WESTERN PERSPECTIVES ON THE CLEAN WATER ACT

A Western Governors' Association Report Based on

THE CLEAN WATER ACT ROUNDTABLE:
WESTERN PERSPECTIVES

February 7, 1992

Co-Sponsored by the Western Governors' Association, Western States Water Council, the Western Senate Coalition, and the Environmental Protection Agency

Funded by the Environmental Protection Agency

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DISCLAIMER

The following report is based primarily on a roundtable of sixteen western officials and practitioners in water management, approximately forty federal agency, White House, and senior congressional committee staff, environmental groups and business representatives that was held in Washington, D.C. on February 7, 1992 ("The Clean Water Act Roundtable: Western Perspectives"). The six subject areas that the roundtable focussed on were chosen in part because EPA was reviewing these "arid area issues" internally for the CWA reauthorization. They were also determined to be manageable for a one-day roundtable. Because of time and space constraints, this roundtable was not an attempt to comprehensively cover every difference between the West and the East and their implications for the CWA. It was an attempt to share information and find themes in western water quality management, and to demonstrate how some of these manifest themselves under federal law.

Participants' information, anecdotes, points and concerns provide the bulk of the material in the report for the six focussed discussions. Because of the participants' level of familiarity with the issues, additional background or clarifying information is incorporated into the report to make it useful for a broader audience. As a result, professionals in the field of water quality management may wish to skip over the background section that sets the stage for the subsequent discussions. Also, to avoid duplicating information, the report sequentially builds on its discussions.

Although the information in this document has been funded wholly or in part by the United States Environmental Protection Agency under assistance agreement R819584010 to the Western Governors' Association, it may not necessarily reflect the views of the Agency and no official endorsement should be inferred. Likewise, the following report does not represent the views of any one individual or organization.

FOREWORD
by
Governor Fife Symington

The February 1992 "Clean Water Act Roundtable: Western Perspectives" was an effort by western governors to seize the opportunity to avoid problems with federal legislation by proactively bringing a broad spectrum of players together for an educational and problemsolving policy discussion. With its cosponsors, the Western States Water Council (WSWC), the Western Senate Coalition (WSC), and EPA, WGA convened approximately 60 participants to discuss ways to work together to develop strong, workable water quality protection in the West.

The idea for the policy roundtable emerged from discussions between Administrator Reilly and my colleagues Mike Sullivan and George Mickelson, past chairmen of the WGA. Their initial contact came after two representatives from EPA headquarters made a presentation to western state water directors in January 1991, on EPA's efforts to prepare for the reauthorization. It was clear that EPA was preparing to deal with some of the tough, unresolved issues regarding water quality protection. However, despite the fact that new policy directions being discussed internally would profoundly effect the West, little consultation had occurred with western states to learn what the states were already doing and how the goal of water quality protection could be achieved most efficiently and effectively in the region with the fewest unintended consequences.

Administrator Reilly responded to this concern with a request to all EPA western Regional Administrators to identify areas where EPA's current statutes and programs do not fit the conditions and needs of the West. Administrator Reilly discussed these with western governors at their annual meeting in July 1991, and requested that the governors work with EPA "to develop answers that are as responsive as possible to the conditions and needs of the West."

The roundtable format was chosen to encourage information discussions that would help shape workable policies and programs under the CWA. Bringing westerners from state and local governments to Washington, D.C. to meet with agency and congressional staff for a one day roundtable was an opportunity to more fully familiarize the D.C. participants with western water law, western states' programs and statutes, and regional hydrologic, climatologic, geomorphic, and demographic differences and to discuss how unintended environmental consequences can occur absent this deeper understanding. It was also an opportunity for westerners to learn more about the Hill process, the mandates and goals of the Washington, D.C. policymakers, how they view the Clean Water Act (CWA) reauthorization issues, and what they may propose as tools to deal with remaining water quality problems.

I would like to thank the sixteen westerners and the 40 federal agency, White House, and senior congressional staff that committed their time and energy to this roundtable exchange of ideas, concerns and solutions. Particularly, I would like to thank Chuck DuMars, Lorna Stickel, Dick Gross, Bill Wiley, Gale Hutton, Dan Sagramoso, and Ed Anton for the energy and thought that they put into presenting specific subjects to set the stage for discussion. Also, I thank John Kelly of my staff, and EPA's Deputy Assistant Administrator for the Office of Water, Martha Prothro and Associate Administrator for the Office of Regional Operations and State/Local Relations, Laurie Goodman, for chairing the meeting. Finally, I want to thank the WSWC for their technical and staff support, EPA for providing funding for this effort, and the WSC for their assistance.

EXECUTIVE SUMMARY

On February 7, 1992, representatives from western governors' offices. western water managers and practitioners, and local officials met with congressional and federal agency staff for a dialogue on wetlands and water quality protection in the West with an eye towards the reauthorization of the Clean Water Act (CWA). Representatives from environmental groups and business were also in attendance. Together the group explored unique characteristics of the West which may have implications for how the West can meet the goals of the Clean Water Act.

Discussion was structured around six subject areas: the quantity/quality interface, wetlands, ephemeral streams, nonpoint source pollution, water reuse and water efficiency, and stormwater.

The following themes emerged from the roundtable:

- Flexibility is needed in the CWA to address local conditions in different types of ecosystems.
- Resources are needed to make this work -- to conduct the research for a better understanding of the local and regional conditions.
- The process needs to be less adversarial with more cooperative work being done up-front between the states and the federal government.
- Processes should be streamlined when possible.
- There needs to be more sensitivity by EPA and Congress regarding the perverse results that occur when applying a national program designed for wetter parts of the United States to the drier West.
- Regional plans and standards should be considered to improve wetlands and water quality protection.
- Coordinated planning among agencies is needed.
- More holistic watershed approaches make sense for environmental planning and management.
- The local manifestation of policies and programs should pass the "does it make sense" test and the "does it achieve the goals" test.

- The public interest needs to be addressed in water quality protection. This means raising peoples' consciousness and incorporating all players into the process.

- Decisions should be moved to the local level whenever possible.

Brief summaries of the issues and suggestions discussed under the six specific subject areas are as follows:

Water Reuse and Efficiency

Today, competition for resources has made greater water use efficiency an imperative for all western states. As a result, the western states have been enhancing their legal, policy, and administrative systems to respond to the needs of these changing conditions. A major concern in the CWA reauthorization centers on the possibility of new federal programs, standards, or requirements which could counter or restrict efforts of the states implementing their own water use efficiency and water reuse programs.

Regulatory and management schemes need to provide ways to balance wetlands maintenance and groundwater recharge with water efficiency and conservation programs. Further, efficient water use and changes in federal and state law need to be carefully planned to avoid the inadvertent loss of public benefits such as instream flows. Guarding against third party impacts when pursuing water reuse and efficiency, however, can sometimes require regulatory flexibility to creatively address legitimate needs while protecting the environment. This should be supported in the CWA reauthorization.

Federal agencies have an important role in water conservation since they influence or control large amounts of water and land in the West. Their commitment to nonpoint source control and riparian land management is vital to achieving conservation objectives particularly as this relates to meeting water quality objectives.

The Water Quality/Quantity Interface

Western states are increasingly bringing water quality and quantity concerns together in their management of water resources. In an effort to make water quality protection more holistically sound, particularly in the arid southwest where a standards-based approach has shortcomings, a suggestion was made to replace standards-based approaches with water quality protection based on human and environmental risks to protect the natural ecosystems, or to adopt the idea of net environmental benefits for decisionmaking in the water quality standards area.

In addition, because of some significant natural differences in the West, participants stressed the importance of good research. Research is needed to both determine regional problem

pollutants as well as to verify that these pollutants are even available to the environment (as opposed to being chemically bound and unavailable). The interest is to provide flexibility to target specific problems or pollutants with appropriate standards that protect the local ecosystems, not to find a way to relax standards. Different standards ought to apply to ecosystems which have adapted and evolved under different natural conditions.

Concerns were expressed about congressional proposals of the 102nd Congress, particularly about addressing hydromodification under the CWA. The CWA lacks necessary balancing provisions for competing water needs and uses, including competing environmental needs and uses. There are cross-media implications to flow regulations that are not well addressed through the CWA.

