

**WHOSE WATER?
Past; Present; Future**

Part I

**Proceedings of Conference — Selected Papers
September 1989**

*Sponsored by
The Institute for Environmental Studies
University of Washington*

Part II

**Chelan Agreement — November 1990
and**

**Water Resources Forum
State of Washington**

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CONFERENCE COOPERATORS

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State of Washington Water Research Center
League of Women Voters of Washington
Washington Department of Fisheries
Northwest Rivers Council
The Evergreen State College
Friends of the Earth, Northwest
American Water Resources Association - Washington Chapter
Washington Environmental Council
Confederated Tribes of the Yakima Indian Nation
Tulalip Tribes
Washington Department of Agriculture
Washington Water Utilities Council
Washington State Water Resources Association

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Part 1

**WHOSE WATER?
Past; Present; Future**

- Proceedings

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Part II

CHELAN AGREEMENT

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PREFACE

This publication is in two parts. **Part I** gives perspectives about water conflicts and concerns from some of the presentations at the conference, *Whose Water? Past; Present; Future*, held in November 1989. **Part II** provides background on current efforts to reach consensus on water resource planning, as outlined in the November 1990 *Chelan Agreement*. A 24-member Water Resources Forum representing eight major interest groups is developing its policy recommendations to the Department of Ecology.

Long before Washington State's 1992 drought, disagreements over water were intense. How much water should remain in rivers and streams? As nature provides? Only enough for anadromous fish? Only after diversions for out-of-stream uses? What about recreation and aesthetics? Is it possible to restore water to streams either completely dried up or substantially dewatered from overallocation to offstream uses? Where does groundwater fit in?

PART I, *Whose Water? Past; Present; Future* examines five Provocative Questions posed to conference speakers and respondents.

Can Western water law rooted in the 19th century serve the public interest in the 21st Century? is examined by University of Washington Law Professor Ralph W. Johnson, with responses from Donald Bond of Yakima and Audrey Simmons of Portland. *Should Washington have free-flowing rivers in the next Century?* is a continuing question, with Sandra Nelson of the Northwest Rivers Council stating the case as to why it should, and respondents Merrill English and Representative Dick Nelson sharing their perspectives. Addressing *How should Treaty Reserved Water Rights, with regard to quantity and quality, fit into state water plans?* is Attorney Mason Morisset. Respondents Floyd Ivey's and Betty Tabbutt's perspectives follow.

Resource Economics Professor Mason Gaffney from the University of California at Riverside analyzes several questions (including 1991 references in his edited paper): *How should economic considerations affect allocation decisions? Can the pricing of water at "true costs" improve the allocation of water? How can values that cannot be reduced to dollars be protected?* Jim Miller responded on behalf of Out-of-Stream users and Ed Whitelaw represented Instream concerns.

The final Provocative Question, *What are the ethical considerations related to water and present and future generations?* is explored by Philosophy Professor Ernest Partridge of California State University at Fullerton (now at the University of California, Riverside). Respondents' reactions and perspectives were given by English Professor Robert Benton of Central Washington University and Representative Karla Wilson, then a member of the Joint Select Committee on Water Resource Policy for the Washington State Legislature.

Water Rights and Water Wrongs, the Keynote Address, are discussed by Huey Johnson, President of the Renewable Resources Institute (and former California Resources Agency Secretary). He shares ideas for equitable restoration of some water to be returned to streams for instream flows from privately held "water rights."

Also included in this partial proceedings: An overview of how much water Washington State has is reviewed by William Funk, Director of the Washington State Water Resources Research Center.

Brief reviews of legal frameworks and government structures affecting water under federal state, and tribal governments are included: an outline of the federal aspects prepared by Professor James Huffman, Northwestern School of Law, Lewis and Clark College; Washington State's water laws outlined by Charles Roe, Washington State Senior Assistant Attorney General (since retired); and for Tribal interests, an overview from Richard DuBey, Attorney-at-Law, introduced by Don Tahkeal of the Yakima Indian Nation.

Better inter-governmental cooperation, an on-going interest, is presented by Kaleen Cottingham, a member of the Governor's staff in 1989 (appointed to be Supervisor of the Department of Natural Resources, starting in 1993).

