 1944 seek to reconcile the interstate, inter-regional, conflicts that seem to be inherent in the development project? What role does the FCA 1944 contemplate for the U.S. Bureau of Reclamation? What, if anything, does California v. United States tell us about Missouri River law and policy? What was the original intent of O'Mahoney-Milliken, and what does that statute mean today? What process is available to implement the statute? Guhin is writing from the perspective of an upper basin state; what interpretation is a lawyer for a lower basin state likely to give?

2. Felix Frankfurter & James Landis, "The Compact Clause of the Constitution – A Study in Interstate Adjustments," 34 YALE L. J. 684 (1925). Frankfurter and Landis advocated a theory which they hoped would support an economy of giant regional electrical combines, i.e., they were great advocates of regionalism:

> "The imaginative adaptation of the compact idea should add considerably to resources available to statesmen in the solution of problems presented by the growing interdependence, social and economic, of groups of States forming distinct regions. It may well be that the New England States, the Middle Atlantic States, the Pacific Coast States, and similar groupings will each evolve, through compact, common industrial standards thereby recognizing diversities not coincident with the capricious boundaries of forty-eight States nor yet to be resolved by a flat common denominator nation-wide in its operation. Time and circumstances alone must determine the existence of such diversities and common needs and the wisdom of regional rather than national treatment. The overwhelming difficulties confronting modern society must not be at the mercy of the false antithesis embodied in the shibboleths 'States-Rights' and 'National Supremacy. We must not deny ourselves new or unfamiliar modes in realizing national ideals." Page 729

IV. Upstream-Downstream II

- ETSI v. Missouri, 484 U.S. 495, 108 S.Ct. 805, 98 L. Ed.2d (1988)**.** [Appendix A]
- Guhin, 380-382

Notes and Questions

1. The administrative and regulatory process is the arena in which law is translated into policy. Can we now say that "the Corps runs the River?" Describe the effect that this decision has on the legal position of upper and lower basin states. Why do the upstream states favor the Bureau of Reclamation? Does *ETSI* mean that the Corps is *not* bound to follow state water law? What is the legal effect of O'Mahoney-Milliken after *ETSI*?

2. A 20,000 acre foot diversion is small. Why the strong reaction? The answer has to do with the precedent of allowing an upstream state to claim some part of the water free of claims of the downstream states. At the time, the federal agencies held conflicting opinions. BuRec favored the South Dakota diversions, while the Corps was opposed, viewing the exercise of any authority by BuRec as an invasion of the Corps' jurisdiction (the control of the water stored behind the dams) and also considering the diversion to be a use that was not authorized by Congress in FCA 1944. The Corps later changed its institutional mind on this, but by then the project had failed, probably because of changes in the energy market.

3. On the basis of what you have read so far, can you envision a role for interstate marketing/transfer of water from Oahe reservoir? If so, by what process would such a transfer be permitted? On the basis of what you have read so far, how would you describe the legal interest of the States of South Dakota and North Dakota in the waters behind Oahe and Garrison Dams respectively?

4. What is a state's claim to the water? Under the equal footing doctrine it is empowered to make the water law rules within the state. The water is located physically within the borders of the state, and at least some of it originated there. And, South Dakota had found a willing buyer! Downstream states will argue that South Dakota has invaded the jurisdiction or property rights of others on the stream. But, the VERY small amount of water involved makes it unlikely that any entity could claim injury.

5. The more difficult inquiry is whether Congress has in fact delegated to the Corps the management of the River, including authority over diversions and allocation of water by directing it to contract and manage the dams. But, can such an approach be taken to the point of saying that the Corps can deny a basin state the right to use a fair share of the water in the system, even if it is impounded water?

6. The State of South Dakota filed an original action for equitable apportionment against the downstream states in the United States Supreme Court. South Dakota v. Nebraska, et al., No. 106 Original. North Dakota intervened as a party plaintiff.

7. Supplemental Readings:

> Nancy T. Reed, Comment, "An Analysis of Technical and Legal Issues Raised By The Development of Coal Slurry Pipelines," 13 HOUSTON L. REV. 528 (1976).
>
> Clyde O. Martz & Stanley L. Grazis, "Interstate Transfers of Water and Water Rights – The Slurry Issue, 23 ROCKY MTN. MIN. L. INST. 33 (1977).
>
> Wyo. Stat. Ann. § 41-3-115(B).
>
> Okla. Stat. Ann. §7.6.

V. Ethics in Natural Resources Management

- Rachel Carson, SILENT SPRING (1962)
- E.O. Wilson, THE DIVERSITY OF LIFE (1999)
- Aldo Leopold, A SAND COUNTY ALMANAC (1949)

Notes and Questions

1. Are there ethical obligations applicable to public officials, employees and independent contractors which extend beyond the specific dictates of statute and judicial decision? Administrative law delegates a substantial discretion to agencies, and in the exercise of that discretion there is ample opportunity to refer to ethical principles. Government lawyers, doctors, scientists and nurses are expected to follow the ethics of their respective professions even when employed by government agencies carrying-out statutorily defined duties. Are natural resources and engineering professionals subject to guiding ethical principles? If so, what is that ethic? If not, why not?

2. Is there an ethical responsibility to refrain from activities that may cause irreversible impacts? Even if restraint increases the risk of negative outcomes?

3. The federal Freedom of Information Act and National Environmental Policy Act set a statutory duty of disclosure to the public. Is there a more fundamental ethical obligation to disclose?

4. How does society make decisions in the face of divergent ethical perspectives?

5. Is technical compliance with the Endangered Species Act and Fish and Wildlife Coordination Act the only governing standard when decisions may result in substantial harm to conservation values?

6. When a Corps of Engineers official makes a decision which will be affirmed according to the Administrative Procedure Act and the FCA 1944, is that sufficient, or should that official also be guided by an independent conservation ethic?

7. What is the ethical position of a decision-maker at any level who is confronted with a decision that is likely to contribute to the extinction of a species? Consider the following:

In the film *Amadeus* (Orion 1984) the following dialogue occurs. Having just composed his first opera for Emperor Joseph II, Mozart asks if his majesty is pleased:

> Emperor -- :. . . .there are simply too many notes. That's all, just cut a few and it will be perfect." Mozart -- "Which few did you have in mind, Majesty?"

[First offered in this context by J.B. Ruhl & J. Salzman at 91 GEORGETOWN LAW J. 757 (2003). The episode depicted in the film is based on an earlier report. "Too many notes, Mr. Mozart," said Emperor Joseph II after hearing *Die Entfuhring aus dem Serail* for the first time. 76 OPERA NEWS 599 (No. 12, June 2012)]

8. May a water rich region ethically deny water transfers to a region in great need as a result of drought?

VI. The Failure of Irrigation

- Guhin, 366-379
- NRC, 24-26,

Notes and Questions

1. The fact that irrigation from Oahe and Garrison reservoirs turned-out to be scientifically infeasible and politically impossible frees-up a huge amount of stored water for other uses; why is there such controversy over the river in the face of "extra" water? Pay close attention to the impact which the failure of irrigation has on basin-wide accounting, project repayment and power rates; herein lies a key to understanding multiple-purpose water projects. Does the failure of irrigation alter our interpretation of O'Mahoney-Milliken? Does the failure of irrigation make water marketing from the reservoirs inevitable? Should the idea of large-scale irrigation in the eastern Dakotas be revived? Have sportfish (Walleye) production become the *de facto* (if not yet *de jure*) substitute for irrigation in the allocation of Oahe reservoir waters? Who owns (or otherwise has jurisdiction over) the *impounded* waters behind Oahe and Garrison dams?

2. The Initial Stage of the Oahe Irrigation Project would have resulted in the diversion of 444,400 acre feet of water from Oahe Dam, and irrigated 190,000 acres of land. Allowing for return flows and water from downstream tributaries, the average annual depletion at Sioux City, Iowa, would have been 303,200 acre feet, representing 1.3 percent of the average annual flow there. House Document No. 163, Oahe Unit, Missouri River Basin Project, South Dakota, P. 23, 90th Cong., 1st Sess. (Aug. 31, 1967). The complete Oahe irrigation plan provided for increasing the irrigable area to 495,000 acres, providing M & I water to 23 towns and cities, as well as fish and wildlife developments at 29 locations. H.D. 163 at p. 3. This doubling of irrigation, combined with the vastly larger proposed irrigation project in North Dakota (Garrison) would presumably have made an impact on downstream flows at some point, especially in dry years. Can it be argued therefore that the FCA 1944 contemplated, indirectly at least, that navigation would eventually be reduced as irrigation was fully implemented?

3. The following is from the Final Environmental Statement, Oahe Unit, Pick-Sloan Missouri Basin Program South Dakota III-5 & III-6 (U.S. Bureau of Reclamation, 1973):

> The average annual diversion of 444,400 acre-feet of water from Oahe Reservoir for use on the Oahe Unit amounts to less than 3 percent of the long-term annual flow of the Missouri River past Oahe Dam. . . . * * * Water diverted from the Missouri River at Oahe Dam will reduce the water supply for other uses. A decline in the generation of 143 million kilowatt-hours per year at the four Missouri River powerplants (Oahe and downstream), and an annual consumption of 99.2 million kilowatt-hours to pump project

> water will be required. The use of water and power was considered in the earliest planning of the Pick-Sloan Missouri Basin Program. The initial stage has been assigned $43 million of main-stem power and storage system costs which are part of the costs of Oahe Unit. The 242.2 million kilowatt- hours of energy will reduce the annual amount of salable energy from the Missouri Basin power system by a little over 2.5 percent. It is anticipated that about 50 percent of the Oahe Unit irrigable lands will be sprinkler irrigated. This would require an additional 43 million kilowatt-hours of electrical energy to operate on farm sprinkler facilities.

House Document 163, at p. xiv, contains the following statement by the Commissioner of Reclamation:

> The States of Iowa, Kansas, and Missouri, have no objection to the Oahe unit if the authorizing document and legislation provide that the diversion of water for the unit does not constitute a prior appropriation, that it shall not prejudice any existing or future determination of rights, and that it shall recognize the need for and permit future consideration of the distribution of the water among the States.

4. In light of O'Mahoney-Milliken, what can this mean, and why would the Commissioner of Reclamation have agreed to insert this in his report to Congress? If the irrigation projects had been constructed, what would have been the legal position of the downstream states in an equitable apportionment action before the Supreme Court of the United States?

5. Is it fair to assume that had Garrison and Oahe irrigation projects been fully developed, the sports and recreation industry now situated around those reservoirs could not have come into existence? Consider {EIS]

6. Supplemental Readings:

> Peter Carrels, UPHILL AGAINST WATER: THE GREAT DAKOTA WAR (1999).
>
> OAHE UNIT, MISSOURI RIVER BASIN PROJECT, SOUTH DAKOTA, House Document 163, 90th Cong., 1st Sess. 9, AUG. 31, 1967).
>
> U.S. Bureau of Reclamation, FINAL ENVIRONMENTAL STATEMENT, INITIAL STATE, OAHE UNIT, PICK-SLOAN MISSOURI RIVER BASIN PROGRAM, SOUTH DAKOTA (1973). McKusick Law Library, HD 1739 .S8 o18 U54x.

U.S. Bureau of Reclamation, ASSESSMENT '87, A NEW DIRECTION FOR THE BUREAU OF RECLAMATION, which states that:

> [t]he Bureau's primary role as the developer of large federally financed agricultural projects is drawing to a close * * * The Bureau of Reclamation must change from an agency based on federally supported construction to one based on resource management.

U.S. Bureau of Reclamation, A LONG-TERM FRAMEWORK FOR WATER RESOURCES MANAGEMENT, DEVELOPMENT AND PROTECTION (June, 1992).

Council for Agricultural Science and Technology, "Future of Irrigated Agriculture," (Aug. 1996).

VII. The Failure of Navigation

- Guhin, 431-436.
- NRC 88-93.
- Michael W. Babcock & Dale G. Anderson, "Does Barging on the Missouri River Provide Significant Benefits?" (1 Nov 1999).
- P. Baumel, "The Competitive Benefit of Missouri River Navigation – Review of Rates and the Availability of Barge Transportation: The Missouri River Region (24 Aug 1998).

Notes and Questions

1. Should the Corps continue to operate the mainstem dams to support barge traffic? Does FCA 1944 give the Corps the discretion to change? If so, what are the bounds of that discretion?

2. The O'Mahoney-Milliken Amendment also states that it is the policy of Congress " . . .to limit the authorization and construction of navigation works to those in which a substantial benefit to navigation will be realized therefrom and which can be operated consistently with appropriate and economic use of the waters of such rivers by other users." FCA '44, §1 58 Stat. 887. A recent report of the Congressional Research Service disagrees with this suggestion.

3. Can the Corps credibly argue that because the FCA 1944 specifically authorizes a navigation channel that it is required to support navigation in every case? Consider, as a hypothetical example, that a low-cost alternative energy source becomes available and that, over time, energy customers prefer the new source over the relatively high cost hydro power. Can it

be credibly argued that because the FCA '44 specifically authorizes hydropower facilities that the Corps must, therefore, continue to generate power at the dams, even if it means that it has no use for the power?

4. Should we begin thinking of legislation; a "Missouri River Restoration and Reform Act?"

VIII. Political Organization of the Basin

- John E. Thorson, River of Promise, River of Peril: The Politics of Managing the Missouri River (1994). HD 1695 .M45 T49

IX. The Effect of Dams On Downstream Interests and on River Ecology

- N.W. Thorson, "Agriculture in the Twenty-First Century: The Perils of Population Growth in A Sustainable World," 25 U. MEMPHIS L. REV. 863, 866 (1995):

> " . . . every reservoir is destined to become a waterfall as reservoir capacity is displaced by silt."

- Marc Riesner, CADILLAC DESERT: THE AMERICAN WEST AND ITS DISAPPEARING WATER 492-494 (Viking, 1986).

- GEOGRAPHY, RESOURCES, AND ENVIRONMENT: SELECTED WRITINGS OF GILBERT F. WHITE 72 (Kates & Burton, eds, 1986), quoted in Jeffrey W. Jacobs, "Broadening U.S. Water Resources: Project Planning and Evaluation," 42 NAT. RES. J. 21 (2002):

> We could fill a large room with documents drawing up what are considered the best plans for and analyses of problems in river basin around the world . . . On the other hand, the literature about what has happened after any of the projects have been carried out can be assembled on one end of a small table**.**

- James C. Schmulbach, Larry W. Hesse & Jane E. Bush, "The Missouri River – Great Plains Thread of Life," in WATER QUALITY IN NORTH AMERICAN RIVER SYSTEMS 137 (1992).

- U.S. Geological Survey, DAMS AND RIVERS: A PRIMER ON THE DOWNSTREAM EFFECTS OF DAMS (Circular 1126 (June, 1996).

- NRC 62-75.

- BiOp (2000) pgs _____.

- Nat'l Research Council, Comm. On Missouri River Recovery & Associated Sediment Management Issues, MISSOURI RIVER PLANNING: RECOGNIZING AND INCORPORATING SEDIMENT MANAGEMENT (2011). ISBN 0-309-16203-3

- Larry W. Hesse, "Taming the Wild Missouri River: What Has It Cost? 12 FISHERIES (March-April 1987).

- Larry W. Hesse, "Missouri River Ecology: The Role of Sediment and the Impact of Man" (Living River Group, 2002).

Notes and Questions

1. The Water Resources Development Act of 1990, §306, 33 U.S.C.A. §2316 (2001), states a general rule that: "The Secretary [Army] shall include environmental protection as one of the primary missions of the Corps of Engineers in planning, designing, constructing, operating, and maintaining water resources projects." §306(a). It then limits the general rule with this language: "Nothing in this section affects – (1) existing Corps of Engineers' authorities, including its authorities with respect to navigation and flood control." §306(b)(1). This provision is reviewed in Raymond Profit Foundation v. U.S. Army Corps of Engineers, 343 F.3d 199, 33 ELR 20,265 (3d Cir. 2003).

2. The Colorado River before the construction of Glen Canyon dam bore some resemblance to the natural Missouri River: (1) Exceptional variability in flows; (2) The River carried huge amounts of sediment; (3) Great variations in water temperature [dams convert warm water streams into something like a headwater stream]; (4) Diversity of unique life forms [78% of fish in Colorado Basin are unique to it]; (5) strong cultural role. (Jacobs & Westcoat, Jr., p. 11).

The policy process of evaluating the post-construction effects of the Missouri dams and channel may be compared to a similar process involving the great Glen Canyon dam, constructed and operated by the U.S. Bureau of Reclamation on the mainstem of the Colorado River. As related in the article by Jeffrey W. Jacobs & James L. Wescoat, Jr. (Environment v. 44 p. 8 March '02) the dam was constructed originally to help the upper basin meet contractual water delivery obligations first established in the 1922 Colorado River Compact. (p. 11) As operated in the early years, however, a daily pattern of maximizing revenue from hydropower sales developed. (p.12)

Over time, however, there was reason to call into question the operational priorities. Recreation on the River had become a highly profitable industry in Grand Canyon (p.15), NEPA & ESA had been enacted, environmental values had shifted and Native American tribes were finding an articulate voice in water policy. (p.16) In addition, Congress had enacted the Grand Canyon Protection Act of 1992, amending the functions of Glen Canyon dam to include protecting and enhancing the values of Grand Canyon National Park and Grand Canyon National

Recreational Area. (p.16)

In anticipation of a planned increase in generator capacity and associated change in Glen Canyon dam operations, (p.12) and also as part of an effort to avoid a full EIS (p.12) the Bureau established GCES.

This pattern preceded the Missouri River Master Manual process, and involved a different agency, but the patterns in each case bear comparison. In addition, what GCES learned and reported on is similar to the experience on the Missouri.

3. Supplemental Readings:

Jeffrey W. Jacobs & James L. Wescoat, Jr., "Managing River Resources: Lessons from Glen Canyon Dam," 44 ENVIRONMENT 8 (March 2002).

National Research Council, Downstream: Adaptive Management of Glen Canyon Dam and the Colorado River Ecosystem (1999).

X: Heat Dispersion at Power Plants -- The Quiet Economic Function

- THE MIDDLE MISSOURI RIVER: A COLLECTION OF PAPERS ON THE BIOLOGY WITH SPECIAL REFERENCE TO POWER STATION EFFECTS (L.W. Hesse *et al., e*ditors, 1982)

- 40 Code of Federal Regulations, Sections 125.70 *et seq.*

Notes and Questions

Downstream from Gavins Point dam are numerous electrical energy generating facilities, burning both nuclear and fossil fuels. These plants are located on the main stem of the Missouri River for several reasons. First, such plants consume large amounts of water as part of their cooling processes. Second, cooling waters that are not lost to evaporation are returned to the River as thermal discharges which have the potential to damage the natural ecosystems of receiving waters.

The federal Clean Water Act treats thermal discharges as a pollutant subject to permitting and compliance with effluent limitations. Recognizing the unique character of these discharges, Congress created a variance process. If the discharging facility can demonstrate that the standards are more stringent than necessary to ensure protection and propagation of a balanced indigenous population of shellfish, fish and wildlife in and on the water body, the permitting agency may adjust the permit limits to a less stringent level. The adjustment is known as a Section 316(a) Variance.

Compliance with thermal discharge limitations is potentially expensive because the known treatment methods are either cooling towers or ponds and canals. However, when the summer and autumn flows in the Missouri River below Gavins Point are maintained at a high level in order to support downstream navigation, they indirectly deliver a valuable economic benefit to power plants, which are freed from the expense of constructing and operating cooling towers. Thus, the electrical power industry is also a quiet, background, supporter of continuing

navigation.

Responding to drought conditions in the winter of 2012-2013, the Corps issued a rare recognition of the fundamental importance of power plant cooling as a River management objective. According to a news report, the Fort Randall Project Manager stated: "We do the best we can to make sure the water intakes have enough water and that we have cooling for power plants." *Low River Levels Affecting Electricity Production*, YANKTON DAILY PRESS & DAKOTAN, p. 1 Col. 1, Feb. 9, 2013.

XI: Municipal and Industrial Water Supply Under Section 6 of the Flood Control Act of 1944

A. The Statute: 58 Stat. 590, ___ U.S.C.A. ____

> The Secretary of War is authorized to make contracts with States, municipalities, private concerns, or individuals, at such prices and on such terms as he may deem reasonable, for domestic and industrial use for surplus water that may be available at any reservoir under the control of the War Department: *Provided*, That no such contracts for such water shall adversely affect then existing lawful uses of such water. All moneys received from such contracts shall be deposited in the Treasury of the United States as miscellaneous receipts.

B. First Example: ETSI

In 1974 the Wyoming State Legislature authorized its State Engineer to issue permits from the Madison groundwater formation to Energy Transportation Systems, Inc. (ETSI), a private joint venture, for use in a coal slurry pipeline designed to ship Great Plains coal to the south central United States.[1] Coal slurry is a mixture of pulverized coal and water, and a slurry pipeline efficiently transports bulk coal. The Wyoming groundwater permits entitled ETSI to withdraw an average of 15,000 acre–feet of water per year.[2]

The success of the ETSI proposal depended on a world influenced by the OPEC oil embargo of the 1970s—a world of inflation, energy shortages, and regulated railroad shipping rates.[3] These factors had all disappeared by the early 1980s and the ETSI project was ultimately abandoned, but the events that occurred during project development provide a case study for a time when transbasin diversions were proposed.

The proposed ETSI well field was located adjacent to the Wyoming-South Dakota border and presented a challenge to South Dakota's water managers and policy makers. The projected drawdown of the Madison aquifer over time was a direct threat to municipal well fields in South Dakota, and the effect on surface water flows threatened drinking water and waste management,

1. Guhin, *supra* note 44, at 380.
2. Zellmer, *supra* note 38, at § IV(E).
3. *Id.*

as well as environmental and aesthetic impacts on the tourist and outdoor activity economy of the Black Hills region.[4]

South Dakota faced an uneasy situation. Its option to actively resist potential damage was limited to lengthy litigation with little prospect of success. This situation changed dramatically when, in 1981, ETSI expressed a willingness to look to the Oahe Reservoir as a primary source for its project and to hold its Wyoming water rights as a reserve.[5] A pipeline carrying Missouri River water from the Oahe Reservoir to Wyoming coal preparation stations presented South Dakota with several advantages.

First, the proposed pipeline option avoided the need for a legal confrontation over the Madison aquifer water permits. Second, it allowed a practical method for addressing another state issue—the delivery of reliable supplies for domestic and stock watering use in the open range between the Missouri River and the Black Hills.[6] ETSI was willing to contract to provide water to western South Dakota communities along the pipeline route, a result that would otherwise be achieved only by large-scale public subsidy. Third, ETSI also proved willing to pay money to the State of South Dakota for the Oahe water right, a bold notion when viewed in the context of western water law systems that are based on rights claimed free of charge to private users.[7]

Fourth, the U.S. Supreme Court in 1982[8] ruled that the Constitution's Commerce Clause precluded states from preventing exports of water from within their boundaries for parochial, political, or economic reasons; in other words, water is an item of commerce, subject to federal regulation, and states may not interfere with commerce in water.[9] South Dakota interpreted this ruling as a precursor to an active water market in which it hoped to be an early entrant. Finally, the timing of this breakthrough was significant because it coincided with a new requirement by the federal executive that state and local governments must contribute a share toward federally subsidized water projects within their boundaries. Economically advanced states were in a position to meet the local share requirement, but South Dakota, with a small population and an agrarian economy, was not in a position to contribute, making it considerably more difficult, if not impossible, to compete for federal subsidies. ETSI's willingness to pay for Oahe water thus provided a potential fund on which future water development would be based.[10]

This innovative approach required supporting state legislation by a special session of the South Dakota Legislature, but as the pieces of the complex puzzle came into place, the Governor could summarized:

> Once this agreement began to take shape and it appeared that our goals with respect to preserving the Madison Formation, providing water to Western South Dakota communities, and obtaining money for water development were actually achievable, it became impossible for South Dakota to reject this virtual bird in the

4. *See* William J. Janklow, *South Dakota and the ETSI Experience*, *in* NEW SOURCES OF WATER FOR ENERGY DEVELOPMENT AND GROWTH: INTERBASIN TRANSFERS, at 3.58, 3.68 to 3.69 (1982), *available at* http://ufdcweb1.uflib.ufl.edu/ufdc/?b=WL00000321&v=00001 (last visited Mar. 24, 2010).
5. *Id.* at 3.68.
6. *Id.* at 3.67.
7. *Id.* at 3.68.
8. *Id.* at 3.73.
9. *See* Sporhase v. Neb. *ex rel.* Douglas, 458 U.S. 941, 953–54 (1982) (recognizing the "Western States' interest . . . in conserving and preserving scarce water resources," while categorizing such interests as "irrelevant" to any commerce clause inquiry and granting Congress the "power to deal with" water problems on a national scale).
10. Zellmer, *supra* note 38, at § IV(E).