Ephemeral Streams

A subissue of the quantity/quality issue is that of the treatment of ephemeral streams under the CWA. Ephemeral streams are considered "waters of the United States" under the CWA, but have water flowing in their channels only following a rainstorm. Otherwise they are dry river beds. This issue is of particular importance to the arid southwest since most of their streams are not "fishable/swimmable" by virtue of their infrequent flows. Nevertheless, states have to do an attainability analysis for each stream to get their state standards adopted by EPA. This may not be a very effective use of limited public dollars and staff resources, particularly in a state like Arizona with 83% of its "waters of the U.S." being ephemeral.

To be relieved of its obligations to do attainability analysis for a stream, the state has to prove that there is no water in the river. EPA was urged to find a simple way to get past this initial requirement of "finding that there is no water in the river" (since the majority of the time ephemeral streams are dry) so that states can move on to the more significant issue of protection of the environment. This situation demonstrates the need for understanding of regional differences and flexibility to respond to these under the CWA.

Wetlands

Wetlands in the West are diverse. Large portions of western wetlands and riparian areas do not meet the vegetation, hydrologic or hydric soils criteria for being identified as wetlands under recent federal manuals, particularly the 1991 revised manual. Therefore, there is limited federal authority for insuring protection of these areas. Nevertheless, these wetlands and riparian areas provide wetland functions, and are important to environmental protection generally and to the basic goals of the CWA in terms of water quality protection and fish and wildlife habitat specifically. Specific policy recommendations provided at the roundtable include:

- No-net-loss should be the national wetlands goal.
- There will need to be flexibility that allows programs to be implemented at different rates in different regions.
- There needs to be sensitivity to regional variation. This could be done by developing regional manuals and/or regional management plans.
- Consistency among federal, state and local programs ought to be achieved. State efforts should be encouraged.
- Full or partial state assumption of the 404 permitting program should be encouraged.
- A broad range of non-regulatory incentives should be encouraged, such as subsidies, tax incentives, conservation easements, and regulatory programs.
- There should be coordination among federal agencies.

Participants also agreed that there is a need for a more proactive, comprehensive wetlands protection program.

Nonpoint Source Pollution

Nonpoint source (NPS) pollution is still responsible for most non-attainment of water quality standards nationwide. The types of NPS pollution vary widely throughout the country. From stormwater runoff to abandoned mine drainage, states are trying to address this major problem.

States highlighted state primacy, flexibility, and funding as top concerns under the reauthorization of the CWA. They also expressed a concern that the NPS program will be overhauled prematurely during reauthorization instead of learning from the results after letting the efforts of the past five years come to fruition.

Roundtable participants also expressed their belief that states have grown beyond demonstrating best management practices. States recognize what the problems are and know their solutions. Too often the limitation is resources and not a lack of understanding of the problem. Some states are trying to stretch limited resources while addressing cumulative impacts of polluting activities by switching to a watershed approach for environmental management.

A number of federal agencies have a role in water quality protection for NPS pollution. There is a lot of information and experience in many of these agencies. There are also

different missions and mandates motivating them. Therefore, it is critical that there is an adequate coordination mechanism put in place among the federal players that are involved and are becoming involved in the NPS arena.

Stormwater

The CWA mandates that cities, towns, counties, departments of transportation, flood control and stormwater agencies serving populations of 100,000 or more must clean up their stormwater discharges. The program will be expanded in the near future to smaller jurisdictions. The program is ambitious and poses a resource problem for both the federal government and the states.

Many of the requirements under the stormwater program do not have a high cost-benefit ratio (high payoff in terms of environmental benefits and yet they demand large sums of public dollars which are not available. There are also engineering and technical obstacles to compliance in some areas. The financial and technical feasibility of the current regulations coupled with the uncertainty of actual environmental gains from such efforts raises questions about whether weighing the comparative environmental risks posed by different types and sources of pollution might be a better approach to determining resource and staff allocation for water quality protection.

In S. 1081 from the 102nd Congress, it is proposed that stormwater discharges meet numerical state surface water quality standards. Costs, along with technical limitations, inappropriate water quality standards due to faulty modeling assumptions for the West, and sampling difficulties make this proposal particularly problematic for the arid southwest.

SETTING THE STAGE

In February; 1992 the Western Governors' Association, the Western States Water Council, the Environmental Protection Agency and the Western States Foundation convened a roundtable on western perspectives on the Clean Water Act (CWA) with an eye towards its reauthorization. Sixteen representatives from western governors' offices and western water managers and practitioners from both state and local governments met with approximately forty federal agency, White House, and senior congressional committee staff for a dialogue on wetlands and water quality protection in the West. Representatives from environmental groups and business were also in attendance.

Together the group explored how they could work together on the front end of policy development for the CWA and discussed the unique characteristics of the West and their policy implications for how the West can meet the CWA goals.

The roundtable was structured around six subject areas: the quality/quantity interface, wetlands, ephemeral streams, nonpoint source pollution, water reuse and water efficiency, and stormwater. To set the stage for these discussions, Professor **Chuck DuMars** of the University of New Mexico Law School provided a review of western water law and changes occurring at the state level. The following report excerpts pieces of this summary, provides a brief review of the physical, economic, demographic, and legal setting in the West to frame the roundtable discussions, and then goes into greater detail on the specific subject areas. Each section provides general background on the issue followed by specific points and concerns aired at the roundtable.

BACKGROUND

The West is different from the East in many ways. Its diverse landscapes range from high alpine ecosystems to deserts, from savannahs to lush coastal zones, from dense cities to barren expanses. It has the vast majority of the public lands in the country. In general, there are many physical, biological, economic, demographic, legal and jurisdictional differences that have implications for water quality management and meeting the goals of the CWA.

Physical Characteristics

Geology and Soils

The West's terrain is geologically young. Its topography and often shallow soils contribute to high levels of erosion and runoff. Naturally occurring heavy metals and other trace elements are carried to water courses in this runoff. This can cause western river systems to have natural background levels that are out of compliance with water quality standards.

For example, a high background level of arsenic exceeding water quality standards at the confluence of the Missouri and Mississippi Rivers was determined to be the result of natural geothermal activity in Yellowstone Park.

In addition, many arid and semiarid environments also have high natural levels of salinity in their soil. The sporadic, "flash" runoff that characterizes these environments will often contain high concentrations of both suspended and dissolved solids which are added to the perennial river systems. It is estimated, for example, that natural processes contribute about two-thirds of the total annual dissolved salt carried by the Colorado River. For portions of this river, this load may exceed 1,500 parts per million total dissolved solids, or three times the recommended level for municipal drinking water.

Climate

The West has a diverse range of climates: from very wet in the Pacific northwest, to the very dry of the southwest. Coastal regions receive more precipitation than the inland regions. Some of this rain runs off into the ocean rapidly and is unavailable for traditional consumptive uses. The inland regions of these West coast states see quite different weather patterns than their East coast counterparts. For example, in parts of California it seldom rains and may not even rain much during the winter. Further north, in a normal year, Salem, Oregon may receive the same precipitation as Washington, D.C. However, the distribution is dramatically different. It is not unusual for Salem to go for sixty days in the summertime without measurable precipitation. This influences the length of time soils will be saturated or inundated which has policy implications for wetland determination.

The duration of the precipitation, seasonal patterns, evaporation rates, effects of the jet stream and other factors have profound effects on the presence and nature of water supplies in the West. This has shaped how western states secure their water supplies. With snowmelt from the West's high mountains and otherwise irregular precipitation being the predominant source of water in the West, dams have been constructed over the years to control flooding and to store water for multiple uses. These factors have implications for the implementation of the CWA.

Biological Characteristics

The range of western river flows and the fish and wildlife they support varies dramatically from the legendary salmon runs of the Pacific northwest and Alaska to the ephemeral streams of the southwest, many of which have never supported fish. Those streams that do support fish in alpine, subalpine, arid and semiarid environments, are usually harsh environments for the most durable species that can survive the "feast or famine" of western water flows. Species that endure these environments tend to have some form of biological adaptation to survive their fluctuating environment such as the ability to migrate, to

complete a full life cycle in only days, or to survive the heavy sediment loads.

It was not until recent history as part of the settlement movement to bring people to drier parts of the West that natural systems were altered and exotic species were introduced to the systems so that there would be a self-sustaining food source.