The Institute for Environmental Studies is grateful to other conference participants whose presentations we regret could not be included in this document: University of Washington Professor Emeritus Marion Marts who briefed the audience on historical uses of water and Doug Clausung of the Department of Ecology who outlined the procedures followed by the department when determining water uses.

Part II introduces *The Chelan Agreement*, providing background for a process to develop water resource policy recommendations.

Kaleen Cottingham gives an overview about water controversies and allocations, leading to meetings of diverse groups in attempts to find ways of working together.

The Chelan Agreement resulted, with the subsequent convening of a Water Resources Forum (WRF) representing those varied interests. The Forum has met monthly since November 1990, completing policy recommendations for *Regional Planning Guidelines* and for *Critical Situations and Guidelines*, both adopted by the Department of Ecology. [Copies can be obtained from the Department of Ecology, Water Resources Program, P.O. Box 48711, Lacey 98504-8711].

WRF was also represented on the Trust Water Rights Committee appointed by the Department of Ecology to develop interim guidelines and incentives to conserve water, which could then be reallocated to other water uses, including returns for instream flows to streams and rivers; this was sent to the Legislature in 1992.

Two water resource Pilot Planning Areas, required by the Legislature, were identified and recommended to the Department of Ecology by the Water Resources Forum. Local governments, tribes, and citizens are now currently developing water resource plans in the Methow Valley of Eastern Washington and the Quilcene/Dungeness areas on the Olympic Peninsula.

As this is written, consensus has been reached by the Forum on recommended policies for Hydraulic Continuity and on Methods to Determine Instream Flows. These are to be integrated with proposed overall Instream Flow Policies (nearing consensus) and Groundwater Policy recommendations, the latter being developed by a WRF committee before going to the full Forum.

Participants in the Chelan Agreement include federally recognized Indian tribes in Washington State. Part II of this publication reproduces copies of the State's *Proclamation: State/Tribal Governmental Relations Policy* and the *Memorandum of Understanding Between Federally Recognized Tribes of Washington State and the State of Washington*.

The Institute for Environmental Studies hopes you find this document of value. We think you will.

Polly Dyer
Continuing Environmental Education Director
Institute for Environmental Studies
University of Washington

December 1992

PART I

WHOSE WATER? Past; Present; Future

Selected Papers from the Conference

Keynote: The Good and the Bad of Water
Huey Johnson

Federal Allocation and Regulation of Water
James Huffman

Water: Where? How Much?
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Tribal Government
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Tribal Government and Legal Structures
Richard DuBey

Building Better Relationships: Intergovernmental Cooperation
Kaleen Cottingham

Provocative Questions I, II, III, IV, V

Addenda to Part I

Keynote

THE GOOD AND THE BAD OF WATER

**Huey D. Johnson, President
Renewable Resources Institute**

The visionaries of a past generation who developed the irrigation systems in the western U.S. accomplished a great good. They made the deserts bloom. They provided the basis for huge cities to thrive in what otherwise would be deserts. The benefits that have come from our development of water for human use speak for themselves.

The bad part is that we, a later generation of water managers, have rested on our laurels and opposed change as the world changed. But we deserve no credit for getting that remarkable water system in place. It is time we awakened and shouldered our own responsibilities. What we must do is manage water under modern use demands and correct some problems that the builders didn't expect.

PROBLEMS TO BE CONSIDERED

Many of the problems we face are repeated from past civilizations that also thrived on irrigation. Salt, the remains of evaporating waters, is one of our main problems, and is listed as one of the reasons for the downfall of the Roman Empire. Salt now affects the lands of every nation in the world where irrigation occurs. My state of California has 300,000 acres out of production and much more than that declining in its rich San Joaquin Valley.

The most serious problem comes from the growing numbers of people. We couldn't have predicted the growth of human populations in the West and did not foresee the demands as everyone showed up hot and dusty and crying for water to take a bath and sprinkle their lawns with. The water was all allocated very early on. Now, however, the latecomers, the urban dwellers, have the political power to dominate all policy, including water policy. Our outdated, scrambled water policy is a serious concern and one the latecomers are moving to affect.