> hand in favor of protracted and uncertain litigation that might accomplish only one of our goals.[11]

Success of the proposed transbasin diversion depended upon a large supply of unappropriated water and a legally valid state water right. State water law is based on the familiar principal of seniority of rights, and the availability, value, and security of a right to use water is dependent on its original appropriation date.[12] Because virtually all of the surplus water impounded behind the Oahe and Garrison dams was then (and is now) unappropriated under state law, the ETSI project developers were in a position to claim a secure senior water right, assuming that state water law governed.

Implementing the deal required special state legislation in order to address several specific problems. "The first was the provision of the South Dakota State Constitution which prohibits the legislature from granting to any private concern any special privilege, franchise, grant, or immunity . . . and prohibits . . . special legislation where the same purpose can be accomplished through a law of general applicability."[13] The solution was a law that allows a state-chartered special district—the South Dakota Conservancy District—to apply for and to obtain water rights for the purpose of transferring them to third persons for consideration in energy development in and out of the state. Nothing in the legislation was specific to ETSI, and the general statute remains on the books.[14]

Under state water law, water rights are issued to successful applicants free of financial charge.[15] The ETSI developers, however, were willing to pay the State of South Dakota for water, provided that a lawful mechanism for the purpose could be established. Arranging payment to the Conservancy District solved this problem and, as a practical matter, put the State in the business of selling water rights to energy companies, whether in or out of the state.[16]

South Dakota's legal strategy could not be limited to state legislation, however, because the water to be appropriated lay in storage behind the federal Oahe Dam. In order for the State's scheme to succeed, it required recognition of the state water right (and, it follows, the lucrative sales contract) by the appropriate federal water management agency. As it happens, however, the Flood Control Act of 1944,[17] which governs management of the Missouri River, delegates authority to two agencies—and the statutory difference between the two is substantial. The U.S. Army Corps of Engineers is charged with constructing the large dams on the main river channel and managing them for flood control, navigation, and hydropower.[18] The Bureau of Reclamation, part of the Department of the Interior, is charged with developing projects that carry water from the main reservoirs to various irrigation projects to be developed in the upper basin.[19] The irrigation projects from the dams on the main channel never materialized and are generally agreed to be impractical.[20] The mixture of legislative authorizations caused the U.S.

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11. Janklow, *supra* note 59, at 3.69.
12. *See Equitable Apportionment*, *supra* note 2, at 383 (describing actions by states to claim "ownership" of waters).
13. Janklow, *supra* note 59, at 3.69.
14. A full account is available at: John H. Davidson, *South Dakota's Special Water Districts—An Introduction*, 36 S.D. L. REV. 500, 533 (1991).
15. *Id.* at 530.
16. *See id.* at 534 (listing "marketing of water for energy use" as one of the Conservancy District's purposes).
17. Navigation and Flood Control Act of 1944, Pub. L. No. 78–534, ch. 665 (Dec. 22, 1944).
18. W.A. Hillhouse II, *Federal Law of Water Resources Development*, *in* FEDERAL ENVIRONMENTAL LAW 844, 846 (Erica L. Dolgin & Thomas G. P. Guilbert eds., 1974).
19. *Id.* at 848.
20. S*ee* Guhin, *supra* note 44, at 430 (noting the tentative but unlikely future course of the project).

Army Corps of Engineers to construct and operate the dams, reservoirs, and navigation channel, while the Bureau of Reclamation maintained paper authority but few projects on the ground.[21]

The laws that govern the operation of the Bureau of Reclamation provide water marketing authority, as well as a saving clause that states:

> Nothing in this Act shall be construed as affecting or intended to affect or in any way interfere with the laws of any State or Territory relating to the control, appropriation, use or distribution of water in irrigation, or any vested right acquired thereunder, and the Secretary of the Interior, in carrying out the provisions of this Act, shall proceed in conformance with such laws.[22]

Section 8 thus requires the Bureau of Reclamation to conform to state law in the delivery of mainstem water, a constraint that was viewed at the time as basic by the upper basin states, which were and are concerned that state control may be subordinated to the U.S. Army Corps of Engineers's traditional preference for managing rivers for flood control and navigation. For South Dakota, a reservoir withdrawal permit issued by the Bureau of Reclamation would be subject to § 8, and would validate the ETSI water right, because section 9(c) of the Flood Control Act of 1944 states that "reclamation . . . developments [are] to be undertaken by the Secretary of the Interior . . . governed by the Federal Reclamation Laws."[23]

The State of South Dakota thus reasoned that a significant portion of the water in storage behind the Oahe Dam was intended for irrigation that was unlikely to be developed in the foreseeable future. Additionally, it reasoned that the use of "irrigation water" ought to be governed by reclamation laws, including § 8 recognition of state water permits, even when the waters are marketed for energy development.[24]

In contrast, section 6 of the Flood Control Act authorized the U.S. Army Corps of Engineers to "make contracts . . . for domestic and industrial uses for surplus water that may be available at any reservoir under the control of" the Corps.[25] Thus, were the Corps to designate waters in the reservoirs as "surplus," it could market the water independently of the states, without recognition of claimed state water permits, and without risk of sale by the state. The water would be subject to a mere administrative permit rather than a legally recognizable appropriation of a property interest. Because the Corps's constitutional authority is pursuant to the Commerce Clause as expressed through the navigation servitude,[26] it may be assumed that the Agency enjoys the broadest discretion in administering its statutory authority to market surplus water, even in the face of opposition from basin states.

The ETSI project collapsed as economic circumstances changed, but the process still matters. First, it provides an example of a case in which state initiative was used to facilitate a transbasin transfer. Second, it demonstrates the substantial authority possessed by federal water management agencies. Needless to say, there was widespread opposition to the ETSI proposal, particularly from downstream states in the basin, as well as from the railroads that competed in

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21. Zellmer, *supra* note 38, at § IV(E).
22. Reclamation Act of 1902 § 8, 43 U.S.C. § 383.
23. Flood Control Act of 1944, *supra* note 72.
24. The State took comfort from upstream litigation involving dams that were in fact constructed by the Bureau of Reclamation primarily for irrigation. In that case, reclamation laws do apply and § 9(c) gives the Bureau of Reclamation industrial water marketing authority.
25. 33 U.S.C. § 708 (2006).
26. *See Equitable Apportionment*, *supra* note 2, at 402 (discussing the move from limited federal power based on navigability to increased federal power "with the full reach of the Commerce Clause").

the business of hauling coal and across whose tracks the slurry pipeline needed to pass.[27] The abundance of litigation and proposed legislation spawned by the ETSI proposal is remarkable by any standard.[28]

Most important is the federal court challenge brought by the lower basin states that were concerned with what they saw as a precedent for out-of-basin transfers at the initiative of a single upper basin state; the suit sought to invalidate the water marketing permit issued to South Dakota by the Bureau of Reclamation.[29] The challenge raised the general question of whether an upper basin state or any basin state held independent rights in some of the stored reservoir water. This water right was issued, after all, by a state rather than a federal agency. The Missouri River is operated under the Flood Control Act of 1944, under which the development of the great dams in the upper basin was undertaken. The Act authorized the reservoirs for multiple purposes. Most benefits flowed to the lower basin states in the form of flood control and navigation improvement, while the upper basin states and tribes received a string of recreation reservoirs and access to hydroelectric power. The ultimate plan of the Flood Control Act was for the Bureau of Reclamation to develop large-scale irrigation projects in the upper basin,[30] but these hopes did not materialize.

The downstream states of Iowa, Missouri, and Nebraska brought suit in federal district court in Nebraska to block the ETSI diversion from Oahe Reservoir.[31] The issue then was a narrow one: whether Congress in the Flood Control Act of 1944 intended the reservoir behind Oahe Dam to be a reclamation facility subject to the water marketing authority of the Secretary of the Interior.[32] The district court ruled for the plaintiff lower basin states,[33] and the court of appeals affirmed.[34] The U.S. Supreme Court held that the Secretary of the Interior lacked authority under the Flood Control Act of 1944 to make a contract allowing the state to use (and sell) water and held the contract void.[35] The decision was a singular victory for the downstream states.

C. Northwest Area Supply Project in North Dakota (2010)

The North Dakota Water Engineer issued a water right permit of 15,000 acre–feet per year in order to allow the Garrison Diversion Conservancy District to serve a federally funded Northwest Area Water Supply Project.[36] This project will divert water from Lake Sakakawea, the huge U.S. Army Corps of Engineers reservoir behind Garrison Dam on the main channel of the Missouri River, and transfer it eastward, where return flows will leave the Missouri River Basin, draining into the Red River and thence further northward into Canadian waters.[37]

The State of Missouri opposed the transbasin diversion and responded to the North Dakota permit by filing suit in federal district court under the National Environmental Policy Act. Missouri's complaint asserts that "any significant out-of-basin transfer of water . . . will

27. Janklow, *supra* note 59, at 3.59, 3.71.
28. *See id.* at 3.71 (rebutting the complaints of the various downstream states).
29. ETSI Pipeline Project v. Missouri, 484 U.S. 495, 498 (1988).
30. Guhin, *supra* note 44, at 352.
31. *ETSI Pipeline Project*, 484 U.S. at 505.
32. Missouri v. Andrews, 586 F. Supp. 1268, 1269 (D. Neb. 1984).
33. *Id.* at 1281.
34. Missouri v. Andrews, 787 F.2d 270, 287 (8th Cir. 1986).
35. *ETSI Pipeline Project*, 484 U.S. at 505.
36. Complaint at 3, 6, Missouri v. U.S. Dep't of Interior, Bureau of Reclamation, D.D.C. (Feb. 23, 2009), *available at* http://ago.mo.gov/agriculture/pdf/NAWS_complaint.pdf.
37. *Id.* at 5 (identifying negative effects of upstream diversions on downstream uses).

significantly affect the human environment . . . and will cause actual and imminent harm to Missouri citizens."[38] More specifically, it argued that the proposed transfers from the Missouri River reservoirs would reduce the amount of flows released for downstream uses in the State of Missouri, such as domestic water supply and navigation.[39]

Although Missouri's suit is based in the National Environmental Policy Act, the underlying concern is obviously with the decision of North Dakota, an upstream basin state, to permit a transbasin diversion over the objection of Missouri, a downstream basin state. The conclusion that Missouri's concern is focused on the transbasin character of the permit is supported by the fact that Missouri routinely declines to oppose large upstream consumptive use permits that support in-basin economic activity.[40] Thus, the dispute renews attention to the legal status of transbasin water transfers from the Missouri Basin in the absence of an interstate compact, judicial apportionment, or congressional decree. The North Dakota Garrison permit and Missouri's opposition to it raise the question of whether any limits exist on the capacity of a single state in the Missouri River Basin to permit transbasin diversions from federal reservoirs. A further question is whether the federal agencies that manage developed rivers, such as the Missouri, themselves possess legal authority to license such diversions. These questions are important: the possibility of a demand for future transbasin diversions is real, and meeting this demand may serve the broad public interest.

Notes and Questions

1. Can the Corps charge for water withdrawn from the reservoirs by state-permitted irrigators?

2. In a decision which predates the Supreme Court's *ETSI* decision, the Ninth Circuit Court of Appeals decided a case involving the sale by the Bureau of Reclamation (Dep't of Interior) from the Yellowtail and Boysen reservoirs, which are Missouri River basin projects subject to the Flood Control Act of 1944. The water sales were to support coal mining operations in the Fort Union formation. The Court held that the Flood Control Act authorized industrial use of project water and that the Secretary had properly determined that the water sales would impair the efficiency of the reservoirs for irrigation. The Court did hold that the water sales must be accompanied by a NEPA EIS. *Environmental Defense Fund v. Andrus*, 596 F.2 848, 9 E.L.R. 20,268 (9th Cir. 1979).

XII. Native American Interests on the Missouri River

- Peter Capossela, "Indian Reserved Water Rights in the Missouri River Basin," 6 GREAT PLAINS NAT. RES. J. 131 (2002).

- Guhin, 471-72.

38. *Id.* at 3.
39. *Id.* at 2–3.
40. *Id.* at 5 (focusing on the adverse impacts of "significant out of basin transfers").

Notes and Questions

1. Can the Corps of Engineers, pursuant to FCA 1944 authority, regulate Missouri River *flows* in a way that diminishes Indian claims to *use*? Stated another way, when the United States exercises its regulatory authority under the navigation servitude of the Commerce Clause in such a way as to invade an unquantified Indian right, does the "rule of no compensation" apply? Is there a doctrine in Indian law which limits the power of the United States to regulate *Winters* water rights as it would any other private right?

2. Does the *Winters* doctrine support a claim for *use* of the *flow*, rather than for a specific quantified amount of the water? On the Missouri it is the abundant flow that is generating economic benefits. Aren't the tribes entitled to some say over how the flow is managed, at least in proportion to their ownership interests? If so, by what process can they advance a claim?

> "If the value of Missouri River water is in the flow, then the interest of the tribes becomes more analogous to that of riparian landowners, who seek and enjoy their water benefits on the basis of geographic location. However, the power to allocate benefits among riparians is lodged almost exclusively with the Corps, which comes to the process armed with a broad constitutional and legislative mandate. Thus, how the Corps chooses to manage the Missouri River is likely to bear on the tribes with the heavy weight of finality." 24 Am. Ind. L. Rev. 1, 20.

Agree or disagree? For example, what if the Tribes were the principal beneficiaries of the sport fishing industry in the Oahe reservoir. Would they have a legally enforceable right to reservoir levels sufficient to support their industry?

3. What legal, policy or practical impediments exist to a proposal by a Missouri River tribe to sell water to an out-of-basin purchaser such as the Denver Water Board?

4. Supplemental Readings:

> John H. Davidson, "Indian Water Rights, The Missouri River, And The Administrative Process: What Are The Questions?"1 AM. IND. L. REV. 19-20 (2000).
>
> Michael Lawson, "Pick-Sloan and the Tribes," in BOUNDARIES CARVED IN WATERS: THE MISSOURI RIVER BRIEF SERIES (April, 1988).
>
> Michael Lawson, DAMMED INDIANS: THE PICK-SLOAN PLAN AND THE MISSOURI RIVER SIOUX, 1944-1980 (1982).
>
> William H. Veeder, "Indian Prior and Paramount Rights of the Use of Water," 16 ROCKY MTN. MIN. L. INST. 631 (1971).

William H. Veeder, "Indian Water Rights in the Upper Missouri River Basin," 48 N.D.L. REV. 617 (1972).

William H. Veeder, "Confiscation of Indian Water Rights in the Upper Missouri River Basin," 21 S.D. L. REV. 282 (1976).

Judith V. Royster, "A Primer On Indian Water Rights: More Questions Than Answers, 30 TULSA L. J. 61 (1995)

XIII. Hydropower, Electric Rates and Cost Allocation

- Gerald Mueller, "Missouri River Hydropower and Revenues**,"** in BOUNDARIES CARVED IN WATERS: THE MISSOURI RIVER BRIEF SERIES (February 1989).

- Marc Riesner, CADILLAC DESERT: THE AMERICAN WEST AND ITS DISAPPEARING WATER 138-143, 450-451 (Viking, 1986).

- Guhin, 436-449.

- David Marcus, ENERGY IMPACTS OF RE-OPERATING THE MISSOURI RIVER DAMS: AN ANALYSIS BY THE U.S. ARMY CORPS OF ENGINEERS (June 2002) [disc].

- Nebraska Power Association, IMPACTS OF POSSIBLE CHANGES IN MISSOURI RIVER FLOWS ON NEBRASKA'S ELECTRIC ENERGY INDUSTRY (Dec. 17, 2003).

- Supplemental Readings:

Henry C. Hart, THE DARK MISSOURI 215 (1957)

> "Nor will it be surprising if power customers, when they have exhausted the moderately cheap hydroelectricity now authorized and when their future needs can only be met by more expensive steam generation, ask why they should be charged rates to repay not only the cost of power, but two-thirds of the cost of irrigation as well. That triples the cost of construction which has to be paid back by users of electricity. According to a 1953 estimate, for instance, power customers will have to repay 2.9 billion dollars of costs. Without the irrigation burden, they would need to repay 874 million dollars. The difference might be critical in attracting industry."

- Bruce C. Driver & Gregg Eisenberg, WESTERN HYDROPOWER: CHANGING VALUES/NEW VISIONS (Report to the Western Water Policy Review Advisory Commission (August 1997).

XIII. Hydropower, Electric Rates and Cost Allocation

(A) Introduction

In order to understand the operations of the Flood Control Act of 1944 (FCA 1944) on the Missouri River it is necessary to come to grips with hydroelectric power revenues and the manner in which they are used to reimburse direct costs and to subsidize electric power users and irrigators.41

When the project was planned, specific purposes were identified and portions of overall costs assigned to each. Some of these purposes were deemed to serve a broad national interest and the assigned costs were therefore absorbed by the taxpayer directly. This is the case with flood control, navigation, recreation and wildlife, which are referred to as "non-reimbursable" expenses of the project. A portion of overall project costs were assigned to the hydroelectric generating facilities at the dams; referred to as "reimbursable" costs, these are required to be repaid to the government with interest over a period as long as or exceeding 50 years. Similarly, when municipal and industrial water (M & I) projects are included in the project plan, they too are reimbursable to the government with interest.

This formula becomes more complicated when irrigation is added as a project purpose. From its inauguration in the Reclamation Act of 1902, the concept of federal aid to irrigation has been that the costs of the overall project allocable to irrigation will be repaid by the irrigators. As a result, project planners lay down financial plans based on the theory of reimbursement. It is a fiction, however, which must be understood by any person interested in altering current river management policies.

Consider first the order in which the Pick-Sloan project was developed. The main-stem dams, with their hydroelectric power generators were constructed first, along with the navigation channel from Sioux City, Iowa to the river's mouth. At this point, the "non-reimbursable" costs assigned to navigation and flood control are in place and delivering their benefits. The hydroelectricity plants at the dams are delivering electricity to the Department of Energy for sale, thus generating a stream of revenue as well as electricity. A portion of this revenue stream is designated to repay the costs of constructing the hydroelectric facilities with interest as well as additional charges for operation, maintenance, and replacement. In theory, the remainder of the revenue is deposited in the United States Treasury.

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[41] A good general introduction to this area is: Truman P. Price, *Hydroelectric Power Policy* (Report to the Nat'l Water Commission, Feb. 1971). McKusick Law Library: TK 1081 P7.5x.
Of the many excellent works on Missouri River policy, a valuable and recent work is JOHN E. THORSON, RIVER OF PROMISE, RIVER OF PERIL: THE POLITICS OF MANAGING THE MISSOURI RIVER (1994). McKusick Law Library: HD 1695 M45 T49.

(B) Preference Marketing Federal Power

The Department of Energy is constrained from selling energy on the open market by a time-honored policy known as *Preference Power*, which requires that public, non-profit utilities have preference to purchase federal hydroelectric power. The justifying principle for this politically powerful preference is that "public resources should be used for public purposes."[42] Because hydroelectricity is usually less expensive than alternatives from coal and gas burning plants, public utilities guard the right of preference with a particular vigor.

Preference is not simply a right to priority when federal power is offered for sale. The price at which preference power is offered for sale is considerably lower than rates on an open market. This is so because the FCA 1944, in the supporting legislative documents, stipulates the factors which go into calculating rates, many of which, as described below, are in fact subsidies.

The legislative history of the FCA 1944 indicates that preference was given to public bodies, non-profits and cooperatives in order to expand rural electrification and to avoid monopolistic domination by private utilities.[43]

The Department of Energy is charged with a duty to calculate the rates that are charged for the electricity generated at the dams. The remainder of this story addresses the manner in which the rates are set, and requires an explanation of the irrigation subsidies.

(C) The Irrigation Subsidy Generally

The irrigation subsidies begin with interest-free repayment. Next, repayment is not required to begin until after a minimum 10 year construction period. After that, repayment is extended to 40, 50 and even greater repayment periods.[44]

Next, the amount that irrigators are required to repay is based on the Bureau of Reclamation's estimate of each irrigator's "ability to pay."[45] This results in very large reductions, and the amount that the irrigators are not required to repay is paid with hydroelectricity revenues. This repayment obligation is also interest-free and does not become

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[42] Gerald Mueller, "Missouri River Hydropower and Revenues," in THE MISSOURI RIVER BRIEF SERIES, BOUNDARIES CARVED IN WATER (J. Thorson, ed., Feb. 1989). Electric power sold pursuant to the preference is sometimes referred to as "firm" power.

For a general description of preference marketing, see U.S. General Accounting Office, *Federal Power: The Evolution of Preference in Marketing Federal Power*, (GAO-01-373, Feb. 2001).

[43] *Id*., GAO Report 6.

[44] *Generally, see* R.W. WAHL, MARKETS FOR FEDERAL WATER: SUBSIDIES, PROPERTY RIGHTS, AND THE BUREAU OF RECLAMATION (Resources for the Future, 1989).

Eckstein makes this observation about the interest subsidy generally:

> The resultant typical project with power investment equal to the irrigation investment, the interest component of the charge for the investment is 49 percent of the total charge for capital; and if all of it is applied to aid in repayment of an irrigation investment that is not charged interest, it is almost adequate to repay the entire irrigation investment.

OTTO ECKSTEIN, WATER RESOURCE DEVELOPMENT: THE ECONOMICS OF PROJECT EVALUATION 229 (1958).

[45] WAHL, *supra* note 44, at 33. *See also* JOHN V. KRUTILLA & OTTO ECKSTEIN, MULTIPLE PURPOSE RIVER DEVELOPMENT: STUDIES IN APPLIED ECONOMIC ANALYSIS (Resources for the Future, 1958).

an obligation until 40-50 years of irrigation "repayments" have passed. Thus, a large part of the irrigation repayment is not only interest-free but it is delayed for half a century or more. The result is that the return to the Treasury is much lower, and the cost of hydropower is also lower.

Finally, the Bureau of Reclamation calculates the amount of hydroelectricity that will be required to pump water to and through the irrigation systems. This amount of power is repaid interest-free and results in lower cost of power to the consumers, preference power purchasers in particular. This allocation can be in excess of 20 percent of total power generated at a dam.

It should now be apparent why the western irrigation community refers to federal Bureau of Reclamation dams as "cash registers." Not only are the portions of the cost allocable to flood control, navigation, hydropower, recreation and wildlife paid by someone else (mostly the national taxpayers), but even the portion for which the irrigators have a technical responsibility are reduced by the layers of subsidy just described.

(D) The Basin Account Concept

This device simply merges the finances of all hydroelectricity generating dams in a basin[46] with all irrigation projects in the same basin. Thus, all revenue streams are available to subsidize all irrigation projects in the basin.

(E) The Irrigation Subsidy and Basin Account as Applied in the Pick-Sloan Project

(1) *The Situation on The Ground Today*

Six large main stem dams and a number of smaller dams (such as Boysen and Yellowtail) are on line and producing electricity and (in theory at least) a steady stream of revenue from preference and open market customers. In the far upper basin some irrigation projects have been constructed and enjoy all of the benefits of the subsidies described above. In addition, under the basin account concept, all hydroelectric revenues generated in the basin are available to support those subsidies.

The Pick-Sloan Plan also contemplated vast irrigation projects in the Dakotas, none of which have been or will be constructed; those plans extended across millions of acres. Still they remain a theoretical piece of the Pick-Sloan Plan as incorporated into the FCA 1944. In other words, when the Department of Energy computes the rates which preference customers are asked to pay, it assumes that the irrigation projects in the Dakotas actually exist, or are under construction.

