Keeping the Waters Flowing: Streamflow Protection Programs, Strategies and Issues in the West

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KEEPING THE WATERS FLOWING:

Steamflow Protection Programs, Strategies, and Issues in the West

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TABLE OF CONTENTS

I. THE MULTIPLE BENEFITS OF INSTREAM FLOWS
   A. Recreation
   B. Other Economic Benefits
   C. Role in the Environment

II. INSTREAM FLOW STRATEGIES OF WESTERN STATES
   A. Prohibitions Against New Diversions
   B. Water Use Permit Denial and Conditions
   C. Instream Water Rights
      1. Appropriation
      2. Reservations
   D. Transferring Existing Water Entitlements

III. EFFORTS OF INDIAN TRIBES

IV. OPPORTUNITIES IN THE PRIVATE SECTOR
   A. Private Instream Appropriation
   B. Coordinating Water Use and Releases
   C. Asserting the Public Trust

V. PROTECTIONS UNDER FEDERAL LAW
   A. Licensing and Permit Conditions
   B. Secondary Effects of Environmental Statutes
   C. Reserved Water Rights

VI. EMERGING ISSUES
KEEPING THE WATERS FLOWING:

Streamflow Protection Programs, Strategies, and Issues in the West

Free-flowing waters have been appreciated and revered in the western United States for as long as people have inhabited the region. Over the centuries, water in western rivers, lakes, and streams played major pragmatic roles in tribal fishing, transportation, and in maintaining important habitat for hunting. But the value of these waters went well beyond practical functions. When new settlers immigrated from the east and south, they found people to whom free-flowing waters were key to spiritual sustenance and religious practices.

Although many of the 19th century settlers undoubtably appreciated the intangible value of free-flowing waters, this appreciation was dominated by the concurrent belief that diverting large quantities of water was key to prospering in this arid land. Entire streams were taken from their channels when placer miners found gold deposits to be washed from the Sierra Nevada hillsides of California. Rivers were reduced to empty beds during the end of hot, dry summers on the Colorado high plains as new farmers irrigated their thirsty crops. Throughout
the West, water was taken from once-thriving streams to satisfy the needs of crops, people, and their new economies.

This attitude and need for water diversions was reflected in the laws that developed in local courts and legislatures. The first person to take water from a stream and utilize it acquired a vested right to continued use of the water. Unlike the easterner who was constrained by riparian water law, a western water user generally could dry up the stream even if people who lived along its banks later wanted to use a bit of water for their homes and livestock. "First in time, first in right" rang through western courtrooms, and this Doctrine of Prior Appropriation [1] accelerated the emptying of rivers and streams of the West: No water right was created unless the flow was diverted from its natural bed—and the law rewarded the quickest to act.

A doctrine of prior appropriation was consistent with a young nation's desire to settle the West and encourage the exploitation of its vast resource base. It failed, however, to take into account the important functions that free-flowing waters serve in this arid region. As the decades passed and additional diversions occurred, people began fighting to maintain the values—both economic and intangible—that instream flows bring to the West. State legislators considered various proposals to protect important rivers and streams. Tribal governments asserted their rights to instream flows needed to support fisheries and religious practices. Private groups and individuals sought to wrest from prior appropriators the waters
needed to replenish natural levels. And the federal government worked to protect instream flows on its western land holdings.

Despite frequent resistance by irrigators and other consumptive user groups, a number of the attempts to protect free-flowing waters under western law have succeeded. Currently, a variety of laws, programs, and strategies are being applied to maintain and enhance instream resources in most areas of the West. After describing the multiple benefits of free-flowing waters, this Article looks at the ways in which instream flow protection is pursued in both the public and private sectors. The analysis begins with programs established by western state legislatures to promote instream resources. These include prohibitions on additional diversions, conditions imposed on new water use permits, the creation of instream flow rights, and transferring existing water entitlements to instream uses. Next, the efforts of Indian tribal governments are assessed, followed in Part IV by ways in which the private sector is asserting instream flow protection. These analyses incorporate discussions of reserved water rights, tribal water codes, the Public Trust Doctrine, and opportunities for cooperation. Part V describes federal strategies, including ways that statutes and administrative procedures are each able to promote instream resources. The Article concludes with a summary of the issues needing resolution in this emerging--and controversial--field of instream flow protection.
I. THE MULTIPLE BENEFITS OF INSTREAM FLOWS

The intangible value of free-flowing water in the West is significant to many people. The aesthetics of a waterfall, the peacefulness of a mountain brook, and the power of a torrent cutting through steep canyons would be sorely missed if they disappeared from the western landscape. Those whose lives are subtly but significantly enhanced by free-flowing waters have fought with some success to ensure that water remains in the natural beds of rivers and streams. It is doubtful, however, that aesthetic and spiritual values of instream flows would have alone compelled state legislators and administrators to initiate the protective statutes and actions of recent years. Instream flow enactments in the West have sprung from a recognition of the broad economic, as well as intangible, benefits that free-flowing waters bring to a region.

A. RECREATION

As the agricultural, mining, and energy industries each took a nosedive in the West during the 1980s, the reliability and importance of the recreational and tourism sector became increasingly evident to state policy makers. Since this sector is heavily dependent on water-related activities throughout the western states, the value of instream flows to the overall economy likewise grew in the minds of officials. For example, in a 1985 water policy speech by then-governor Richard Lamm of Colorado, the wisdom of perpetuating historic water uses at the
expense of instream values was questioned. To emphasize this point, the governor stated that alfalfa which consumes 27% of Colorado's water injected only $156 million/year into the state's economy, while recreation and tourism accounted for more than $4 billion in annual statewide benefit.