For example, recreation is more important to them than raising cattle. And recreation has a lot of economic value. Richard Lamm understood this back in 1985 when he was governor of Colorado. That year, alfalfa farming consumed 27% of Colorado's water and returned only \$156 million to the state. Recreation and tourism, which are heavily dependent on water use as permanent flow in streams, accounted for over \$4 billion in annual statewide benefits. The recreation value was 25 times that of irrigated alfalfa.

There are others, but these examples make the point.

Let us rise to the challenge and match the courage and commitment of those pioneer builders. Hopefully, as we, like the world, are older and wiser and have tools those pioneers didn't have, we may, because of our study within great universities like this one, straighten out the difficulties.

Otherwise, the iron fist of conflict will make water policy change in other ways. In states like Montana, where water laws are inflexibly set so that water purchase and transfer isn't possible, frustration levels are rising. Wildlife isn't given consideration for a fair share of water because the irrigation interests refuse to allow legislation. There is going to have to be a period of law suits and referendums, and such processes in such places will become examples of how not to do it.

THE KEY ISSUE

The opportunity exists at this moment to solve the problem and grant everyone's wish. I am here to present an idea that can solve much of the instream flow public trust issues. I believe that new technology and management

practices can provide excess water to preserve landscape and conserved water can be secured for permanent flow in rivers and marshes.

I should add I've had some experience in the struggle for water policy change. As the state cabinet officer in charge of natural resources, I was responsible for forming and directing policy during the 1976-77 drought in California.

We implemented programs to conserve and extend water and planned for other programs. These ranged from spending the millions to put CIMIS (California Irrigation Management Information System) into practice on farms to sending water conservation kits to every home in the state. The kits included a low-flow shower head and a plastic brick for the toilet. And we tracked results in water saved and oil not imported.

Most important was the starting of a new department of water conservation. That department and its programs are gaining momentum and becoming more important as the months go by. In fact, that department is at the center of water conservation issues that are about to explode with success in that state's urban centers.

ON CONFLICT

I was reminded by someone here that I spoke at a land use conference at the University of Washington 16 years ago. [Ed. Note: Public and Private Rights In Land: Regulation vs Taking; 1976] The setting was similar. There was anger. Developers were fearful of zoning. There was fear that the public could limit density without compensating the developers and there was a need for debate. That conference and others around the country were part of the working out of that issue.

I had started the Trust for Public Land to be a middle ground innovator in the economics of land use and land preservation. We immediately worked out some complex land themes. Several of the first were lands owned by large corporations, like RCA. They owned three miles of coastline near the Golden Gate Bridge and it was mired in dispute. Zoning limits threatened litigation. By being private and nonprofit we were able to figure a way out, satisfy all sides, and return more than the company's costs while preserving the site as a park. Today some 15 years after its beginning, the Trust For Public Land has some 500,000 acres of lands it has saved by using economic approaches. And in doing so, it has helped the evolution of a more flexible, open space land use policy in the various states.

The same concept that TPL was built on will work for water.

The Water Heritage Trust is a nonprofit that hopes to help solve some of the problems. Being small and new, and knowing that we are pioneering a very conflict-ridden situation, we can test some ideas that older, larger institutions might find difficult. We've decided to actually acquire the water that is needed.

A river or a marsh doesn't need all the water there; if they can be provided a share, enough to stay alive, then that will solve a problem and gain urban friends.

Let's look at an example. Last year the salmon and steelhead that swam up the Columbia River through the Snake and the wild Salmon River 900 miles, arrived at what would have been their spawning grounds, the shallow gravel bottom upper headwaters in the Sawtooth Valley of Idaho. Instead they were stopped dead by a dry stream. The water for that final small reach was taken for alfalfa irrigation. We have an agreement to buy a ranch in the Sawtooth Valley, the ultimate headwaters of the Columbia at the end of the Salmon River. We are paying for the land and the water involved through public fundraising. Most of the water will be devoted to help the needs of spawning steelhead and salmon.