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[46] ECKSTEIN, *supra* note 44, at 229 states:

> Not only would it [the basin account] make the formulas discussed above apply to the power and irrigation of a project, but it would make it possible to subsidize irrigation anywhere in the basin through diversion of power revenues from any power project in the same basin. It is clear that the basin account multiplies the possibilities of the hidden subsidies which are paid by the taxpayer, besides opening the door to subsidies from strong purposes to weak and from good projects to bad.

(2) *The Ultimate Development Concept*

Central to the calculation of hydroelectric rates today is the ultimate development concept, which requires that "the cost of any reimbursable services must be computed as if the entire project, including full irrigation development, has reached its ultimate state consistent with the Flood Control Act of 1944."[47]

The original Pick-Sloan project planned for 5,307,704 acres to be irrigated from Missouri River reservoirs.[48] Under the basin account concept, all revenues from generating hydroelectricity are available to subsidize the projects. A majority of those acres have not been developed for irrigation, but under the ultimate development concept, rates charged for hydroelectric power must be computed as if irrigation – all 5,307,704 acres – had reached the ultimate state of development as authorized in the original legislation.[49]

(3) *Computing the Subsidy*

In 1984 it was calculated that 21.4 percent of all power revenues were reserved for irrigation pumping, and that amount is therefore interest-free. So, when the power is sold to preference customers, that portion is interest free, resulting in power rates that are artificially lower than the normal market for energy would demand.[50]

Because the ultimate development concept requires an assumption that all project features will be built, this also *defers* project costs, further reducing today's electric rates. This concept "lowers current electrical rates by postponing the repayment of a portion of the existing hydropower system until some indefinite future date. Thus, repayment attributable to the cost of constructing irrigation projects is postponed until project construction commences which, in the case of the Dakotas, is not going to occur. Pick-Sloan ratepayers and their regional economies benefit from the ultimate development policy at the expense of the taxpayers who must finance the debt and the ratepayers of the future who must ultimately repay it."[51]

There is more.

The ultimate development concept brings the issue of irrigator's "ability to pay" into the computation of electrical rates. The portion of the irrigation project costs that are beyond the capability of irrigation farmers to repay is assigned as a responsibility of hydroelectricity, and it is *also* delivered interest-free. The Bureau of Reclamation actually calculates a percentage of "ability to pay" although the irrigation projects remain hypothetical and unlikely to be constructed.

At any specific time it is possible to delineate the subsidy which is built into power rates. To do so, one must examine each statutory enactment subsequent to 1944 which may potentially

[47] John P. Guhin, *The Law of the Missouri*, 30 S.D. L. REV. 366 (1985).
[48] This number is based on the Sloan Plan description in Senate Document 191.
[49] Guhin, *supra* note 47, at 366.
[50] *Id*.
[51] Mueller, *supra* note 42.

alter the Pick-Sloan project. For example, the Garrison Unit Reformulation Act of 1986[52] de-authorized 876,060 acres. In contrast, in 1982 the WEB Rural Water Development Project Act[53] cancelled construction contracts in the proposed Oahe Unit in South Dakota while simultaneously preserving the acreage assigned, thus preserving the subsidy to power consumers. Peter Carrels describes the legislator's concern that any Oahe legislation be crafted in such a way as to preserve the artificial irrigation subsidies to preference power customers.

> United Family Farmers and the sub-district preferred *deauthorizing* Oahe features. Project proponents wanted words such as *deleted* or *shall not be constructed* instead of *deauthorization*.
> Senator Abdnor reminded all parties that a significant share of the cost associated with constructing the Missouri's mainstem dams was allocated to irrigation water storage. Under federal reclamation law, Abdnor explained, that portion of the dams allocated to irrigation storage did not have to be paid for until it was used for irrigation, and when that time arrived, there would be no interest connected to repayment. Deauthorization of the Oahe project, said the senator, would cause water storage in the mainstem system to be reallocated. At that point, it would become reimbursable and interest bearing, and power rates would increase significantly. "That was another reason," said Abdnor aid Owen Ambur, "why we would never have agreed to the deauthorization of Oahe."[54]

The recent version of the resulting numbers is:

Pick-Sloan Project-Use Power[55]

	Acres	**Kilowatts**
Senate Document 191	5,307,704	1,155,567
Adjustments	(1,519,304)	(687,400)
1958 Report	3,788,400	468,367
1986 Garrison Reformulation		
Removal	(876,060)	(121,997)
Subtotal	2,912,040	346,370
Subtotal +15% line losses		398,325
Total Project Use		398,325

This chart represents the subsidy *only for* power reserved for irrigation pumping. The subsidy based upon "ability to pay" is another generous layer.

[52] Pub. L. No. 99-294, 100 Stat. 418 (1986).
[53] Pub. L. 99-273, 96 Stat. 1181, § 4 (1982). The legislation includes this language:
> That any repayment obligation existing at the time of cancellation of the master and participating and security contracts shall therefore be treated as a deferred cost of the Pick-Sloan Missouri basin program.

[54] PETER CARRELS, UPHILL AGAINST WATER: THE GREAT DAKOTA WATER WAR 198-199 (1999).
[55] *See* http://mo-rast.org/wp-content/uploads/2011/09/2011.09.27-Continued-Pick-Sloan-Presentation-Roger-Otstot.pdf. The phrase "Project-Use Power" is a euphemism for "irrigation subsidy."

Summarizing the Pick-Sloan project in 1996, the General Accounting Office wrote:

> $454 million of capital costs were allocated to authorized irrigation facilities that are infeasible and therefore not expected to be completed. As long as this $454 million is allocated to incomplete irrigation facilities, recovery by [DOE] will not be required. If these costs had been allocated based on the actual use of the hydropower facilities and water storage reservoirs, they would have been allocated primarily to power production and recovered, with interest, through electricity rate charges within 50 years of completion. Under the current repayment criteria, it is unlikely that [DOE] will be required to recover the principal or any interest on these capital costs.[56]

(F) Is It Possible to "Raid The Pantry" of Hydropower Revenues?

Since enactment of FCA 1944, other river uses and users have longed to raid the pantry, and take advantage of the hydropower electric revenue stream in order to fund other management opportunities such as wildlife habitat, recreation, and compliance with the Endangered Species Act. As we have seen, however, preference power customers have every incentive to guard their subsidies, and they do so with both vigilance and political skill.

Because the subsidies are built into the Pick-Sloan project, diversion of revenues will occur, if at all, only as the result of express legislation. An isolated example occurred in 1999, when Congress enacted legislation which temporarily diverted hydropower revenues into a specific trust fund held by the State of South Dakota.[57]

At the time a number of persistent problems called for resolution. First, the Fish and Wildlife Coordination Act requires mitigation for lands flooded by Lakes Oahe and Sharpe. Second, there were jurisdictional disputes over the land and water frontage on Indian Reservations. Third, the public demand for recreation on the River was increasing while a majority of the Corp's recreation areas lacked adequate funding.[58]

The legislation established a trust fund for the State of South Dakota, Cheyenne River Sioux Tribe, and the Lower Brule Sioux Tribe. Revenue for the trust fund came from hydropower dams at the four main-stem dams in South Dakota. Payments were temporary, and terminated when the capital in the trust fund reached a specified level.[59] The idea was that interest from the trust fund would provide a steady revenue flow to support habitat acquisition and management as well as recreational opportunities.

This law is clearly an exception to the rule, although it contained a provision that "[t]he

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[56] U.S. General Accounting Office, *Power Marketing Administration, Cost Recovery, Financing and Comparison to Nonfederal Utilities*, (AIMO-96-145, Sept. 19, 1996). *See also Federal Power Recovery of Federal Investment in Hydropower Facilities in the Pick-Sloan Program* (GAO/T-RCED-96-142, May 2, 1996).

[57] Nicole C. Nachtigal, *Implementing the Fish and Wildlife Coordination Act Along the Missouri River in South Dakota*, 5 GREAT PLAINS NAT. RES. J. 210, 232-33 and materials cited (2001).

[58] *Id.*

[59] *Id.*

Corps of Engineers retains the authority to operate the Pick-Sloan Missouri River Basin program for purposes of meeting the requirements of" FCA 1944,[60] which is taken to mean that it does not interfere with the existing subsidy system, and that the revenues come "off the top," from funds that would otherwise have gone to the U.S. Treasury. It is worth observing that by diverting funds only from the four dams in South Dakota, the legislation is inconsistent with the basin account and ultimate development concepts.

(G) The Pick-Sloan Irrigation Subsidy and Carbon -- The Climate Change Link.

The future is likely to bring some form of tax or other financial disincentive for the use of electric power generated by carbon emitting sources such as coal and natural gas. When that occurs, a significant advantage will go to preference power customers, who will enjoy a statutory right to purchase carbon-neutral (tax-free) hydropower. Added to this favorable place in line, preference power users will benefit from the interest-free irrigation subsidies. It is likely that this policy will then receive heightened scrutiny. In a free market, non-preference customers may be willing to pay a premium for carbon neutral hydropower, creating pressures on Congress to make it available.

(H) The "Fairness" Argument

Upper basin states, the Dakotas in particular, defend the irrigation subsidies in power rates by arguing that because they "lost" so much land to the reservoirs, and the projected irrigation projects turned out to be unfeasible, it is only "fair" that they be allowed to capture some benefits from the Pick-Sloan project. The artificially low power rates, they argue, are a tool which encourages economic development.

According to this argument, the lower basin states got the "here and now" in the form of flood control, navigation and hydropower, while the upper basin sates got the "then and later" in the form of subsidies for irrigation projects that never did and never will happen.

The practical question is whether this "fairness" argument has political endurance. It is not written into law, and with each new generation of elected officials, it fades further into political history.

One factor that works against the survival of the "fairness" argument is the emergence nationally of a diverse and unregulated energy economy in which the idea of hidden subsidies may appear anachronistic. Another factor is that the subsidies divert a major stream of revenue from the U.S. Treasury. Yet another factor – as yet unarticulated – is that the nation may perceive the large federal reservoirs not as a burden on the Dakotas, but as an invaluable asset undeserving of perpetual financial subsidization.

What Midwestern preference customers consider to be a justly deserved entitlement may

[60] Cheyenne River Sioux Tribe, Lower Brule Sioux Tribe, and State of South Dakota Terrestrial Wildlife Habitat Restoration, Pub. L. 106-53, §§ 601-609, 113 Stat. 385 (1999).

be viewed by the larger national as a market-distorting Treasury-robbing, totally unjustifiable subsidy.

It will be an interesting discussion.

XIV. Recreation and Wildlife in FCA 1944 Planning

- Fish and Wildlife Coordination Act (FWCA), 16 U.S.C.A. §§ 661-666c (West 2000).

- U.S. Army Corps of Engineers, Missouri River Division, Office of Counsel, "The Role of Recreation in the Regulation of the Corps of Engineers Constructed and Operated Reservoirs of the Missouri River," reprinted in 4 GREAT PLAINS NAT. RES. J. 26 (1999).

- Nicole C. Nachtigal, "Implementing the Fish and Coordination Act Along the Missouri River in South Dakota," 5 GREAT PLAINS NAT. RES. J. 210 (2001).

- Guhin, 450-458.

Notes and Questions

1. In *Environmental Defense Fund v. Andrus*, 596 F.2d 848, 9 E.L.R. 20,268 (9th Cir. 1979) the Court held that the Fish and Wildlife Coordination Act applies to sales from the Missouri River. The Court accepted the clear language of the act, which is "modification or supplementation of plans for previously authorized projects." 16 U.S.C. Sec. 662(b).

XV. Master Manual Review (Herein NEPA)

- Paul & Percival Goodman, COMMUNITAS (1947):

> "In planning, as elsewhere in our society, we can observe the paradox that the wildest anarchists are generally affirming the most ancient values, of space, sun, and trees, and beauty, human dignity and forthright means . . . . whereas the so-called conservatives are generally arguing for policies and prejudices that date back only four administrations."

- Council on Environmental Quality, "Protection of Environment," 40 C.F.R. §§1500-1517 (2003).

- Guhin 411-420, 465-470.

- NRC 40-53.

- Pyramid Lake Paiute Tribe of Indians v. Truckee-Carson Irrigation Dist., 882 F.2d 364 (9th Cir. 1989).

- Upper Snake River Chapter of Trout Unlimited v. Hodel, 921 F.2d 232 (9th Cir. 1990).

- Supplemental Readings:

  Missouri River Coalition, COMMENTS ON THE MISSOURI RIVER MASTER WATER CONTROL MANUAL REVIEW AND UPDATE DRAFT ENVIRONMENTAL IMPACT STATEMENT (March 1, 1995))

  Lawrence J. MacDonnell, "Managing Reclamation Facilities for Ecosystem Benefits," 67 U. COLO. L. REV. 197 (1996)

XV. Endangered Species Act (ESA).

- ESA, 16 U.S.C.A. § 1536.

- ESA, 16 U.S.C.A. § 1538.

- TVA v. Hill, 437 U.S. 153 (1978).

- Rio Grande Silvery Minnow v. Keys, 333 F.3d 1109, 33 E.L.R. 20,224 (10th Cir. 2003); the "appropriation rider" which overrules the court's decision is at Pub. L. No. 108-137, Sec. 206, (H.R. 2754), 117 Stat. 1827. 1849 (Dec. 1, 2003). Decision vacated at 355 F.3d 1215 (10th Cir. 2004).

- Thomas v. Peterson, 753 F.2d 754 (9th Cir. 1985).

- Carson-Truckee Water Conservancy District v. Clark, 741 F.2d 257 (9th Cir. 1984).

- Supplemental Readings:

  U.S. Fish & Wildlife Service, Proposed Rule, Piping Plover Proposed as an Endangered and Threatened Species, 49 Fed. Reg. 44712-01 (Nov. 8, 1984).

  U.S. Fish & Wildlife Service, Final Rule, Interior Population of the Least Tern Determined to be Endangered, 50 Fed. Reg. 21784-01 (May 28, 1985).

U.S. Fish & Wildlife Service, Final Rule, Determination of Endangered and Threatened Status for the Piping Plover, 50 Fed. Reg. 50726 (December 11, 1985).

U.S. Fish & Wildlife Service, Final Rule, Determination of Endangered Status for the Pallid Sturgeon, 55 Fed. Reg. 36641-01 (September 6, 1990).

U.S. Fish & Wildlife Service, Availability of a Draft Recovery Plan for the Pallid Sturgeon (Scaphirynchus albus) for Review and Comment, 57 Fed. Reg. 39237-03 (August 28, 1992).

U.S. Fish & Wildlife Service, Final Rule, To List the Topeka Shiner as Endangered, 63 Fed. Reg. 69008-01 (December 15, 1998).

U.S. Fish & Wildlife Service, Proposed Rule, Designation of Critical Habitat for the Topeka Shiner, 67 Fed. Reg. 54262-01, August 21, 2002.

The U.S. Fish & Wildlife Service formally declined to list either the Sicklefin Chub or the Sturgeon Chub, both native to the Missouri, 66 Fed. Reg 19910 (2001).

Holly Doremus & A. Dan Tarlock, "Fish, Farms and the Clash of Cultures in the Klamath Basin," 30 Ecology L. Q. 279 (2003).

XVI. Biological Opinion 2000

- NRC 128-133.
- BiOp 2000 ____.
- Michael Grunwald, "Washed Away: Bush v. The Missouri River," THE NEW REPUBLIC (Oct. 27, 2003).
- U.S. Fish & Wildlife Service, AN ECOSYSTEM APPROACH TO FISH AND WILDLIFE CONSERVATION: AN APPROACH TO MORE EFFECTIVELY CONSERVE THE NATION'S BIODIVERSITY (1994).
- National Research Council, Committee on Restoration of Aquatic Ecosystems**,** RESTORATION OF AQUATIC ECOSYSTEMS: SCIENCE, TECHNOLOGY, AND PUBLIC POLICY (Nat'l Academy Press, 1992)

XVII: DOWNSTREAM FLOODING – 1927, 1943, 1993.

- Interagency Floodplain Management Review Commission, SHARING THE CHALLENGE: FLOODPLAIN MANAGEMENT INTO THE 21ST CENTURY _____ (1994).

- U.S. Geological Survey, ECOLOGICAL STATUS AND TRENDS OF THE UPPER MISSOURI RIVER SYSTEM 1998, Ch. 15, *The Flood of 1993*

- Bruce Babbitt, "Restoring Our Natural Heritage," 14 NAT. RESOURCES AND THE ENV'T 147, 149 (2000).

Supplemental Readings:

J.N. Abramovitz, "Sustaining Freshwater Ecosystems," in STATE OF THE WORLD 1996 (Worldwatch Institute, 1996):

> The management and policy changes begun after the 1927 [Mississippi] flood have had a number of profound effects. One was to shift the cost of flood control and relief from the local to the federal level, which in part encouraged people, farms, and businesses to settle in flood-prone areas with the knowledge that they would be bailed-out of trouble at taxpayer expense. Since 1930, the U.S. Army Corps of Engineers alone has spent more than $25 billion on flood control and navigation efforts in the Mississippi basin. Billions more have been spent by other federal, state and private interests.

Robert Jerome Glennon & John E. Thorson, "Federal Environmental Restoration Initiatives: An Analysis of Agency Performance and the Capacity for Change," 42 ARIZ. L. REV. 483, 504-505 (2000).

XVIII: Upstream Flooding -- 2011

- Report of the Technical Review Panel, REVIEW OF THE REGULATION OF THE MISSOURI RIVER MAINSTEM RESERVOIR SYSTEM DURING THE FLOOD OF 2011 (Dec. 2011)

XVIX. Ecosystem Restoration and Adaptive Management

- BiOp (2000) **_____.**

- Daniel B. Botkin, "Adjusting Law to Nature's Discordant Harmonies," 7 DUKE ENVT'L L. & POL'Y F. 25 (1996).

- Fred P. Bosselmann & A. Dan Tarlock, "The Influence of Ecological Science on American Law: An Introduction," 69 CHI.-KENT L. REV. 847 (1994).

- NRC 135-145.

Supplemental Readings:

National Research Council, DOWNSTREAM: ADAPTIVE MANAGEMENT OF GLEN CANYON DAM AND THE COLORADO RIVER ECOSYSTEM (1999).

Judy L. Meyer, "The Dance of Nature: New Concepts of Ecology," 69 CHI.-KENT L. REV. 875 (1994).

Reed F. Noss, "Some Principles of Conservation Biology, as They Apply to Environmental Law," 69 CHI.-KENT L. REV. 893 (1994).

Bruce Babbitt, "Science: Opening the Next Chapter of Conservation History," 267 SCIENCE 1954 (1995).

J.B. Ruhl, "Ecosystem Management, The ESA, and the Seven Degrees of Relevance," 14 NAT. RES. & THE ENV'T 156 (A.B.A. Section of Nat. Res, Energy and the Env't, Winter 2000).

XX. Litigation – 1990-2011

- South Dakota v. Hazen, 914 F.2d 147 (8th Cir. 1990)

Documents on File: Complaint with Attachments (May, 1990); South Dakota's Brief In Support of Motion for TRO' S.D.'s Supplemental Brief; S.D.'s Brief Resisting Corps' Motion for Stay.

- Brian Morris, "Unanswered Prayers: The Upper Missouri River Basin States Take On the U.S. Army Corps of Engineers. 68 N.D.L. REV. 897 (1992).

- Missouri ex rel. Nixon v. Craig, 163 F.3d 482, 29 E.L.R. 20,453 (8th Cir. 1998), aff'd 978 F. Supp. 902 (W.D. Mo. 1997).

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- Kansas v. United States, 2000 WL 1665260 (D. Kan. 2000).

- State of South Dakota v. Ubbelohde, 330 F.3d 1014 (8th Cir. June 4, 2003).

  Documents on File: Transcript of Preliminary Injunction Hearing, May 9, 2002); Briefs of State of South Dakota, May, 2002, 26 Aug. 2002, and 6 Sept 2002; State of South Dakota's Response to Petition for Rehearing En Banc. Sept. 3, 2003; and North Dakota v. United States Army Corps of Engineers, 270 F.Supp2d 1115 (July 14, 2003); South Dakota v. Ubbelohde, 337 F.3d 1022 (8th Cir. 2003) (Denial of Motion for Stay Filed by the United States).

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- American Rivers et. al. v. United States Army Corps of Engineers, Civil No. 03-241 , 271 F.Supp.2d 230, 33 E.L.R. 20,239 (D.C.D.C. July 12, 2003).

Documents on File: 60 Day Notice of Intent to Sue Under the Endangered Species Act for Operation of the Missouri River Main-stem System and Related Activities (Environmental Defense,3/30,2000); 60-Day Notice of Intent to Sue for Violations of the Endangered Species Act and the Administrative Procedure Act Caused by Missouri River Dam Operations (American Rivers, 3/30/2000); Complaint For Declaratory Judgment and Injunctive Relief (2/13/'03); Affidavit of James Heisinger, Ph.D.; Order, District Court (7/12/'03); 271 F.Supp2d 263 (D.C.D.C. 7/15/'03, Denial of Motion for Stay Pending Appeal); Court of Appeals for the District of Columbia, (7/18/'03. Denial of Motion for Stay Pending Appeal); Plaintiffs' Motion For An Order to Show Cause Why Defendant Should Not Be Held In Contempt and Sanctioned And Supporting Memorandum (July 18, '03); 274 F.Supp.2d 62 (D.C.D.C., July 22, 2003, Decision and Order Holding the Defendant in Contempt);

XXI. Missouri National Recreational River (MNRecR)

- Wild and Scenic Rivers Act (WSRA), 16 U.S.C.A. §**§** 1271-1287.

- Swanson Mining Corp. v. Federal Energy Regulatory Commission, 790 F.2d 96 (D.C. Cir. 1986).

- Oregon Nat. Resources Council v. Marsh, 845 F. Supp. 758 (D. Or. 1994), aff'd in part and rev'd in part sub nom Oregon Nat. Resources Council v. Harrell, 52 F.3d 1494 (9th Cir. 1995).

- Addition of Missouri Segment, Pub. L. No. 95-625, § 707, 92 Stat. 3529 (Nov. 10, 1978).

Supplemental Readings:

National Park & Conservation Assoc. v. Stanton, 54 F. Supp.2d 7 (D.C. 1999) (Niobrara management plan rejected).

Eric. L. Hiser, "Piloting The Preservation/Development Balance On The Wild and Scenic Rivers., 1988 DUKE L. J. 1044 (1988).

A. Dan Tarlock & Roger Tippy, "The Wild and Scenic Rivers Act of 1968," 55 CORN. L. REV. 707 (1970).

Sally K. Fairfax, Barbara T. Andrews & Andrew P. Buchsbaum, "Federalism and the Wild and Scenic Rivers Act: Now You See It, Now You Don't." 59 WASH. L. REV. 417 (1984).

Peter M. K. Frost**,** "Protecting and Enhancing Wild and Scenic Rivers in the West," 29 IDAHO L. REV. 313 (1992).

XXII. MNRecR and the Bank Erosion Issue.

- Water Resources Development Act [WRDA] of 1974, § 32, Pub. L. No. 93-251, 88 Stat. 12.

- WRDA of 1988, §33, Pub. L. No. 100-676, 102 Stat. 4012 (Nov. 17, 1988).

- U.S. Environmental Protection Agency, Region VIII, TOOLS FOR ADDRESSING RIVERBANK EROSION: GUIDELINES FOR COMMUNITIES AND LANDOWNERS ALONG THE UPPER MISSOURI RIVER (EPA 908-K-01-001, August 2002).

- *See,* John H. Davidson, "Multiple-Use Water Resources Development Versus Natural River Functions: Can the WSRA and WRDA Coexist on the Missouri River? 83 NEB. L. REV. 362 (2004).