Similar disparities in value occur in other regions of the West where fishing, commercial rafting, boating, and scenic waterways attract large numbers of people. Millions of dollars of revenue are lost when these activities are undermined by diminished stream flows, losses that debilitate local economies as well as prove disruptive statewide. The loss of recreational opportunities also has a detrimental effect, unrelated to money, on those who find pleasure and a release of urban tensions in water-based activities.

B. OTHER ECONOMIC BENEFITS

Other sectors of the economy, independent of recreation and tourism, are also enhanced by free-flowing waters. In many areas of the West, revenues from water-borne commerce and hydropower are important to the economy. Similarly, commercial fishing is highly dependent on instream flows in many western areas. Also, an environment enhanced by streams and lakes helps to attract new businesses looking to locate in areas where their employees can enjoy a high quality of life.

Instream flows also save cities and industries millions of dollars in sewage and effluent treatment costs. Wastewater typically must be treated to ensure that the receiving waters do
not exceed contaminant standards. A loss of instream flows to dilute the effluent can result in more stringent treatment requirements on the city or industry prior to discharging its effluent.

C. ROLE IN THE ENVIRONMENT

The benefits of instream flows to the natural environment are readily apparent in the West. Streamflows are needed to maintain endangered fish species and the aquatic environment as a whole. Free-flowing waters are crucial to terrestrial species as well. Natural rivers and streams create ribbons of habitat throughout the arid West that are essential to the life cycles of various species as well as to the ecosystem as a whole. This benefit translates into additional economic value where hunting, bird watching, and other land-based activities add to local revenues.

A less obvious, but very important function played in the natural environment by instream flows involves maintaining the physical capacity of stream beds and river channels to carry runoff. Channel capacities often depend on instream flows to transport sediment that would otherwise clog the channel and create a number of problems. When natural flows are depleted, the resulting sediment build-up can cause flooding, erosion, meandering of the streambed, and a reduction in the overall capacity to carry runoff. In addition, in areas where reservoirs or major diversions prevent periodic high spring runoff that historically scoured the streambed, new vegetation growth can
II. INSTREAM FLOW STRATEGIES OF WESTERN STATES

In recognition of the many benefits of free-flowing waters, most western state legislatures have enacted statutes to protect instream flows. The purposes of these laws typically incorporate the desire to protect fish life, although the enabling statutes also reflect the variety of values represented by instream waters. For instance, California officials may protect free-flowing water for recreation and the enhancement of wildlife resources. In Idaho, instream flow protection includes the promotion of hydropower, while Colorado's statute broadly provides that instream flow rights be designed to "protect the natural environment to a reasonable degree." Alaska legislators specified that instream flow rights may be created to promote navigation, water quality, fish migration, wildlife habitat, float plane landing, and a number of other beneficial uses.

As of 1988, only three of the westernmost states do not have legislatively created programs to promote instream flow protection. In two of the states without legislation (Arizona and Nevada), officials have administratively recognized the right to establish instream flow rights under certain conditions independent of expressed legislative authorization. Only New Mexico has elected to neither
administratively nor legislatively recognize instream flows as a protectable beneficial use of water under any circumstances.

The characteristics and effectiveness of instream flow strategies embodied in statute differs greatly from state to state. The legislatively created programs fall into four basic categories described in the following sections.

A. PROHIBITIONS AGAINST NEW DIVERSIONS

The earliest form of instream flow protection to appear legislatively in the West involved prohibiting new diversions from specified streams. In the 1920s, Oregon placed a moratorium on new withdrawals from a number of streams with important salmon fisheries and scenic beauty. A typical statute read:

"The unappropriated waters of Milton Creek and its tributaries are withdrawn from appropriation except for domestic use through the year and storage during the period beginning November 1 and ending April 30 of each year."[6]

Some western states expanded this concept into a comprehensive program for protecting wild and scenic rivers from further appropriation. For example, in 1972, California declared that it was state policy "that certain rivers which possess extraordinary scenic, recreational, fishery, or wildlife values shall be preserved in their free-flowing state."[7] The legislature provided that no dams could be built on certain rivers and no diversions approved that would adversely affect the
natural character of the river. As in Oregon, however, an exception was carved out to allow for new domestic water diversions if needed.

Prohibiting new water withdrawals is an effective way to maintain existing instream flow levels with a minimum of administrative red tape. This strategy, however, can prove too restrictive for streams which, during certain seasons and wet years, carry sufficient water for new diversions without injuring the instream values. Consequently, a number of states have developed more flexible alternatives for instream flow protection.

B. WATER USE PERMIT DENIAL AND CONDITIONS

Every western state requires that an application be filed in order to obtain a new, protectable water right. The applications for new diversions undergo various review procedures, and the states generally issue a permit for the new water right if it meets approval criteria. Also, the issuing agency may condition the permit with restrictions to prevent injury to other water users or to promote the public interest. A number of states have used these permit review processes as avenues for instream flow protection.

