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THE BACKWATERS OF FEDERALISM:  
RECEDING RESERVED WATER RIGHTS AND  
THE MANAGEMENT OF NATIONAL FORESTS

In *U.S. v New Mexico* (1978), the Supreme Court appears to have halted decades of growth in the Winters Doctrine of federal reserved rights; it narrowed the purposes for which implicitly reserved water could be used. The Court ruled that the Forest Service was entitled to reserved rights only for water needed to secure "favorable conditions of water flows" and "a continuous supply of timber." Water for other forest uses was to be allocated under state law. This narrow reading of the 1897 management authority for forest reservations contrasts sharply with virtually all intervening interpretations of the Forest Service "Organic Act" and with the multiple use concept which has been evolving in Congress and administrative practice ever since.

Although the Forest Service has long supplied diverse public services based on the 1897 statute, the Court decided that timber production and watershed maintenance are the only purposes for which implied water rights exist under the Winters Doctrine. Water for "secondary" purposes must be obtained by condemnation or in competition with other claimants under state law. Hence, the Rio Mimbres decision appeared to skew the management of national forests away from their secondary purposes--recreation, fish, wildlife, range--by making water for them more expensive. By reducing Forest Service rights to the benefits thus produced, it may also discourage the management of national forest vegetation to improve the quantity and timing of runoff for state water needs.

Appearances are rarely informative guides to federal-state interaction, however. Although lawyers and judges may debate or reinterpret the Court's words, the effects of the decision will be defined by Forest Service and state responses to it. And agency actions at both levels of government will be shaped by the larger political, economic and legal realities of a dynamic federal system. Every indication thus far is that the bitter federal-state disputes that have accompanied the federal reserved rights doctrine throughout this century are yielding to the pressures of resource scarcities. Behind the dust kicked up by adversarial habit are mutual interests in water and forest management that neither state nor federal government can afford to ignore.

The purpose of this article is to explore how the Rio Mimbres decision will affect the management of water on the national forests. The article has five parts. In the first, we review the rise and decline of the federal reserved water right. In the second, we consider the possible effects of the Rio Mimbres decision on national forest management. In the third, we explore responses to the decision. In the fourth, we place these responses in the context of general developments in federal-state relations.

Finally, we offer as a conclusion an hypothesis about the future governance and content of national forest management in an evolving federal system. Although Forest Service responses to the Rio Mimbres decision attempt to recover the agency's ability to claim water, they create opportunities for negotiated settlement of federal-state differences at a time when capacities for such negotiation are ready to respond to them. The

Rio Mimbres is appropriately viewed as a decision "for" States' Rights. It reflects the adversarial mode of the court system, which has heretofore dominated discussion of reserved water rights. But its effect is to move future disputes from the courts to the tables of administrative negotiation. The change is likely to increase rather than reduce the Forest Service attention to state water needs.

### The Doctrine of Federal Reserved Water Rights and How It Grew

Relations between federal and state governments regarding management of western resources are changing for reasons which have nothing to do with federal reserved water rights. However, the evolution of "Winters rights" or "reserved rights," as they are sometimes known, provides an interesting window through which to view these changes. There is a growing tendency at both state and federal levels to view management problems in terms of mutual or negotiable interests that require coordinated, joint or cooperative response. This trend is particularly noticeable in the field of federal reserved water rights because the historic pattern of dispute resolution has been distinctly adversarial, bitter and, not coincidentally, one-sided.

Although many rival interests contend for the benefits of water when federal reserved water rights are litigated, the courts approach the issue in terms of a conflict between sovereigns: Whose law, the federal or the state sovereign's, is controlling in this situation? Substantively, the conflict has been viewed as a zero-sum game: What one sovereign (or its assigns) wins, the other loses. In the water-scarce west, this casting of the issue has preordained its intensity. The theoretical reach of federal authority generally, and of federal authority over the public domain lands specifically, has expanded for much of this century (*Kleppe v New Mexico*, 426 U.S. 529[1976]). Not surprisingly, the theoretical reach of the reserved rights doctrine grew apace with it, from nothing to a conceivable stranglehold on state water rights.

The practical consequences contrast with the theoretical possibilities and make the intensity of the dispute more instructive. Throughout the protracted legal debate, few have lost a state-granted right to use water because of a conflicting federal assertion of reserved rights (Johnson, 1984; Corker, 1970). This fact may do more to explain the bitterness than to render it premature or unreasonable: It underscores the contrast between the ill-defined federal reserved rights and the certainty-seeking state systems.

Federal reserved rights were ill-defined from this inception because they developed in a series of piecemeal responses to changing federal land and water policy. Until 1908, the assumption the federal government had "acquiesced" in evolving western state water law was an integral part of the more venerable expectation that the federal government would dispose of its western territories to states and private holders. These expectations are manifest in states like Ohio, Kansas, Nebraska, Indiana, and Iowa, which were all carved from the public domain in a relatively standard way (Gates, 1968). Such early public domain states contain very small percentages of land in federal ownership, and have no issue with the reserved water right. At the turn of the century, land retention replaced land disposal as the dominant federal policy for the remaining western public domain. The Supreme Court discovered a doctrine through which a federal reservation of land implicitly reserved water to accomplish the purposes of the reservation without reliance upon state water law.

The doctrine of implied water reservations was first expressed in *Winters v. U.S.*, 207 U.S. 564 (1908). The Supreme Court held that an 1888 treaty establishing an Indian reservation gave the Indians a superior right to divert water from a stream than did a right granted under state law prior to the reservation. Although the treaty did not mention water, the Court concluded that the land reservation had by implication reserved sufficient water to accomplish the purposes for which the federal government had established it.

The Winters Doctrine raised three practical questions about the definition of the reserved right. First, is the doctrine an artifact of the federal government's trust relationship with the tribes, or does it attach to non-Indian land reservations as well? Second, what are the purposes of reservation for which water may be claimed? Third, how should the amount of water necessary to achieve the purpose be calculated? These questions were left to be answered in dribs and drabs over the century.