We hope that careful, economically correct moves like this will get support and guidance from all of you.

ACTION FOR CHANGE

An intelligent strategy is to move ahead and work out alternatives. Left to the eventual ends, the courts and the urban dominated legislatures will indeed reappropriate water just as they did the vote. And they may potentially do so without paying for the portion they seek. If we can cooperate, I feel we can often provide ways to pay for the water that will be taken for public trust purposes.

The policies in the cities force change. City dwellers refuse to accept the thought that the fish and wildlife don't get a share of the water. And the cities have come into political power that is growing each month. They vote and they decide policy — all policy.

Though many know only that water comes from the faucet, they believe that wildlife deserves to have their habitats intact, including streams and marshes. As they learn more about water, they learn that they have ownership in the nation's public lands and resources. Seventy percent of the water in the West originates on U.S. Forest Service lands — the public's lands. As taxpayers they have an investment in this public landscape and part of that is the system of irrigation technology. They paid for the dams and canals.

Now they are beginning to question. They are learning that we already allocated all the water before all these new people with new uses showed up. Nothing is left to distribute.

This concerned public represents a new universe and their interests can be called public trust. The courts are beginning to take a new look at the previous allocation, noting that the Constitution guarantees the public trust since it involves the long term quality of the land. Congress didn't set aside land to have it become desert.

When rivers and marshes commonly went dry last summer in the U.S. as alfalfa growers used the water, it stirred questions. The public voice is beginning to say, We want our share.

The Mono Lake decision is an example of where the public trust presided. It provides a view of the future. Los Angeles wanted and diverted the water that flowed into Mono Lake. The Lake began to go dry because of their diversions. The city demonstrated the utmost arrogance, saying it was the ultimate decisionmaker. We environmentalists fought as best we could. Eventually, we took the issue to court and won. The courts agreed that we should have water for wildlife; so Los Angeles was ordered to find a way to free the water for Mono Lake.

Change is coming. The banks and other lending agencies lose when such changes are met inflexibly. This threat to banks and borrowers gives us a basis for helping to guide change.

EXAMPLES OF TECHNOLOGY AND MANAGEMENT FOR SAVING WATER.

As stated earlier, we believe that new technology and management practices can provide excess water to preserve landscapes, and that at least 5 percent of the water being used for irrigation today can easily be saved. It should be saved and committed as part of the public trust to maintain flows in permanence.

Water conservation technology includes devices, like gypsum blocks and neutron tubes, that are implanted in the ground and send signals to a meter when the land should be irrigated. Computer technology like CIMIS measures other factors as well, such as air moisture, and is constantly available for any farmer or landscape manager via an 800 toll-free number, from 50 locations. Overhead sprinklers save a lot of water compared to flood irrigation. And already some extra water is being saved from these practices.

An example of improved management practices include using shorter furrows or delivery ditches to reduce the amount of water lost through seepage. One California district found that by shortening its irrigation ditches from a mile to one-quarter mile, it saved 40% of the water it had been losing in the mile-long ditch before it got to the use point. This practice kept the fertilizers from getting into the aquifers.

Pricing can extend water too. California's Broadview District tried a two-tier system. A low price for the basic amount a farmer needed to produce a crop, a higher cost for additional water. The first year, considerable water was saved.

Oregon has a nice innovation, allowing part of the water saved to be sold and part of the water to provide instream flow for habitat.

Funding to acquire water is a new challenge. The Water Heritage Trust provides an innovative middle ground, where owners of water can have some financial advantages so that a water can be made available and used for public trust purposes. For instance, the source of the money for land acquisition was the Land and Water Conservation Fund

administered by the Department of Interior. Hundreds of millions of dollars were spent over time. I would favor opening that fund to water acquisition for habitat needs.

But let's not overlook gifts. Currently, an owner of water can't give water to be permanent wild habitat. The IRS won't recognize the gift as a charitable donation. The Water Heritage Trust hopes to see and effect a change in that position.

New joint ventures between government and the private sector, meeting today's realities, not yesterday's anachronisms, are part of the future.