XXIII: Integrating Climate Change and Variability into River Planning and Operation

- James C. Schmulbach, *Marsh Legacy,* 1988 Harrington Lecture, University of South Dakota, **http://www.usd.edu/as/harrington/**

> The river has been severely altered . . . , but its surviving biota including man may not have faced its greatest challenge. In the final analysis, climatic change effected by anthropogenic causes could be the most important factor influencing the water supply of the Missouri River basin. World reliance on fossil fuels as primary energy sources has increases the atmospheric concentration of carbon dioxide more than 15 percent in the past 100 years. Moreover, atmospheric carbon rates are increasing exponentially not linearly. Carbon dioxide is not in itself harmful, but in the atmosphere it acts like a greenhouse, allowing the sun's

> energy in while not letting the earth's energy out. By the end of three more decades, . . . the climate of the earth may be warmer than at any time in the past 1,000 years. . . . * * * No one knows whether this scenario will unfold, but contingency planning for a warmer and drier climate would be prudent for federal agencies and all states with the Missouri River basin

- Victor B. Flatt & Jeremy M. Tarr, "Adaptation, Legal Resiliency, and the U.S. Army Corps of Engineers: Managing Water Supply in A Climate-Altered World," 89 NO. CAROLINA L. REV. 1499 (2011).

- Dan Tarlock, "Water Demand and Energy Production In A Time of Climate Change," 5 ENVT'L & ENERGY L. & POL'Y J. 325 (2010).

XXIV. Prospects for the Missouri River

- John E. Thorson, "Voyage of Rediscovery: Lessons From Lewis & Clark for Missouri River Managers," 6 GREAT PLAINS NAT. RES. J. 121 (2002).

Supplemental Readings:

> John E. Thorson, "A Proposal For A Missouri River Corridor Trust," 23 PUBLIC LAND & RESOURCES L. REV. 77 (2002).
>
> Daniel P. Beard, "Reform in Western Water Policy," Speech to 17th Annual Public Interest Environmental Law Conference, March 6, 1999, Eugene, Oregon.
>
> Reed D. Benson,"Recommendations for an Environmentally Sound Federal Policy of Western Water,' 17 STAN. ENVTL L.J. 247 (1998).
>
> Sandra B. Zellmer, "A New Corps of Discovery for Missouri River Management," 83 NEB. L. REV. 305 (2004).

Notes and Questions

1. What are the similarities and differences between the Colorado and Missouri River basins? How important are geologic and geographic distinctions? What difference, if any, in the manner in which the federal government has developed the two basins? Speaking of the Colorado, Getches states: "[s]ome in the Upper Basin fear that the Lower Basin's reliance on water in excess of basin entitlements may ripen into necessity and ultimately into recognized rights." David Getches, *Learning From the Colorado River Basin Experience,* in Northern Lights Institute, BOUNDARIES CARVED IN WATER (No. 5, Feb 1988).

APPENDIX A: OPTIONAL STUDY SEGMENTS

[In a seminar setting, additional topics for discussion and student research will properly be suggested. What follows is a catch-all of possible additional topics or categories.]

Cost-Benefit Analysis in Corps Planning

· National Research Council, Comm. To Assess the U.S. Army Corps of Engineers Water Resources Project Planning Procedures, NEW DIRECTIONS IN WATER RESOURCES PLANNING FOR THE U.S. ARMY CORPS OF ENGINEERS (Nat'l Academy Press, 1999)

· New Corps projects are subject to specific non-federal cost-sharing requirements under legislation enacted in 1986 and later years. See WRDA of 1986, Pub. L. No. 99-662, 100 Stat. 4082 (1986), as amended at Pub. L. No. 101-640, 104 Stat. 4604 (1990)

· Otto Eckstein, WATER-RESOURCE DEVELOPMENT: THE ECONOMICS OF PROJECT EVALUATION (1958)

Downstream Issues - Riparian Land Drainage

Natural History, Natural Resources

The River before Pick-Sloan

Literature, Fiction and Art

Individuals, Peoples and Culture

Agriculture in the Missouri River Basin

Wildlife on The Channelized River

Upper Basin Tributaries

A. Vermillion River (S.D.)

Rex R. Johnson, Ph.D., The Vermillion River: Managing the Watershed to Reduce Flooding (Clay County Conservation District, 1997)

James C. Schmulbach & Patrick J. Braaten, "The Vermillion River: Neither Red nor Dead," 58 Biological Report #19, p. 57 ( ).

Thomas M. Power & Ernie Niemi, "An Economic Evaluation of Flood Control Alternatives in the Vermillion River Basin, South Dakota," 3 GREAT PLAINS NATURAL RESOURCES JOURNAL 3 (1998)

Multi-Objective Flood Mitigation Plan, Vermillion River Basin, South Dakota (Federal Emergency Management Agency (1994) ["The River has been channelized from about 11 miles below Centerville to 2 miles above Vermillion."]

U.S. Army Corps of Engineers, Survey Report on Flood Control for the Vermillion River and Tributaries (Dec. 1958). [Recommends channel improvements and levees]

U.S. Army Corps of Engineers, Vermillion River Basin, South Dakota, Flood Control: Reconnaissance Report and Appendices (1992). [No alternative had a positive cost-benefit ratio]

Lower Basin Tributaries

Native American History and Cultural Heritage in the Basin

Federal Liability for Private Land Lost to Erosion

Accretion Lands and Boundary Issues

Underhill, "Determination of Rights to Real Property Along the Missouri River in Connection With River Stabilization," 42 Iowa L. Rev. 58 (1956). Also, Comment, 45 IOWA L. REV. 945 (1960).

Tara DePuy, "Ownership of Abandoned Navigable Riverbeds: To Who Does the Windfall Blow," 8 PUB. LAND L. REV. 115 (1987).

Drought Management and the Missouri River

· U.S. General Accounting Office, WATER RESOURCES: CORPS; MANAGEMENT OF ONGOING DROUGHT IN THE MISSOURI RIVER BASIN (GAO/RCED-92-4, Jan. 1992)

· Donald Wilhite, IMPROVING DROUGHT MANAGEMENT IN THE WEST (Report to the Western Water Policy Review Commission, June, 1997)

APPENDIX B: THE BASIC LEGAL DECISIONS

1. ETSI Pipeline Project v. Hodel et al., 484 U.S. 495, 108 S.Ct. 805, 98 L.Ed. 898 (1988).

Justice WHITE delivered the opinion of the Court.

We must decide whether in the circumstances of this case the Secretary of the Interior has exceeded the authority Congress delegated to him by the Flood Control Act of 1944.

I

The dispute centers on Lake Oahe, an enormous reservoir located on the Missouri River in South Dakota, with a capacity of more than 23 million acre-feet of water. In 1982, ETSI ***498** Pipeline Project entered into a contract with the Secretary of the Interior to withdraw up to 20,000 acre-feet of water from Lake Oahe per year for 40 years.[FN1] South Dakota already had granted ETSI a state permit to use this water in a coal slurry pipeline that would transport coal from Wyoming to the southeastern United States. Soon after the contract was signed, the States of Missouri, Iowa, and Nebraska brought suit in District Court to enjoin performance of the contract, alleging that the manner in which the contract was approved violated several federal statutes. In particular, the plaintiffs contended that the Interior Secretary lacks statutory authority under the Flood Control Act of 1944 (Act), 58 Stat. 887, to execute a ****808** contract to provide water from Lake Oahe for industrial uses without obtaining the approval of the Secretary of the Army. [FN2]

> FN1. Although the contract states that the Interior Secretary entered into it "after consultation with the Secretary of the Army," App. 226, no party has disputed the fact that the Secretary of the Army did not expressly approve or sign the contract, which was signed on behalf of the United States by a regional director for the Interior Department's Bureau of Reclamation. *Id.,* at 234.
>
> FN2. This case also has involved several procedural issues, as well as ancillary issues about the validity of the contract. Those other issues are not before this Court. Neither is there any issue presented here as to the relative interests of the United States and South Dakota in Lake Oahe water.

The District Court ruled for the plaintiffs. *Missouri v. Andrews,* 586 F.Supp. 1268 (Neb.1984). It concluded that the Oahe Dam was not a reclamation or power development that was undertaken by the Interior Secretary, pursuant to clear statutory authority. Instead, the dam was built by the Corps of Engineers, now part of the Department of the Army (formerly the Department of War, but renamed by Act of July 26, 1947, 61 Stat. 495), which has always maintained and operated the reservoir. No block of water in Lake Oahe has been specifically set aside for use by the Interior Department, and the Interior Secretary has not constructed any works at Lake Oahe. On these facts, the District Court held ***499** that the Act does not empower the Interior Secretary to furnish water from Lake Oahe for industrial use.

The Court of Appeals affirmed, with one judge dissenting. *Missouri v. Andrews*, 787 F.2d 270 (CA8 1986). It upheld the District Court's conclusion that Lake Oahe is not a reclamation development undertaken by the Interior Secretary, primarily because the Army built the reservoir and controls its operation. Accordingly, the Interior Secretary cannot contract on his own to withdraw water from the reservoir for industrial use. Neither the language nor the legislative history of the Act was thought to support the claim that the Interior Secretary was ceded broad authority over water in this reservoir, even water that it claims has been designated as available for future irrigation purposes. Indeed, the language of the Act and its legislative history were found to be convincing enough on this point that the Court of Appeals refused to defer to the Interior Secretary's contrary interpretation.

The Court of Appeals denied a petition for rehearing en banc by an equally divided vote of the judges. We granted certiorari, 480 U.S. 905, 107 S.Ct. 1346, 94 L.Ed.2d 517 (1987), and we now affirm.

II

A

The Missouri River Basin is a watershed that covers a vast area in the midwestern United States. The topography of this area, however, reveals two distinct regions that experience very different water problems. The upper part of the Basin, which includes large sections of Montana, Wyoming, North Dakota, and South Dakota, is mostly arid or semiarid; there, the Missouri River and its tributaries are important because they represent a major resource for developing the agricultural and industrial potential of the area. The lower part of the Basin, which includes territory in Nebraska, Kansas, Iowa, and Missouri, is more humid, and there the rivers are used chiefly for navigation, though the critical problem in ***500** this region is to control flooding. See generally M. Ridgeway, The Missouri Basin's Pick-Sloan Plan 47-55 (1955). In the early 1940's, Congress focused its attention on the water problems of the Missouri River Basin, prompted especially by severe floods that had devastated the lower Basin in 1943 and 1944.

At the behest of Congress, the Army Corps of Engineers prepared a report that described a comprehensive plan to develop the entire Basin, known as the Pick Plan for its author, a colonel in the Corps. The Pick Plan proposed the construction of 12 multiple-purpose reservoirs and related works, including 5 reservoirs on the main stem of the Missouri River, at an approximate initial cost of $480 million, though it was estimated that to carry out the entire proposal might cost close to $1 billion. The ****809** Pick Plan stressed flood control as its primary objective, but noted that its comprehensive list of projects "would also provide for the most efficient utilization of the waters of the Missouri River Basin for all purposes, including irrigation, navigation, power, domestic and sanitary purposes, wildlife, and recreation," as well as other intangible benefits. H.R.Doc. No. 475, 78th Cong., 2d Sess., 29 (1944) (H.R.Doc.). The report estimated the gross storage capacity of the Oahe Reservoir at about 6 million acre-feet of water.

At almost the same time, the Interior Department's Bureau of Reclamation independently completed its own plan to develop the Basin, which it had begun earlier, known as the Sloan Plan after the Montana engineer who prepared much of its analysis. The Sloan Plan proposed a total of 90 reservoirs, many of them on the smaller tributary streams, and included 3 reservoirs

on the main stem of the Missouri River, at a projected cost of $1.2 billion, with much of that figure to be repayable. The Sloan Plan was also a comprehensive proposal, though it emphasized use of the water for irrigating land, especially in the upper part of the Basin. It estimated that the Oahe Reservoir would hold 19,600,000 acre-feet of ***501** water. The Sloan Plan also contained a section comparing its provisions to those in the Pick Plan and suggesting modifications to the Pick Plan "which appear necessary to satisfy water-use requirements throughout the Missouri River Basin." S.Doc. No. 191, 78th Cong., 2d Sess., 120 (1944) (S.Doc.). This section concluded that though "the capacity of individual reservoirs, as well as aggregate capacities, remain to be determined in greater detail," the "Army and Reclamation plans on storage needs for all purposes can be composed." *Id.,* at 122-123.

The Pick and Sloan Plans differed with one another not only in their primary objectives, but also in several other important respects, such as the amount of expenditures and the number of projects. The engineering features of the two plans also were dissimilar. On the main stem of the Missouri River, the two plans called for different numbers of reservoirs of divergent sizes, and thus for inconsistent amounts of total water storage. Even where the two plans agreed on the need for a particular reservoir at a particular location, which they did at Oahe and at Fort Randall, they envisioned those projects very differently; as noted above, for example, the Sloan Plan proposed that Lake Oahe would hold more than three times as much water as called for in the Pick Plan, at an additional cost of more than $20 million.

Obviously Congress could not proceed with both plans at once. In order to arrive at a single set of projects for development of the Basin, a Committee composed of two representatives each from the Corps of Engineers and the Bureau of Reclamation was appointed to review the engineering features of the two plans. This Committee essentially combined the determinations made by the Corps about the projects that would be needed for flood control and navigation and the determinations made by the Bureau about the additional projects that would be needed for irrigation. After meeting for two days, the Committee produced an engineering report that recommended most of the specific ***502** developments that had been set out in the Sloan Plan, but provided for six main-stem reservoirs on the Missouri River. The Oahe Reservoir was to be created by construction of a high dam and to have a gross storage capacity of 19 million acre-feet of water. The stated purposes of Lake Oahe were to allow "the irrigation of 750,000 acres of land in the James River Basin as well as to provide useful storage for flood control, navigation, the development of hydroelectric power, and other purposes." S.Doc. No. 247, 78th Cong., 2d Sess., 3 (1944). As had been proposed in the Sloan Plan, the irrigation of the James River Basin was to be made possible by construction of a system of long canals, including one canal approximately 125 ****810** miles long. See S.Doc., at 115-116. With a single set of projects before it at last, Congress enacted the Flood Control Act of 1944 less than two months later.

B

In the Act, Congress accomplished three distinct tasks. First, it authorized certain specific projects to be undertaken by approving the "general comprehensive plans set forth in [the Pick and Sloan Plans] as revised and coordinated by Senate Document 247." § 9(a), 58 Stat. 891. It directed that "the initial stages recommended are hereby authorized and shall be prosecuted by the War Department and the Department of the Interior as speedily as may be consistent with

budgetary requirements." *Ibid.* Second, Congress appropriated funds to pay for the initial work done on those projects. Two separate allotments were authorized: $200 million "for the partial accomplishment of the works to be undertaken under said expanded plan by the Corps of Engineers," § 9(d), and another $200 million "for the partial accomplishment of the works to be undertaken under said plans by the Secretary of the Interior." § 9(e).

Third, Congress adopted an administrative framework within which these projects were to go forward. This task involved several areas of potential controversy. The Act ***503** evoked federalism concerns because the States were anxious to keep control over the development of their lands and the use of valuable water resources. In response, Congress declared a policy of "recogniz [ing] the interests and rights of the States in determining the development of the watersheds within their borders and likewise their interests and rights in water utilization and control." § 1, as set forth in 33 U.S.C. § 701-1 (1952 ed.). The Act also implicated the tensions between the Upper Basin States and the Lower Basin States, whose interests in the use and control of the water were markedly different. Congress addressed this problem by providing that when the Department of War undertook additional works not authorized by the Act it would be required to consult and share information with the affected States and the Secretary of the Interior, depending on whether the works were located west of the 97th and 98th meridians. §§ 1(a) and (b). All projects proposed by the Interior Secretary that would involve construction of "works for irrigation" were made subject to a similar requirement, without regard to geographical location. § 1(c).

Finally, and most directly relevant to this case, the Act required Congress to deal with the administrative jurisdictions of several agencies of the Federal Government. Among the interested agencies were not only the Departments of War and Interior, but also the Department of Agriculture and the Federal Power Commission, both of whom joined the Interior Department in submitting comments on the Pick Plan, and both of whose interests were also touched on by the Act. H.R.Doc., at 1-3, 10-13; Act, §§ 2, 5, 11-15, 58 Stat. 889, 890, 903-907. The crucial provisions here, however, were the sections that set forth the specific authority allotted to War and Interior, the two key Departments affected by the Act. In relevant part, those five central sections of the Act state as follows:

(1) "The Chief of Engineers, under the supervision of the Secretary of War, is authorized to construct, maintain, and ***504** operate public park and recreational facilities in reservoir areas under the control of the War Department, and to permit the construction, maintenance, and operation of such facilities. The Secretary of War is authorized to grant leases of lands, including structure or facilities thereon, in reservoir areas for such periods and upon such terms as he shall deem reasonable." § 4, 16 U.S.C. § 460d (1946 Ed.).

(2) "Electric power and energy generated at reservoir projects under the control of the War Department and in the opinion of the Secretary of War not required in the operation of such projects shall be delivered to the Secretary of the Interior, who ****811** shall transmit and dispose of such power and energy." § 5, 16 U.S.C. § 825s (1946 Ed.).

(3) "That the Secretary of War is authorized to make contracts with States, municipalities, private concerns, or individuals, at such prices and on such terms as he may deem reasonable, for domestic and industrial uses for surplus water that may be available at any reservoir under the control of the War Department." § 6, 33 U.S.C. § 708 (1946 Ed.).

(4) "Hereafter, it shall be the duty of the Secretary of War to prescribe regulations for the use of storage allocated for flood control or navigation at all reservoirs constructed wholly or in part with Federal funds provided on the basis of such purposes, and the operation of any such project shall be in accordance with such regulations." § 7. See 33 U.S.C. § 709 (1946 Ed.).

(5) "Hereafter, whenever the Secretary of War determines, upon recommendation by the Secretary of the Interior that any dam or reservoir project operated under the direction of the Secretary of War may be utilized for irrigation purposes, the Secretary of the Interior is authorized to construct, operate, and maintain, under the provisions of [the Federal reclamation laws,] ... such additional works in connection therewith as he may deem necessary for irrigation purposes.... Dams and reservoirs operated under the direction of the Secretary of War may be utilized hereafter for irrigation purposes only in conformity with the provisions of this section." § 8. See 43 U.S.C. § 390 (1946 Ed.).

III

A

[1] In light of these specific provisions, as well as the general background to the Act, it is beyond question that the Interior Secretary does not possess the authority that is claimed in this case: to execute a contract to provide water from an Army reservoir for industrial uses without obtaining the approval of the Secretary of the Army. Nobody has disputed that Lake Oahe, one of the six main-stem reservoirs on the Missouri River, was constructed by, and has been operated and maintained by, the Army Secretary, and the District Court found this to be true as a matter of fact. 586 F.Supp., at 1273-1274. The Act says explicitly that such reservoirs are "under the control of" or "under the direction of" the Army Secretary. §§ 4-6, 8. Only two provisions of the Act provide for the Interior Secretary to exercise any authority whatsoever at Army reservoirs, and in both instances the Act clearly states that the Interior Secretary's authority is subordinate to that of the Army Secretary, who does after all "control" those reservoirs. The Interior Secretary is authorized to "transmit and dispose of" electric power and energy generated at Army reservoirs, but only when that energy is "in the opinion of the Secretary of [the Army] not required in the operation of such projects." § 5. The Interior Secretary is also authorized to recommend to the Army Secretary that an Army reservoir "be utilized for irrigation purposes," and to "construct, operate, and maintain ... such additional works in connection therewith as he may deem necessary for irrigation purposes." § 8. But this authority only comes into play if the Army Secretary "determines" that "any dam or reservoir project operated under [the Secretary's] direction" may be used for such purposes. *Ibid.* The language of the Act is plain in every respect, and the conclusion is unavoidable that if the Interior Secretary wishes to remove water from an Army reservoir for *any* purpose, the approval of the Army Secretary must be secured.

[2] The precise authority claimed by the Interior Secretary in this case is to enter into a contract, without the approval of the Army, to remove from Lake Oahe water that is claimed to

be available for irrigation, and to allow that water to be devoted to industrial use. Nowhere does the Act provide any support for this claimed authority, and in fact it is directly inconsistent with §§ 6 and 8 of the Act, which show that only the Army Secretary has that independent authority in this instance. Section 6 gives the Army Secretary the authority "to make contracts with States, municipalities, private concerns, or individuals ... for domestic and industrial uses for surplus water that may be available at any reservoir" under the Secretary's control, "*Provided*, That no contracts for such water shall adversely affect then existing lawful uses of such water." The language of the Act is plain enough: "surplus water" is all water that can be made available from the reservoir without adversely affecting other lawful uses of the water. As long as ample water remains in Lake Oahe for the purposes embodied in the Act, and absent any allocation for irrigation pursuant to § 8, the Army Secretary has exclusive authority to contract to remove water for industrial uses. In this light, two of the District Court's factual findings take on special significance. First, the District Court found no evidence "which would show that specific storage space in Oahe Reservoir was assigned to irrigation," and "there is no evidence that separate allocations were made at Oahe." 586 F.Supp., at 1277. Second, "there is no evidence that any Oahe water ever has been used for irrigation or will be in the near future." *Id.*, at 1274. In light of these facts, and the plain provisions of § 8, the Interior Secretary had no authority to dispose of Lake Oahe water. The Army Secretary might have but has not done so.[FN3]

> FN3. At one time, the Army took the view that the only "surplus water" in the main-stem reservoirs was the water that neither was held in the reservoirs nor was run through the generators to produce hydroelectric power-in other words, that no "surplus water" existed in the reservoirs themselves-apparently because it assumed that all water contained in the reservoirs "is otherwise being used" for specified purposes. Army Memorandum Marketing of Missouri River Water for Coal Gasification, AR900407 (Dec. 16, 1974), App. 133. More recently, however, the Army has abandoned this assumption and recognized that "this interpretation of what constitutes surplus water is unnecessarily narrow." Memorandum from Susan Crawford, General Counsel of Army, to Assistant Secretary of Army, Proposed Contracts for Municipal and Industrial Water Withdrawals from Main Stem Missouri Reservoirs 2 (March 13, 1986), App. to Brief for Respondent States 14a. Its current position is that § 6 of the Act gives the Army Secretary the same authority over "water he determines is not needed to fulfill a project purpose in Army reservoirs" that the Interior Department possesses over water contained in its own reservoir projects, namely, the authority to withdraw water for industrial use if to do so would not impair the efficiency of the project for its other stated purposes. Memorandum of Crawford 4, App. to Brief for Respondent 16a. See also Army Circular EC 1105-2-181, pp. 3-4 (Oct. 30, 1987). This view is consistent with the language of the Act, for if the term "surplus water" could never include any of the water stored in the reservoirs themselves, then the caveat Congress enacted in § 6-that this grant of authority shall not "adversely affect then existing lawful uses of such water"-would have been irrelevant because this grant of authority could never adversely affect any existing or projected uses of such water.

***507** Section 8 details the procedures for utilizing water from Lake Oahe for irrigation, and only when these procedures are followed does the Interior Secretary have any authority to deal

with Lake Oahe water. The Interior Secretary may recommend to the Army Secretary that an Army reservoir be utilized at least in part for irrigation purposes. If the Army Secretary determines that the reservoir may be used for this purpose, then the Interior Secretary "is authorized to construct, operate, and maintain, under the provisions of [the Federal reclamation laws,] ... such additional works in connection therewith as he may deem necessary for irrigation purposes." Congress must grant "specific authorization" for the construction of any such additional works. Water from Army reservoirs "may be utilized hereafter for irrigation purposes only in conformity with the provisions of this section." § 8. It may be recalled at this point that the Sloan Plan, which had envisioned the use of a substantial amount of water from Lake Oahe for irrigation of the James River Basin, was consistent with this approach; the Sloan Plan provided for the construction of massive additional works for irrigation comprising a system of long canals. S.Doc., at 115-116. By this means, Interior would be permitted to withdraw water from Army reservoirs through these additional works for use in irrigation, which would then bring that water under its control, and under the federal reclamation laws the Interior Secretary may reallocate irrigation water from irrigation projects to other purposes when he sees fit, as long as "it will not impair the efficiency of the project for irrigation purposes." 43 U.S.C. § 485h(c) (1946 ed.).[FN4] In this case, the District Court found that the Interior Department did begin initial construction on irrigation works at Lake Oahe, but Congress later authorized the Department to cancel construction, which it did. 586 F.Supp., at 1274. As already stated, the District Court found that no water from Lake Oahe has ever been used for irrigation, *ibid.*, and we are unaware of any such plans in the near future. Under these circumstances, the Interior Secretary is not "in conformity with the provisions of" § 8, and therefore has no authority under the Act to withdraw water from Lake Oahe, whether for irrigation or otherwise. It is likely that ***509** Lake Oahe contains surplus water, but that water is subject to disposal by the Army, not by Interior.[FN5]

FN4. See also 43 U.S.C. § 521 (1946 ed.). Under that section the Interior Secretary "in connection with the operations under the reclamation law is hereby authorized to enter into contract to supply water from any project irrigation system for other purposes than irrigation ...: *Provided* ..., That no water shall be furnished for the uses aforesaid if the delivery of such water shall be detrimental to the water service for such irrigation project." The Interior Secretary's determination that the sale of water does not impair the irrigation purpose of a project under his control has been accorded broad deference. See, *e.g.*, *Environmental Defense Fund v. Morton*, 420 F.Supp. 1037 (Mont.1976), aff'd in part and rev'd in part, *Environmental Defense Fund v. Andrus*, 596 F.2d 848 (CA9 1979).