The western states confidently argued that only Indian reservations enjoyed reserved rights. Their position construed three statutes from 1866, 1870, and 1877 to suggest that the federal government waived its claims to water appurtenant to the federal lands and acquiesced in state allocation law. In 1935, Justice Sutherland solidified this "severance theory" in his decision in *California Oregon Power Co. v. Portland Beaver Cement Co.*, 295 U.S. 142 (1935).<sup>1</sup> However, his ruling was overturned in 1955 [*FPC v. Oregon* 349 U.S. 435 (1955)], when the Court rejected state "ownership" of water associated with withdrawn federal lands and allowed a federally licensed project over state objections (Johnson, 1984). *Arizona v. California* 373 U.S. 546 (1963) dealt the state position a further blow. With virtually no discussion, the Court held that the reservation doctrine applied to non-Indian reserved lands.

Thus, after half a century, the Court had answered the first question raised by the Winters case: the Winters Doctrine obtained an all, not just Indian, land reservations. The Forest Service subsequently departed from its longstanding policy of filing for water claims in conformity with state law and began asserting reserved rights claims to meet its water needs.

Two questions from the Winters case remained unanswered: What are the purposes for which reserved rights can be claimed, and how should the appropriate quantity of water to achieve them be determined? As these questions simmered on the back burner regarding non-Indian land reservations, native American rights burst to the surface as a major public issue. Litigation expanding Indian water rights appeared to considerably enhance the implied reservation concept as it applied to the non-Indian reservations as well.

Numerous efforts in Congress and by various study commissions (see Johnson, pp. 5-9) failed to rescind or restrict the reserved rights doctrine. The Court's partial, piecemeal and inconclusive holdings served primarily to threaten state water systems with open-ended and potentially conflicting allocations. The fact that paper, or theoretical, rather than wet water was at issue did not make the planning of water-related investments any easier for states or holders of state granted rights. Moreover, westerners confronted increasingly aggressive federal resource management; the reserved rights threat was but one they perceived to be lurking in the growing federal commitment to retention of the remaining public domain.

It was disconcerting to state officials and state water rights holders to view their laboriously nurtured water systems going down the drain in federal court during a century of increasing judicial support for federal

priorities and of centralizing forces in politics and the economy. Moreover, the paper nature of the water arguably keep the issue in the piecemeal forum of the courts. Without real losers, there was little incentive to force the issue into a forum which was more conducive to planning and negotiation.

But in a 1976 case concerning the Devil's Hole Pupfish, the Court hinted that the expansion of the doctrine might be approaching an end. In *Cappaert v. U.S.*, 425 U.S. 128 (1976), it answered the "how much water" question stingily, holding that the federal government could claim only enough water to prevent "frustrating" achievement of the purpose for which the land reservation was made.<sup>2</sup> The decision left only one question of the initial triad unanswered.

Two years later, in a 1978 adjudication of the Gila River in New Mexico, the Court acted decisively to further limit the implied reservation doctrine. In *U.S. v. New Mexico* 238 U.S. 696 (1978), the Supreme Court defined only two purposes for which the Forest Service could claim water. Selectively distorting the history of the Forest Service's 1897 management authorization and several subsequent statutes (Fairfax & Tarlock, 1979; Tarlock & Fairfax, 1982), the Court identified timber supply and securing favorable conditions of water flows as the only purposes for which water was implicitly reserved. All others were described as secondary and without a reserved right. The Court rejected Forest Service rights to water from the Rio Mimbres for recreational and stockwatering purposes unless the State of New Mexico chose to provide them, which it did not.

With the third question answered, there appeared to be the first loser of wet water since Winters: the U.S. Forest Service.

#### The Rio Mimbres Decision: Its Possible Effects on National Forest Management

National forest planning turns on the relative values of outputs that pieces of land are capable of producing under different management regimes, as well as upon the relative costs of implementing these regimes at different intensities. In allocating land to different regimes, the Forest Service presumably uses values that reflect its cost of obtaining additional water and the benefit from the contribution to its objectives that additional water would make. Under an expansive federal reserved right, the Forest Service valued water only to the extent that downstream needs might impose political or legal costs upon it. Water management services yielded outputs of no value to the Forest Service, unless it used them itself, because it had no institutional means for selling or exchanging them. With a reserved right and without opportunity to sell or exchange water services, the Forest Service had little incentive to provide them at the expense of its other purposes.<sup>3</sup> Beyond its research endeavors in water yield augmentation, it approached its responsibilities for water conditions as a custodian rather than as a manager.

When the Rio Mimbres decision confined reserved (i.e., free and relatively unlimited)<sup>4</sup> water to the purposes of timber production and stream-flow protection, it potentially increased the cost of managing the national forests for other land uses that need water. In the economic calculus of national forest planning, this would bend Forest Service allocations in favor of timber production relative to those uses that depend upon a more limited and costly water supply. As the Forest Service would have no apparent right to additional water produced by agency efforts, its interest in improved water supply would presumably diminish. Unless its budget

or state influence upon its choices were increased, the Forest Service would be expected to become more specialized in timber production, more concentrated in enclaves suitable for that purpose, and less devoted to managing forestlands for water supply and the forest recreation, fish, wildlife and range services that require it.<sup>5</sup> Potential state relative to federal influence in the management of nonenclave lands would increase, possibly sharpening distinctions between timber and multiple use zones of the national forests.

But the Rio Mimbres decision created other tendencies as well. By closing the remaining open end of the reserved rights definition, the decision increased Forest Service accountability to the states for the water it uses. The decision expanded both the potential state influence upon national forest management and the potential federal threat of withdrawing the multiple use services that the states now freely enjoy. In circling the reserved right, the Supreme Court increased the means by which the Forest Service and the states could impose their values on one another. It increased their potential interdependence and, thus, the prospects for negotiation and exchange between them.