Economic History

The West's history is filled with economic boom and bust. Usually these economies were based on extractive industries such as mining much of which took place on public lands. In the wake of the turn-of-the-century mining practices, there remain many abandoned mines with acid drainage, Superfund sites, and other environmental nightmares. These present some of the toughest environmental management challenges for the West because of their diffuse nature, their toxic effects on both surface and groundwater, and frequently, their absence of responsible parties.

Jurisdictional Characteristics

The vast majority of the public lands in the country are in the West. Many western states have at least 50% federal ownership, and some have a much higher percentage such as Nevada, with 87% of its lands under federal ownership and control. The joint management challenges for water quality on these lands are great.

There are also numerous Indian reservations in the West. These pose a variety of different joint management challenges as well. The Dawes Act, which encouraged non-Indian ownership of reservation land, has led to checkerboarded jurisdiction on many reservations in the West. Also, Indian tribes, as an aspect of their self-governing status, have authority over their water on the reservations. Assertion of this authority varies from reservation to reservation and tribes are expanding their capacity and management activities. Tribes asserting more authority over management of their water resources need to work with state and federal management agencies to coordinate allocation of supply, protection of water quality, and stewardship over the hydrologic resources.

Demographics

The West is now the most urbanized region in the Nation. Of the 76 million people who live in the 17 western reclamation states, 60 million, or 80 percent, live in metropolitan areas. This percentage climbs to 81 percent in Washington, Colorado, and Texas, and to 95 percent in California. In the 1980s alone, western cities grew at almost twice the national rate. Given the cities' increasing political strength as a result of these growth rates and the range of increasing demands on limited, often imported, water supplies, the complexity of water management has never been greater.

Western Water Law

As is frequently said, "Water means life in the West." Western water law reflects the relative scarcity of water in the West as well as the historic public purposes of promoting economic growth and settling an arid region. Unlike the East with its relatively abundant precipitation and therefore numerous water courses and available groundwater resources, the West's climate and geology often required water diversions for year-round settlement and economic activity. The West's water law therefore evolved differently from eastern riparian law by providing security of supply through water rights and adopting a different underlying doctrine -- the prior appropriation doctrine.

Designing water quality protection laws that work as intended in the West requires an understanding of the West's complex system of water rights and water law particularly when trying to influence water efficiency and reuse, water quality and quantity interfaces, and in some cases wetlands.

The Prior Appropriation Doctrine

The prior appropriation doctrine embodies three basic principles:

- "First in time, first in right" -- the provision of certainty to those willing to make capital investments that they would have a set amount of water according to their seniority in their acquired water right.

- The "reasonable and beneficial use" principle. To ensure its "place in line," a right to water use required that a volume of water be 1) diverted from its natural water course or withdrawn from an underground aquifer, and 2) put to a reasonable and beneficial use as defined by states. The diversion requirement has been modified by many states since the prior appropriation doctrine was adopted.

- The "use it or lose it" principle. If the water was not diverted and used, or the user was not demonstrating "due diligence" in developing the right, the individual would lose his/her right to use that water after a set period of time.

Water Rights

A water right is a right to use a specific quantity of water from a certain point on a river or from a well, during a specified time or season, for application in a particular place, for a particular purpose, when water is available. It can be lost if not put to the prescribed beneficial use. It is generally an exclusive, valuable right which can be defined, sold, transferred, mortgaged and bequeathed. However, there is no ownership of the resource

until it is actually diverted and continuously applied to a beneficial purpose over some period of time. The state (and, in some cases, tribe) is responsible for the allocation and distribution for use in accordance with constitutional and statutory requirements. For the most part, any waters returning to the hydrologic system, such as irrigators' return flows and cities effluent flows, are the property of the state (not the user) and are again available for allocation.

Water rights can be changed from one type of use to another or from one point of diversion to another but only if there is no "injury" or damage to another water right. These decisions are usually made by a state water court or administrative agency. More and more, determinations of injury involve consideration of third party effects and the public interest. These third parties and interests might be holders of valid rights who are not involved in a transfer, an environmental need or a community value in water. Though protection of the public interest by the states is a principle of western water law, it is acknowledged by state law in different ways by different states.

Western Water Management Today

The demands on western water have changed in many significant ways since the West's system of water management was put into place. Today streams are more fully appropriated; new urban demands tend to dominate in the competition for consumptive use of water; instream uses for fish and wildlife, recreation, and aesthetics have expanded enormously; and Indian water rights, federal reserved rights and habitat for endangered species are playing a bigger role in the management of water throughout the West.

Western water law has particular implications for how these needs can be met. Under a system of water rights, options for meeting competing water demands include transfers of interests in water, salvage and conservation measures, conjunctive use of surface, groundwater and other substitutable supplies of water, and provision of alternative supplies of water for senior users by exchanges and other measures.

States have developed and incorporated other legal and management tools that provide security to existing water rights while meeting new and changing values and demands such as recreation, minimum flow and instream flow requirements, and the value of water to sustain wetlands and riparian areas. Examples of these tools include:

- Storage rights that are maintained for recreational uses.
- Legal provisions that allow appropriations for instream uses.
- Provisions for protests of transfers if the transfers negatively effect the public welfare or don't meet public interest criteria.

- Negative easements to leave water instream.
- Public interest criteria for new appropriations.
- Creation of special management areas, especially for groundwater.
- Enforcement of moratoria on granting of new water rights in some areas.
- Coordination of regulation for water quality/water quantity purposes.
- Renewed/more rigorous enforcement of traditional legal mechanisms such as abandonment/forfeiture laws, beneficial use requirements, etc.
- Public Trust Doctrine[1] provisions.
- Reservoir releases which are coordinated with irrigation to meet fish and wildlife needs.
- Designated rivers or stretches of river as "wild and scenic" under the Wild and Scenic Rivers Act of 1968.[2]
- Minimum flow requirements.
- Broad definition of beneficial uses.
- State protected river designation.
- Conditions in water use permits.
- Water conservation laws and practices.
- Land use laws and practices.
- Stream restoration.

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[1] The underlying principle of the Public Trust Doctrine is that water is a public resource held in trust by the state and when the state allows it to be put to private use it must be with due consideration of the public's multi-faceted interest in water.

[2] The Wild and Scenic Rivers Act of 1968 established a federal-state system of river conservation. The program protects rivers with outstanding scenic, recreational, geologic, wildlife, historical, or cultural values in free-flowing condition.

Management systems around the West continue to evolved to keep pace with the changes. New forums have emerged; water quality and quantity concerns are beginning to be integrated; and the public interest and effects on third parties is in the forefront of decisionmakers' and water managers' minds. Water management is taking on the complex task of balancing interests and needs as supplies are reaching their limits.

ROUNDTABLE DISCUSSIONS

WATER REUSE AND EFFICIENCY

Water reuse and efficiency is not currently addressed under the CWA. However, as demands increase on water supplies and increased use impacts water quality, there has been more federal attention to water reuse and efficiency.

Water reuse and efficiency offer partial solutions to water supply and wastewater problems, and may also provide significant environmental benefits such as leaving water for instream flows and wetlands by reducing overall demands on the natural system. However, specific congressional proposals to reauthorize the CWA[3] contain conservation provisions that concern some western water directors.

At the roundtable, states expressed their concern about possible new federal programs, standards and requirements under a reauthorized CWA. These could counter or restrict efforts of the states implementing their own programs in these areas. Specific to congressional proposals[4] for conservation provisions, there is concern about the adoption of national conservation standards which reduce the flexibility to deal with the diverse nature of western water management particularly related to agricultural practices.

Lorna Stickel, Chair of the Oregon Water Resources Commission, pointed out that efficient use has always been part of the basic principle of beneficial use, which provides western states with the authority to regulate use and eliminate waste. Today, competition for resources has made water efficiency an imperative for all western states because of growth in many urban areas, changes in public attitudes regarding instream values, environmental regulations, and cost associated with water use for both municipal and industrial and agricultural users.

As a result, the western states have been modifying their legal, policy, and administrative systems to respond to the needs of these changing conditions. Stickel illustrated the range of activities and changes that states have undertaken:

- Increased regulation of "beneficial use without waste" through state regulatory programs including upland management in such areas as forest practices;
- Evaluation of the public interest in new water rights;

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[3] Senate Bill 1081 (S. 1081), a bill proposed in the 102nd Congress to amend and reauthorize the Federal Water Pollution Control Act.