Finally, the issue is important enough that new supplies must be made available on a permanent basis for allocation to the public trust. For that we might seek government assistance in getting improved irrigation equipment. By working together we would have the power to get a greater share of the nation's tax dollars for the recovery of our natural resources.

This is changing policy with a velvet glove. The opportunity is there to solve the problems in a way amenable to all. Let's solve them.

FEDERAL ALLOCATION AND REGULATION OF WATER

Professor James Huffman,
Northwestern School of Law
Lewis & Clark College
Portland, Oregon

I moved to Portland in 1973 and some of you from this part of the country remember that was a time of water shortage in the Columbia, particularly. Among one of the many conservation measures that was recommended, at least in the popular circles, was to put a brick in your toilet tank and thereby save that particular volume of water each time you flushed. I remember then we had a governor by the name of Bob Straub who was pictured in a cartoon in the *Oregonian*, standing out by a river that was almost dried up, only a little bit of water. His aide is standing next to him and suggests to the governor, "Maybe we can put a brick in it."

Of course some people would say that's what the federal government's role in all this is, to put bricks in things. What I'll try to do is give you a very nuts and bolts description of what the role of the federal government is in water allocation and water management in the Western U.S., although what I have to say is generally applicable to the East as well.

We can divide the federal government's role in water management and allocation into three historical periods which helps explain how the federal government got to where it is. First of all, for the largest part of our history, the federal government was really almost exclusively in the business of navigation protection and navigation promotion. I would say that was true from 1787 until about the beginning of the 20th Century with the adoption of the Reclamation Act in 1902. Mostly what the federal government was doing was dredging streams, putting in levees that were designed to contain water flows, and generally maintaining the navigable streams of the country.

In 1902 with the adoption of the Reclamation Act the federal government got into another sort of business for them. They got involved in trying to develop and encourage the development of water supplies for agricultural use. That was largely a western activity for the federal government. Of course, we still have the Reclamation Act and we have a lot of federal projects that are done pursuant to the Reclamation Act. The act has been amended several times but the basic thrust of it remains the same.

About 20 years later, the federal government got into the hydropower business, at least into promotion of the hydropower business, with the Federal Power Act of 1920 which led to the formation of the Federal Power Commission, now the Federal Energy Regulatory Commission. So, the federal government basically was in the licensing business for building hydroelectric plants on navigable streams.

The third general area that the federal government started to get involved in, and, again, at about the same time, was flood control. One of the major projects was the Boulder Canyon Project Act of 1926. It led to a lot of litigation about the appropriate role of the federal government. Particularly on the Mississippi the federal government became heavily involved in the business of flood control.

Much more recently, in 1965, Congress adopted the Water Resources Planning Act, the intent of which was to start doing river basin planning on a nationwide level. That really was a reflection, I think, of several decades of multi-purpose projects that not only related to navigation, but flood control, agricultural water use, recreational water development, and so forth. As with many other areas of our society, we started looking at planning and trying to get a little more organized about the way these projects developed.

That was sort of the second phase of our federal involvement. It was really water development in various ways and flood control. Then, since 1969/1970 the federal government has been in the water pollution control business, which of course is a whole new area of activity. There was some water pollution control earlier, connected largely with navigation, and under the Rivers and Harbors Act of 1899 there are certain provisions that have proven useful

for those who would try to control pollution of streams. But the federal government did not seriously get into the water pollution control business until the last couple of decades.

On what basis does the federal government have authority to be involved in water resources management, aside from whether we think it's a good idea or a bad idea for the federal government to be there? From a lawyer's point of view, one of the central and beginning questions is by what authority is the federal government there. Largely, we look to the Constitution to answer that question, although I would say in passing that under the English common law, which was adopted in all the jurisdictions of the United States, the government had certain responsibilities with respect to navigable waters.

English courts had developed a test for navigability which made a fair amount of sense for the British Isles. Almost all the water that was navigable for any commercial purposes in Britain was water that was affected by the ebb and flow of the tides. They did not have, because it's not a continent, large inland waterways the way we do. So under the Common Law, the crown or the state had the authority to undertake regulatory activities and proprietary activities of various kinds with respect to the waters affected by the ebb and flow of the tide.