In theory, the opportunity for exchange among holders of property is assumed to advance their mutual interest (Pigou, 1920). If right holders can gain from strengthened opportunities for negotiation and exchange, and if arrangements that maintain such opportunities depend upon their support, they will support the necessary arrangements as long as the values at stake justify the costs of doing so (Olson, 1965; Demsetz, 1964). The higher the values at stake, the greater is the readiness to absorb these costs and to accept the interdependence involved. The greater the existing interdependence, the lower are the additional costs that must be justified. And the more open the opportunities for exchange, the less the location of property rights affects outcomes (Coase, 1960). Mutually acceptable arrangements replace adjudication as means for resolving differences of interest. This presumably benefits all involved because the zero-sum consequences of adjudication are products of its structure rather than of the values and opportunities that are potentially present in the situation it addresses.

These propositions suggest that the effect of a shift in water rights depends on the extent to which the values at stake justify new mutual relations that are cooperative rather than adversarial. The Rio Mimbres decision shifted water rights in a way that may force the Forest Service to internalize the state's costs of water it had previously used free to provide services that the states now freely obtain. The states face a potential loss of these national forest services but can use the allocation of water rights, or financial and political proxies for them, to avoid it. They possess added leverage to the extent that their general capacities for resource management enable them to serve national needs as well as their own. And the Forest Service possesses leverage to the extent that these state capacities depend upon its support. If the values at stake are sufficient, then increased federal-state coordination would be expected. Where it occurs, the Forest Service would diversify management of the national forests in response to greater state influence and would increase its emphasis upon serving state water needs.

This framework offers predictions about the impacts of the Rio Mimbres decision on national forest management. In states where the values of water and nontimber forest uses are generally high relative to those for timber (e.g., in California and the central Rockies), federal-state coordination and the management of national forests for water and water-based

multiple uses will intensify. Where the values of water are high and those for nontimber uses are low relative to timber production (e.g., in the northern Rockies), the Forest Service and the states will maintain or increase their separateness and adversarial stance; national forest management will become more specialized in timber production and more concentrated in areas particularly suited for it. Where water is abundant, the Rio Mimbres decision will not affect forest management, which will continue to emphasize multiple uses where values for them are high (e.g., in the Pacific Northwest) and timber production where they are low (e.g., in Alaska). And the stronger the state relative to federal capacities in resource management, the lower are the water and multiple use values at which some level of coordination will develop.

In the next sections, we explore responses to the Rio Mimbres decision to find indications of trends. The results tend to support our predictions. More importantly, they tend to support the general hypothesis that the Rio Mimbres decision is weakening the distinction between state and federal land and water rights and is encouraging a system of cooperative arrangements that will gradually replace the syndrome of reliance upon the courts.

#### Forest Service Responses to Rio Mimbres: Restoring Power While Creating Opportunities for Negotiation

Since the Rio Mimbres decision, the Forest Service has worked to obtain rights under state law to water that it had been using for nontimber purposes on the basis of the federal reserved right since *Arizona v. California* in 1963. The agency has also sought to recover the federal water rights that the Rio Mimbres withdrew. It has thus far used four distinctive strategies to do so (Romm & Bartolani (1985) discuss these strategies in greater detail). All four have been applied only in regions where the values of water and multiple uses are generally high relative to those for timber production. Although the four appear at first glance designed to maximize the water which the agency could control, their implications are broader than that. Three of the four create new opportunities for negotiation and exchange with state interests.

#### The Hydrological Argument

In the Rocky Mountain states, the Forest Service has used a hydrological argument to expand the amount of water attached to the Court's narrow interpretation of the 1897 Organic Act.

Because the Rio Mimbres decision denied reserved rights to instream uses of water for fisheries, aesthetic or recreation purposes, the Forest Service is quantifying the amount of water needed to "secure favorable conditions of water flow" for which claims can be made (Hill, 1982). To validate the relationship between levels of instream flow and qualities of forest drainage systems, hydrologists have estimated the distribution of flows over the year that would maintain the existing condition of stream channels.<sup>6</sup> The amount of water that is required to prevent a decline in the drainage capacities of several basins (Rosgen & Silvey, 1983) provides the basis for claims of instream flows under federal reserved water rights.<sup>7</sup>

The Forest Service tested this hydrological approach in the 1982 adjudication of Wyoming's Big Horn River, where it estimated that about 78 percent of average annual water yields were necessary for maintenance of the drainage system (Rosgen & Silvey, 1983). After several months of

negotiation with the State of Wyoming, the agency settled its claims out of court for 25 percent of the amount of water that it had claimed. Confident that an improved version of the same approach will withstand legal scrutiny, the agency is testing it in adjudications of the Rio Grande River (Rio Grande National Forest) and the Arkansas River (Pike and San Isabel National Forests) in Colorado.

The hydrological argument is designed to protect, and may even enhance, the Forest Service's position in traditional adversarial water allocation procedures. But although this has been its primary purpose, its potential is not limited to expanding the Forest Service's reserved water rights and it may have utility outside the judicial arena. For example, it also defines a mutually accepted physical standard that states could apply separately to restrict upstream Forest Service activities which modify the structure and capacity of stream channels. A state could use the same standard to define mandatory best management practices for water quality programs, which apply to nonpoint sources of pollution on federal as well as private lands. And if states accept the principle for federal lands, they would seem more likely to apply it as well to private lands that have public watershed value. Thus, the Forest Service's hydrological argument could tighten the weave between institutions for national forest management and state water quality regulation and could lead to diminished jurisdictional and institutional differences between them.

### Riparian Rights

The Forest Service has pursued a second strategy in California, where state law recognizes "riparian rights" under which property owners can make reasonable use of water that flows through or adjacent to their lands.<sup>8</sup> The Forest Service argues that national forest lands qualify for riparian rights.<sup>9</sup> It has asserted riparian rights in about 65 percent of its California claims since *Rio Mimbres*.