The explicit right to protect instream flows during the water use permitting process first appeared in the West in 1949. In that year, the Washington state legislature empowered the water administrative agency to deny a permit application if the new water use might result in lowering the stream flow below the
level "necessary to adequately support food fish and game fish populations."[8] Similarly, the Utah legislature provided that a permit could be denied if it "will unreasonably affect public recreation or the natural stream environment."[9]

Outright denial of a new water diversion lacks flexibility needed in some instances, thus a number of states allow the new permit to be issued subject to protective conditions for instream flows. Two types of instream flow conditions are frequently incorporated into water use permits. The first, applied extensively in California and to some extent in Alaska, provides for a specified level of the natural flow to be left in the stream by the new permittee. It is the duty of new permittees to ensure that they allow the minimum flow to bypass their diversion at all times.

The second type of permit condition creates a similar result, incorporating the requirement that when the natural stream level falls below a specified flow, the permittee shall discontinue diverting water. This strategy is used most effectively on critical salmon streams in central Washington where, following a basinwide study of instream flow needs, the water agency conditions all new permits to require curtailment of diversions during low flow periods.

C. INSTREAM WATER RIGHTS

Conditioning permits on a case by case basis can result in inconsistencies and prove cumbersome to administer. Consequently, a number of state legislatures have authorized the
creation of instream flow rights on the same legal footing as municipal diversions, irrigation withdrawals, and other consumptive water rights. As explained below, these instream rights may be established by the state through appropriation, reservation, or through the transfer of senior water rights.

1. Appropriation. The concept of appropriations to protect natural waters dates back to 1925 when the Idaho legislature designated certain lakes for the preservation of their scenic beauty and recreational values.[10] The associated water right was issued to the governor to be held in trust for the people of Idaho. It was not until the 1970s, however, that the concept blossomed into comprehensive administrative programs to systematically establish instream flow rights on important rivers and streams.

In 1973, the Colorado legislature empowered the Colorado Water Conservation Board (CWCB) to establish water rights on behalf of the public to maintain instream flows and natural lake levels. Since that time, the CWCB has established new water rights on more than 6,500 miles of Colorado's streams and rivers and on scores of natural lakes. A typical instream flow right designates a specified level of flow (e.g. 15 cubic feet per second from April through October; 8 cfs during the winter) over a stream segment stretching up to several miles. The right does not ensure that such flow will actually be maintained, because senior water rights may already exist that deplete the stream below the specified level. But the instream flow rights do give
the CWCB the authority to curtail junior diversions and limit proposed transfers of senior rights that could injure the instream rights.

The appropriation of instream flow rights has proven an effective way to systematically establish protection of instream resources. A number of state legislatures have recently set up programs similar to Colorado's for appropriating instream flow rights. These include Wyoming in 1986 (after a citizens' initiative drive got a similar law proposed on the ballot), Hawaii in 1986 (as part of a comprehensive state water code), and Oregon (which changed administratively set instream flow levels into vested public water rights).

2. Reservations. State reservation of instream flows are similar in concept to appropriative instream rights. Pursuant to statute, waters are reserved for instream flow maintenance to prevent future users from diverting water below the set levels. The Montana and Alaska legislatures followed this model in creating instream water rights.

In Montana, the water reservation system was established in the 1973 Water Use Act.[11] Under the statute, political subdivisions of the state (as well as federal agencies) may apply to the Montana Board of Natural Resources and Conservation to reserve water for instream purposes as well as for future consumptive needs. After an environmental impact statement is filed and a hearing on the application held, the Board may order the water reserved if it is in the public interest. Currently,
instream flows have been reserved only in the Yellowstone River basin of southern Montana. Nearly 4 million acre feet have been reserved annually for instream uses in the basin above the river's confluence with the Bighorn River with a priority ahead of all future agricultural uses. In the lower basin, a 5.43 million acre foot per year reservation was established for instream flows, but was deemed subordinate to water needed for future irrigation.

Alaska's reservation program allows any entity or person to apply for an instream flow right. The Department of Natural Resources will issue the right if the applicant demonstrates that the reservation will not affect prior appropriators, that a need exists for the instream reservation, that unappropriated water is available, and that the proposed reservation is in the public interest. The resulting instream flow right is vulnerable, however, to future consumptive uses. The legislature provided that the state shall review the reservation every ten years to determine if it is still needed and consistent with the public interest.[12]

D. TRANSFERRING EXISTING WATER ENTITLEMENTS

In many basins of the arid West, waters have been fully appropriated by consumptive users. Under these circumstances, junior instream water rights are of little value in protecting instream resources. An effective alternative for enhancing natural flows in these areas is to acquire and dedicate existing water rights to the stream.
Recent legislation in Utah, Wyoming, and Colorado has explicitly sanctioned this mode of instream flow enhancement. In Utah, the state Division of Wildlife may file for a change of use to instream flow purposes from an existing water right given to the division or purchased by funds from the legislature.[13] In Colorado, the state Water Conservation Board may acquire water rights for instream needs through "grant, purchase, bequest, devise, lease, exchange, or contractual agreement."[14] Similarly, Wyoming may acquire water rights through voluntary transfer or gift for instream flow uses.[15]

Legislation in Oregon during the 1987 session provided an innovative twist to the transfer of water rights to instream purposes. The new law allows irrigators who conserve water to sell or use the historically irretrievable losses that they salvage. Such use, however, is predicated on the condition that up to 25% of the salvaged water shall be dedicated to the state for maintaining streamflows if needed for the public interest.[16]