[4] Proposals in S. 1081 of the 102nd Congress.

- Changing the definition of reclaimed water so that it can be utilized to meet both needs for water and the regulatory requirements for pollution discharges;

- Allowing transfers and marketing of conserved water to provide private sector incentives for more efficient water use;

- The adoption of conservation legislation and state policy to require water efficient practices in the municipal, industrial, and agricultural sectors;

- A recognition of the need to better coordinate water quality and quantity within state statutes and administrative frameworks;

- New funding incentives programs to either provide education, grants, or loans for water conservation such as Washington State's Clean Water Fund which makes loans for water conservation;

- A growing recognition of using least cost planning in water resources development to internalize the cost of externalities and therefore reflect the full costs of the water, particularly in hydropower resources and in municipal and industrial supply development;

- Spending millions of dollars on conservation to meet current and future water supply needs within the municipal sector. For example, California has developed an MOU regarding urban water conservation. Seven western states have adopted low flow plumbing legislation.

- New instream programs which are factored into both new appropriations and into programs encouraging or requiring conservation.

She emphasized that the regulatory and management scheme needs to provide a way to balance wetlands maintenance and groundwater recharge with water efficiency and conservation programs (which is being done presently by the states). Further, efficient water use and changes in federal and state law needs to be carefully thought out to avoid the inadvertent loss of public benefits such as instream flows.

Given the physical differences of the states, their mix of water uses, and their tight budgets, states want to be able to apply scarce fiscal resources to address problems identified at the state level as having the highest priority.

Efficiency and Irrigation

Another aspect of increasing water efficiency in the West that is not always well understood is the role that irrigation efficiency can and cannot play. Given that at least eighty percent of the water in the West is consumed by agriculture it is a logical place to look for opportunities to increase efficiency. Analysts say that a ten percent reduction in water consumption in agriculture would almost double the water available to other consuming sectors. This could be enough additional water to meet the needs of other sectors in even rapidly growing areas of the West until well into the next century. This is supported by studies that show that, on average, the output of western agriculture, as measured in revenues, could be maintained or even enhanced, with less water than is presently consumed by western agriculture.

There are a number of examples where water use efficiency measures have occurred. Nevertheless, there are a number of reasons why this is difficult to achieve and more complex than it might appear.

- Only otherwise consumed water is truly available for conservation because one diverter's return flow is another diverter's supply. Conservation, therefore, requires targeting that portion that is "irretrievably lost" to the system through deep percolation, evaporation, transpiration, extreme quality deterioration, and flow into the ocean. Accurate assessment of water consumption requires knowledge of the entire water use system, the amount diverted, site-specific factors such as local hydrology and patterns of return flow dependencies, the climate, and the vegetation receiving water (crop and non-crop).

- Many efficiency measures are very expensive to implement and many farm operations are economically marginal or heavily indebted. The initial financing of conservation practices may be difficult even if the owner desires to carry out a project.

- In addition to fiscal constraints, the weight of the "use it of lose it" principle should not be underestimated in its effects on right holders' actions and decisions. Even with incentives for conservation and a belief in good environmental stewardship, most right holders are more likely to continue to use all of their allocation so that they do not limit their flexibility to change their crop mix or other future opportunities with their valuable water resource, nor do they lose their "drought insurance."

  This is believed to be the explanation of the behavior in Oregon where they have created an incentive program for rights holders to conserve and revert some of their saved water back to instream flows. Though there was broad participation in the development of the program, and the program appeared to hold great promise, there

have been no participants yet.

Third Party Impacts and Efficiency

Third party impacts have to be assessed and guarded against when pursuing water reuse and efficiency in the West. Third parties include users whose rights may be affected by efficiency measures. They range from the traditional consumptive users such as irrigators with junior water rights who depend on return flows to instream or environmental "uses" such as fish and wildlife habitat and wetlands that form in response to inefficient irrigation.

Weighing the degree of protection that third parties should receive relative to the gains in efficiency is not always easy either. Many western states, recognizing this, look for win-win solutions to water use conflicts. This can sometimes require a certain level of regulatory flexibility to creatively address legitimate needs while protecting the environment.

Using Natural Channels to Transport Water for Reuse

An issue for the West when pursuing water reuse is the manner of transport to the point of use. Opportunities for water reuse sometime involve using natural channels to transport the water. However, some of these opportunities are frustrated because permits are not granted even though there is no clear evidence that the use of natural channels to transport the water causes harm to the environment or to human health. Requiring water carried in such channels to meet strict standards may cause some viable ecosystems to be lost (see section on Quality/Quantity Interaction). One participant cited this as a point for clarification under the CWA so that, where water is scarce, new sources of water can be moved through natural channels to meet needs when it can be done without harming the environment or human health.

The Federal Role

Federal agencies having influence or control over water such as the Army Corp of Engineers and the Bureau of Reclamation, as well as federal reserved rights, have played major roles in western water management. These can both complicate and enhance the ability to make changes to encourage or require water efficiencies. For example, the Bureau of Reclamation's projects control an enormous amount of water. However, they generally were authorized to provide water just for agriculture and therefore may be constrained in how the project water can be used. There are signs that Congress may be willing to amend the original project authorizations to remove institutional barriers to conservation and reuse

opportunities, such as was seen in Nevada U.S. Senator Reid's Truckee/Carson bill[5] that allowed conservation and transfers of reclamation water for ongoing wetland protection, endangered and threatened species habitat protection and other environmental uses.

Suggestions were put on the table regarding a state/federal partnership in the area of water conservation:

- The CWA could require conservation for large State Revolving Fund loans, or instead, make the development of statewide conservation programs a condition of receiving federal funds for the SRF and then let the states apply the requirements in individual loan situations. The same could apply to the NPDES permitting program.

- Tie conservation and/or least cost planning requirements to the granting of 404 permits that might be required for water development projects which will be utilized for new municipal water sources or for irrigation storage. This requirement could be implemented by the individual states so that local conditions can be dealt with in the most effective manner. A federal function could be to conduct further research in the area of least-cost planning such as the Northwest Power Planning Council has done for power planning for the northwest. This approach is aimed at internalizing the costs of externalities.

Finally, the federal government is a large land owner in the West. The federal agencies manage the land for federal uses and, by granting permits and licenses, for many other uses. Federal land management practices have tremendous implications for NPS pollution loadings and the health of riparian areas. The commitment to NPS pollution control and riparian land management by both the federal agencies and the private users on the federal lands is vital to achieving conservation objectives particularly as this relates to meeting water quality objectives.

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[5] Senate Bill 1554 of the 101st Congress was a bill that ratified and implemented water settlements involving the Pyramid Lake Paiute Tribe, the states of California and Nevada, and other parties regarding the waters of the Truckee and Carson Rivers and Lake Tahoe in Nevada and California; and provided for enhancement of endangered and threatened species, for preservation of valuable wetlands, and for other public purposes.

THE QUALITY/QUANTITY INTERACTION

In the present system of western water management, states manage the water within their borders, particularly the allocation of rights to use quantities of water. The CWA regulates water quality impacts of point and nonpoint source discharges of pollutants to protect designated uses through the setting of water quality standards and management controls to meet those standards. As water supplies are used and reused in the West, however, the assimilative capacity of the water supply for pollutants often diminishes. Decreasing the quality of water can reduce the quantity of water available for certain uses and vice versa. Recognizing this and the fact that they are best positioned to handle this issue due to their role in the federal system, western states are increasingly trying to marry quality and quantity considerations in water management.

Implications for the Quality/Quantity Interaction under the Present CWA

CWA water quality standards have worked well for the most part in controlling point sources of pollution to maintain instream water quality. One requirement, toxic standards, has caused some unexpected wrinkles for arid and semi-arid regions, however.

A 1987 amendment to Section 303 of the Clean Water Act required all states to adopt water quality standards for toxics by 1990. Many states are still completing this process. EPA has initiated a national rulemaking to promulgate standards for those states which have been unable to adopt their own, and for those states whose standards EPA has disapproved.

The effect of these toxic standards has not always resulted in cleaner water as intended, however. In some cases, it has caused entire flows to be diverted from streams to avoid costly treatment upgrades. The following three scenarios demonstrate situations where standards lead to inadvertent incentives to remove flows.