The State Water Resources Control Board sought to derail this strategy by rejecting Forest Service riparian claims on Hallett Creek (Plumas National Forest) and Roaring Creek (Shasta-Trinity National Forest).<sup>10</sup> The State argues that riparian rights apply only to lands that passed from the public domain to private ownership.<sup>11</sup> The Forest Service successfully appealed the Hallett Creek decision in State Superior Court (Lassen County Superior Court Case No. 16291) and gained a favorable judgement in June 1984. The Board's appeal to the State Supreme Court is pending.

Riparian rights have some advantages over alternative entitlements. Unlike appropriative rights the Forest Service could obtain under state law, they do not require a permit from the State Water Resources Control Board. They also provide an advantage over the narrowly interpreted reserved right of the *Rio Mimbres* decision because they can be applied to any use, as long as it is "reasonable" under state law. Nevertheless, the riparian right is governed by state law. If the Forest Service wins its point in the Hallett Creek case, it would recover some of the security that it lost in *Rio Mimbres*, but it would also become a probably significant party to the give-and-take processes of state water law development.

### Regulation of Access

Despite the effects of water allocations on land management possibilities, the Forest Service does not consider water resource development in its national forest management plans. As a third strategy of response to the *Rio Mimbres* decision, however, the Forest Service is testing its authority under the Federal Land Policy and Management Act (FLPMA) of 1976 to

regulate private uses of national forest water. FLPMA authorizes the Forest Service to regulate private access to water and other natural resources to protect environmental conditions within national forest boundaries. The permit authority could allow the Forest Service both to expand its own water rights by confining the scope of others and to insure that water developments conform with its land management plans.

Small-scale hydroelectric developments in the Pacific Coast states, and transmountain diversions of national forest water to urban areas in the Rocky Mountain states, are water projects that require Forest Service special-use permits. The agency has denied permits for transmountain diversions that did not meet environmental standards. Its denials have not been challenged. The Forest Service has also imposed conditions on permits that it did grant. Except for one case involving a wilderness area, all challenges to Forest Service permit conditions have been settled out of court with the conditions intact. However, the agency appears reluctant to challenge the Federal Energy Regulatory Commission (FERC): It has not yet denied a permit for a hydroelectric project.

The Forest Service exercises its permit authorities through negotiations with state and federal agencies that have related authorities (e.g., in water quality, fish and wildlife, energy and public utilities department) for the same projects. Thus, its approach to permits governs its assignment of influence. It has thus far considered applications for permits on a case-by-case basis. This approach places the initiative for water development and its land management effects with the applicant rather than the agency. It makes it difficult to assess the cumulative environmental and management implications of individual projects. It also tends to disperse the influence of other agencies by limiting negotiations with them to the characteristics of specific projects and sites.

In 1984, the agency sought to increase the efficiency of its permit process by decentralizing primary authorities for it from the Region to the Forest level (Bartoloni, 1984), where land management planning occurs. The decentralization increased the probability that the permit strategy for water development will be integrated with forest planning, for administrative and budgetary reasons if for no others. Such integration may strengthen the agency's control of water use. It would allow the agency to design permit strategies that conform with forest plans and draw upon whatever authority the plans have or may gain in the future. It would also shift the focus of negotiations with other permit-granting agencies toward the forest plan as a whole and presumably increase their influence upon it.

### Reserved Rights for Recent Purposes of the National Forests

The fourth Forest Service strategy is closest to the familiar adversarial mode of pre-Rio Mimbres water relations and apparently farthest from current legal authority: It seeks reserved rights for purposes of the national forests that Congress approved in the Multiple-Use Sustained Yield Act of 1960 (i.e., recreation, range, fish, and wildlife purposes). Those purposes were "declared to be supplemental to ... the purposes for which the national forests were established as set forth in the Act of June 4, 1897." In its Rio Mimbres decision, the Supreme Court interpreted the "supplemental" purposes to be "secondary" and opined in nonbinding *dicta* that they were not entitled to reserved rights. Nevertheless, the Forest Service has frequently claimed reserved rights for them with a priority date of 1960, when the Multiple Use Act passed.

The Forest Service brief for the 1982 adjudication of Wyoming's Big Horn River claimed reserved rights to water for range, recreation, and



fish and wildlife against any appropriative claims with dates of priority subsequent to June 12, 1960--the day that Congress passed the Multiple Use Act. Although the Colorado Supreme Court relied on *Rio Mimbres* when it decided against such federal claims [*U.S. v. City and County of Denver*, 656 Pacific 2d 1 (1982)], the Forest Service has continued to press them in Utah adjudications that involve five national forests.

Among the four strategies of Forest Service response to the *Rio Mimbres*, this is the only one that maintains the adversarial stance and does not directly create opportunities for negotiation of forest water management and use with the states. It is the only one that has been applied uniformly and that has not been designed for specific states with high water and multiple use values. The other three have shaped instruments for water allocation that both federal and state governments can control; they have placed these instruments in states that appear to have reason to use them.

### The States: Emerging Parity and Capacities for Negotiation

Although designed to enhance its right to free water, Forest Service responses to the *Rio Mimbres* decision have raised possibilities for negotiation at an auspicious moment. The context of federal-state relations in which the responses will be implemented differs significantly from the period of state hostility to growing federal dominance in which the reserved rights doctrine developed. Whatever the abstract merits of the reserved right may be, changes in the premises of these relations have frayed its mesh with other institutions of natural resource management. These changes are discussed in this section under the heading of three trends.

#### The States Have Developed Independent Natural Resource Policy, Planning and Regulatory Capacities

Future Forest Service water policy will proceed in the context of new state-level assertiveness based in enhanced capacity and ambition. The Federal government has carrot-and-sticked state natural resources programs for a good part of this century (Ingram, 1977). One result of this federal prodding and investment is that state governments, long the cause of despair among analysts and citizens alike, are not generally regarded as alternatives to federal programs in many areas of public policy (ACIR, 1981; Stenberg, 1985). In forestry, the growth of federal assistance to the states dates back to 1911 for fire protection, to 1924 for the provision of planting stock and state extension services, to 1937 for afforestation subsidies, to 1940 for research, and to 1974 for state forest resource planning and assessment. Similar cooperative arrangements were initiated in flood control (1936), erosion control (1937), the abatement of stream pollution (1948), the development and enforcement of state water quality standards (1965), the maintenance of anadromous fisheries (1965), and the implementation of point and nonpoint source pollution controls (1972).