FN5. Nothing in today's decision, it should be emphasized, prevents the water in Lake Oahe from being put to beneficial use for industrial or other purposes. Of the 23 million acre-feet of water stored in this reservoir, by far the most part was projected for potential use in irrigation. As the District Court found, however, none of this water has been allotted for irrigation, no works have been constructed to make use of this water for irrigation, and none of this water has ever been used for irrigation or is likely to be used for that purpose in the foreseeable future. 586 F.Supp., at 1274, 1277. On these facts, there is considerable leeway for the Army Secretary to designate some of this water for industrial use without "adversely affect[ing]" the "existing lawful uses of such water."

Act, § 6. Certainly if the Executive Branch as a whole wishes to put the water in this reservoir to beneficial use, it may do so simply by complying with the terms of the Act.

B

[3] The petitioners seek to avert this conclusion by pointing to §§ 9(a) and (c) of the Act. Section 9(a) approves the "general comprehensive plans" set out in the Pick Plan and the Sloan Plan, as revised and coordinated by the final Senate Document, and authorizes the initial stages of those projects to be "prosecuted by the War Department and the Department of the Interior as speedily as may be consistent with budgetary requirements." The petitioners contend that this statement represents congressional approval of various aspects of the functional division of authority between the Army and Interior Departments that had been suggested in those plans; in particular, the petitioners suggest that this provision allows the Interior Secretary unilaterally to remove water from Army reservoirs for irrigation purposes and for other related uses.

This contention is both wide of the mark and grounded on a misuse of the legislative history. To begin with, it would be surprising if Congress had followed up the five sections of the Act in which it explicitly established the jurisdiction of Army and Interior over specific uses of Army reservoirs, the last section of which established jurisdiction over the use of those reservoirs for irrigation, with a provision in which it indirectly made further refinements in how water could be used for irrigation, and yet did not offer the slightest indication that it was doing so. In any event, there is no reason to think that § 9(a) incorporates into the Act any additional indications about the proper division of authority between Army and Interior. On the contrary, its location in § 9 of the Act indicates that this provision was not intended as anything more than authorization for the two Departments to begin working on the projects listed in the final Senate Document. The other parts of § 9 merely harmonize the Act with existing laws and set out separate appropriations for Army and Interior to begin "the partial accomplishment of the works to be undertaken under said expanded plans," §§ 9(d) and (e), which indicates that this entire section of the Act encompasses only the necessary ministerial details to allow action to begin on the specified projects.

If there were any room for believing that § 9(a) implicitly modified the jurisdictional provisions that were plainly set forth in the preceding sections of the Act, or for doubting that it instead approved a different division of authority from that suggested in the Pick Plan and the Sloan Plan, one item in the legislative history puts this supposition entirely to rest. The original House version of the Act included language almost identical to the suggestions made in the two plans, see *infra*, at ----, which obliged the Interior Secretary "to prescribe regulations" for the use of water stored in Army reservoirs for irrigation. Hearings on H.R. 4485 before a Subcommittee of the Senate Committee on Commerce, 78th Cong., 2d Sess., 2 (1944). Secretary Ickes testified at the Senate Hearings on the proposed bill that this approach did not relate very well to the reclamation laws because it "disregards the problem of allocating costs for multiple-purpose facilities serving other uses in addition to irrigation." *Id.,* at 458. He proposed replacing that approach instead with the language currently contained in § 8 of the Act, which was eventually enacted by Congress. *Id.,* at 313. As noted above, § 8 now provides that Army controls the main-stem reservoir projects and Interior controls all such additional irrigation works as it may "construct, operate, and maintain" at the site of those main-stem projects. One need not draw all the inferences that may be justified by this piece of legislative history in order to make it decisive

here, for at the very least it directly refutes the notion that the other sections of the Act were intended to effect no changes in the division of authority between Army and Interior that had been suggested in the Pick Plan and the Sloan Plan.

Moreover, even if § 9(a) had been intended to adopt every aspect of the functional division of authority between the two Departments that had been proposed in the Pick and Sloan Plans, this section would not provide Interior with the authority to withdraw water unilaterally from Lake Oahe for irrigation and other uses in flat contradiction of § 8 of the Act. Contrary to the petitioners' argument in this case, nothing in those two plans indicates that control over individual reservoirs was to be divided among various departments of the Federal Government. The Pick Plan, for example, emphasized that although the Department of War was willing to coordinate its activities with Interior in order to serve "the broad and important interests and responsibilities" of both agencies, "[i]t is essential, however, that the main-stem projects be built, operated, and maintained by the Corps of Engineers." H.R.Doc., at 3-4. The War Department noted that although it would retain control of those reservoir projects, it accepted that "utilization of storage reserved for irrigation" in those reservoirs "should be in accordance with [Interior] regulations." *Id.*, at 4.[FN6] But this accession is not at all the same as dividing control between the two agencies over the reservoir projects or the water stored in those projects, which was not contemplated in the Pick Plan. The Sloan Plan basically agreed with the approach set out in the Pick Plan, recognizing that the agency "with primary interest in the dominant function of any feature proposed in the plan should construct and operate that feature, giving full recognition, in the design, construction, and operation, to the needs of other agencies with minor interests." S.Doc., at 11. The Sloan Plan recognized that the "dominant function" of Lake Oahe and the other main-stem reservoir projects would be flood control and navigation, and therefore these projects would come under the jurisdiction of the Army and its Corps of Engineers. *Id.*, at 4.[FN7] Even if Congress had intended to write the jurisdictional structure suggested in the Pick Plan and the Sloan Plan directly into law, therefore, it would not have extended to Interior the unilateral authority that has been claimed in this case.

> FN6. In its comments on the Pick Plan, Interior endorsed this approach, stating that the Army "Corps of Engineers should construct, operate, and maintain any feature in which flood control and navigation are dominant considerations, and the [Interior's] Bureau of Reclamation should construct, operate, and maintain any feature in which the functions of irrigation, restoration of surface and ground water levels, and power are dominant," though the two Departments would "advise and consult with" one another to the extent that these interests overlapped in features controlled by one or the other Department. H.R. Doc., at 7.
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> FN7. The self-styled "joint engineering report" contained in the final Senate Document that effected a reconciliation of the Pick and Sloan Plans did not shed any further light on how the administrative jurisdictions of the two Departments were to be circumscribed, but merely observed that the engineering features of the two plans were brought into agreement by applying the principles that the Army Corps of Engineers "should have the responsibility for determining main stem reservoir capacities and capacities of tributary reservoirs for flood control and navigation," and the Bureau of Reclamation "should have

the responsibility for determining the reservoir capacities on the main stem and tributaries of the Missouri River for irrigation." S.Doc. No. 247, 78th Cong., 2d Sess., 1 (1944). This passage seems to be nothing more than an explanation of how the final number of projects and the amount of their storage capacities were reached by the representatives of the two Departments.

The petitioners also point to § 9(c) of the Act as lending support to its argument. That section states that "the reclamation and power developments to be undertaken by the Secretary of the Interior under said plans shall be governed by the Federal Reclamation Laws." As noted already, under the reclamation laws the Interior Secretary is authorized to reallocate water under his control for industrial use as he sees fit. See n. 4, *supra*. By its terms, however, § 9(c) applies only to "the reclamation and power developments" undertaken by the Interior Secretary under the Act: that is, to the "transmission lines and related facilities" that § 5 authorizes the Interior Secretary "to construct or acquire" for transmitting and disposing of electric power, and to the "irrigation works" that § 8 authorizes the Interior Secretary "to construct, operate, and maintain" under the reclamation laws. This provision merely stipulates that the reclamation laws, which typically apply to other Interior projects, see 43 U.S.C. § 371 *et seq.* (1946 ed.), also apply to all the projects that Interior may undertake under the Flood Control Act. But as the District Court found, and as is readily apparent, the reservoir project engineered by the Army at Oahe is neither a "power development" nor a "reclamation development" that has been undertaken by the Interior Secretary. 586 F.Supp., at 1273-1278.[FN8] On the facts ****816** of this case, § 9(c) ***514** clearly does not extend any authority to Interior to withdraw water from Lake Oahe by other means than those stated in the Act.[FN9]

FN8. The petitioners contend that the term "reclamation ... developmen[t]" in § 9(c) can encompass either the entire reservoir project at Oahe or the activities that Interior might undertake to dispose of water stored at Oahe for irrigation. Neither suggestion is tenable. The construction of the main-stem dam and reservoir project at Oahe was undertaken and controlled by the Army, and the District Court found this to be true as a matter of fact; thus Oahe cannot be a "reclamation ... developmen[t] to be undertaken by the Secretary of the Interior." And the suggestion that the term "reclamation ... developmen[t]" may refer to activities rather than projects is wrong for several reasons. First, the whole term is "reclamation and power developments to be undertaken by the Secretary of the Interior." These developments, which were set out more specifically in the Pick and Sloan Plans, plainly refer to the only developments that the Act identifies Interior as undertaking: the "power developments" ("transmission lines and related facilities") identified in § 5, and the "reclamation developments" ("irrigation works") identified in § 8. Second, the term "reclamation ... developmen[t]" used in § 9(c) of the Act is linked by petitioners to § 9(c) of the Reclamation Project Act of 1939, 53 Stat. 1193, as set forth in 43 U.S.C. § 485h(c) (1946 ed.), which is said to give Interior the authority to contract to dispose of this water, yet that statutory section itself limits Interior's authority by stating that such authority may not be used to "impair the efficiency *of the project* for irrigation purposes." *Ibid.* (emphasis added). Thus this same account relates the terms "development" and "project." Third, the integral nature of the relation between these two terms is shown by further consideration of the Reclamation Project Act § 2(*i*), 43 U.S.C. § 485a(*i*) (1946 ed.),

which defines the term "development unit" as "a part of a project which, for purposes of orderly engineering or reclamation development, is designated as a development unit by order of the Secretary." Thus a "reclamation development" is a designated part of a "reclamation project" under the Reclamation Project Act, for administrative purposes, and the two terms are used almost synonymously in that Act. See § 485f(b).

FN9. Petitioners suggest that their reading of the Act is supported by Congress' enactment of § 212 of the Reclamation Reform Act of 1982, 43 U.S.C. § 390*ll*. That provision, however, works no change in any of the substantive provisions of the Flood Control Act, and specifically does not purport to modify § 8 of the Act, which states the manner in which water may be withdrawn from Lake Oahe for use in irrigation. Section 212(a) merely was intended "to eliminate the shadow of applicability of the reclamation law to Corps of Engineers projects in any case in which the intent of Congress concerning such applicability is not clearly and explicitly set forth in statutory language," S.Rep. No. 97-373, p. 16 (1982), U.S.Code Cong. & Admin.News 1982 pp. 2570, 2580, which it was not in § 8 of the Act. Section 212(b) simply ensures that the Interior Secretary's "authority to contract with water user entities for the irrigation water deliveries from Corps of Engineers projects, and to collect appropriate charges for those deliveries, continues in effect." *Ibid.* It says nothing about when and how the Interior Secretary possesses and exercises the authority to enter into such contracts, which is prescribed in § 8 of the Act. Even more to the point, § 212 does not indicate in any way that the Interior Secretary has the authority to enter into a contract to withdraw water from an Army reservoir for industrial use, which is the precise authority asserted in this case.

Not only do the language, structure, and legislative history of the Act fail to support the petitioners in this case, but the substance of their position is also difficult to fathom. The petitioners claim that the administrative structure established in the Act divides authority over Lake Oahe between Army and Interior in a novel fashion that is considerably different from what appears on the face of the Act. One possibility, which the petitioners disavow, is that Interior has the ultimate authority to use water from the reservoir for irrigation purposes and Army has the ultimate authority to use water from the reservoir for flood control and navigational purposes. This approach obviously would founder, and could give rise to endless squabbles, unless the water in the reservoir has been allocated between these uses, yet the District Court explicitly found "no evidence that separate allocations were made at Oahe," and "one wonders how the Interior Department is to control what cannot be identified." 586 F.Supp., at 1277. The position actually urged by the petitioners is even less straightforward than the foregoing: they argue that the Act *requires* Interior *to consult with* Army before withdrawing any water for industrial use from Lake Oahe, and *does not allow* Interior to withdraw water *if Army objects,* and yet the Act *does not require* Interior *to obtain the approval* of Army in order to withdraw water for industrial use. Tr. of Oral Arg. 14-15. The Army's authority over Lake Oahe is thus to be understood as most closely analogous to an executive veto over legislation: Interior must offer its proposal to the Army, and cannot proceed on its own if the Army objects, but can proceed even without Army approval as long as Army does not object. This would be, to say the least, a most unusual approach to administrative jurisdiction, one that gains no support from the text of the Act, and

one that we are unwilling to read into the Act as an implicit modification of its otherwise sensible and intelligible provisions.

C

[4] The petitioners finally contend that this Court should defer to the Interior Secretary's interpretation of the authority granted to him under the Act, which the Army apparently has acquiesced in at least for the purposes of this litigation. The petitioners also point to what they describe as a tradition of cooperation between these two Departments in the Missouri River Basin, including a period between 1975 and 1978 when they entered into a joint agreement that allowed the Interior Secretary, "both on his own behalf and as agent for the Secretary of the Army, [to] contract for the marketing of water for industrial uses" from the six main-stem reservoirs.[FN10] The District Court disagreed with this historical account of the relations between Interior and the Army on this subject, and concluded that when "the chief attorneys for the two departments affected by a statute disagree, neither enjoys any deference." 586 F.Supp., at 1280. The Court of Appeals discussed this issue very briefly, but the gist of its holding was simply that Interior's interpretation did not even constitute a reasonable reading of the Act. 787 F.2d, at 287.[FN11]

FN10. This "Memorandum of Understanding" declared that the Army Secretary "shall retain all operational and managerial control over said reservoirs." Memorandum of Understanding Between Secretary of Interior and Secretary of Army, AR900072 (Feb. 24, 1975), App. 136. Over the four years it was in effect, no contracts were executed under it, and the agreement was allowed to expire in 1978. It also appears, by all accounts, that the contract at issue in this case is the only instance of the Interior Secretary exercising unilateral authority to withdraw water for industrial uses from a reservoir project controlled by the Army.

FN11. Both the District Court and the Court of Appeals mentioned various reasons why the Interior Secretary's interpretation of the Act might not be entitled to deference even if it were a reasonable interpretation. But since in the end the District Court, like the Court of Appeals, concluded that the agency's decision was not "reasonable," 586 F.Supp., at 1280, its additional comments, like those of the Court of Appeals, were pure dictum, and there is no reason to address them here.

It is unnecessary to consider the petitioners' contention that deference to the Interior Secretary is appropriate in this case and their related arguments about the history of relations between Army and Interior under the Act, for even if Interior's interpretation of the Act would be entitled to any ***517** deference in these circumstances, the Executive Branch is not permitted to administer the Act in a manner that is inconsistent with the administrative structure that Congress enacted into law. As this Court has stated in a recent opinion on the proper limits of deference to an agency's construction of the statute which it administers: "If the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress." *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 842-843, 104 S.Ct. 2778, 2781, 81 L.Ed.2d 694 (1984). The Flood Control Act speaks directly to the dispute in this case, and congressional intent as

expressed in the Act indicates clearly that the Interior Secretary may not enter into a contract to withdraw water from an Army reservoir for industrial use without the approval of the Department of the Army. That is "the end of the matter." *Id.*, at 842, 104 S.Ct., at 2781.

The decision of the Court of Appeals is therefore affirmed.

It is so ordered.

Justice KENNEDY took no part in the consideration or decision of this case.

2. State of South Dakota v. Ubbelohde, 330 F.3d 1014m 33 E.L.R. 20,213 (8th Cir. 2003)

Before WOLLMAN, RICHARD S. ARNOLD, and MELLOY, Circuit Judges.

RICHARD S. ARNOLD, Circuit Judge.

This case arises out of the management of the Missouri River, which runs through seven states in its journey from Montana to Missouri. The United States Army Corps of Engineers is charged with the responsibility of managing this river and its attendant reservoirs. In carrying out this charge, the Corps must strike a balance among many interests, including flood control, navigation, and recreation. In good times, the Corps can accommodate all such interests, but, when facing a continuous drought, the Corps is forced to make hard choices. In the Spring of 2002, the Missouri River Basin was in the midst of just such a prolonged drought. The Corps decided to release water from a single reservoir, Lake Oahe, to maintain downstream river flow. The State of South Dakota, where Lake Oahe is located, sought and received an injunction barring this release. This action led other states to seek similar injunctions. Within a period of days, courts had put four of the six main stem reservoirs off limits for releases. The State of Nebraska then sought and received an injunction requiring the Corps to maintain downstream river flow.

In this case we review the decisions of three district courts to issue preliminary injunctions binding the Corps. District Courts in North Dakota and South Dakota enjoined the Corps from drawing down reservoirs located in their states for short periods of time, and a Nebraska District Court ordered the Corps to abide by its governing Missouri River operations manual. We reverse the judgments of the District Courts in North Dakota and South Dakota and affirm the judgment of the Nebraska District Court.

I.

Congress enacted the Flood Control Act of 1944 to provide for the orderly management of the Missouri River Basin. Pub.L. No. 78-534, 58 Stat. 887 (1944). The Act had numerous purposes. First, it entrusted the Army Corps of Engineers with the task of managing the River basin. The Corps is charged, for example, with constructing and managing the dams and reservoirs created by the Act, 16 U.S.C. § 460d, making contracts for use of surplus water available at the reservoirs, 33 U.S.C. § 708, and "prescrib[ing] regulations for the use of storage allocated for flood control or navigation at all reservoirs ... the operation of any such project shall be in accordance with such regulations," 33 U.S.C. § 709. The Act thus granted the Corps considerable power over the River basin.

The Act also laid out certain substantive interests that it was to serve. The dominant functions of the Flood Control Act were to avoid flooding and to maintain downstream navigation. *ETSI Pipeline Project v. Missouri*, 484 U.S. 495, 512, 108 S.Ct. 805, 98 L.Ed.2d 898 (1988). The Act's dominant functions were expressed repeatedly in three Congressional Documents: Senate Documents 191 and 247 and House Document 475. See Flood Control Act Section 9, 58 Stat. at 891. House Document 475, which represented one of two competing plans, confirmed this view, stressing flood control. H.R. Doc. No. 475, 78th Cong., 2d Sess. 28-29 (1944). At the same time,

however, the Act recognizes secondary uses of the River including irrigation, recreation, fish, and wildlife. See Flood Control Act Section 4, 58 Stat. at 889-90; 33 U.S.C. § 708; 43 U.S.C. § 390. The House Document just cited noted that the management plan "would also provide for the most efficient utilization of waters of the Missouri River Basin for all purposes, including irrigation, navigation, power, domestic and sanitary purposes, wildlife, and recreation." H.R. Doc. No. 475, *supra*, at 29. Senate Document 247, which reconciled the competing proposals, included a discussion of the purposes of Lake Oahe: "the irrigation of 750,000 acres of land ... as well as to provide useful storage for flood control, navigation, the development of hydroelectric power, and other purposes." S. Doc. No. 247, 78th Cong., 2d Sess. 3 (1944). Thus, the Flood Control Act provided the Corps with a wide array of interests to consider in regulating the River.

While the Flood Control Act laid out broad goals, the intricacies of the River basin required the Corps to work out a specific management plan. The Corps devised this more specific management plan and published it in the *Missouri River Main Stem Reservoir System Reservoir Regulation Manual*, commonly referred to as the Master Manual, which explains how the Corps is to go about managing the River system. The most recent version of the Master Manual was promulgated in 1979, although the Corps has been in the process of revising the manual since the late 1980's, and the Corps assures this Court that the revisions should be completed quite soon.

The Master Manual accomplishes numerous goals. For one, Section IX lays out the "general approach" that is to be used to plan reservoir operation, an approach that calls for sequential consideration of the various interests. Predictably, it indicates that flood control will be provided for first. After flood control, the Manual calls for the Corps to consider (in order) irrigation, water supply and water-quality requirements, navigation and power, and finally recreation, fish, and wildlife. Notably, the final provision reads: "insofar as possible without serious interference with the foregoing functions, the reservoirs will be operated for maximum benefit to recreation, fish and wildlife." Master Manual Section 9-3. In addition to laying out this general approach, the Master Manual includes more specific technical guidelines. Thus, the Manual lays out minimum flows that are to be maintained at different points on the River, Master Manual Section 9-17, and methods for deciding the length of the navigation season based upon river flow at certain times of the year. Master Manual Section 9-18. The Master Manual also explains that the Corps has always promulgated Annual Operating Plans, which lay out the Corps's particular plan for the year. Master Manual Sections 9-47 & 9-48. These plans also give the public notice of the Corps's plan for operating the system, allowing interested individuals to order their affairs for the year.

The dispute in this case arose out of the prolonged drought conditions that the Missouri River has been experiencing over the last several years. This shortage of water has forced the Corps to make decisions about the allocation of water between the states and between different interests. Pursuant to its 2002 Annual Operating Plan, the Corps decided to release water from Lake Oahe in South Dakota to maintain downstream navigation on the Missouri River. At the same time, the Corps was planning on holding water levels constant at the other five reservoirs. The Corps generally lowers only one reservoir if releases are necessary to maintain navigation, and it

attempts to shift this burden from year to year. Because Lake Oahe's water level had not been reduced the year before (it had actually increased), the Corps chose Lake Oahe to bear the burden of the drought in 2002.

The Corps's plan to release water from Lake Oahe was troubling to South Dakota, because it wanted the water level of Lake Oahe to be held constant from late April to late May to allow for a fruitful fish spawn during that period. Lake Oahe has become a well-known destination for trophy walleye fishing. Since 1997, however, the State noticed a marked reduction in the quality of fish in the lake-a reduction that has reduced recreation at the lake. The State concluded that this reduced quality was caused by a sizable decrease in the number of rainbow smelt, the prey fish of the walleye. This decrease was due in part to a massive water release from Lake Oahe in 1997 and in part to the overpopulation of walleye. South Dakota set out to remedy this problem by allowing for increased walleye fishing, which would reduce the number of predators of the rainbow smelt. After this increased fishing, the State concluded that the rainbow smelt were poised to have an extremely fruitful spawn in 2002. Because the smelt lay their eggs in shallow water, however, the spawn would not be successful if the water level was reduced even by as little as six inches. South Dakota therefore asked the Corps to forego its plans to release water from Lake Oahe during the smelt's spawning season-late April until late May. The Corps indicated that it nevertheless intended to abide by its annual operating plan, which called on the Corps to continue the releases from Lake Oahe to maintain downstream navigation.

On April 25, 2002, after the Corps refused to change its plans, the State of South Dakota filed suit in the District Court for South Dakota. The suit claimed that the Corps acted arbitrarily and capriciously in maintaining downstream navigation rather than maximizing recreation at upstream reservoirs. The suit sought a declaration that the Corps's practice of always requiring one of the reservoirs to bear the burden of a drought was unlawful. The suit sought to enjoin the Corps from releasing water from Lake Oahe until after the spawning season. After a hearing, the Court entered a temporary restraining order requiring the Corps to maintain the water level until a preliminary-injunction hearing could be held. When the Court entered this restraining order, the Corps announced its intention to release water from Lake Francis Case to offset its inability to lower Lake Oahe. Lake Francis Case is also in South Dakota, and the State requested that the District Court consider the propriety of lowering Lake Francis Case at the preliminary injunction hearing. Before the preliminary-injunction hearing, the State of Nebraska and numerous private entities moved to intervene in the case, but the Court denied these motions. After hearing arguments from all sides on May 9 and 10, the District Court entered a preliminary injunction that required the Corps to maintain the water level at both Lake Oahe and Lake Francis Case until May 25-the end of the spawning season.