States may also promote the temporary transfer of water to enhance instream flows during critical periods. This was done during the 1987 drought in Montana where the state Fish, Wildlife & Parks Department purchased 10,000 acre feet of reservoir water for release to the Bitterroot River. This purchase, which cost the department $20,000, helped ensure the survival of rainbow and brown trout in the river.
III. EFFORTS OF INDIAN TRIBES

Like state government, Indian tribes have the authority to manage, regulate, and control waters in their jurisdictions. Waters flowing through or underlying an Indian reservation generally fall under tribal jurisdiction regardless of whether the water is used by the tribe, by individual tribal members, or by non-Indians residing within the reservation boundaries. The courts have recognized the rights of tribes to issue water use permits pursuant to tribal water codes and, in 1986 and 1987, Congress authorized tribal governments to assume primacy on Indian reservations over major provisions of the Clean Water Act and Safe Drinking Water Act.\[17\]

A number of Indian tribes have enacted comprehensive water codes to promote the management, use, and protection of reservation water resources. These codes typically reflect, among other policies, the desire to maintain the natural environment supported by free-flowing waters. For example, the Navajo Nation Water Code (that regulates water use on the Navajo reservation in northeastern Arizona, northwestern New Mexico, and southeastern Utah) provides that the director of the tribal Division of Water Resources administer water to ensure that adequate levels remain in streams, rivers, ponds, and lakes. More specifically, in approving new water use permits, the director shall incorporate conditions designed to maintain "pools and streamflows for fish, wildlife, recreation, aesthetic and Navajo religious values."[18] The Tribes of the Fort Peck Indian
Reservation have implemented a similar permit condition strategy in their water code, calling for "protection for fish, wildlife, recreational and aesthetic values."[19] The Fort Peck Tribes are also currently assessing the establishment of an instream flow program on their tributaries to the Missouri River in northeastern Montana.

Tribal governments have similar opportunities as states to implement the various instream flow strategies listed in the previous section. They also carry an important additional tool with which to protect instream flows based on their history as independent sovereign nations that made treaties and agreements with the United States. In 1908, the U.S. Supreme Court recognized that an Indian tribe has reserved water rights that supercede non-Indian water uses established under state law after creation of the reservation.[20] Subsequent court decisions have established that these Indian water rights include instream flows needed to support the fishing and hunting rights that tribes retained pursuant to treaty.

The strength of this instream flow protection mechanism was recently demonstrated in a case involving the Tribes of the Flathead Reservation in northwestern Montana who argued with local irrigators over water distributed by the federal Bureau of Indian Affairs (BIA). Initially, the tribes filed suit claiming that the BIA had historically delivered too much water to non-Indian irrigators, thereby reducing instream flows and destroying important fish populations. In 1986, the BIA altered its distribution criteria, protecting instream waters in order to
support tribal fishing rights guaranteed by the 1859 Treaty of Hells Gate. The irrigation districts in turn filed an injunction stating that the reduced diversions injured their members.

The federal district court judge ruled in favor of the non-Indian irrigators, stating that the BIA must be guided by the principle of "just and equal distribution of all waters of the Reservation." The Ninth Circuit Court of Appeals overturned this finding in November 1987, stating that the Treaty of Hells Gate,

"accompanied by a history indicating that one of the essential purposes in creating the reservation was to preserve Indians' right to fish, created a reserved [instream] water right in the Tribe."[21]

The court then invoked the concept of first in time, first in right, concluding:

"Because any aboriginal fishing rights secured by treaty are prior to all irrigation rights, neither the BIA nor the Tribes are subject to a duty of fair and equal distribution of reserved fishery waters."

Consequently, the BIA must continue to administer the water distribution network to ensure that sufficient flows remain in the natural stream to support tribal fishing activities.
IV. OPPORTUNITIES IN THE PRIVATE SECTOR

Tribal instream flow rights are frequently viewed with caution by water user groups that want maximum flexibility under state law to use and manage local waters. Similarly, instream flow rights held by private individuals or organizations are often perceived as constraints to future water development. As a consequence of this latter fact, most western state legislatures have authorized only governmental agencies to hold instream water rights under programs that balance competing instream and consumptive uses. Utah and Wyoming, in their 1986 instream flow legislation, and Colorado in its 1987 amendments to its enabling statute each specified a single state agency to hold instream water rights established under state law.

This does not mean, however, that private interests are unable to participate in instream flow protection. For example, the Nature Conservancy is currently negotiating the purchase of water rights in Colorado and Utah to dedicate to the states for instream resources. Also, a number of other strategies have been asserted by instream flow advocates to enhance free-flowing waters in the West. As explained below, these include private appropriation of instream water rights, coordinating water uses and reservoir releases, and asserting the Public Trust Doctrine.

A. PRIVATE INSTREAM APPROPRIATION

Despite the fact that several legislatures have explicitly
prohibited the creation of instream flow rights held by the private sector, in some western states individuals and organizations are asserting this appropriation strategy. Most notably, during the early 1980s an environmental advocacy group applied for two instream flow rights on an ecologically important river in southern Arizona. The state Department of Water Resources approved the applications after determining that fish and wildlife protection is a beneficial water use under Arizona law, a physical diversion is not required for appropriating a new water right, and the applicant had followed the necessary procedures for establishing a valid right.