1) Expanding on the above example, throughout much of the West, there are many ephemeral water bodies (see section on ephemeral streams). Effluent from wastewater treatment plants receive little or no dilution when discharged to these ephemeral or intermittent water bodies. Therefore, dischargers are required to meet new toxics standards at the point of discharge. Treatment to meet these standards can be quite costly. Municipalities find it more economical to sell the treated effluent to golf courses or agriculture, or to inject it underground than to upgrade their sewage treatment plants to the point where water quality standards are met. This results in the elimination of stream flows and destruction of important riparian habitat.

2) EPA could require states to set very strict water quality standards for pesticides and trace elements in wetlands. As was pointed out earlier, many wetlands in the West

are dependent on agricultural return flows as a water supply. Best management practices necessary to meet these standards may be costly for farmers and create disincentives for farmers to increase efficiency, and/or create the incentive to transfer their water to distant cities, causing the wetlands to dry up. In such cases, strict standards would ensure that there is no longer a polluted habitat, but in the process they may contribute to a chain of events which would eliminate the habitat.

3) A similar set of trade-offs faces coastal state wastewater reclamation projects. Sewage districts choose between constructing an ocean outfall and a wastewater reclamation system for discharge of their treated effluent. If wastewater reclamation is selected, wastewater is often discharged to an ephemeral coastal stream during the winter, when demand for reclaimed water is light. If strict water quality standards are enforced in the coastal stream, wastewater reclamation efforts may be discouraged. This may occur even if the discharge of reclaimed water creates a net environmental benefit, such as creation of endangered species habitat in the coastal stream.

One participant offered an alternative to the standards-based approach in arid regions where it has been determined that streams are not and never have been fishable or swimmable. He suggested basing water quality protection on human and environmental risks to protect the natural ecosystems.

EPA has also prepared interim final guidance on how EPA regulations should apply to arid systems.[6] It promotes the idea of net environmental benefits to decisionmaking in the water quality standards arena. If water is in fact being removed from the river and drying up riparian areas in order to remove toxics completely, evaluating the net environmental benefits is a preferred approach. As one EPA official said, "In my opinion, there are places we will have to accept lower water quality to maintain a valuable ecological system."

Natural Mineralization

Another problem posed by toxic standards is when toxics occur at high levels in the natural environment which is often the case in the arid or semi-arid West. Though it would be hard to determine what the historic baseline level is of these toxics, some parts of the West are finding that toxics in their natural water supplies are already at discharge limits.

In many of these places, the local environment has adapted to the mineralization. Therefore, having a standard far below the natural conditions does not necessarily help the environment. The goal instead should be at what point does the substance cease to interact

[6] "Guidance for Modifying Water Quality Standards and Protecting Effluent Dependent Ecosystems," Interim Final Guidance, June 1992.

with the environment in a negative way.

Along these lines, it is hard from an administrative standpoint to explain and fund improvements to treatment facilities when standards are more stringent in the river than for the municipal water supply. In addition, the focus of these standards may be on something that does not present a hazard to the natural environment while at the same time there might be something else to which the environment is enormously sensitive that is not addressed under the CWA. Therefore, when considering pollutants to focus on, it is important that research is done both to determine the problem pollutants as well as to verify that these pollutants are even available to the environment (as opposed to being chemically bound and unavailable). It also is important to provide flexibility to target problems or pollutants.

The interest in the West is not to find a way to relax the standards but instead to define appropriate standards that protect the local ecosystems. Different standards ought to apply to ecosystems which have evolved to the natural conditions. This translates into a research funding. As one participant put it, "We are not talking about lesser standards, we are talking about different standards."

Congressional Proposals[7]

There have been proposed amendments to the CWA that address the quality/quantity interface more directly. A bill proposed in the 102nd Congress[8] lists "ecological integrity" as a new purpose of the act, and new requirements for "hydromodification" and "antidegradation." The first seeks to "more comprehensively protect the ecological integrity of water bodies, including the maintenance and restoration of aquatic habitat. In the bill's section on "Water Quality Standards" it lists antidegradation requirements which appear to be an effort to maintain and protect instream flows. In addition, this section would require EPA to include restoration and maintenance of the chemical, physical, and biological integrity of water bodies in developing criteria documents and would include "hydromodification" as a pollutant to be regulated. Though these may be appropriate amendments from a water quality point of view, the CWA is not a good vehicle to address flows, particularly in the West.

Hydromodification

Hydromodification, basically, is the alteration of water flows, such as by diversion or storage. It is true that hydromodification impacts water bodies and there may be opportunities to

[7] Proposals that were found in S. 1081 of the 102nd Congress.

[8] S. 1081.

reduce these impacts. However, complex tradeoffs between what quality of water is desired and its implications on quantity arise. For example, releases are made from water storage facilities which can have a significant impact on the downstream ecosystem. The questions arise: What is the right flow for a stream below a dam? Which fish should be protected--indigenous species (such as squawfish) or introduced species (such as rainbow trout)? What is the right flow regime? What uses receive priority? Hydropower spares the environment from the effects of coal-powered electricity -- acid rain, slag disposal, mining and mine drainage -- but the flow regime to meet power demands may not be best for the downstream ecosystem. How do hydropower demands, flood control, and a host of other uses fit into the picture?

No matter how those questions are answered, hydromodification casts a large net over a plethora of activities in the West, many of which must be sanctioned by state law under the appropriation doctrine. Further, as one participant pointed out, hydromodification is not just dams and canals, but it is rooftops and streets as well. There are costs and benefits of hydromodification. There are now drainage waters, irrigation return flows, municipal return flows, and more flood runoff from reduced impervious surfaces (yet less flood runoff from flood control) that put more water into surface water year round and recharge groundwater. All of these themselves may aid in sustaining riparian habitat. Dam releases may keep a more constant flow instream, or may result in high fluctuations depending on the use the release is providing. Municipal systems may rely on a combination of groundwater and surface water which is likely to be imported in order to minimize environmental impacts. In addition, as water is brought in through canals and ditches, groundwater is recharged and wildlife takes advantage of the water. The riparian areas that these may sustain have taken the place of converted wetlands for migratory bird and wildlife routes in some parts of the West. The value of these wetlands, riparian areas and instream flows to the environment and to other users depends on the quality of the water and the severity of the flow fluctuations. These, in turn, are primarily the result of land and water management practices.

All of this points to the need for balance among competing water needs and uses, including competing environmental needs and uses. Therefore, the primary concern about treating hydromodification under the CWA, as well as regulating flows for ecological integrity and antidegradation, is the lack of such a balancing provision. There are cross-media implications to flow regulations that are not well addressed through the CWA. It also poses a tremendous and far-reaching challenge of working within the complex legal and institutional water and land management systems of the western states and federal entities. The state is the most appropriate level of government to address these complexities and balance competing interests triggered by hydromodification.

Other Concerns

The treatment of irrigation water delivery facilities under the CWA stirs up concern in some parts of the West. Many of the West's natural water bodies have been modified by irrigation practices. Water delivery canals and agricultural drains are legally considered to be waters of the United States. Therefore, states must adopt standards for these water bodies. However, usually these were not intended to support recreational or environmental purposes, or be used for drinking water. In some cases, all parties agree that a canal or drain provides important wildlife habitat or an opportunity for fishing. In other cases, there is significant disagreement about what standards should apply.

Finally, cautions were offered on a number of related points:

- "Don't set up laws that remove opportunities for federal/state consensus-building."
- "There is a problem of state and local capability and how we make this work as a practical reality. Defaults lead to having to set national standards that have been hard to live with. The focus should instead be how can we enable states and localities to develop site-specific criteria appropriate to their own ecological systems. This is the challenge."
- "If pollution prevention is a goal, it is important to recognize that pounds of sludge are created in efforts to remove some contaminants."

EPHEMERAL STREAMS

The CWA was established to restore all waters of the United States to a fishable and swimmable condition -- a concept that is difficult to apply to ephemeral streams like the Santa Cruz River which, except for the discharge of effluent from the Pima County wastewater treatment plants and storm flow, is normally dry. Nevertheless, ephemeral streams, intermittent streams, dry washes and arroyos are considered waters of the U.S. This means that water quality standards apply. Ephemeral streams are navigable streams with channels when they have water in them. They flow in response to direct precipitation. But, they do not support a self-sustaining fish population. When dry, these streams may serve as roads. During flood stages, these channels have a high sediment content making it unreasonable to apply standards. Since they usually flow in response to a rain event, sometimes as flash floods, they are also difficult to sample for standard compliance.