Although long viewed as examples of growing federal control over state budgets and priorities, such pieces of policy and programs coalesced in the 1970s as a virtual federal mandate that states develop comprehensive state capacities to plan and regulate the management of forest and water resources. In forestry, for example, the 1978 Cooperative Forestry Assistance Act and its extensions created a visionary policy of state forestry and of federal-state relations in forestry that is likely to have greater historical importance than its more-discussed counterparts of the decade.

The Water Quality Acts of 1972 and 1977 have had profound effects on state and local capacities to regulate forest and land as well as water use and to do so within federal as well as state and local jurisdictions.

In many states, such developments have built planning and regulatory capacities that are now prepared to assume the initiative rather than follow the carrot. In California, for example, the first State Forest Resource Assessment (California Department of Forestry, 1979) was funded primarily by the federal government. Nevertheless, it formed a strikingly different interpretation of state forestry conditions--specifically in its chapter on water--than is apparent in analogous Forest Service planning documents, and argued the necessity for expanding state influence on national forest policy and management. Meanwhile, the California Forest Practice Act of 1973 had established the strongest system of private forestry regulation in the nation (Vaux, 1983). The Forest Taxation Reform Act of 1976 had created a 5.5 million-acre state zone of private land that was committed to long-term forestry (Romm & Washburn, 1985). The Forest Improvement Act created a state cost-share program for nonindustrial forestry investment, analogous to but stronger than existing federal program (Romm et al., 1985). And in 1984, the State Water Resources Control Board, possessing the authority to establish the best management practices as standards for managing nonpoint sources of pollution on private and federal forest lands, adopted the independent recommendations of the State Board of Forestry and the Forest Service for their respective jurisdictions: The state's water policy agency thereby emerged as a formal link between and authority over state and federal forestry organizations and their standards of forest management. If California's experience illustrates or prefigures developing potential in other states, it suggests that the states have gained the ability and motive to serve national interests in exchange for favorable national forest management policies within their boundaries.

### **The Federal Government is Decentralizing Responsibility for Public Services to the States**

Although the dominating reasons for it were political and fiscal, the age of federal subsidies has, by empowering and supporting the states, substantially reduced the inequities and weakness in state public services that had been used to justify heavy federal involvement (Stenberg, 1985). And since 1981, for other political and fiscal reasons, the federal government has begun to withdraw from support of state public services that it had largely developed through tied assistance. This withdrawal has included the reduction of federal support for and consequent leverage upon state forestry programs (U.S. Forest Service, 1981-85). The transfer of responsibility to the states has not yet been matched by the transfer of authority and financial instruments they need to provide services the public has come to expect. Just as Congress represented state interests in leading the development of federal subsidization policies, there seems reasons to expect that it will again assume leadership in the transfer of authority and resources that the states need to fill the vacuum left by federal retreat.

The federal lands are an obvious focus for the exercise and development of potential state authority in the West (Coward et al., 1986). While their divestiture in significant amounts is unlikely, the growing state participation in their management is a reality. Current state-federal conflicts over the allocation of forest and minerals revenues (Fairfax & Yale, 1985), about the states' rights to participate in and challenge federal decisions (*Texas Oil and Gas Corp v. Arkla Exploration Co.*, 562 F.Supp.

1214 W.D. Ark. 1983), and about the appropriate relationships between federal resource management and state and local need (*Granite Rock Co. v. California Coastal Commission*, 590 F.Supp. 1361 [N.D.Cal. 1984]), indicate growing pressures for transfer of authority and responsibilities as well as resources (Fairfax, 1985b).

The Rio Mimbres decision, perhaps benighted in its understanding of the 1897 Act, had the effect of maintaining in state hands title to a potentially valuable and arguably federal resource. However, the decision's real value to the states depends on their capacities to convert the water right into a stream of benefits that support their public programs. One possible means is to use the right as a lever on the management of the national forests in order to extract more of the services which the states need. While decentralization builds incentives for influencing national forest management, and reduces federal abilities to counteract them, the Rio Mimbres decision provides a potential tool with which they can be translated into tangible effect.

### Realignment of Political Constituencies is Expanding the Power Base for State and Local Interests in National Forest Management

A realigning political environment will shape water as a goal of national forest management. In the 1970s, the environmental movement, the clear-cutting dispute and wilderness debates made national forest management a broad public issue. Two major congressional enactments focused unprecedented attention on the Forest Service, increased its accountability to a national public, and brought the national forests under the full sway of the distributively-oriented national policies of the time.

When the Reagan administration assumed power, it did so with the perception of the national forests as a federal economic asset. If managed "efficiently," the asset could prime the pump and fill the treasury on the basis of productive rather than fiscal powers; it could free private timber for export and improve the balance of trade. As an alternative to federal borrowing against future generations, it could even be sold. Forest Service budgets for timber, minerals and land sales increased; budget for the unpriced services of soil, water, and range management declined (U.S. Forest Service, 1981-85). The criterion of "economic efficiency" gained the same ascendancy in national decisions as the criterion of "equity" had held in the previous decade.

At the present time, industrial timber associations and established environmental groups have clear access to influence upon national Forest Service policies. Despite their public disagreements, the national leadership of both have developed common interests and skills in the federal way of doing business. They now share the same language of "efficiency" (Sample, 1984; Roe, 1984). They may even hold the same positions on issues.<sup>12</sup> They have developed a facility for negotiating with the federal government, and with one another, that has strengthened their functional identity while separating them from the contemporary concerns of their localized constituents.