Approval of these two applications opened the way for numerous new instream flow filings submitted by a variety of applicants. The Arizona Department of Water Resources is currently assessing what action it should take on these new claims. It has appointed an interagency task force, including members from the private sector, to develop recommendations on technical and institutional matters. Without cooperative efforts, advocates of free-flowing waters fear that the legislature may step in to foreclose private instream flow claims, while water user groups want to ensure that private instream rights do not constrain their future options.

Only in Alaska has a western state legislature explicitly empowered the private sector to participate in an instream flow program as a rights holder. The Alaska Water Use Act allows any person to reserve a quantity of water for stream or lake level maintenance for a number of purposes. These include
protection of fish and wildlife habitat, migration and propagation; recreation and park purposes; navigation and transportation; and sanitary and water quality purposes.\[22\] To date, however, no private instream flow rights have been reserved in Alaska. Although a small number of applications have been received by the state, they were found to be procedurally deficient.

B. COORDINATING WATER USE AND RELEASES

Because most states prevent the private sector from appropriating instream rights, advocates of free-flowing waters have looked to alternatives to promote their goals. One option is to purchase and dedicate water rights to the state for instream flow protection, but this is often expensive. In the Colorado Rockies above Denver, a 10 cfs senior irrigation right would sell for more than $1 million under current market conditions. Although water rights in other parts of the West generally sell for less than in Colorado, purchases for instream flow maintenance are prohibitively costly in most instances.

In lieu of purchasing water rights, some advocates have negotiated to induce reservoir owners to alter their operations in order to enhance instream flows during critical times. This strategy is particularly applicable in the West since one-quarter of all the farmland in the region is served by federal Bureau of Reclamation reservoirs. In addition, scores of private reservoirs are scattered throughout the region, providing opportunities for innovative operating criteria that promote
instream resources.

Examples of this strategy have occurred on the Rio Chama in New Mexico, an area devoid of state-recognized instream flow rights. On the Rio Chama, a river heavily fished and rafted, recreational users negotiated with owners of water in an upstream reservoir to alter their operating criteria to maximize releases of stored water on summer weekends. This arrangement did not cost the water owners anything since they were able to recapture the water for subsequent beneficial use in a downstream reservoir—and the commercial rafting industry and recreational users received enhanced opportunities on weekends.

High in the headwaters of the Rio Chama, another arrangement was made by fishing interests with the Bureau of Reclamation to promote instream flows. The Bureau stores water in Heron Reservoir imported from the Colorado River basin for delivery to Albuquerque and other Rio Grande basin users. Pursuant to contracts with the Bureau, the users must take delivery of their water by December 31 or lose it. Since many contractors did not request deliveries until close to the deadline, December found the Rio Chama with very high flows followed by extremely low flows during critical winter months. This release schedule proved detrimental to the local trout population, and talks with fishing interests commenced to persuade the Bureau to extend the delivery deadline into April. An agreement was reached which results in no harm to the Bureau, provides more breathing room to water contractors, and enhances winter flows in the Rio Chama.

Throughout areas of the West, alteration of reservoir
operations may prove useful to instream resources. Also, opportunities for enhancement may exist even in those locales without reservoir storage. For example, instream flows could be enhanced simply by moving the place of use or point of diversion of a senior irrigation right further downstream. Also, arrangements could be made, where needed, with irrigators to defer diversions during critical dry spells to enable the survival of local fish populations. Under this arrangement, paying the irrigator for crop damage during infrequent drought events would be far less expensive than purchasing the permanent water right.

Where none of these strategies suffice to adequately protect instream resources, free-flowing water advocates have been assessing and, in some cases asserting their ultimate tool—the Public Trust Doctrine.

C. ASSERTING THE PUBLIC TRUST

The Public Trust Doctrine is perceived by many westerners as the vehicle through which the public interest in fully appropriated streams can be reestablished without costly expenditures. Others view it as an underhanded means of sidestepping constitutional protections and taking the vested property rights of farmers and other senior water users. Each attitude reflects the understanding that the doctrine indeed yields the potential for greatly enhancing instream flows in the western states.

The roots of the Public Trust Doctrine reach into English
common law where the sovereign could not prevent the people from using tidelands and coastal waters for fishing and navigation needed for the public good. This concept was carried into American jurisprudence, and constrained state governments from turning over coastal lands to private enterprises to the detriment of the public needs in these areas. Then in 1983, the California supreme court applied this public trust concept to inland waters, setting off both considerable hope and consternation in various westerners who wondered if it would be applied in their states as well.

The California supreme court in its 1983 decision ruled that Los Angeles' diversions from tributaries of Mono Lake were subordinate to the public values supported by the lake.[23] To the extent that the diversions were lowering the lake level and destroying important public values (e.g. bird habitat, scenic beauty), the diversions should be curtailed. Under the Public Trust Doctrine, California as the sovereign had no right to issue permits for water diversions that undermined the public values entrusted to the state on behalf of its citizens. The court remanded the case for a determination of what level of flow was needed in the tributaries to ensure maintenance of the public trust values in Mono Lake.