The South Dakota Court's injunction had a cascading effect. To cope with the injunction, the Corps planned to lower Lake Sakakawea, which is located in North Dakota. The State of North Dakota brought suit in the federal District Court in North Dakota to enjoin the Corps from lowering this reservoir. The District Court entered a temporary restraining order on May 12, which required the Corps to maintain the lake's water level. When the TRO expired ten days

later, the parties agreed that it would be converted into a preliminary injunction.

When it was not allowed to intervene in the South Dakota case, the State of Nebraska went to the federal District Court in Nebraska seeking a preliminary injunction that would require the Corps to operate the River according to the Master Manual and the 2002 Annual Operating Plan. On May 13, the District Court entered an injunction ordering as much. The Court noted that it was "reluctant to interfere with the discretion of the Corps, but must recognize that court orders in other jurisdictions designed to safeguard interests of upstream users are quickly stripping the Corps of Engineers of its ability to function as an objective steward of the water flows in the Missouri River Basin." Addendum to Corps's Brief 29. This order left the Corps in a thorny predicament. The Nebraska order required it to maintain navigation, but with Lakes Oahe, Francis Case, and Sakakawea and Fort Peck Reservoir off limits, the Corps was forced to rely on the two smallest reservoirs for the releases. Ultimately, downstream flows were reduced, and navigation and other downstream interests suffered.

The Corps immediately appealed the judgments of each of the District Courts. Additionally, Nebraska and the other proposed intervenors have appealed the South Dakota District Court's orders denying their motions to intervene. This Court stayed each of the injunctions on May 22, 2002. The injunctions in North Dakota and South Dakota expired by their own terms on May 25, 2002. The Nebraska District Court's injunction has not expired and will go into effect again if we lift our stay.

II.

We must decide whether the three District Courts erred in enjoining the Corps and whether the South Dakota Court erred in denying the motions to intervene. We conclude that the District Courts in North Dakota and South Dakota erred in enjoining the Corps from lowering reservoirs to maintain navigation, and that the District Court in Nebraska correctly ordered the Corps to follow the Master Manual. We also conclude that the South Dakota District Court erred in denying the motions to intervene.

A.

[1] Before reaching the merits of this case, we must consider whether the expiration of the preliminary injunctions in North Dakota and South Dakota renders the appeals of those orders moot. Although none of the parties to this appeal has urged this Court to dismiss the case, we must nevertheless satisfy ourselves that this case is not moot. See *Kremens v. Bartley,* 431 U.S. 119, 136, 97 S.Ct. 1709, 52 L.Ed.2d 184 (1977). We are so satisfied for numerous reasons. First, we note that the injunction issued by the District Court in Nebraska is still in effect, so the Corps's appeal from that injunction is clearly not moot, and many, if not all, of the substantive***1023** issues raised by the South Dakota and North Dakota appeals will be decided anyway.

The North Dakota and South Dakota cases fall within the well-known "capable of repetition, yet evading review" exception to the mootness doctrine. *Weinstein v. Bradford,* 423 U.S. 147,

149, 96 S.Ct. 347, 46 L.Ed.2d 350 (1975). This exception applies when two conditions are met: "(1) the challenged action [is] in its duration too short to be fully litigated prior to cessation or expiration, and (2) there [is] a reasonable expectation that the same complaining party [will] be subject to the same action again." *Spencer v. Kemna*, 523 U.S. 1, 17, 118 S.Ct. 978, 140 L.Ed.2d 43 (1998).

A preliminary injunction that bars the Corps from releasing water from the reservoirs during spawning will never last long enough to allow for full litigation because of the brevity of spawning season. Thus, if these actions were to recur, they would continually evade review. Moreover, we have every reason to suspect that these events will recur. On previous occasions, we were inclined to think this type of litigation would not repeat itself. See *South Dakota v. Hazen*, 914 F.2d 147 (8th Cir.1990) (deciding case was moot because the injunction had expired); *cf. Missouri ex rel. Nixon v. Craig*, 163 F.3d 482 (8th Cir.1998) (deciding that a challenge to the Corps's annual operating plan was moot because the plan had lapsed). But repetition now seems quite likely. At oral argument the parties agreed that drought conditions continue along the River, meaning that the Corps will again be forced to choose between releasing water from the reservoirs or letting downstream navigation suffer. We have every reason to believe that the Corps will choose to release water from at least one reservoir, and we are confident that the legality of such a release would again be challenged in the courts. In the end, then, we are persuaded that the questions presented in this appeal are likely to recur, yet will evade review when they do. Therefore, the expirations of the preliminary injunctions do not render the appeals moot.

B.

Next, we must decide whether the South Dakota District Court erred in refusing to allow various parties to intervene in the case brought by the State of South Dakota. After the initiation of the suit by South Dakota, the District Court received three separate motions to intervene as of right under Federal Rule of Civil Procedure 24(a)(2): one from MO-ARK Association, one from Ergon Asphalt and Emulsions, Inc., and other corporate entities, and one from the State of Nebraska. A party seeking to intervene must establish both that it has standing to complain and that the elements of Rule 24(a)(2) are met. Rule 24(a)(2) requires that the proposed intervenor establish that it claims an interest in the property or transaction which is the subject of the litigation, that disposition of the litigation in the party's absence may impede or impair its ability to protect its interest, and that the interest is not adequately represented by the current parties to the suit. Fed.R.Civ.P. 24(a)(2); *Jenkins v. Missouri*, 78 F.3d 1270, 1274 (8th Cir.1996). The South Dakota District Court concluded that the proposed intervenors failed to prove that they had standing and failed to meet the requirements of Rule 24(a)(2). Additionally, the Court concluded that allowing the State of Nebraska to intervene would be problematic because it would put Nebraska and South Dakota on opposite sides of the dispute, thus bringing the case within the exclusive jurisdiction of the Supreme Court.

We review the District Court's conclusion that these parties were not entitled to intervene *de*

novo. *Arrow v. Gambler's Supply, Inc.*, 55 F.3d 407, 409-10 (8th Cir.1995). The proposed intervenors presented sufficient evidence of their interest in the case to give them standing to intervene. Each of the proposed intervenors presented substantial evidence that the remedies sought by the State of South Dakota threatened it with serious injury. MO-ARK represents numerous interests along the Missouri River, including members with interests in navigation, agriculture, and water treatment. Ergon and the corporate entities that joined its motion to intervene utilize the lower Missouri River to transport their goods. And the Missouri River runs through the State of Nebraska. Each of these proposed intervenors claimed an interest in the litigation based upon the fear that the Court's ruling would lead to decreased water flow downstream. They offered to present significant evidence that a reduction in the flow of the River would cause a great deal of harm to downstream interests. Among the threats were an interruption in their ability to navigate the River, problems for power plants that relied upon the River water for cooling, and decreases in water quality for community water supplies. Moreover, the parties presented evidence that decreasing the flow for even a short period of time could be troublesome because of the effects that such a short-term reduction could have on wildlife. Specifically, the parties presented evidence that if the water levels were decreased, two endangered species of birds would nest on the newly exposed river bed. Once these birds nested, the proposed intervenors feared, the water flow could not be increased until after the fledgling birds could leave the nest. Thus, according to this argument, flow reduction could not be limited to a short term.

The Court did not disagree with this evidence, but merely held that it did not believe that its order would lead to a reduction in downstream flow. The Court noted that it was not ordering the Corps to reduce downstream flows, but only to maintain the water levels at the South Dakota Reservoirs. Thus, the Corps was free to maintain the downstream flows by lowering water levels at other reservoirs. The Court found that because its preliminary order would not require a reduction in flow, the proposed intervenors did not have an interest in the litigation. This finding led the Court to reject the motion to intervene not only on Rule 24 grounds but also for lack of standing. However, the proposed intervenors did not move to intervene in only the preliminary-injunction hearings. Instead, they sought to intervene in the whole case. As the proposed intervenors explain, the State of South Dakota was seeking more than a preliminary injunction for the short period of time that it lasted. South Dakota is also seeking a more permanent, forward-looking declaration that will affect the way the Missouri River is managed in the future. South Dakota alleges that the Corps should "give all water uses equal consideration while the Master Manual Review is undergoing a revision," First Amend. Compl. ¶ 39, and to accomplish this goal seeks injunctive relief "to prevent irreparable harm to the fisheries of the mainstream reservoirs, when the harm is inflected [sic] to benefit downstream navigation." *Id.* at ¶ 55. If South Dakota ultimately prevails in this case, the Corps may be forced to reduce downstream flows in drought conditions to maintain the water levels at all of the reservoirs. When we consider the effect that an ultimate ruling for South Dakota might have, we think the proposed intervenors presented sufficient evidence of a threatened injury to give them standing.

The District Court did not base its decision solely upon its conclusion that the proposed

intervenors lacked standing; the Court also concluded that the proposed intervenors had not proved that they were entitled to intervene under Rule 24(a)(2). The Court first concluded that the proposed intervenors had not shown that they had an interest in the litigation. Again, we disagree. Success by South Dakota in the whole litigation would impair the proposed intervenors' interests in the operation of the River.

The Court also concluded that the proposed intervenors were not entitled to participate in the action because their interests were adequately represented by the Corps under the *parens patriae* theory. This theory creates a presumption that a government agency will represent the interests of all citizens in cases raising matters of sovereign interest. *Mausolf v. Babbitt*, 85 F.3d 1295, 1303 (8th Cir.1996). Proposed intervenors can rebut this presumption, however, if they can make a strong showing of inadequate representation, for example, by showing that the proposed intervenor's interest is not subsumed within the general interests of the public. *Id.* The District Court concluded that the presumption applied in this case, and that the proposed intervenors had not overcome it. We respectfully disagree.

The *Mausolf* case is instructive. There, snowmobile enthusiasts sued the Secretary of the Interior, seeking to enjoin the enforcement of certain snowmobiling restrictions in a federal park. Various conservationist organizations moved to intervene in the case for fear that the Secretary would settle the case or back away from his rules. The District Court denied intervention, partly because of the *parens patriae* presumption. This Court reversed, finding that the presumption was rebutted. We noted that the government must represent the interests of all of its citizens, which often requires the government to weigh competing interests and favor one interest over another. Where such conflicts exist, "even the Government cannot always adequately represent conflicting interests at the same time." *Id.* at 1303.

This case presents just such a conflict. The Corps is charged with managing the Missouri River system as a whole-a charge that requires it to balance the interests of the upstream and downstream users. The proposed intervenors, on the other hand, wish to represent exclusively downstream interests. Indeed, South Dakota's lawsuit itself indicates a fear that the Corps cannot adequately represent the interests of all parties. The very crux of this suit is that the Corps has failed in its representative role. Yet South Dakota asks this Court to hold that the Corps will adequately represent downstream users. We decline to do so. Given that the Corps is asked to balance multiple interests, we conclude that it cannot adequately represent the interests of downstream users in this case. The *parens patriae* presumption, therefore, does not present an obstacle to intervention. Thus, the proposed intervenors met the requirements for intervention under Rule 24(a)(2) and were entitled to intervene.

The District Court presented an additional reason for not allowing the State of Nebraska to intervene-the Court feared that doing so would strip the Court of jurisdiction. The Court worried that allowing Nebraska to intervene would create a case or controversy between two states-a controversy within the Supreme Court's exclusive original jurisdiction. This was not an appropriate reason for ***1026** rejecting Nebraska's motion to intervene, however, because, even

had Nebraska been allowed to intervene, the controversy would not have been between South Dakota and Nebraska. The Supreme Court's exclusive jurisdiction under 28 U.S.C. § 1251(a) applies only when one state seeks relief from another state. See *Mississippi v. Louisiana*, 506 U.S. 73, 78 n. 2, 113 S.Ct. 549, 121 L.Ed.2d 466 (1992) ("Louisiana's intervention is also unaffected by § 1251(a) because it does not seek relief against Mississippi."); see also *United States v. Nevada*, 412 U.S. 534, 537, 93 S.Ct. 2763, 37 L.Ed.2d 132 (1973) (per curiam) ("The complaint ... is not one alleging a case or controversy between two States within the exclusive jurisdiction of this Court, under 28 U.S.C. § 1251(a), but a dispute between the United States and two States over which this Court has original but not exclusive jurisdiction under § 1251(b)(2)."); *Connecticut v. Cahill*, 217 F.3d 93 (2d Cir.2000) (holding that Connecticut could maintain an action against officers of New York in federal district court because the action was styled as a suit against officers, not the state). In this case, the controversy is between each of the states and the Corps. Although the states would have had adverse interests, each state would be seeking relief from the Court against the Corps. Thus, allowing intervention by Nebraska would not strip the District Court of jurisdiction.

The District Court's denials of the motions to intervene are reversed.

III.

We now turn our attention to the question of whether the District Courts erred in issuing preliminary injunctions in these cases. The decision to issue a preliminary injunction is within a district court's discretion in the first instance. The following factors govern the exercise of that discretion:

> Whether a preliminary injunction should issue involves consideration of (1) the threat of irreparable harm to the movant; (2) the state of the balance between this harm and the injury that granting the injunction will inflict on other parties litigant; (3) the probability that movant will succeed on the merits; and (4) the public interest.

Dataphase Systems, Inc. v. C L Systems, Inc., 640 F.2d 109, 113 (8th Cir.1981) (en banc). We review a district court's decision to grant a preliminary injunction for abuse of discretion, and can reverse such an injunction only if the district court "clearly erred in its characterization of the facts, made a mistake of law, or abused its discretion in considering the equities." *Bhd. of Maint. of Way Employees v. Burlington Northern R.R.*, 802 F.2d 1016, 1020 (8th Cir.1986).

The facts of these cases are largely undisputed, and the District Courts did not clearly err in their fact finding. All sides seem to agree that each of the plaintiffs can show that they will suffer irreparable harm absent the injunctions imposed. The States of North Dakota and South Dakota demonstrated that the population of fish in the reservoirs would decrease if the water levels were not maintained. Each state presented evidence that such a decrease would lead to a decrease in recreation on the reservoirs. Nebraska presented evidence that it would be harmed by the Corps's failure to follow the Master Manual, because the decreased flows would harm many of its citizens. In each case, the District Court concluded that the complaining party would suffer

irreparable harm without an injunction. There was no clear error here.

The balance-of-harms and public-interest criteria present closer questions, but we need not pursue these issues. The dispositive issue on this appeal is the likelihood that each plaintiff would succeed on the merits. In each of these cases, the plaintiffs are challenging agency actions. Thus, our review is guided by the Administrative Procedure Act. Under the APA, district courts review agency actions to determine whether they are "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). In this case, however, the review is more complicated, because the Corps maintains that its actions are not subject to judicial review at all. It contends that the Flood Control Act commits these decisions to the Corps's discretion. See 5 U.S.C. § 701(a)(2). Thus, before considering whether the Corps's actions were unlawful or were arbitrary and capricious, we must decide whether the Corps's actions are subject to judicial review.

A. Is There Law To Apply?

The Corps first argues that the District Courts erred because its actions are not subject to judicial review. As a general rule, courts presume that Congress intended agency action to be subject to judicial review. *Kenney v. Glickman*, 96 F.3d 1118, 1124 (8th Cir.1996); see also 5 U.S.C. § 702. There is a very narrow exception to this presumption "applicable in those rare instances where statutes are drawn in such broad terms that in a given case there is no law to apply." *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 410, 91 S.Ct. 814, 28 L.Ed.2d 136 (1971) (internal quotations omitted). This exception is quite narrow and does not apply where statutes provide even minimal guidance to limit agency discretion. *Id.* at 411-13, 91 S.Ct. 814 (holding that an agency action was subject to review because the granting statute provided factors for the agency to consider in making the decision). And courts can find law to apply either "in the underlying statute or in the regulations by the agency interpreting the underlying statute." *Kenney*, 96 F.3d at 1124. Thus, to prevail on its claim that its actions are not subject to judicial review, the Corps must demonstrate that neither the Flood Control Act nor any of its internal regulations provides law to apply in these cases. We reject this argument. We conclude that the Corps's actions are constrained both by the Flood Control Act and by the Master Manual.

The Flood Control Act clearly gives a good deal of discretion to the Corps in the management of the River. But this discretion is not unconstrained; the Act lays out purposes that the Corps is to consider in managing the River. The Act recognizes what the Supreme Court has called the dominant functions of the River's reservoir system-flood control and navigation. *ETSI Pipeline Project v. Missouri*, 484 U.S. 495, 512, 108 S.Ct. 805, 98 L.Ed.2d 898 (1988). While flood control and navigation are dominant functions, the Act also recognizes recreation and other interests and secondary uses that should be provided for. Flood Control Act Section 4, 58 Stat. at 889-90. The text of the Flood Control Act thus sets up a balance between flood control, navigation, recreation, and other interests. Because the Flood Control Act calls on the Corps to balance these various interests, the courts can review the Corps's decisions to ensure that it considered each of these interests before making a decision. What the text of the Act does not

provide is a method of deciding whether the balance actually struck by the Corps in a given case is correct or not. Nevertheless, the Flood Control Act clearly provides some law to apply, so the decisions of the Corps are subject to judicial review under the Act.

The minimal guidance provided by the Flood Control Act is only the beginning of our inquiry, however. We turn next to the Master Manual to decide whether it binds the Corps. The Corps has promulgated the Master Manual, which sets out priorities and directs the Corps to take certain actions in given situations. Upon close examination, we conclude that the Master Manual is binding on the Corps because it sets out substantive requirements, and its language and context indicate that it was intended to bind the Corps's discretion.

The Corps maintains that the Manual is not binding because it is not a rule, merely a policy statement. Indeed, the Master Manual was not promulgated through the notice-and-comment rulemaking procedures of the Administrative Procedure Act. This does not by itself render the Master Manual non-binding. Agency statements can be binding upon the agency absent notice-and-comment rulemaking in certain circumstances. Where a policy statement purports to create substantive requirements, it can be a legislative rule regardless of the agency's characterization. *Northwest National Bank v. United States Dep't of the Treasury*, 917 F.2d 1111, 1116-17 (8th Cir.1990); see also *Syncor Int'l Corp. v. Shalala*, 127 F.3d 90, 94 (D.C.Cir.1997) (holding that policy statements can become binding on the agency if so intended, which is a determination made by examining the statement's language and context).

The language of the Master Manual itself implies that it is binding. Throughout, the Manual speaks of what "is" done or "will" be done. Section 9-3 of the Manual, for example, explains that the "general approach, which was developed and generally agreed upon during planning and design of the reservoirs, *is observed* in operation planning and subsequent reservoir regulation procedures." Master Manual Section 9-3 (emphasis added). This general approach prioritizes the different interests that will be considered in regulating the reservoirs. The interests are to be provided for in this order: flood control, irrigation and upstream beneficial uses, downstream water supply, navigation and power, power generation, and finally recreation and wildlife. In the midst of this prioritization, the Master Manual speaks in mandatory terms. Focusing on the areas of most interest to this case, the fourth priority section reads: "the remaining water supply available *will be regulated* in such a manner that the outflow from the reservoir system at Gavins Point provides for equitable service to navigation and power." *Id.* (emphasis added). Two paragraphs later, the Manual indicates that recreation, fish, and wildlife will be provided for insofar as possible, but consistently with the preceding considerations (including navigation). Section 9-3 itself seems to indicate that the Manual was intended to bind the Corps, and later provisions bolster this conclusion.

In addition to sections, like Section 9-3, which explain general priorities and goals, the Master Manual also includes provisions that direct the Corps to take certain actions when given circumstances occur. In Section 9-19, for example, the Manual provides that "Fall extensions of the navigation season beyond the normal 8-month length will be scheduled" when certain

triggering events occur. Other provisions require the Corps to maintain minimum flow levels at various points on the River at different times. See generally Master Manual Section 9. These provisions can hardly be termed non-binding; they, like Section 9-3, speak of what the Corps will do in given circumstances. The Manual's provisions, then, do not merely give advice to administrators; instead, they direct the operation of the River. There is no indication in the text of the Manual that the Corps is free to ignore its provisions if it so chooses. Indeed, the language of the Manual appears to assume that members of the Corps must follow its provisions.

In addition to the Master Manual itself, the Corps's promulgated regulations indicate that the Manual is binding. The Code of Federal Regulations includes a section that "prescribes policies and procedures to be followed by the U.S. Army Corps of Engineers in carrying out water control management activities, including establishment of water control plans for Corps and non-Corps projects as required by Federal laws and directives." 33 C.F.R. § 222.5 (2002). The regulation goes on to require the Corps to develop water control plans "to conform with objectives and specific provisions of authorizing legislation and applicable Corps of Engineers reports," and indicates that "[t]horough analysis and testing studies will be made as necessary to establish the optimum water control plans possible within prevailing constraints." *Id.* § 222.5(f). "[P]lans developed for specific projects and reservoir systems will be clearly documented in appropriate water control manuals." *Id.* The regulation also recognizes the need to create a "Master Manual" in cases where several projects are linked together. *Id.* § 222.5(i)(2). These manuals are to be created with the aid of public involvement. *Id.* § 222.5(g)(2). And once produced, these plans are to be made publicly available. *Id.* § 222.5(g)(2)(ii). These provisions support the conclusion that the Manual binds the Corps. The most significant of these provisions is the indication that in creating Master Manuals, the Corps will consider public comment on its plans and then publicize the completed plans. The public-comment provision recognizes the power that these Manuals wield-a power that should be exercised only after public consideration. The provision which makes these manuals publicly available likewise recognizes that these manuals will affect individuals, and that potentially affected people should have access to the documents. These are not the types of procedures one would expect in the promulgation of an internal, non-binding agency guideline.

Moreover, the Corps's treatment of the Manual indicates that it is binding. Lawrence Cieslak, a member of the Corps, indicated in his testimony to the South Dakota District Court that all of the critical decisions that were made in the Spring of 2002 were based upon the instructions in the Master Manual. The Corps decided the length of the navigation season and decided not to cut the releases from the reservoirs because the Master Manual instructed as much. Moreover, Mr. Cieslak concluded his testimony by observing that "we have stated that we will continue to try to meet the operational objectives of the current Master Manual," until a revised manual is completed. Appendix at 792. As this testimony demonstrates, the Corps continues to treat the Master Manual as a how-to manual for operating the Missouri River. The Corps has treated and continues to treat the Master Manual as a constraint on its discretion in operating the River.

Because the language and context of the Master Manual and the Corps's treatment of the

manual indicate that it binds the Corps, we conclude that it is binding. The Corps is not free to ignore the Master Manual (though it may elaborate upon details of operation in its annual operating plans), and courts can review the Corps's actions to ensure conformity. In the end, then, there is sufficient law to apply in these cases. In each case, courts can assess whether the Corps's actions run afoul of either the Flood Control Act or the Master Manual.

B. South Dakota

We turn our attention first to the injunction entered by the South Dakota District Court. The Court enjoined the Corps from releasing water from either Lake Oahe or Lake Francis Case. The State of South Dakota claimed that it was entitled to this relief on three grounds. First, it alleged that the Flood Control Act requires the Corps to act so as to maximize all interests on the River, including recreation. Second, the State argues that it is entitled to relief because the Corps is judicially estopped to favor navigation over recreation. Finally, South Dakota maintains that the Corps acted arbitrarily and capriciously in favoring navigation over recreation. We hold that none of these arguments is likely to succeed on the merits.

South Dakota argues that the Flood Control Act requires the Corps to maximize the benefits of the River, including fish-and-wildlife benefits. This argument is not based upon the text of the statute, but instead upon the Act's legislative history. Senate Document 247 states that the plan "will secure the maximum benefits for flood control, irrigation, navigation, power, domestic and sanitary purposes, wildlife, and recreation." S. Doc. No. 247, at 5; see also H.R. Doc. No. 475, at 29 ("the comprehensive plan would ... provide for the most efficient utilization of the waters of the Missouri River Basin for all purposes, including irrigation, navigation, power, domestic and sanitary purposes, wildlife, and recreation."); *id.* at 3 ("When completed the basin plan will be operated for maximum multiple purpose use."). Moreover, Senate Document 191, which represented one of the original competing views, included a provision that stated that "during the spawning season every effort will be made to maintain as constant a pool level as possible." S. Doc. No. 191, 78th Cong., 2d Sess. 211 (1944). South Dakota maintains that the sum total of this legislative history compels the Corps to balance the interests each year so as to maximize each category of benefits, and that courts can review the annual operating plans to ensure that they do indeed maximize the benefits.