Bill Wiley, Deputy Director for the Arizona Department of Environmental Quality, described these characteristics of ephemeral streams to the audience and how they pose a particular problem for Arizona because 83% of its "waters" are ephemeral. They do not support a fish population and they do not support "full body contact." Nevertheless, the state has to do an attainability analysis for each stream to get the state standards adopted. Arizona does not feel that this is a particularly useful application of limited public dollars and staff resources.

Issues and Discussion

Bill Wiley outlined some of the points that make ephemeral streams particularly challenging within the context of the CWA:

- These streams are not "fishable and swimmable" by nature.
- Criteria documents that support the development of standards do not have the species that exist in ephemeral waters.
- Arizona has tried to develop criteria documents appropriate for ephemeral water species on its own. However, limited resources at the local level have made this difficult.
- The use attainability analysis currently required under the CWA asks the state to adopt standards for certain parameters. Some of these parameters are inappropriate for Arizona. For example, if you don't have fish, then dissolved oxygen is an inappropriate priority. In addition, arid regions are often nutrient poor. Therefore, removing nutrients through treatment to meet nutrient standards may have no benefit or may even have a negative effect on the natural system.

- Turbidity standards are also inappropriate for a system that is dry most of the year and then has periods of high flow with heavy sediment loads.

- The CWA does not presently have the flexibility to develop meaningful standards for ephemeral water. These are natural systems that should be protected but need the right criteria to achieve protection.

As was previously stated, ephemeral streams are not "fishable/swimmable." There is not even archeological evidence of fish in most of Arizona's waterways. **Hugh Holub** representing the city of Nogales, Arizona presented his perspective:

> Having a fishable/swimmable goal makes a mockery of really important things that have to be addressed. For example, the city of Nogales, Arizona is on the border of the U.S. and Mexico. They have international problems that cannot be addressed by the CWA. Yet these international water quality problems are far more serious issues for the city and require a lot of public dollars to address. Examples of some of these problems include huge problems of toxics flowing across the border from Mexico, and human health problems such as a hepatitis epidemic resulting from raw sewage that flows across the border. Focusing on a "fishable/swimmable" goal undermines the whole effort to try to protect the environment.

He further cautioned that, if the mayor's council of Nogales is approached to raise revenues to upgrade a municipal treatment plant to meet standards for fish consumption, the council will spend the money to litigate rather than upgrade the facility. This points to the need for a national recognition of regional needs so that the public interest is protected. Alternative presumptions to "fishable/swimmable" would not translate into more lenient standards, but into more rational standards.

A discussion ensued with a regional EPA representative suggesting that the finding that there is no water in a stream is still an appropriate starting point. Bill Wiley described Arizona's problem with this response. "Sadly enough, for ephemeral waters the data is not available. No one puts gauging stations on dry washes.... If people can walk out in a dry stream bed and see that, except for immediately after a storm, there isn't any water there, one imagines that you shouldn't have to go into a large research effort to establish this."

The suggestion was offered that a better presumption would be "to protect the natural system." Instead of dollars buying gauges to monitor dry washes, money could be used to study the natural system. If there are still streams in question, USGS could be charged with making the initial finding.

Fred Pfeiffer, General Manager for the San Antonio River Authority, added, "We are here to serve the public.... Most of the arid southwest's rivers are "driveable rivers." We have

to find a simple way to get past this requirement of "finding that there is no water in the river" so we can move to the real issues of protecting the environment.

WETLANDS

Wetlands provide economic as well as ecological benefits by:

- naturally abating pollution of drinking water supplies;
- providing a natural means of flood and storm damage protection;
- serving as transition zones between dry land and water courses and thereby retarding eroding soils and mitigating their effects on water quality;
- providing essential breeding, spawning, rearing, feeding, nesting, and wintering habitats for fish and wildlife which support many valued recreational and commercial opportunities; and
- providing aesthetic enjoyment.

Preservation, conservation, and wise management of the nation's wetlands resources, therefore, are issues of great public concern.

Wetlands in the West are diverse, occurring, for example, as playas on the Plains that fill only occasionally with rain; mountain meadows that are only wet with spring snowmelt; forested wetlands in the Pacific northwest; bogs; fens; potholes; vernal pools; high salt marshes; freshwater tidal wetlands along the coast; riparian areas with bushy plants such as willows, alders, and cottonwoods on sandy or floodplain soils bordering ephemeral or intermittent streams; and man-induced wetlands that are the result of inefficient irrigation practices or leaky conveyance ditches. Such diversity calls for flexibility in regulation and management of these areas.

Numerous federal, state, and local programs exist which plan for, manage, and regulate wetlands. Much of the present controversy about wetlands protection centers on the definition of a wetland. Federal manuals have been developed to assist in the determining what is a wetland. However, the definition of wetlands has increasingly narrowed with each revision of the manuals.

Given the uncertainty regarding the definition of a wetland under federal law, many western wetlands and riparian areas may not meet the vegetation, hydrologic or hydric soils criteria for being identified as wetlands. As a result, there could be limited federal authority for insuring protection of these areas. Nevertheless, these provide functions important to environmental protection generally, and to the basic goals of the CWA in terms of water quality protection and fish and wildlife habitat specifically. For example, although wetlands account for only a tiny fraction of Colorado's total land area, at some stage in their life, at

least 60 percent of all animals in Colorado are dependant on wetlands. In addition they are relied upon by thousands of migratory birds such as ducks and geese.

Issues and Discussion

Dick Gross, Legal Counsel to Governor Sinner of North Dakota, demonstrated the broad degree of support for a number of wetland policy recommendations that address both regional and broader national issues. By comparing and contrasting the policy positions of WGA, WSWC, National Governors' Association (NGA) and the EPA Operations Committee, the following commonalities emerged:

- No-net-loss should continue to be the national goal.
- There will need to be flexibility that allows programs to be implemented at different rates in different regions.
- There needs to be sensitivity to regional variation. This could be done by developing regional manuals and/or regional management plans.
- Consistency among federal, state and local programs ought to be achieved. State efforts should be encouraged.
- Full or partial state assumption of the 404 permitting program should be encouraged.
- A broad range of non-regulatory incentives should be encouraged, such as subsidies, tax incentives, conservation easements, and regulatory programs.
- There should be coordination among federal agencies.

Discussion centered on a few of these recommendations.

<u>No-Net-Loss Goal</u>

There is widespread agreement among states, non-governmental organizations, and the federal government that "no-net-loss" of wetlands is the appropriate national goal. However, it was pointed out that with the significant changes in the way wetlands are defined and delineated by the federal government and the resulting confusion and controversy, the credibility of the definitions and the program have come into question. Good science examining the range of wetland ecosystems needs to be the foundation of the program.

Regional Manuals

Research results would provide the base for regional manuals or regional management plans. These are broadly supported as a solution to providing protection of critical areas that might otherwise be overlooked or poorly addressed in a national effort because of the relatively small areas they represent, their relative valuation to eastern wetlands, or the result of limited scientific awareness. As described earlier, these wetlands may have a great relative importance in the West because of 1) the diversity they provide in an often desolate landscape; 2) the scarcity of alternative habitat due to the climate or urban encroachment; 3) the rare, threatened, endangered species that they support; 4) tribal or international treaty obligations on migratory birds and anadromous fish; and 5) the more familiar functions they serve. One roundtable participant emphasized this point:

> Climate is a crucial factor in wetland determination. Regionalization of wetland determination is a particularly important issue. It needs to reflect the actual ecosystems around the country. Three numerical criteria cannot reasonably capture the diversity of the ecosystems ranging from the arctic slope of the Brooks Range to the tip of Florida let alone the West to East differences.

Comprehensive Wetlands Protection Programs

Another concern expressed at the roundtable about the current program to protect wetlands under the CWA is that it is inherently reactive. Section 404 of the CWA is not engaged until someone wishes to alter a wetlands system by adding fill. Yet there are valuable biota and ecosystems that are disappearing for a variety of reasons, not just those that are being flagged under the 404 process. There was widespread agreement that many other types of activities degrade wetlands that need to be addressed.