The Mono Lake decision threw open the door to the reallocation of water resources from historic uses to instream flows in the West. In most western states, however, the courts have not ruled on whether the Public Trust Doctrine applies to protecting local inland waters. Only in Idaho has the state
supreme court followed the lead of California in explicitly recognizing the strength of the doctrine. In applying the doctrine, the Idaho director of water resources recently demonstrated how the public trust may influence the maintenance of instream flows in that state. In approving a junior instream right under the state's streamflow appropriation program, the director explained the elements of the Public Trust Doctrine in Idaho:

"The waters of the natural streams, springs and lakes within the boundaries of the state of Idaho are a public trust resource.... The state as sovereign, or an agency authorized by statute to exercise the powers of the state, may grant rights to the use of the public trust resource, but any grants remain subject to the public trust. This duty is a continuing duty, which may take precedence over vested water rights."[24]

The director, after stating that the junior instream right was currently subordinate to existing diversionary rights, retained jurisdiction over the case for future review under the Public Trust Doctrine. He concluded that this review may affect vested water rights water if existing diversions later were shown to contravene the public values supported by the instream flow right.
V. PROTECTIONS UNDER FEDERAL LAW

The preceding sections have demonstrated the various strategies invoked by states, Indian tribes, and private interests to promote free-flowing waters. A description of instream flow protection is incomplete, however, without a look to the federal government. Not only may federal agencies apply for instream rights under the laws of several western states, but independent avenues exist under federal law for agencies to establish strong instream resource protections. Opportunities spring from federal permitting programs, environmental statutes enacted by Congress, and the reserved water rights doctrine.

A. LICENSING AND PERMIT CONDITIONS

Federal permits or licenses must usually be issued prior to the development of new water diversion and storage projects. If the project involves water developed on or from the National Forests, application must be made to the Forest Service for a permit to construct diversion and storage facilities. In issuing a permit, the Forest Service requires that natural streamflows be allowed to flow by or through the structure in order to maintain fisheries, recreational opportunities, and other uses important to forest users. If hydropower is part of a water project, the Federal Energy Regulatory Commission becomes involved irrespective of whether the project is on federal lands. FERC, in issuing hydropower licenses, generally includes conditions that ensure adequate bypass flows for instream resource protection.
The U.S. Army Corps of Engineers undertakes a similar, although generally less stringent review prior to issuing its 404 permits for works such as dams placed in navigable waterways.

B. SECONDARY EFFECTS OF ENVIRONMENTAL STATUTES

In issuing permits or taking other actions, federal agencies are guided by Congressional enactments to protect the environment. Key among these is the Endangered Species Act which has no explicit provisions for instream water rights but by implication can have significant effects on water diversions and use in the West. Because the Act prevents federal agencies from adversely affecting endangered species and their habitat, federal actions (including the issuance of permits) must not cause the diminishment of instream flows that support endangered species.

An example of the way that the Endangered Species Act can promote maintenance of instream flows arises in western Colorado. In the Colorado River, species of endangered fish persist including the humpback chub, squaw fish, and bonytail chub. The U.S. Fish and Wildlife Service has worked on developing plans for the preservation and recovery of the species in the upper Colorado River basin, including assessments of establishing minimum streamflow levels. Any new water diversions in this region will have to conform to instream flow requirements or other mitigation measures mandated by the final recovery plan.

The protections potentially afforded instream flows by the Endangered Species Act have also been demonstrated in the South Platte River basin of eastern Colorado. Irrigators who wanted to
build a reservoir on a tributary of the South Platte were denied their initial request for a 404 permit from the Corps of Engineers due to potential effects on endangered species habitat. The reservoir itself did not affect any on-site endangered species, but the capture of spring runoff that would otherwise flow downriver to the mainstem of the Platte River was deemed a potential threat to whooping crane habitat in Nebraska. High spring runoff on the Platte helps maintain the habitat needed to keep whooping cranes safe from predators during their journey through Nebraska. Consequently, issuance of the Corps 404 permit is contingent upon the irrigators demonstrating that the effects on the whooping crane by the reservoir project will be insignificant or mitigated.

Although the Endangered Species Act is the most far-reaching example, instream flow protection is potentially generated by other federal environmental statutes as well. For instance, instream flows may need to be maintained in order to dilute non-point source pollution or other contaminants controlled under the Clean Water Act. The Salinity Control Act of 1974 also creates pressures to maintain streamflows, primarily in the headwaters of the Colorado River that dilute high salinity levels downstream.

C. RESERVED WATER RIGHTS

A final—and potent—method under federal law for streamflow protection involves the establishment of senior instream rights on federal lands. As mentioned in Section III, the U.S. Supreme
Court in 1908 stated that water rights were reserved for tribal use at the time that Indian reservations were created. In 1963, the Court applied this concept of reserved water rights to non-Indian federal reservations carved out of the public domain (national forests, military bases, national monuments, etc.).[25] Consequently, scenic national parks, national wildlife refuges, and other federal lands needing natural water bodies to achieve their purposes carry instream water rights. Consumptive water uses which began diverting after the creation of the federal reservation are legally subordinate to the associated federal instream flow needs.

In 1976, the Supreme Court demonstrated the strength of this federal reserved rights doctrine in Cappaert v. United States.[26] This case involved the protection of a natural pool of water in Devils Hole National Monument (near the Nevada/California border) which supports the Monument's feature attraction--the desert pupfish. In its ruling, the Court restricted groundwater pumping by nearby irrigators that was lowering the pool to the detriment of the pupfish. The Court ruled that the Monument's reserved water right was senior to the injurious groundwater pumping since the irrigation began after establishment of the Monument.