We reject this argument. South Dakota's proffered standard-whether the Corps's management of the River maximizes the benefits to all interests-is not the kind of standard that courts regularly employ in reviewing agency action. As a general rule, courts defer to agency policy decisions because it is not a court's "function to substitute [its] judgment for that of the agency." Aman & Mayton, Administrative Law § 13.10.2 (1993). Under South Dakota's proffered standard the Corps's actions would receive no deference and the courts could be called upon to review every decision that the Corps makes, no matter how minute. Although Congress could give the courts the power to engage in such searching review, we do not believe that the portions of the Flood Control Act's legislative history to which South Dakota directs this Court are sufficient to achieve such a radical shift from the normal standard of review. Indeed, the statements that South Dakota points to are merely general statements of policy goals. They are

not phrased as limitations on the Corps's discretion. Given that this argument finds no support in the text of the statute, and given the vagueness of the legislative history on the matter, we refuse to apply South Dakota's proffered standard. Courts are simply not empowered to review every decision of the Corps to ensure that it maximizes the benefits of the River for all interests. Indeed, such a standard would be impossible to meet, anyway. In times of drought it is not possible for both navigation and fishery benefits to be maximized. Something has to give.

[19] South Dakota next argues that judicial estoppel requires the Corps to give equal consideration to recreation and other interests including navigation. This argument is based upon an agreement reached in previous litigation in Montana. There, South Dakota maintains, the Corps agreed to give all interests, including recreation, equal consideration in the management of the River-as opposed to giving flood control, navigation, or other interests priority over recreation-until the revision of the Master Manual was complete. Even assuming that the elements of judicial estoppel were met in this case, the only thing that the Corps agreed to was that it would give all interests equal consideration. S.D. Brief at 27 (citing the ruling in a previous suit that gave rise to the judicial estoppel claim). Equal consideration does not mean equal results. In this case, South Dakota has presented no evidence that the Corps did not give equal consideration to recreation; only that in the end, the Corps decided to lower one reservoir per year during a drought to maintain navigation. This result could easily arise from the Corps's giving equal consideration to each interest. Indeed, the Corps maintains that it considered the interests of recreation equally. Testimony of Lawrence Cieslak, App. at 823 ("[I]n the Annual Operating Plan we are giving equal consideration to all of the project purposes in trying to meet the operation objectives.") The Corps concluded that it does not need to hold the water level at every reservoir constant every year to allow recreational activities to flourish. The evidence before the Corps indicated that a good fish spawn once every four to five years is sufficient to maintain the fisheries of each reservoir. Master Manual Section 9-31. According to this conclusion, then, the Corps can lower each reservoir on a rotating basis (one per year) and still maintain the fish stock in the reservoirs. Given this fact, the Corps's decision to lower one reservoir per year during a drought simply does not provide any proof that the Corps was not giving recreation equal consideration. South Dakota is unlikely to succeed on its judicial-estoppel theory.

Finally, we must consider whether the Corps's decision to lower Lake Oahe in the Spring of 2002 to maintain downstream navigation was arbitrary and capricious. See 5 U.S.C. § 706(2)(A). "To make this finding the court must consider whether the decision was based on a consideration of the relevant factors and whether there has been a clear error of judgment. Although this inquiry into the facts is to be searching and careful, the ultimate standard of review is a narrow one. The court is not empowered to substitute its judgment for that of the agency." *Overton Park*, 401 U.S. at 416, 91 S.Ct. 814 (citations omitted). To pass scrutiny, "[t]he agency must articulate a rational connection between the facts found and the choice made." *Bowman Transp., Inc. v. Arkansas-Best Freight System, Inc.*, 419 U.S. 281, 288, 95 S.Ct. 438, 42 L.Ed.2d 447 (1974) (internal quotations omitted). This standard of review gives great deference to the policy decisions made by the agency and does not allow a court to overturn an agency action merely

because the court would have acted differently; a court may find an action to be arbitrary and capricious only when there is no rational basis for the policy choice.

The policy choice that South Dakota is challenging is not arbitrary and capricious. The Corps provided a rational basis for its decision to lower one reservoir per year during drought conditions. The Corps had evidence that every reservoir did not need to have a good spawn each year to maintain the fish stocks. Thus, so long as each reservoir's water level was not lowered every year, the fish stocks in the reservoirs would not be irreparably harmed. The Corps decided to alternate the harm among the reservoirs, maintaining the water level at all but one reservoir each year. This plan would presumably allow each reservoir to have a fruitful spawn five out of every six years even in the worst drought conditions. This plan was eminently rational. South Dakota's efforts to increase the rainbow smelt stock during the Spring of 2002 do not make the plan irrational. South Dakota knew that Lake Oahe's water level had not been lowered in 2001, and that it was thus among the candidates to be lowered in 2002. Moreover, if Lake Oahe had been lowered as planned in 2002, it presumably would not be lowered in 2003, which would allow for a fruitful spawn this year. The Corps's policy was not irrational when written and did not become irrational in the Spring of 2002 because of South Dakota's efforts on Lake Oahe. South Dakota, therefore, is not likely to succeed on its theory that the Corps acted arbitrarily and capriciously.

Because none of South Dakota's theories for relief is likely to succeed on the merits, it was not entitled to a preliminary injunction. We therefore reverse the preliminary injunction entered in the South Dakota District Court and remand the case to that Court for further proceedings consistent with this opinion.

C. North Dakota

The arguments raised by North Dakota in favor of affirming the injunction entered in the North Dakota District Court are quite similar to those made by South Dakota. Having already rejected South Dakota's judicial-estoppel theory and its argument that the Corps's policy to release water from one reservoir per year is arbitrary and capricious, we need not address these arguments again. In addition, North Dakota argues that the Flood Control Act itself precludes the Corps from favoring navigation over recreation. This argument is simply incorrect; the Flood Control Act does not require the Corps to give equal treatment to recreation. The Flood Control Act provides little guidance about what priority the Corps can or must give to different interests. The evidence that we do have, including the sequential listing of interests that uniformly lists navigation before recreation, indicates that the Corps's primary concerns should be flood control and navigation. The Supreme Court appears to have accepted as much. *ETSI*, 484 U.S. at 512, 108 S.Ct. 805. The Corps has adopted this prioritization, as evidenced by the listing of interests in Section 9-3 of the Master Manual. The Corps's decision to adopt this prioritization was not impermissible.

Because, like South Dakota, North Dakota has not demonstrated that it is likely to succeed on the merits, the North Dakota District Court erred in entering a preliminary injunction in its favor.

We therefore reverse the preliminary injunction and remand this case to the District Court for further proceedings consistent with this opinion.

D. Nebraska

The preliminary injunction entered in the Nebraska District Court was wholly different from those entered in North Dakota and South Dakota. The Nebraska District Court ordered the Corps to abide by the Master Manual because it concluded that the Manual binds the Corps. We can find no error with this conclusion. The Master Manual does bind the Corps, and under 5 U.S.C. § 706, Nebraska was entitled to an order that the Corps abide by its own formally adopted policies.

The Corps argues strenuously against the preliminary injunction entered in Nebraska. It feels that it should not be bound by the Manual when unforeseen circumstances arise. The record before this Court does not allow us to assess the validity of this argument on this appeal. Probably the Corps should be accorded some flexibility if an unforeseen circumstance arises. We leave such questions to the District Court to decide on remand if necessary. The Nebraska District Court order granting a preliminary injunction is affirmed, and the stay entered by this Court is vacated. This case is remanded to the District Court for proceedings consistent with this opinion.

IV.

In summary, we conclude that the South Dakota District Court erred in denying the motions to intervene and in entering a preliminary injunction requiring the Corps to maintain the water level at Lakes Oahe and Francis Case. The Court's orders are, therefore, reversed, and the case is remanded for proceedings consistent with this opinion.

We likewise conclude that the North Dakota District Court erred in enjoining the Corps from releasing water from Lake Sakakawea. That Court's order is, therefore, reversed, and the case is remanded for proceedings consistent with this opinion.

Finally, we conclude that the Nebraska District Court did not err in entering a preliminary injunction requiring the Corps to follow the Master Manual. That Court's order is, therefore, affirmed, and the case remanded for proceedings consistent with this opinion.

The motion for an expanded stay is denied as moot.

It is so ordered.

In re Operation of the Missouri River Aquifer Litigation, 421 F.3d 618 (8th Cir. 2005).

APPENDIX C: A. DAN TARLOCK, *THE MISSOURI RIVER: THE PARADOX OF CONFLICT WITHOUT SCARCITY,* 2 Great Plains Natural Resources Journal 1 (1997)

> "The [Lewis and Clark] expedition was to follow the Missouri to its source, look for easy water routes across the continent, continue to the Pacific, and return. Particularly on the high plains, Lewis and Clark camped at places where nothing important has happened since. On some of the bleaker reaches of the upper Missouri, they were the harbingers not of civilization but of future visits by Lewis and Clark buffs." [FN1]

I. CONFLICT IN THE MIDST OF ABUNDANCE

From a legal and administrative perspective, the Missouri River is a paradox: the amount of water available to support existing and future demands is inverse to the number of potential users, but the basin states have been unable to agree either on a permanent allocation among themselves or on a management plan. Instead, for the past fifty years, the basin states have persistently, if quietly, fought among themselves and with the federal agencies, primarily the U.S. Army Corps of Engineers (hereinafter Corps), that run the Pick-Sloan project reservoirs about the use and management of the river. There are many "stories" or explanations for the fifty-plus years of unsuccessful allocation and management of the Missouri, but they all have a common primary theme: the paradox of conflict over absolute ***2** abundance rather than scarcity. A secondary theme--the injustice done to the Native American Tribes by the federal government, and the Tribes' subsequent inability to obtain effective redress through either allocation or management/tribal relations--also runs through the long history of the region.

The upper Missouri is now a managed river with great carry-over storage capacity. Six Pick-Sloan mainstem reservoirs have a present storage capacity of about seventy-three million acre-feet, the largest amount of water stored on any United States river system. However, the basin states continue to squabble over the use of the river and the operation of the system in ways that seem strange to those schooled in the allocation of rivers in the more arid regions of the country. Despite many efforts, the states cannot find the formula or process to overcome reliance on their historic entitlement claims, although the circumstances on which the claims are based have long since changed. There are two primary explanations for the Missouri Basin states' failure to agree among themselves and with the federal government about the use and management of the system: (1) the basin's geography and (2) federalism tensions.

A. Geography

Geographically, the Missouri Basin is actually two separate regions with conflicting rather than common water-related interests. The lower basin interests are fundamentally different from the upper basin, which sees the river as the means to sustain a stronger regional economy. From its headwaters in Montana to the South Dakota-Nebraska border, the river flows through the semi-arid Great Plains. The vision of federally subsidized agriculture to sustain the most sparsely populated region of the United States has driven the politics of the upper basin states in this century. As the river forms the Nebraska and Kansas borders with Iowa and Missouri, it enters the humid midwest. Irrigated agriculture is a minor water use, although there are some consumptive municipal and industrial withdrawals. In general, the lower basin states view the Missouri as both a flood menace and as a navigable highway between the mouth of the Mississippi and Sioux City, Iowa. Other basins with a similar split among states have been able to agree on a permanent allocation, [FN2] but the differences between the upper and lower Missouri Basins have substantially contributed to the inability of the states to cooperate.

B. Federalism Tensions

The Missouri River is a story of the triumph of the scientific conservation idea of national control of large rivers through multiple-use dams and ***3** reservoirs [FN3] and their use to produce cheap hydroelectric power. It is also a story of the failure of the river basin development idea to be translated into institutions that can adapt to changing regional conditions. Thus, it is ultimately a story of the failure of the multiple-use ideal. Pick-Sloan has both failed to promote regional equity and efficiency and to develop the institutions to promote sustainable river use and development by adapting to changing perspectives of the river's function and value. In the late 1930s and 1940s, the Missouri, along with the Tennessee Valley Authority, were to be the model for the river basin commissions as a new major federal-state government entity. However, the familiar pattern of western water sectionalism has repeatedly killed efforts to induce the basin states to make a permanent allocation and to create a management entity to administer the allocation.

The standard institutional accounts of the Missouri River focus appropriately on the federal-state conflicts and the failure of the states to find a mutually acceptable allocation formula or even to find a successful cooperation process. The states have preferred bitter, but tried and true, traditional sectional water politics to cooperation. [FN4] The federal government has managed the river, primarily with the support of the lower basin states, but has provided little vision or leadership since the basin states forced the Truman Administration to abandon a Missouri River Authority. Due to the Great Depression, the basin states were given a series of multiple purpose mainstem reservoirs that were to be managed by the federal government for the benefit of basin water users and states. By default, the Corps became the river master to the exclusion of the states and the Bureau of Reclamation. The Missouri, as John Thorson observed in his recent masterful study of the series of failed attempts at intra-basin cooperation, is characterized by prefectorial federalism. [FN5] The states were ordered to conform to federal mandates with no financial incentives to induce cooperation. "The Missouri River Basin Commission, which was originally established to coordinate government activity, gradually became a federally driven planning agency with an agenda that was ultimately rendered obsolete by congressional failure to fund the completion of Pick-Sloan." [FN6]

II. PICK-SLOAN REVISITED

Since the Depression, the conventional story of the development of the Missouri is one of a New Deal dynastic marriage of mutual advantage between two rival water agencies, the Bureau of Reclamation and the ***4** United States Army Corps of Engineers, which failed to fulfill its original purpose in the Upper Basin. General Lewis Pick's plan to construct a series of mainstem flood control and navigation channel enhancement reservoirs was combined with the relatively more modest plans of G. W. Sloan, Director of the Bureau of Reclamation's regional office in Billings, Montana, to construct both mainstem and tributary dams. This story has been told several times, [FN7] and it has recently been told again by a U.S. Army Corps of Engineers scholar, John R. Ferrell in his book, The Big Dam Era: A Legislative and Institutional History of the Pick-Sloan Missouri Basin Program. [FN8] Ferrell's study of the construction and operation of the mainstem reservoirs is an accurate, detailed and valuable account of the federal and

regional forces that control the Missouri and the recent upper/lower basin recreational/environmental versus navigational conflicts caused by the drought of the late 1980s. However, as is often the case with the Missouri, the interesting story is what Pick-Sloan did not address and whether the project has to be substantially reconceptualized in light of the failure of Congress to implement Pick-Sloan in the Upper Basin and of changed perceptions of the Missouri's value and function. The Big Dam Era is a useful addition to the history of the Missouri, but it stops short of a necessary reevaluation of the future of the region, the role that water is likely to play in its future and the possibility for new visions of the Missouri's function that transcend the current upper/lower basin conflicts.

The Big Dam Era recreates the moment in time that produced the Pick-Sloan plan and traces the subsequent failure of the basin states to agree on a common management plan through the early 1990s. In addition to navigation enhancement, Pick-Sloan expanded the Corps' flood control mission and combined it with the New Deal's use of public works projects to provide regional employment with a more ambitious, but ultimately flawed and unsound, plan to use the reclamation of arid and semi-arid lands to resettle World War II veterans and thus avoid a post-war depression. Like other countries, such as Australia, we have tried to use our vast unsettled lands for veterans resettlement, but we refused to make the planning investment to make the policy work. Bureau of Reclamation planners envisioned up to 3.8 million acres under irrigation [FN9] on the assumption that the region would sustain large-scale irrigated agriculture, [FN10] a hollow dream today.

The merging of the Corps and Bureau of Reclamation plans into the final Pick-Sloan plan is often portrayed as a shotgun marriage, but Ferrell's more judicious portrayal of the final compromise shows that it was more ***5** like two feudal dynasties haggling over the last bits of a marriage contract. Both agencies agreed that Pick-Sloan was a single project which consisted of a chain of multiple-purpose reservoirs and they agreed to storage allocations contemplated by the two plans. Two crucial legal compromises were reached to make the marriage work. The first allocated the responsibility for planning the reservoirs by function: the Corps would determine flood control and navigation capacity and the Bureau of Reclamation would determine capacity for irrigation. The second is the famous O'Mahoney-Millikan Amendment which the upper basin states claim subordinates flood control and navigation to irrigation. [FN11] The Amendment, however, has not impressed the Supreme Court, and is an insufficient basis for the upper basin's claims to control the use of the river. For example, in the energy boom of the 1970s and 1980s, the Court unanimously refused to treat O'Mahoney-Millikan as a division of operating responsibility between the two agencies and held that only the Corps of Engineers could sell surplus mainstem water because the Corps built the Oahe Dam and thus controlled it. [FN12]

III. TWO OUTDATED MANAGEMENT MODELS

Today, the Missouri Basin states remain locked in a battle between two allocation and management models. The federal government initially envisioned a strong river basin authority, and the upper basin states have tried to allocate the river to ensure that beneficial consumptive use has priority over navigation and flood control. In various forms, subsequent cooperation methods seek to accomplish one of these two objectives. The problem is time has rendered both

models largely irrelevant.

A. The TVA Model

From 1944 to 1981, the basin states struggled to develop a management structure for the Missouri which, both in prospect and retrospect, was doomed to failure, as experts warned at the time. The core of the problem is that the consumptive use of Missouri River water has never been central to the development of the Great Plains. The largest consumptive use of water is the post-World War II mining of the Ogallala Aquifer in the southern Great Plains by deep wells. [FN13] Today, most states have used the cheap portion of their share of the aquifer, and large-scale ground water irrigation only appears sustainable in Nebraska. [FN14] In contrast, dry land farming, rather than irrigated agriculture, is the source of the upper Great Plains' major crop--winter wheat. The story of the successful introduction of hard ***6** wheat to the upper Missouri region and the disasters of the 1930s are a lesson in adaptation to this harsh area, but Missouri River water plays a limited role in this story. Russian-German Mennonites brought drought resistant Turkey Red wheat from the Crimea, where Catherine the Great induced them to settle in the 18th century. Later, a far-sighted Department of Agriculture employee imported a better strain from Russia and created new pasta markets for this hard variety. [FN15]

The damming of the Missouri for Depression and post-World War II relief removed all incentives for basin state cooperation and the development of basin management institutions that manage the total resource. In 1949, the states rejected a Missouri Valley Authority after a decade of widespread opposition. The passage of the 1965 Water Resources Planning Act [FN16] revived the idea of a basin commission and in 1971 the Missouri River Basin Commission was established. [FN17] However, during its ten years of existence, it performed only a fact-finding and coordinating mission because it lacked management authority. [FN18] President Reagan defunded all the river basin commissions in 1981 to the regret of very few in the water community. [FN19] As Ferrell notes, the Missouri River Basin Commission was doomed to irrelevance from the start because there was very little to plan and coordinate. [FN20] The federal money had already been allocated so planning and coordination did not mean the distribution of new federal monies, but would have meant hard management and allocation choices that the states feared or had no incentive to make.

B. The Allocation Model

The Upper Basin States tried to allocate the River in the 1970s and 1980s. The Colorado River is the model for the allocation of all western rivers, but again, an allocation formula has yet to be applied to the Missouri, which remains unallocated. Through interstate compacts, congressional legislation and original jurisdiction litigation, the river has been allocated among basins, states and the major user constituencies including Indians and environmental interests. States generally cooperate to allocate waters when the financial stakes are high and the costs of non-cooperation are equally high or when the financial stakes are low but the political benefits of cooperation are high. The Colorado River Compact [FN21] illustrates the first principle. Without an allocation, regional rivalries would have prevented a unified raid on the treasury. The 1985 Great Lakes Charter, [FN22] ***7** which requires the prior consent of all Great

Lakes governors before a transbasin diversion can be approved, illustrates the second. Neither are present on the Missouri. There are no costs of non-cooperation for the lower basin states.

In the 1980s, the Supreme Court refused to find that the O'Mahoney-Millikan Amendment constituted a Congressional apportionment of the river, [FN23] and a recent effort of the Northern Lights Institute to promote a consensus allocation failed. The Big Dam Era recounts how the basin states killed a regional commission after they got the dams. Another recent analysis of the Missouri, John Thorson's River of Promise, River of Peril tells the story of the failure of the most recent consensus building effort, the Missouri River Management Project and the Missouri River Assembly. The first, a privately initiated inclusive education process, produced the second, a federal, state and tribal organization. The Assembly produced a consensus management plan, but a lack of funding prevented the continuation of its work. [FN24]

IV. TOWARD A NEW VISION: THE FLOW IS THE RESOURCE

Ultimately, the Missouri Basin states must recognize that the primary "use" of the river will always be non-consumptive and that what must be shared is a managed flow resource. This vision of the Missouri reflects the current debate between two alternative visions of river systems which are competing for dominance within the water community. The traditional multiple-use vision of a river system as a commodity to be used to the maximum extent possible is still the dominant vision world-wide. It is alive and well in China and many other parts of the developing world, but it is slowly giving way to a newer ecological integrity vision. This vision is less clearly articulated because it rests on a more complex view of nature and man's role in the functioning of natural systems. Thus, it is not a simple river preservation concept, rather it starts from the premise that we try to integrate human use of a river system with the maintenance of its natural environmental sustainability on a landscape scale. [FN25] This newer vision seeks to identify a river's hydrograph and the natural functions sustained ***8** by the flow over time. [FN26] These functions include the maintenance of both natural systems, such as wetlands, and human economies. The objective is to use these patterns as the basis for adaptive management of an altered system. The flow cycle of the pre-Aswan Dam Nile is the classic example of the ecological-social vision [FN27] as the post-dam river is a prime example of the commodity vision.

The flow maintenance vision has three primary advantages. First, it places the emphasis on the major post-construction valuable uses of the resource such as hydroelectric power generation, ecosystem maintenance and recreation as well as on navigation. For example, joint tribal-state purchase of the Pick-Sloan hydropower facilities, a distinct possibility as the federal government downsizes and the electric generation industry is deregulated, could be the basis for regional cooperation that integrates the major environmental and development values. [FN28]

Second, it recognizes that a primary function of modern river basin management regimes is risk allocation among the major stakeholders. Modern river management is a large scale bioregional experiment. [FN29] The risk allocation model recognizes that a large number of stakeholders have legitimate interests which can be better accommodated through shared risk

assumption than through the insistence on adherence to rigid entitlements that constantly seek to give use priority over others. Risk assessment allows those exposed to above normal risks to be compensated both by water releases and by direct or indirect financial contributions.

Third, it recognizes that the regulatory missions of the federal agencies, if they survive in their present form, will not be simply to administer past allocations and entitlements but to restore the ecological integrity of systems and to do a better job at promoting regional equity. In the future, a major river management task will be the restoration of degraded rivers. Major river systems such as the Colorado, Columbia, Missouri and Nile are facing substantial environmental problems as a result of the construction of large dams. The operation of these dams must be modified to expand the objectives beyond flood control, water supply and hydroelectric power to include environmental protection and recreation. [FN30] Experiments are now ***9** underway on many river systems, large and small, to restore the system to a baseline that reverses the most harmful effects of human use and alteration of natural system functions. [FN31] The Florida Everglades are the most spectacular example of system restoration, but there many others.