Participants agreed that there is a need for a more proactive, comprehensive wetlands protection program. This could be achieved or aided by local and state plans that are developed on no-net-loss standards. North Dakota's no-net-loss program was offered as a working example. The state program uses an acre-for-acre, no-net-loss definition, and "wetland" is defined as any natural depression capable of holding water. They have used a variety of tools including wetland easements -- an option that the agricultural community has been receptive to. This works in North Dakota. Other states would have to determine what would work for them.

Man-Induced Wetlands

As was discussed previously, there are a number of wetlands in the West that are the direct result of man's activities -- usually irrigation and the related hydromodification and transportation of water. These wetlands may present the only habitat in the local region and

may support significant populations of birds and wildlife. When looking at the value and function of these wetlands, one should consider the relative availability of the habitat they provide and the size and variety of populations that depend on that habitat should be considered.

Beyond the issue of how these wetlands will be delineated and how valuable they are determined to be, man-induced wetlands present a potential conflict and wrinkle for policymakers that are trying to provide incentives for conservation. If mitigation is required for lost wetlands due to efficiency improvements, a new source of water will need to be found. This may increase the cost of conservation efforts and therefore reduce the incentive to increase efficiency.

Though it is complex, the West has examples of win-win solutions to such problems such as the Truckee-Carson/Stillwater Wildlife Refuge example in Nevada[9]. Innovation, flexibility, and creativity are going to continue to be critical to solving similar tough problems in the West.

[9] This win-win solution was provided through the passage of S. 1554 referred to under footnote #5.

NONPOINT SOURCE POLLUTION

Nonpoint source (NPS) pollution is still responsible for most non-attainment of water quality standards nationwide. The types of NPS pollution vary widely throughout the country. From stormwater runoff to abandoned mine drainage, states are trying to address this major problem.

Western states share many of their concerns about the nonpoint program under the CWA with states across the country. Policy statements made by state organizations such as the Association of State and Interstate Water Pollution Control Agencies (ASIWPCA), WSWC, and NGA all highlight state primacy, flexibility, and funding as concerns. They also express a concern that the program might be overhauled prematurely during reauthorization.

Issues and Discussion

Funding

The 319 funding process[10] begins with a determination of funding by EPA for each region based on their states' characteristics. Western states are concerned about this process because western regional offices receive smaller portions of the total allocations. For example, EPA Region 8 receives approximately 5% of the total federal allocation for nonpoint source programs. This distribution is the result of an allocation formula and how its elements are weighted. The formula is based on four factors with a minimum floor guaranteed for each state: 1) the population density and growth of a state, 2) estimate of NPS problems, 3) wetlands acreage, and 4) wellhead protection areas. Rural western states with low population densities and growth are disadvantaged by the weight given to the population factor. Yet many of the NPS problems states face are directly related to activities on their sparsely populated and frequently federally owned lands such as soil erosion, stream and riparian habitat degradation associated with grazing and logging; agricultural runoff; and abandoned mine drainage. For example, between 1990 and 1991 Idaho's NPS funding allocation decreased 10% despite the fact that the national 319 authorization increased 25%. This is partially due to placing heavy weight on the population factor.

A second factor in these funding determinations is the National Resource Inventory data. If the updated inventory data from the Soil Conservation Service showed a decrease in cropland erosion due to successful NPS controls, a state is likely to receive less funding. The funding formula therefore has a negative incentive built into it.

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[10] Under Section 319 of the Clean Water Act which addresses nonpoint source pollution.

EPA regional offices then divide their regional funding between their states. Their process of grant awards for state NPS programs provides states with approximately 50% of the national planning target with the remainder of the funding being placed in a regional competitive pot. This approach was developed by EPA to provide the incentive for quality programs through competition, and to target their limited resources on projects with the greatest promise. This assurance of only 50% of states' target allocation, however, is problematic for several reasons.

- States need to build stable nonpoint source programs to make real progress on reducing pollution. Annual competition for funding undermines their efforts with its uncertainty and changing levels of funding. Under these conditions, a state cannot build a program with a core staff that has strong, cumulative working knowledge of the problems and solutions to the state's NPS pollution as is done in the point source program.

  Using states' NPS Assessment and Management Program that are approved by EPA as the primary basis for EPA grant awards, or dividing funds equitably among states and allowing states to target their priorities were suggested as preferred approaches.

- One director of a state nonpoint source program had a concern about EPA's favoring of NPS demonstration projects that promise improvements in water quality within two years (apparently to have success stories to take to Congress to lobby for NPS program appropriations). While this approach is understandable and may ultimately result in continued or increased funding levels from Congress to address NPS pollution, it does not support the kind of broader investment necessary to get at the problems that continue to plague the nation's waters and to the staff resource question. Furthermore, in most cases, water quality improvements usually cannot be demonstrated definitively in two years. For example, outside factors such as weather patterns during those years, other things happening in the watershed that may have added or taken away from the water quality, and the life cycles of recovering species in the ecosystem may all effect results. The sustainability of the improvements is an additional consideration.

The crux of the funding problem is the belief that states have grown beyond demonstrating best management practices (BMPs). States recognize what the problems are and what the solutions are. Too often the limitation is resources and not a lack of understanding of the problem. In order to address dynamic needs of state programs, flexibility was urged for states to use federal dollars to address the priorities they have identified without mandates attached to the funds.

State Primacy

Nonpoint source pollution is a site and situation specific problem. Public education is critical. National standards would be difficult to enact and enforce. Roundtable participants emphasized the importance of the lowest level of government in resolving NPS pollution problems. They also emphasized importance of state primacy to success of these efforts. With such diversity nationwide in terms of causes of NPS pollution, types of water bodies, amount of streamflow, and opportunities for mitigation, the NPS issues can be handled best at the state and local levels.

Gale Hutton, Chief of Nebraska's Water Quality Division, found some congressional proposals[11] "a bit scary" in their suggestion that EPA should have the role of identifying priority watersheds. States have local sensitivity and critical economic, social and environmental data to address needs of their particular region. They are asked to address a range of national interests expressed under federal law beyond the CWA. In fact, some states, recognizing the need to manage watersheds holistically, are trying to address cumulative impacts and not separating efforts under an NPS and a point source program. Gale Hutton therefore felt that states are the appropriate level to be doing the prioritizing, and implementing management practices that will alleviate the problems contributed by NPS pollution.

Irrigation Return Flows

Participants felt that irrigation return flows should not be addressed under the point source permit programs. To apply fishable/swimmable goals on a seasonal flow through irrigation conveyance facilities is contrary to instream flow goals. Dealing with irrigation return flows as a point source may have the unintended consequence of eliminating flows completely.

Interagency Coordination

A number of federal agencies have a role in water quality protection. Those that have a role in NPS pollution control in the West include the Department of Interior, those that are renegotiating irrigation contracts, congressional committees and Department of Agriculture, in addition to EPA. There is a lot of information and experience in these agencies. It is critical that there is an adequate coordination mechanism put in place between the federal players that are involved and becoming involved in the NPS arena.

An example demonstrating the effects of the multiple agencies working in isolation on individual pieces of a problem builds on the earlier discussion about efforts to improve irrigation efficiency in the West. One agency promotes lining ditches to reduce seepage

[11] Proposals found in S. 1081 of the 102nd Congress.

resulting in drying up wetlands, reducing groundwater recharge, and increasing total dissolved solids as pollutants -- consequences of concern to other agencies. To minimize the net environmental impact, agencies are going to have to find a way to coordinate. The price of water is relevant, crop mix is relevant, and the desire to be efficient in water quantity while optimizing water availability for waterfowl is important. When statutes have no flexibility, the public and the environment may lose. Flexibility and balancing have to be allowed under CWA legislation. Coastal zone management efforts are a potential model for federal coordination.

Federal entities will continue to play an important role by conducting research, developing guidelines, and providing the necessary tools and the very broad goals that need to be accomplished nationwide. Expansion of public education efforts at all levels of government, public outreach, and moving beyond "command and control" approaches are increasingly important pieces of the equation as well.

STORMWATER

The Clean Water Act, including 1987 amendments, mandates that cities, towns, counties, departments of transportation, flood control and stormwater agencies serving populations of 100,000 or more must reduce pollution from their stormwater discharges. The program will be expanded in the near future to smaller jurisdictions.