In some areas, localized environmental and economic interests seem to have moved toward one another as well. The wood products industry has always been a loose association of highly competitive local and regional interests that join forces nationally only against a perceived common threat (Robbins, 1982). Environmentalism and its legal consequences appeared to unify them in the '60s and '70s. Hard economic times have subsequently split them apart. Local sawmills are increasingly threatened by aemise or

absorption and increasingly separated from the interests that their national centers of presumed leadership represent. When federal timber purchasers in the West sought relief from contracts signed during the price boom of the later 1970s, it separated them from the timberland holding segment of the industry, and even from self-supplying divisions of their own corporations, more deeply than any other issue in the postwar era (Horngren, 1985).

The environmental strength of the 70s derived initially from local and largely urban organizations that mobilized nationally to promote federal control over matters that concerned them. Environmental groups have now proliferated in forest-dependent communities and regions, where normal concerns for jobs and neighbors are difficult to separate from concern about the viability of the local sawmill or issues of local control. In at least some California counties, these groups have rejected the intervention of national organizations in local issues in order to avoid the polarization it was expected to cause (MacNally & Hester, 1985). Local environmental groups joined woods- and mill-workers' unions in an industrial strike against Louisiana Pacific's use of forest herbicides, which was perceived as a threat by a distant corporation to local industrial and environmental health (Mendocino News Service, 1985). And they and the unions have begun to discuss joint efforts to achieve a California policy that would regulate private timber harvest rates on a "sustained-yield" basis in order to stabilize forest outputs and the communities depending upon them.

The horizontal split between local and national interests appears to be gaining political significance relative to the vertical environment-development divisions that dominated resource politics in the preceding decade. Such shifts are recurring phenomena in American politics. But the present one is occurring with the first real retreat of federal power since the national forests were created and at a time when state capacities in resource management appear to be coming of age. While the phenomenon is recurrent, this combination is new.

### Political Flows and Water Rights

What do these contextual trends suggest about the effects of the Rio Mimbres decision on national forest management for water supply? The decision created a potential instrument for state influence upon national forest management. It also created a reason for federal withdrawal from the provision of nontimber benefits for the states. It sowed these possibilities in the context of a more general shift in relative state and federal powers. The states have increasing (1) capabilities and ambitions, (2) financial motive, and (3) local political support, to more actively plan and regulate forest management activities, including those on the national forests. They are increasingly in a position to impose their priorities on national forest management decisions as well as to promote the satisfaction of national interests on private lands that are within their jurisdiction. The Forest Service has (1) declining budgets and staff, (2) increasing motive to shed or share peripheral responsibilities, and (3) weakening coalitions of "traditional" support for its programs. It is losing the leverage on state programs that it once had, but it retains the capacity to curtail or expand services, such as improved water supply, that the states may desire. In resource management, the federal and state governments are approaching a parity of power, capacity and dependence that has not existed previously. These circumstances are fruitful for the growth of negotiation and exchange where the stakes are sufficiently high on both sides to justify the required arrangements.

Forest Service responses to the Rio Mimbres decision both reflect and enhance the environment for negotiated rather than adversarial settlement of forest water issues between federal and state governments. The responses have developed where values and capacities are most likely to promote interdependence. They have taken forms that offer diverse precedents for application in states where the tendency toward interdependence would otherwise be weaker. In seeking more secure water rights, the Forest Service has nurtured conditions in which the direct influence of water rights on national forest management seems likely to diminish. As a result, the values that the Forest Service applies to water will gradually approach those of the states; its land management decisions will increasingly reflect state water objectives.

### Toward Federal-State Coordination and the Management of National Forests for Water Supply

The Rio Mimbres decision had two direct effects. First, it severely limited the federal reserved right. It increased the potential cost of water the Forest Service requires to manage its lands for uses other than timber production as well as the potential cost the states might incur if the Forest Service withdrew from managing for these uses. It then provoked responses that increase the probability of federal-state negotiation and exchange for the management of the national forests and their water supply.

The possible outcomes range from (1) Forest Service withdrawal to timber enclaves, in which it is entitled to all the water it can consume, to (2) federal-state coordination of forest policy, planning and management, in which rising state values for water strengthen multiple-use management of the national forests. Tendencies in both directions are presently apparent. They are likely to be manifest in different degrees, depending upon relative state values for the various forest uses, upon state capacities to influence federal decisions and to promote production of forest services on private land, and upon the national benefits that such state activities can provide.

Forest Service responses to the Rio Mimbres, and state capacities to respond to the opportunities that these have created, suggest to us that the dominant trend will be toward modes of coordination that gradually integrate federal and state forest policy, planning and management. Beginning in California and the central Rockies, we expect the circling of the reserved right to eventually spawn compacts and councils such as manage intergovernmental relations in cooperative fire protection.<sup>13</sup> As such arrangements arise, the location of boundaries and rights, and the adversarial relations associated with them, will lose importance in resource allocation, presumably to the advantage of both parties.<sup>14</sup>

The Rio Mimbres decision made both levels of government somewhat more aware of their limits and their interdependence. It is one more closing of the American frontier. As with other such events, responses to it will transform national forest water from a paper issue of sovereignty to a practical problem of effectively managing what is there.

### NOTES

<sup>1</sup>If the Acts of 1866 and 1879 did not constitute an entire abandonment of the common-law rule of running waters insofar as the public lands and subsequent grantees thereof were concerned, they foreshadowed the more positive declarations of the Desert Land Law of 1877

[A]ll surplus water over and above such actual appropriation and use, together with the water of all lakes, rivers and other sources of water supply upon the public lands and not navigable, shall remain and be held free for the appropriation and use of the public for irrigation, mining and manufacturing purposes subject to existing rights. [43 U.S.C.A. § 321]

"If this language is to be given its natural meaning .... it effected severance of all waters upon the public domain, not theretofore appropriated, from the land itself .... The fair construction of the provision ... is that Congress intended to establish the rule that for the future the land should be patented separately; and that all non-navigable waters thereon should be reserved for the use of the public under the laws of the states and territories ...."

<sup>2</sup>The Desert Hole National Monument was explicitly reserved by presidential proclamation to protect the endangered pupfish inhabiting its underground pool. When pumping on an adjacent ranch began to lower the level of the pool, the Court ruled that the federal reserved right superseded the state right that the ranchers held, but that "the level of the pool may be permitted to drop to the extent that the drop does not impair the scientific value of the pool as the natural habitat of the species sought to be preserved."