Efforts to revise the operating regime for the Glen Canyon Dam on the Colorado River have important lessons for the Missouri because they illustrate the challenges and opportunities of overcoming the entitlements generated by multiple-purpose development. On both systems, the environmental impact statement process has been used to try to force new operating patterns. [FN32] The construction of Glen Canyon Dam on the Colorado and its operation for hydroelectric power generation have altered the downstream environment through the Grand Canyon. The net result of the construction of Glen Canyon and other carry-over storage and hydroelectric generating dams is that the river has permanently become an artificial one. [FN33] Ecosystems often require disturbance cycles to sustain them, but Glen Canyon Dam altered the natural hydrograph of the Colorado River. In the early 1980s, a number of consequences of the substitution of an artificial for a natural disturbance regime began to surface. Canyon beaches were eroding, endemic fish were jeopardized by the substitution of colder clear water for the warm, more turbid natural flow regime and rafting trips were subjected to pulsating flows from the daily power release cycle. In 1982, the Bureau of Reclamation and the Western Power Administration began to collect information about these changes [FN34] and, after initial resistance, agreed to prepare an environmental impact statement. [FN35]

Re-engineering possibilities exist to improve the canyon ecosystem through different patterns of reservoir releases from Glen Canyon Dam, but they have been resisted because they may frustrate the expectations generated by the entitlement regime. Historically, the idea that the flow of the river was a use to be protected had no basis in the law of the river. [FN36] ***10** The dam managers, the Bureau of Reclamation and the Western Area Power Administration, were able to run the dam as a cash register and ignore the potential external costs of this management decision. Initially, the Bureau of Reclamation and the Western Power Administration tried unsuccessfully to make the problem disappear by funding research which would demonstrate minimal modification of the riverine ecosystem, but the problems did not disappear. In 1992, Congress responded directly to the new river use and interested constituencies with the passage of the Grand Canyon Protection Act. [FN37]

The Grand Canyon Protection Act is a direct outcome of identification of the need for a different release pattern from the dam both to build beaches and to retard beach erosion. It establishes the legality of river corridor enhancement flows consistent with the "Law of the River" and is an important step toward the adoption of ecosystem protection as a management standard. Section 1802 of the Act requires that the Secretary of the Interior operate the dam in a manner consistent with the "Law of the River," including the Endangered Species Act, "to mitigate adverse impacts to, and improve the values for which the Grand Canyon National Park and the Glen Canyon National Recreation Area were established, including, but not limited to, natural and cultural resources and visitor use." [FN38] Section 1804 requires that the Secretary use the "findings, conclusions, and recommendations" of the Environmental Impact Statement to adopt management criteria and operating plans in addition to those specified in Section 602 of the Colorado Basin Project Act of 1968. [FN39] In 1996, the Bureau of Reclamation released a beach-building flood flow. [FN40]

Interestingly, research has indicated that ecosystem management does not necessarily require a fundamental change in reservoir operations and thus may not be inconsistent with equitable entitlements. For example, when the Glen Canyon Environmental Studies began, many scientists and others thought that the dam had trapped the sediment necessary to sustain the canyon's beaches. Sophisticated sediment transport research done by the United States Geological Service and other federal agencies demonstrated***11** that tributaries entering the mainstem below Glen Canyon Dam contain sufficient sand to maintain beaches and backwaters. The problem was not the mass balance of sand in the system but the way in which it moved down the Colorado post-dam. The alteration of the pre-dam hydrograph eliminated seasonable floods, except when the reservoir could not contain the run-off, and replaced them with a combination of steady and fluctuating flows, produced by the generation of peaking power, that eroded the beaches. The scientists recommended controlled floods (or beach-building flows, as the Bureau of Reclamation prefers to call them) and reduced ramping rates (the decline in the rate of discharge from the turbines) to reduce beach losses. In short, the Bureau is inching its way toward a more flexible, science-based operating regime. [FN41]

V. CONCLUSION: THE VIRTUES OF FLUID ENTITLEMENTS

Historically, the flow of large river systems and their adjacent corridors have been perceived as natural resources which should be extensively developed or modified. Rivers have thus often been conceptually and functionally "detached" from their surrounding landscape, and river channels and corridors ceased to be considered valuable resources as rivers were viewed exclusively as commodities. [FN42] A new vision of urban and rural landscapes and the relationship between human settlement and natural systems is required to address the adverse impacts of river and watershed development. This is possible, although difficult, for the Missouri. Despite the posturing of the upper and lower basin states, happily, the "Law of the Missouri River" is not locked into a rigid entitlement regime that makes adaptation to changed circumstances and values extremely costly if not impossible. The river remains unapportioned by Supreme Court decree or interstate compact: the Pick-Sloan Act creates a series of expectations that seem to fall short of a permanent congressional apportionment. Thus, neither history nor supply are an insurmountable barrier to the development of a new vision for the Missouri.

The objective of future management should be the adoption of a simulated naturalness baseline. There is neither a simple, accepted definition of this concept, nor is it an absolute standard. In brief, it can best be understood as a progressive management standard that recognizes that ecosystems are constantly changing, including the introduction of exotic species, ***12** and thus static preservation is impossible. The objective to use natural processes, such as erosion, flow cycles and other ecological processes as standards against which man-made changes can be measured and, if appropriate, mitigated. This baseline approximates as best as we can, within the limits of science and the legal constraints posed by the modification of the river and protection of existing uses at a reasonable level, our understanding of pre-intervention or background conditions.

[FNd1]. Professor of Law, Chicago-Kent College of Law. A.B. 1962, LL.B. 1965, Stanford University. I wish to disclose that from 1983-85, I was a consultant to the Montana Department of Natural Resources and Conservation in the preparation of a report, John Thorson et al., Montana and the Missouri: Montana's Strategy for Missouri River Apportionment and Management (1988), and from 1987-90, I was a consultant to the state of South Dakota in the South Dakota v. Kansas City Southern Industries litigation, 880 F.2d 40 (8th Cir. 1989), cert. denied, 493 U.S.1023 (1990), growing out of the failed attempt by the state to sell Missouri River water for a coal slurry pipeline. These experiences provided me with an introduction to the long and fascinating history of the settlement of the upper Great Plains and to the role that the Missouri River has played in sustaining the region in the post-settlement era. However, the views reflected in this article are solely my own.

[FN1]. Ian Frazier, The Great Plains 184 (1989).

[FN2]. The best example of semi-arid and humid state cooperation is the 1980 Red River Compact, 94 Stat. 3305 (1980). See Marguerite Ann Chapman, Where East Meets West in Water Law: The Formulation of An Interstate Compact to Address the Diverse Problems of the Red River Basin, 38 Okla. L. Rev. 1 (1985).

[FN3]. See Samuel P. Hays, Conservation and the Gospel of Efficiency: The Progressive Conservation Movement 1890-1920 91-121 (1959).

[FN4]. For a lucid articulation of the role that sectional politics has played in water allocation policy see Donald Pisani, To Reclaim A Divided West: Water, Law and Public Policy 1848-1902 (1992).

[FN5]. John E. Thorson, River of Promise, River of Peril: The Politics of Managing the Missouri River (1994).

[FN6]. Id. at 116.

[FN7]. E.g., Henry C. Hart, The Dark Missouri (1957); Northern Lights Institute, Boundaries Carved in Water: An Analysis of River and Water Management in the Upper Missouri River Basin (undated).

[FN8]. John R. Ferrell, The Big Dam Era: A Legislative and Institutional History of the Pick-Sloan Missouri Basin Program (1993).

[FN9]. Id. at 32.

[FN10]. Id. at 40.

[FN11]. See John P. Guhin, The Law of the Missouri, 30 S.D. L. Rev. 350, 383-411 (1985).

[FN12]. ETSI Pipeline Project v. Missouri et. al., 484 U.S. 495 (1988).
[FN13]. See Groundwater Water Exploitation in the High Plains (David E. Komm & Stephen E. White eds., 1992).
[FN14]. National Academy of Sciences, National Research Council, A New Era For Irrigation 131-36 (1996).
[FN15]. Frazier, supra note 1, at 190-199.
[FN16]. Water Resources Planning Act of 1965, 42 U.S.C. § 1962 (1994).
[FN17]. Ferrell, supra note 8, at 114.
[FN18]. Id. at 114-16.
[FN19]. Id.
[FN20]. Id.
[FN21]. 42 Stat. 171 (1921).
[FN22]. The charter was adopted by the Great Lakes governors in 1985 in reponse to U.S. Army Corps of Engineer plans to divert Lake Superior water to the southern Great Plains. It is reprinted in Great Lakes Governors Task Force, Council of Great Lakes Governors, Final Report and Recommendations of Water Diversion and Great Lakes Institutions 40 app. III (1985). The charter is not a compact because it was never ratified by Congress, but in 1986 Congress prohibited Great Lakes diversions unless there was uniform consent by the littoral governors. 42 U.S.C. § 1926d-20. See generally Symposium, Great Lakes Legal Seminar: Diversion and Consumptive Use, 18 Case Western Reserve J. of Int. L., No. 1 (1986).
[FN23]. South Dakota v. Nebraska, 485 U.S. 902 (1988) (leave to file complaint in original jurisdiction denied).
[FN24]. Thorson, supra note 5, at 172.
[FN25]. Lawyers will find Judith L. Meyer, Changing Concepts of System Management in Proceedings: Sustaining Our Water Resources, Water Science and Technology Board Tenth Anniversary Symposium 78 (1992) and The Dance of Nature: New Concepts in Ecology, 69 Chi.-Kent L. Rev. 875 (1994) a good introduction to modern ecology and its influence on environmental management. The changes build on the substitution of a non-equilibrium for an equilibrium paradigm in ecology. See A. Dan Tarlock, The Nonequilibrium Paradigm in Ecology and the Partial Unraveling of Environmental Law, 27 Loy. L.A. L. Rev. 1121 (1994).
[FN26]. See Daniel Botkin, Discordant Harmonies (1991). For an exploration of the potential influence of the non-equilibrium paradigm on environmental law see Symposium on Ecology and the Law, 69 Chi.-Kent L. Rev. 847 (1994).
[FN27]. Nile irrigation began to be modified in the 19th century and barrages and dams were constructed to regulate the River's flow, but historic patterns were relatively maintained until the construction of the High Aswan Dam. H.E. Hurst, The Nile (1952).
[FN28]. See Thorson, supra note 5, at 186-88.
[FN29]. The over-arching concept is the idea of bioregionalism which seeks to identify “whole systems comprised of sets of diverse, integrated, natural subsystems and run by ecological laws and principles.” David Henke, Bioregionalism: A Territorial Approach to Governance and Development of Northwest British Columbia (Unpublished Master's Thesis), quoted in Keane Callahan, Bioregionalism: Wiser Planning For The Environment, 45 Land Use Law and Zoning Digest 3, No. 8 (August 1993). Australia is a leader in bioregional planning and management. See, e.g., J. M. Powell, The Emergence of Bioregionalism in the Murray-Darling Basin (Murray-Darling Basin Commission 1993).

[FN30]. The need to correct the river modifications produced by dams is now widely recognized, but the institutional barriers to doing so are often formidable. See Michael Collier et. al., U.S. Geological Survey Circular, Dams and Rivers: Primer on the Downstream Effects of Dams 1126 (1996).
[FN31]. See National Academy of Sciences, The Restoration of Aquatic Ecosystems (1992).
[FN32]. E.g., State of South Dakota v. Hazen, 914 F.2d 147 (8th Cir. 1990).
[FN33]. See Phillip Fradkin, A River No More (1981).
[FN34]. Two readable assessments of the scientific studies are two National Academy of Sciences assessments of the scientific studies. National Research Council, River and Dam Management (1987) and Colorado River Ecology and Dam Management (1991). I served as member of the National Academy of Sciences-National Research Council Committee to Review the Glen Canyon Environmental Studies from 1986-1995.
[FN35]. The triggering even was the decision to upwind the dam's generators. U.S. Department of the Interior, Operational of Glen Canyon Dam, Environmental Impact Statement (1994).
[FN36]. A leading Colorado River expert, Edward R. Clyde of Salt Lake City, Utah, offered the following definition of the "law of the river" in 1987:

> [The] Colorado River Compact negotiated in 1922, which divided the Colorado River between the Upper Basin and the Lower Basin states; a treaty between the United States and Mexico dated February 3, 1944; the Upper Colorado River Basin Company negotiated in October, 1948; the apportionment made by Congress in the enactment and implementation of the Boulder Canyon Project Act of 1928, as declared by the United States Supreme Court in Arizona v. California; federal statutes dealing with salinity on the Colorado River and the management of the federally constructed reservoirs; the laws of the individual states, which control individual use; and the Indian reserved rights. Beyond this we will have the continuing role of Congress which has the constitutional authority to intervene in the river administration and water allocation.

E. Clyde, Institutional Responses to Prolonged Drought, Report to Central Utah Water Conservation District (1987), quoted in A. Dan Tarlock, International Water Law and the Protection of River System Ecosystem Integrity, 10 B.Y.U. J. of Pub. L. 181, 205 (1996).
[FN37]. Grand Canyon Protection Act, Pub L. No. 102-575, § 1801, 106 Stat. 4669 (1992).
[FN38]. Id. at § 1802.
[FN39]. Id. at § 1804.
[FN40]. The beach building flood flows represent one of the most significant water management experiments in the West. The immediate effects, however, may be short-lived because the subsequent large, steady release patterns reverse much of the sediment deposition produced by the flood flows. For a summary of flood monitoring research see William K. Stevens, A Dam Open Grand Canyon Roars Again, N.Y Times Feb. 25, 1997, at B7.
[FN41]. See National Research Council, National Academy of Sciences, River Resource Management in the Grand Canyon (1996).
[FN42]. The influence of western European law and economic theory on the perception of all land and related resources as commodities from the time of settlement has been brilliantly explored by the environmental historian William Cronon in two books, Changes in the Land: Indians, Colonists, and the Ecology of New England (1983) and Nature's Metropolis: Chicago & The Great West (1991). The adverse consequences of the "commodification" of nature is, of course, the central theme of modern environmentalism. See Lester W. Milbrath, The World is

Relearning Its Story About How It Works, in Environmental Politics in the International Arena: Movements, Parties, Organizations and Policy 21 (Sheldon Kamienecki ed. 1993).

APPENDIX D: BIBLIOGRAPHY

[This proposed Bibliography is open-ended; a work in progress. The idea is that students will contribute entries and short reviews during their independent research of River issues]

TABLE OF CONTENTS -- BIBLIOGRAPHY

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Peter Carrels, UPHILL AGAINST WATER: THE GREAT DAKOTA WATER WAR (1999)

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John R. Farrell, SOUNDINGS: 100 YEARS OF THE MISSOURI RIVER PROJECT (1995)

John P. Guhin, "The Law of the Missouri," 30 S.D.L.REV. 346 (1985)

This comprehensive piece was written by a member of the legal staff of the South Dakota Attorney General's office, a veteran of the water wars. It is a complete legislative and regulatory history of the Pick-Sloan Plan, from the 1930s to the date of publication, and is the starting point for interpretation of the federal laws which govern every aspect of decision-making on the River. The article asserts the legal and policy position of the State of South Dakota. The comprehensive citations alone are sufficient to make this an enduring source.

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An articulation of the idea that humans might limit the demands they make on the basin's water processes. A natural and political history of the Missouri which concludes: Even from the science of the second half of the century, the hydrology of the basin will still hold some secrets. Even the leaders closest to its farms and cities will not find exactly what its People need with water. That is why the Missouri basin, seen no longer through the images of other climates – all wet or all dry – will appear again as a frontier.

Beatrice Hort Holmes, A HISTORY OF FEDERAL WATER RESOURCES PROGRAMS, 1800-1960 (U.S.D.A. Misc. Pub. No. 1233 (June, 1972)

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This compilation is another example of the research resources which must be penetrated by the river studies researcher. Bear in mind that an internal agency memorandum implementing a federal statute and regulation is binding within the agency. Thus, it is never sufficient to have only the statute, the *Federal Register* and the *Code of Federal Regulations;* one must also ferret-out the interpreting internal rules, memos, guidance documents and so forth. A good rule of thumb for the skeptical researcher is that agencies readily publish everything <u>except</u> what they would rather keep to themselves.

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> "And now my book of Crazy Horse is done. In it I have tried to tell not only the story of the man but something of the life of his people through that crucial time. To that end I have used the simplest words possible, hoping by idiom and figures and the underlying rhythm pattern to say some of the things of the Indian for which there are no white-man words, suggest something of his innate natures, and something of his relationship to the earth, and the sky and all that is between. I hope I have not failed too miserably, for they were a great people, these old buffalo-hunting Sioux, and someday their greatness will reach full flowering again in their children as they walk the hard new road of the white man."

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VIII. INDUSTRY IN THE BASIN

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Congress, in 1968, created a National Water Commission to study and report on the nation's water policies. The final report is the most searching analysis of state and federal water policy and frames most of today's water policy debates. Although nearly 600 pages, the Report is fascinating reading, as are the volumes of separately published supporting papers (all of which are cataloged in the McKusick Law Library).

This report was the result of some after-the-fact concerns for rational water planning that led Congress to establish the National Water Commission in 1968. The Commission was directed to study future water requirements and alternative means of meeting them,

> Giving consideration * * * to conservation and more efficient use of existing supples, increases usability by reduction of pollution, innovations to encourage the highest economic use of water, interbasin transfers and technological advance * * * [and to] consider economic and social consequences of water resource development on regional economic growth, on institutional

> arrangements, and on esthetic values affecting the quality of life of the American people. * * *

Pub. L. No. 90-515, § 3(a), 82 Stat. 868 (1968). The NWC Report has had an enduring impact and there are few issues bearing on contemporary water policy on which the Report does not shed useful light. The attempt was to alter the federal focus from responding to raw requests for funds to build water projects to considering a variety of public concerns about the use of water resources. In addition, the numerous topic-specific reports to the Commission staff also remain a vital source of thought and analysis.

Edward Goldsmith & Nicholas Hildyard, The Environmental and Social Effects of Large Dams (1984).

This is a critical Sierra Club survey of large dam technology.

Charles H.W. Foster & Peter P. Rogers, FEDERAL WATER POLICY: TOWARD AN AGENDA FOR ACTION, Harvard University, Kennedy School of Government (August, 1988).

"Water projects continue to represent one of few vestiges of brute power remaining in Congress." (p. 37)

National Resources Law Center, Univ. Colorado School of Law, "America's Waters: A New Era of Sustainability – Report of the Long Peak Working Group on National Water Policy," 24 ENVT'L L. 125(1994)

Water Use Trends to the Year 2000, Report Prepared by the Congressional Research Service of the Library of Congress for the Committee on Environment and Public Works, U.S. Senate, S. No. 96-12, 96th Cong., 2d. Sess. (1980).

X. THE RIVER BEFORE PICK-SLOAN

Ray H. Mattison, "Report on the Historic Sites in the Big Bend Reservoir Area, Missouri River, South Dakota," in XXXI S.D. DEP'T OF HISTORY COLLECTIONS 243 (1962).

This monograph is the National Park Service's report of "historic sites and features" that were to be "adversely affected" by the closing of the Big Bend Dam. It is in catalog format but includes such history as many of Lewis and Clark's campsites, forts, trading posts, graves and so forth.

James Willard Schultz (Apikuni), FLOATING ON THE MISSOURI (Okla. PB 1979).

The writings of Schultz describe the upper Missouri (Montana) as it was before the full effects of European settlements were felt. He arrived in Montana as a 17 year old in 1877. He became intimately acquainted with the Blackfoot, taking part in its buffalo hunts and

war parties. He married Natahki, a Blackfoot woman, and their son was the noted artist Lone Wolf. Upon the extermination of the buffalo herds the family settled on the Blackfoot reservation near Browning, from where Schultz served as a guide for exploration and hunting parties. With Grinnell, for example, he explored what is now Glacier Park. In 1901 Schultz and Natahki decided to float again the Missouri and central Montana. This book is his observations from that trip, taken at a time when the history of exploration, fur traders, gold chasing and Indian wars was coming to a close, and the era of intensive ranching setting in. Thus, the book is a memory of The River as Schultz and Natahki had once known it, and as it had become in 1901. The book is also rich in Blackfoot lore, as Natahki's observations are related by the author. This journey cannot be retraced today because the Fort Peck reservoir has stilled most of the waters. This work is both an idyll and a history.

Schultz' MY LIFE AS AN INDIAN (Houghton, Mifflin, 1914) is also recommended.

XI. DEVELOPMENT OF THE RIVER: PICK-SLOAN

A. Political and Legal History

Henry C. Hart, THE DARK MISSOURI (U. Wis. Press, 1957).
An articulation of the idea that humans might limit the demands they make on the basin's water processes. A natural and political history of the Missouri, which concludes:

> Even from the science of the second half of the century, the hydrology of the basin will still hold some secrets. Even the leaders closest to its farms and cities will not find exactly what its people need with water. That is why the Missouri basin, seen no longer through the images of other climates – all wet or all dry – will appear again as a frontier.

John P. Guhin, "The Law of the Missouri," 30 S. D. L. REV. 346-487 (1985).
This impressive article was written by a member of the staff of the SD Attorney General's office, a veteran of the water wars. It is a complete legislative and regulatory history of the Pick-Sloan Plan, from the 1930s to the date of publication, and is the starting point for interpretation of the federal laws which govern every aspect of decision-making on the River. The article asserts (and without apology) the legal and policy position of the State of South Dakota. The comprehensive citations alone are sufficient to make this an invaluable source.

Marian Elizabeth Ridgeway, THE MISSOURI BASIN'S PICK-SLOAN PLAN: A CASE STUDY IN CONGRESSIONAL POLICY DETERMINATION, Univ. Illinois Press 1952.
A doctoral thesis. Very thorough.

John R. Ferrell, "Missouri Basin Land and Water Control Controversies," in AGRICULTURAL LEGACIES: ESSAYS IN HONOR OF GILBERT C. FITE 118 (R.A. Lee, ed. 1986).
The Flood Control Act of 1944, which authorized construction of the main dams on the

Missouri, also contemplated that future flood control measures would be required in the tributary streams of the Missouri, especially the lower basin rivers in Kansas and Missouri. A contest between development policies was fought. On the one hand there were those who sought non-structural soil conservation practices as the way to retard floodwaters in the tributaries. On the other hand, there were those who advocated dams and related flood control measures. The former were aligned with the U.S. Department of Agriculture, the latter with the Corps of Engineers. After record flooding in 1951, the Corps' position prevailed. This led, among other things, to the levees from Sioux City to the Mississippi River. Ferrell, an historian for the Corps, opines that this solution ". . . reflected the waning of the strength of the rural-agrarian heritage and the shift of weight to an urban-industrial commercial conceptualization and policy design." (p. 138).

B. Native American Interests

Michael L. Lawson, DAMMED INDIANS: THE PICK-SLOAN PLAN AND THE MISSOURI RIVER SIOUX, 1944-1980, (U. Okla. Press 1982).

As Guhin is the brief for upper basin states, Lawson is the brief for the Indian nations of the Missouri Valley. No interpretation of the Pick-Sloan Plan can ignore this persuasive manuscript. The citations are invaluable.

William H. Veeder, "Confiscation of Indian Water Rights in the Upper Missouri Basin," 21 S.D. L. REV. 282 (1976).

A concise statement of the Indian viewpoint.

Caposella, Peter, *Indian Reserved Water Rights in the Missouri River Basin,* 6 GPNRJ 131 (2002)

Davidson, John H., *Indian Water Rights, The Missouri River, and the Administrative Process: What Are The Questions?* 24 AMER. INDIAN L. REV. 1 (200_)

Mary Jane Schneider, INDIANS OF NORTH DAKOTA ( ).

A generic volume that details some issues related to the river and Indians.

C. Impacts on Communities

D. Impacts on Valley Environment

XI. CONTEMPORARY ISSUES ON THE MIDDLE MISSOURI

A. General

B. Master Manual

C. Recreational River Designation

D. Tributaries

E. Exports of Water from Basin

F. Additional Development Projects

G. River Transportation

H. Irrigation from Reservoirs

I. Reservoir Water – Who Owns It?

J. Hydropower

K. Economic Development, including Tourism

L. The "Call" of Lower Basin States

M. Water Quality

N. Wetlands, Marshes & Riparian Areas

O. Fish & Wildlife, including Endangered Species

Spear, Brook A., *The Missouri River: Law, Politics, and Creatures Caught in the Conflicts*, 18 BUFF. ENVTL L. J. 75 (2011)

Zellmer, Sandra B., *Mudslinging on the Missouri: Can Endangered Species Survive the Clean Water Act?* 16 DRAKE J. AG'L L. 89 (2011)

> *Eventually, all things merge into one, and a river runs through it. The river was cut by the world's great flood and runs over rocks from the basement of time. On some of the rocks are timeless raindrops. Under the rocks are the words, and some of the words are theirs.*
>
> *I am haunted by waters.*
>
> – Norman Maclean