Issues and Discussion

Presently, the program has two main areas of regulation: municipal and industrial. It also covers sewage treatment plants, landfills, dumps, hazardous waste treatment/disposal facilities, junkyards and construction areas greater than 5 acres. The program is ambitious and poses a resource problem for both the federal government and the states. As one water quality program manager stated from his experience with the state permitting requirements:

> States are faced with strapped state budgets and layoffs. It's not an issue of not wanting to do some of these things. It's a question of being thoroughly overwhelmed. For example, Washington state has had permitting requirements jump from 1000 needing permits to between 10,000 and 15,000 under new regulations. The state is also facing a 22% cut in staff. It seems to be an impossible task.

As a result, several states are managing water quality problems based on risk when they can. However, they feel there are a number of higher NPS priorities than issuing permits to remote individual sources, such as rural gas stations, that cannot be addressed given the current budget and staff constraints.

The financial and technical feasibility of the current regulations coupled with the uncertainty of actual environmental gains from such efforts raises questions about whether the comparative environmental risks posed by different types and sources of pollution might be a better approach. Many of the requirements under the stormwater program do not have the highest payoff in terms of environmental benefits and yet they demand large sums of public dollars which are not available.

Numeric Water Quality Standards

Dan Sagramoso of Maricopa County, Arizona described to the audience how, in a 1991 written opinion, EPA's general counsel advised that the stormwater discharges must meet numerical state Surface Water Quality Standards, even if meeting the standards requires collection and treatment of the stormwater, similar to the sewage and wastewater collection and treatment at municipal plants. He further pointed to some congressional proposals[12]

[12] This proposal was found in S. 1081 of the 102nd Congress.

that would translate the EPA opinion into law in the reauthorized Clean Water Act, as well as add a number of additional stormwater clean-up requirements.

There are a number of reasons why water quality standards and associated numerical limits do not make sense for large parts of the West:

- The cost of complying with numeric water quality standards may be very high, and the benefits difficult to quantify. For example, the City of Sacramento, California has performed a scientific simulation of the cost of removing heavy metals from stormwater discharges to meet the numeric water quality standards. They estimate that it would cost $2 billion for capital expenses only, not counting monitoring or actual activities, or the equivalent of $ 40 per month per household over 20 years. They also discovered that, because of background contamination, even after the $2 billion expenditure they would not meet water quality standards.

- In contrast with humid regions, differences between the frequency of storm water generation, drainage conveyance engineering, and pollution loading associated with land use are vast. The ability to collect, and the technology to store and treat, desert rainfall and the associated stormwater discharges that are characterized by high volume flows of variable and unpredictable concentrations does not exist at this time. Collecting such flows alone is unrealistic. For example, to capture for treatment a two-year flow event in an arid region such as on the Rillito River in Pima County, Arizona would require a detention basin one-mile long, one-quarter mile wide, and five feet in depth. Without regional flexibility or appropriate amendments, local governments will struggle to meet an unreachable goal while subject to the federal law's citizen suit provisions and its $25,000 per day penalties;

- Standards have been based upon low flow, continuous discharge modeling rather than high flow, intermittent discharges. In addition, the arid west is typified by its lacking "receiving waters," and therefore the stormwater discharge is the only water in the river. More research is needed to determine the appropriate standards.

- The sampling program proposed by EPA in its regulation is not well suited to conditions that prevail in the arid and semi-arid areas of the West and Southwest. Storm events are extremely unpredictable with regard to timing, duration and location. Because this unpredictable, short duration, and high intensity of rainfall events, the first flush of stormwater as defined in the NPDES testing program is not a good indicator of the origin or the efficacy of clean-up efforts. It is also dangerous to sample. Automated samplers, as an alternative, are not only expensive, but have a high incidence of equipment failure and susceptibility to vandalism. They are not capable of taking first flush samples and test results can be skewed by long holding times and elevated temperatures typical of these regions.

- Finally, a large portion of the West is in federal reservations, military and public land. This complicates the management of regional stormwater quality and the responsibility for attaining instream standards. Stormwater, and nonpoint source pollution on federal lands more broadly, is a serious problem in many areas of the West. In the final analysis, contiguous jurisdictions will have to work together to achieve regional solutions and to ensure compliance with water quality standards.

Stormwater discharges should be regulated by Best Management Practices only and not end-of-pipe treatment requirements, or else compliance schedules should be revised to permit states the necessary flexibility to develop alternative methods for meeting water quality standards.

Further, stormwater discharges to "waters of the United States" which are dry streams in arid regions pose substantially lower environmental risks than do the same discharges to perennial surface waters. Therefore, permit writers must receive explicit guidance in requiring source control programs in NPDES permits that are fully appropriate to the actual environment to be protected.

AFTERWORD

Water scarcity and an initial focus on water quantity shaped the West's water law and its system of water management. As populations have grown and demands on the water supplies increased, cumulative effects of use have had their impact on water quality. Where these effects exceed the assimilative capacity of the system, quality affects quantity and hence may affect personal property rights as well as the public trust welfare concerns.

Many federal, state and local laws and programs have implications for water quality. For example, there is state law, public interest protection, instream water rights, water reservations and stream restoration, local land use regulations, creation of special management districts, the Endangered Species Act, the Wilderness Act, the Migratory Bird Treaty Act, the Reclamation Act, the Federal Wild and Scenic Rivers Act, as well as others which all in some way effect water quality. Many of these reflect the goals, missions or mandates of a single agency. The challenge, therefore, is integrating these national public interest goals into a system that meets the local and regional needs. This is best achieved at the state level.

Given that the CWA is only one of a number of environmental protection laws that states must adhere to, it is important to provide a structure that exerts control over polluting activities but does not inhibit innovative solutions to difficult environmental problems, nor cause perverse, unintended results. Hopefully, with a better understanding of the West -- its water law, physical characteristics, demographics and natural systems, the reauthorization of the Clean Water Act will enable states to protect their diverse ecosystems while being able to meet the needs of the multiple other users to the fullest extent possible.

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WESTERN GOVERNORS' ASSOCIATION/WESTERN STATES WATER COUNCIL/ WESTERN SENATE COALITION/WESTERN STATES FOUNDATION/EPA

Clean Water Act Roundtable: Western Perspectives
February 7, 1992

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FINAL AGENDA

CLEAN WATER ACT ROUNDTABLE: WESTERN PERSPECTIVES

Russell Senate Office Building, Room 385
February 7, 1992

Co-Sponsored by:
WGA/WSWC/WSC/EPA

9:00 - 9:15 a.m.	Introductions, Background on the Workshop (John Kelly, Special Assistant to the Governor of Arizona; Laurie Goodman, Associate Administrator, Office of Regional Operations and State/Local Relations, U.S. EPA; Martha Prothro, Deputy Assistant Administrator, Office of Water, U.S. EPA)
9:15 - 10:15 a.m.	Review of Current Western Water Law & Changes Occurring at the State Level (Chuck DuMars, Professor of Law, University of New Mexico)
10:15 - 10:30 p.m.	Break
10:30 - 3:30 p.m. (Break for lunch 12:00 noon - 1:00 p.m.)	Group Discussion on Issues of Concern (Moderated by John Kelly and Martha Prothro, with introductions to each issue given by westerners)

- Flow Standards -- The Quantity and Quality Interface
  (Ed Anton, Chief, Division of Water Rights, California Water Resources Control Board)

- Wetlands
  (Dick Gross, Legal Counsel to the Governor of North Dakota)

- Ephemeral and Intermittent Streams/Regional Differences
  (Bill Wiley, Deputy Director, Arizona Department of Environmental Quality)

- Non-Point Source Pollution
  - Irrigation Return Flows (including constructed drains)
  - Water Quality on Public Lands
    (Gale Hutton, Chief, Water Quality Division, Nebraska Department of Environmental Control)

- Water Reuse and Water Efficiency
  (Lorna Stickel, Chair, Oregon Water Resources Commission)

- Stormwater Quality Permits
  (Dan Sagramoso, Chief Engineer and Director of Transportation and Development, Maricopa County, Arizona)

3:30 - 4:30 p.m. Wrap-Up

- Review of Discussion (Co-Chairs)
  - Points of Agreement
  - Points Needing Further Information

- Outlook in Congress (Congressional Staff)

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