<sup>3</sup>In 1979, California's national forests (Region 5) were using \$5 per acre foot as the value of forest water to be considered in their land management planning process. The value has subsequently been raised to \$10, \$41, and, in 1984, to \$56 per acre foot. Ewing (1985) and Euphrat (1985) have shown that the marginal economic values of forest water vary greatly with location, ranging from zero to almost \$300 per acre foot, but average at least twice the value that the Forest Service currently uses in California.

<sup>4</sup>The reserved right is limited technically to the amount of water that is needed to satisfy a federal purpose of land reservation. However, it places no limit on the ambitions with which the purpose of reservation is pursued. If the amount of water that is necessary to grow a unit of timber were quantified, for example, the reserved water right could be limited to that amount per unit of timber grown, but it would not limit the acreage in or intensity of timber production, i.e., the total amount of water that it secured for the purpose.

<sup>5</sup>Krutilla, Bowes and Sherman (1983) have demonstrated that decisions about timber harvest regimes are sensitive to differences in the assumed value of water yields. In general, the higher the value of water yield, the shorter are the optimal timber rotations and the smaller and more numerous are the optimal harvest openings. Because of the potential reuse of water through a series of hydrogeneration plants, the value of water is directly related to the elevation of its source where such facilities are available. Thus, the effect of water value on timber management regimes becomes more pronounced at higher elevations and, by supplementing the economic value of harvests where growth rates are low, tends to raise the elevational threshold of economic harvest. Agricultural values of forest water depend upon the availability of infrastructure for storage and transport (Ewing, 1985). Thus, forest management for water storage and augmentation is more likely to occur in agriculturally developed than

undeveloped basins. For surveys of empirical research on relationships between forest management and water yields, see Kattelman (1982) and Troendle (1983).

<sup>6</sup>The capacity of a channel changes when streamflows deposit more or less sediment than they remove. The hydrologists have used general principles of geomorphology and fluid mechanics to identify the regimes that balance sediment removal and deposition over the course of the year. Lesser flows would cause channel filling, vegetative encroachment, and consequent loss of drainage capacity.

<sup>7</sup>The amount of water that is necessary for timber production, the other primary purpose of national forest reservation, has not yet drawn similar inquiry. Conventions within the Forest Service may have resisted the possibility. The agency has traditionally viewed and presented itself as a protector rather than user of water supplies. The Weeks Act of 1911 codified this position. The Act was passed amidst rousing debates about the scientific relationship between forest management and the navigability of streams and, thus, about the constitutionality of federal acquisitions of private forestland. Subsequent law and administrative policy have not modified the Forest Service position nor has subsequent scientific research significantly strengthened its theoretical basis (Schiff, 1960). Since the Weeks debates, the Forest Service has remained conspicuously aloof from the politics of water, but this was far from true during the Progressive Era (Pinchot, 1947, pp. 138-144; Kahrl, 1982, pp. 212-220).

<sup>8</sup>This strategy has unique application to California. Most western public domain states establish rights only by prior appropriations. (See Dunbar, 1983, and Andrews & Sansone, 1984, for a discussion of the evolution of allocation systems westwide and the history and current developments.)

<sup>9</sup>The Forest Service argues that a federal reservation possesses at least the same water rights as a private landholding and that its nonconsumptive uses are therefore protected by the riparian doctrine. The agency's position is supported by California court rulings since 1886, which evolved the principle that "the United States, with respect to the lands which it owns in this state, is a riparian proprietor as to the streams running through such lands." [*Palmer v. Railroad Commission*, 167 Cal 163 (1917)]

<sup>10</sup>The state has some basis for concern. If successful, the Forest Service would become the predominant holder of riparian rights in the state. Moreover, the precedent of a federal riparian right may affect the state's powers regarding other federal lands in its territory, roughly one-fourth of which is in federal ownership of equivalent legal status.

<sup>11</sup>The Water Resources Control Board position is based on California's assertion at statehood of full powers to govern the rights that apply to property, whether federal or private: "Riparian rights do not attach to lands held by the government until such land has been transmitted to private ownership," or unless they are explicitly granted by the state [*McKinley Bros. v. McCauley*, 215 Cal 229 (1932)]. Although riparian rights attach to land that was once public domain and now is privately owned, the Water Resources Control Board rejects the Forest Service view the reservation of a national forest from the public domain is analogous.

<sup>12</sup>For example, both want strong wilderness designations, one to secure its direct interests in wilderness, the other to close access to price-breaking supplies of raw materials. Robbins (1982) analyzes the historically adversarial but symbiotic relationship between larger timber corporations and preservation interests, viewing reduced availability of federal timber as one means for gaining some industrial concentration and control in a very unstable market (see also Romm, 1983; Fairfax, 1985a).

<sup>13</sup>Malos and Bacon (1980) describe the highly developed intergovernmental coordination of California's fire protection system.

<sup>14</sup>On the recommendation of the Fire Chief of Los Angeles County, the California Department of Water Resources initiated a council of public and private owners, and federal, state and local agencies, to cooperatively manage almost 100,000 acres of land in the Lower Feather River Basin for improved water, range, and timber yields. Although the project has suffered for budgetary reasons, the institutional accomplishment was a significant breakthrough. As with the elevenfold increase in Forest Service planning values for water in California, its occurrence after the Rio Mimbres decision was presumably coincidental.