While the Cappaert controversy was brewing, the United States also sought to establish reserved instream water rights on its national forest lands. The Forest Service claimed that instream flows were needed to support the purposes for which Congress had established the national forest system. Reserved
instream water rights were therefore created concurrently with the designation of federal lands as National Forests. However, in 1978 the Supreme Court rejected this argument stating that Congress's original intent in establishing the national forest system in 1897 did not include the protection of instream resources.[27] Instead, the primary purposes of the national forests were to promote timber supplies and to protect forested watersheds to prevent flooding and facilitate the delivery of reliable water supplies. The original purposes, the Court concluded, did not include recreational or environmental amenities.

In response to this defeat, the Forest Service undertook to establish instream flow rights based on the Supreme Court's finding that a primary purpose of the national forests was "securing favorable conditions of flow"[28] to prevent flooding and to deliver reliable water supplies to downstream users. The Forest Service's new instream flow claims are based on the fact that instream flows help transport sediment which could otherwise clog stream channels to create erosion and flooding problems. Without viable stream channels maintained by instream flows, the national forests could not secure favorable conditions of flow for downstream users as mandated by Congress. This argument is currently being asserted by the Forest Service in several western states, with ultimate resolution of the issue unclear.

Another unresolved instream water right issue involves federal Wilderness Areas. After the federal government failed to claim reserved instream rights for designated Wilderness Areas,
Sierra Club filed suit to compel the United States to assert these rights in state water adjudications. The reviewing court agreed with Sierra Club [29], and government officials are currently assessing ways to implement instream protections in Wilderness Areas with a minimum of disruption to current and future water users.

VI. EMERGING ISSUES

Conflicts over federal water rights demonstrate the high level of controversy that surrounds the protection of instream flows in the West. Whether created by state, tribal, federal, or private entities, instream flow programs rarely are established free of detractors in the water user community. An understanding of each side of the issues surrounding instream resource protection is important in order to adequately prepare for the future.

One area of controversy involves setting the quantity of flow that is needed in particular instances to support instream resources. In most western states, the protected amount is tied to flows needed by fish species. Many different models are applied, however, to establish the quantity needed for fish, with little agreement as to the details of which approach is best. Also, different value judgments compete when setting the quantity of an instream flow right. Should the level maintain optimum species production or simply ensure population survival? These
technical and policy questions are complicated further when the analysis includes instream flow levels needed to dilute contaminants, promote recreation, maintain riparian habitat, or to transport sediment.

Eventual agreement on the appropriate quantity of an instream flow right is the beginning, rather than the end, of the process to protect instream resources. Instream water rights are only pieces of paper until a commitment is made to enforce the rights and to physically protect streamflows from new diversions. Such enforcement, however, is more easily said than done. Gaging stations to measure when the streamflow drops below the specified level are generally needed, as are personnel in sufficient numbers to monitor the gages and to curtail junior diversions when the instream flow rights are injured.

To ease the difficulties of enforcement, states are assessing and in some instances implementing innovative methods to facilitate the process. For example, in central Washington, the state has installed a satellite telemetry system to beam streamflow data to the enforcement agency which utilizes a toll free phone-in system to inform junior irrigators when they must curtail diversions. In Colorado, state personnel monitor private applications for changes in water rights to spot potential water transfers that could injure protectable instream flows.

Procedural difficulties in enforcing instream flow rights are compounded by complex policy issues. Should a proposed water development be legally foreclosed by instream flow rights even when the potential injury to the right is too small to be
measureable in the stream? An example of this difficult issue would occur where a proposed cluster of mountain cabins would deplete flows by a maximum of 0.01 cfs on a stream with a 10.0 cfs instream water right. Under the laws of many western states, the holder of the senior instream right is entitled to estop the new diversion regardless of the quantity of the injury. Some commentators would argue that preventing the construction of new cabins based on undetectable injury to instream flows is poor policy for the economy of the state. Others would point out that if instream water rights were only selectively enforced, the incremental effect of dozens of new developments would eventually injure the instream resources protected for the public good.

These issues of enforcement help explain why state legislatures have generally chosen to prevent the establishment of private instream water rights. Most legislatures have given to state agencies the exclusively role to weigh all economic, social, and environmental factors in establishing and enforcing the rights. This desire to retain control and balance also fuels the conflicts occurring between state governments and their tribal and federal counterparts regarding instream water claims. Politically powerful water user groups who oppose strong instream flow programs are reassured when their state agencies, rather than federal, tribal, or private entities, are overseeing instream water right decisions.

Perhaps the highest level of controversy and emotion surrounding the issue of instream flow and control accompanies discussions of the Public Trust Doctrine. It is this doctrine
that carries the biggest threat to consumptive water interest not only in terms of controlling instream flow programs, but also in retaining control over their water rights. Should the public trust values in free-flowing waters be asserted to reestablish depleted streams at the expense of vested diversionary rights, or should the public have to pay to supplement important instream flows?

The answer to this and other difficult questions will face judges, state officials, tribal leaders, federal agencies, and others involved in shaping the future of western water law. As the 19th century mentality of maximum resource exploitation slowly gives way to an understanding of the need for conservation and wise use, answers that once were easy are increasingly complex. Appropriate solutions demand an understanding of the implications of actions on cultures, economies, and the natural ecosystem. They also call for cooperation—a cooperation among the many people who will face the challenges posed by instream flow protection into the 21st century.
APPENDIX A

SUMMARY OF STREAMFLOW PROTECTION EFFORTS OF THE WESTERN STATES

ALASKA: Alaska is the only state whose enabling statute empowers private individuals, as well as governmental agencies, to hold instream water rights. The statute also embodies a broad category of purposes that may be supported by instream rights, including fish, wildlife, water quality, recreation, and navigation. However, no systematic protection program is mandated by statute, and instream water rights are reviewed every 10 years to reassess if they are still in the public interest.