#### REFERENCES

- Advisory Commission on Intergovernmental Relations (ACIR). (1981, November). *In brief: State and local roles in the federal system* (B-6). Washington, DC: Advisory Commission on Intergovernmental Relations.
- Andrews, B., & Sansone, M. (1984). *Who runs the rivers?* Palo Alto, CA: Stanford University, Stanford Environmental Law Society.
- Bartoloni, M.K. (1984). *Forest Service response to hydro project applications on national forest land in California* (M.C.R.P. Report). Berkeley: University of California, Department of City and Regional Planning.
- California Department of Forestry. (1979). *California's forest resources*. Sacramento: California Department of Forestry.
- Coase, R. (1960, October). The problem of social costs. *Journal of Law and Economics*, 3, pp. 1-44.
- Corker, C. (1970). Let there be no nagging doubts: Nor shall private property, including water rights, be taken for public use without just compensation. *Land and Water Law Review*, 6, 109-115.
- Cowart, R., Fairfax, S., & Wilson, L. (forthcoming). Beyond sagebrush: State opportunities for influencing federal land management. *Ecology Law Quarterly*.
- Demsetz, H. (1964, October). The exchange and enforcement of property rights. *Journal of Law and Economics*, 7, 11-26.
- Dunbar, R. (1983). *Forging new rights in western waters*. University of Nebraska Press.
- Euphrat, F. (1985). *The value of increased water yield from national forest watersheds in California*. Unpublished paper. Berkeley: University of California, Department of Forestry and Resource Management.
- Ewing, A. (1985). *The agricultural value of forest water*. M.S. thesis. Berkeley: University of California, Department of Forestry and Resource Management.
- Fairfax, S.K. (1985a, May 6-8). The role of economic analysis in forest policy. Paper presented at the Western Forest Economists Association annual conference, Wemme, OR.



- Fairfax, S.K. (1985b). Federalism as if the states mattered: The case of national resources revenue sharing. In P. Foss (Ed.), *Federal lands policy*. Policy Studies Organization.
- Fairfax, S.K., & Andrews, B. (1979, October). National forests and reserved water rights in the western states. *Journal of Forestry*, 648-651.
- Fairfax, S.K., & Tarlock, A.D. (1979). No water for the woods: A critical analysis of *United States v. New Mexico*, *Idaho Law Review*, 15, 509-554.
- Fairfax, S.K., & Yale, C. (1985). *The financial interest of western states in non-tax revenues from the federal public lands*. San Francisco, CA: Council of State Governments.
- Gates, P.W. (1968). *History of public land law development*. Washington, DC: U.S. Government Printing Office.
- Hill, J. (1982, July). Reserved rights for national forests after *New Mexico, R-4 hydrograph*, 9-11.
- Horngren, S. (1985, April). Federal relief from high-cost timber contracts on the national forests. *Forestry Forum* (Western Timber Association seminar). Sacramento, CA: Department of Forestry and Resource Management.
- Ingram, H. (1977, Fall). Policy implementation through bargaining: The case of federal grants-in-aid. *Public Policy*, 25, 499-526, at 501.
- Johnson, R. (1984, June 11-13). Introduction to [non-Indian] federal reserved water rights. Natural Resources Law Center.
- Kahrl, W. (1982). *Water and power*. Berkeley: University of California Press.
- Kattelman, R.C. (1982, April 20-23). Water yield improvement in the Sierra Nevada snow zone: 1912-1982. Paper presented at the Western Snow Conference, Reno, NV.
- Krutilla, J.V., Bowes, M.D., & Sherman, P.B. (1983). Watershed management for joint production of water and timber: A provisional assessment. *Water Resources Bulletin*, 19(3), 403-414.
- Malos, S., & Bacon, K. (1980). *The Department of Forestry's cooperative fire protection agreements with local government*. California Assembly Office of Research.
- MacNally, M., & Hester, R. (1985). Personal communication based on sociological survey in north coast counties of California, University of California, Berkeley.
- Mendocino News Service. (1985). Periodic reports, Fort Bragg, CA.
- Olson, M. (1965). *The logic of collective action*. Cambridge, MA: Harvard University Press.
- Pigou, A.C. (1962). *The economics of welfare*. London: Macmillan.
- Pinchot, G. (1947). *Breaking new ground*. New York, NY: Harcourt Brace.
- Robbins, W.G. (1982). *Lumberjacks and legislators*. College Station: Texas A&M University Press.
- Roe, D. (1984). *Dynamos and virgins*. New York, NY: Random House.
- Romm, J. (1983, September). Book review of Robbins, W.G. *Lumberjacks and legislators in environment*, 25(7).
- Romm, J., & Bartoloni, M.K. (1985, June). The new rules for national forest water. *Journal of Forestry*, 362-367.
- Romm, J., & Washburn, C. (1985). *State forest policy and county land control: Their effects on the formation of California's timberland preserve zone*. Berkeley: University of California, Department of Forestry and Resource Management.

- Romm, J., with Washburn, C., Tuazon, R., & Bendix, J. (1985). *Forest owners and the state: California policy for growing forests on non-industrial land*. Berkeley: University of California, Department of Forestry and Resource Management.
- Rosgen, D., & Silvey, L. (1983). Procedure and rationale for securing favorable conditions of waterflows on national forest system lands. Lakewood, CO: U.S. Forest Service, Rocky Mountain Regional Office.
- Sample, V.A. (1984). *Below cost timber sales on the national forests: Issue brief*. Washington, DC: Economic Policy Department, The Wilderness Society.
- Schiff, A. (1960). *Fire and water: Scientific heresy in the U.S. Forest Service*. Cambridge, MA: Harvard University Press.
- Stenberg, C.W. (1985, March/April). States under the spotlight: An intergovernmental view. *Public Administration Review*, 45(2), 319-325.
- Tarlock, A.D., & Fairfax, S.K. (1982). Federal proprietary rights for western energy development: An analysis of a red herring? *Journal of Energy Law & Policy*, 1(1), 1-56.
- Troendle, C.A. (1983). The potential for water augmentation from forest management in the Rocky Mountain region. *Water Resources Bulletin*, 19(3), 359-372.
- U.S. Forest Service. (1981, 1982, 1983, 1984, 1985). *Budget explanatory notes*.
- Vaux, H.J. (1983). State intervention on private forests in California. In R. Sedjo (Ed.), *Governmental interventions, social needs, and the management of U.S. forests*. Resources for the Future.