ARIZONA: State statutes do not carry any explicit provisions for instream flow protection. However, a 1976 Arizona Court of Appeals ruling interpreted that a statute deeming recreation, fish, and wildlife as beneficial uses of water impliedly sanctioned instream water rights. In the 1980s, a number of private applications for instream water rights were submitted to the Arizona Department of Water Resources, two of which were approved. The Department is currently considering rules for handling additional instream flow claims.

CALIFORNIA: Legislation to establish a comprehensive instream flow right program was defeated in past years. Consequently, the state relies primarily on bypass flow conditions in new water use permits to protect instream resources. In 1987, the legislature passed a bill to improve enforcement of the instream flow bypass conditions on new water use permits. The state's wild and scenic river law also provides a means to protect certain flows from excessive diversions. In addition, the 1983 recognition of the Public Trust Doctrine by the California supreme court carries potential for major instream flow protections.

COLORADO: Since 1973, the Colorado Water Conservation Board has implemented a program of establishing instream water rights to "protect the natural environment to a reasonable degree." Pursuant to statute, instream water rights have been set on over 6,500 stream miles, primarily based on protecting fish populations. Recent amendments to the enabling legislation consolidated state power over instream flows in response to private and federal attempts to establish instream water rights.
IDAHO: A long history of instream flow protection began with a 1925 act to protect lakes for their recreational use and scenic beauty. The major instream flow program was enacted in 1978, empowering the Idaho Water Resources Board to apply for and hold instream water rights on behalf of the people. Slightly more than a dozen such rights have been established, with major claims existing on the mainstem of the Snake River. The state has also recognized the Public Trust Doctrine as a factor in streamflow protection.

MONTANA: 1969 legislation was enacted for state appropriation of instream flows for twelve prime fishing streams. The program now operates under a 1973 act allowing the state to legally reserve quantities of flow needed for the public interest. Such water reservations exist in the Yellowstone River basin for instream resource protection, with other areas currently being assessed.

NEVADA: A 1969 amendment recognized recreation as a beneficial use of water, although no instream flow rights or protection programs are explicitly authorized under state law. However, the state engineer recently approved an instream flow right application filed by the federal Bureau of Land Management for important recreational streams. The state engineer's approval of the application is under judicial review.

NEW MEXICO: No legislation exists authorizing instream flow protection, and the state engineer enforces the policy that a water right cannot be established in New Mexico without a physical diversion of water. A 1987 bill to allow the transfer of irrigation rights to instream purposes passed the house of representatives but failed to clear senate committee.

OREGON: Past laws have withdrawn specified streams from further off-stream appropriation and have allowed the state water agency to administratively establish instream flow levels to support aquatic life and minimize pollution. These administrative levels were strengthened in a 1987 bill that turned them into enforcible public water rights. The 1987 legislature also enacted a bill that would dedicate to instream flow up to 25% of the water that irrigators salvage through conservation efforts.

UTAH: Until 1986, streamflow protection was authorized only through the conditioning of new water use permits, a step that was rarely taken by the state water agency. The new statute empowers the Division of Wildlife Resources to accept gifts, exchanges, or acquisitions of senior water rights and transfer
them to instream rights.

WASHINGTON: The state program began in 1949 with provisions for conditions on new water use permits to protect fish populations. The current program protects flows for fish, wildlife, recreation, scenic, aesthetic, and environmental values. The administering agency adopts instream flow regulations (which create instream water rights) after a basinwide assessment of need. The agency implements and enforces these rights through conditions on new water use permits.

WYOMING: In 1986, Wyoming adopted an instream flow program to establish instream rights for the minimum amounts "necessary to maintain or improve existing fisheries." The statute also authorizes the state to acquire existing water rights by voluntary transfer or gift for instream flow use. The appropriation of instream water rights involves a complex procedure in which the Game and Fish Commission assesses the quantity of flow needed and forwards the information to the Wyoming Water Development Commission and the Economic Development and Stabilization Board. The Board then applies for a right to the state engineer.
FOOTNOTES

1. See e.g. Coffin v. Left Hand Ditch Co., 6 Colo. 443 (1882); Irwin v. Phillips, 5 Cal. 140 (1855).

2. California Water Code, Sec. 1243.

3. Idaho Constitution, Art. 15, Sec. 3.


5. Alaska Statutes, Sec. 46.15.145(a).

6. Oregon Revised Statutes, Sec. 538.300.


8. Revised Code of Washington, Title 75.

9. Utah Code, Sec. 73-3-8.

10. Idaho Code, Sec. 67-4301. Also see Sec. 67-4304.


12. Alaska Statutes, Sec. 46.15.145(f).

13. Utah Code, Sec. 73-3-3.


15. Wyoming Statutes, Sec. 41-3-1007.


18. Navajo Nation Water Code, Sec. 703(m).

19. Fort Peck Tribal Water Code, Sec. 603(i).


22. Alaska Statutes, Sec. 46.15.145(a).

24. *In the Matter of Application for Permit to Appropriate Water No. 36-7200, Memorandum Decision and Order of the Director, Idaho Department of Water Resources, July 22, 1987*.


28. United States Code, Title 16, Sec. 475.