Inland waters under the Common Law, that is, those not affected by the ebb and flow of the tide, were basically in private ownership based upon who owned the land under the riparian water rights system, which is largely what regulates water rights in the eastern part of the United States, although Washington, Oregon, and California each has its varying doses of riparian water law.

With that as the legal background, then we can look to our Constitution. If you read it through from front to back, as I ask my students to do, I don't think you'll find it says anything about water. As with so many other things under our Constitution, we have to imply and interpret the language of the Constitution. The provision in the Constitution which has been most largely responsible for federal involvement in water is the commerce clause; that's not surprising given the common law notion of the role of the state with respect to water - it was largely related to the regulation of commercial navigation on waterways. When in the early 1800's there was a conflict between the state of New York and the federal government over the regulation of boats engaged in interstate commerce, travelling between New Jersey and New York, the justification which the Supreme Court offered in invalidating the state regulation, in a case called *Gibbons vs. Ogden*, was that the commerce clause empowered the federal government to regulate interstate commerce. Navigation, they said, was clearly interstate commerce when it crossed state boundaries, and therefore the federal government had authority to impose regulations on interstate commerce if it was on navigable waterways.

That left us with the problem of figuring out what of our waterways are navigable. If we adopt the common law rule from England, then, of course, the federal government's jurisdiction stops at the ebb and flow of the tide which means the entire Mississippi River, the Ohio River, the Missouri River, and the Columbia River beyond that point would not be subject to federal regulation. In 1825 the Supreme Court concluded that the application of the common law notion of navigability didn't really apply to the circumstances of the North American continent and, therefore, they adopted a rule which said that those waters were navigable that were suitable for commercial navigation. Later, in an 1871 case - the *Daniel Ball*, (the name of the ship that was involved), they said that what they meant in that early case was that it had to be navigable in fact; that is, could you put a vehicle of commerce on that water and navigate. If you could, then it was a navigable stream. That test, generally, at least among water lawyers, known as the *Daniel Ball* test, or the navigable-in-fact test, remains important but not for reasons directly related to the scope of federal jurisdiction. It remains important for purposes of the definition of who owns the land underneath the water; basically the rule says that states own land under those waters that are navigable in fact under the *Daniel Ball* test. It's a question that is very pertinent to what I'm sure will be another topic of discussion here, which is the Public Trust Doctrine, because it applies to the navigable waters and relates to state title. But it was gradually abandoned as the test for the reach of federal regulatory power; that is, if you limited the federal government's regulatory power to those waters that were navigable in fact, then in Washington and Oregon and all over the country there are all kinds of streams which are not navigable in fact, and, therefore, would not be subject to federal authority under the commerce clause.

In 1940 the Court extended this navigable-in-fact doctrine a little farther by saying that it either had to be navigable in fact or that it could be reasonably made to be navigable in fact. I suppose one might have said there was a time when the Columbia River wasn't navigable in fact above the falls at Celilo because you couldn't get your boat up there, although as long as you put your boat in upstream then presumably you could navigate it. So long as work could be done to make the stream navigable in fact then it became subject to federal regulation by the terms of this

1940 decision. For any of you who knows what role the federal government plays you'll know that even that definition is probably too restrictive. For example, just ask yourself whether FERC licenses hydroplants on little streams in the state of Washington that are by nobody's judgment navigable, certainly not for commercial purposes.

The bottom line after all of this history is that the commerce power of the federal government really extends to all waters that are navigable in fact or could be made navigable in fact or in some way impact upon the navigability of streams that are navigable in fact. Of course, depending on how you want to interpret that you can get to every drop of water in the state because it contributes to the flow in one way or another of those streams that are navigable in fact. Hence, FERC regulates and licenses power plants on all manner of waterways.

Two examples of how the federal government relies on the commerce clause as a justification for its regulatory activities over water: one is the Clean Water Act which was adopted in 1972. In that statute Congress defined navigable waters as "waters of the United States including the territorial seas." The waters of the United States is a pretty broad term. It may apply to ponds, lakes that are in no way connected to navigable streams; it may apply to waters of all kinds, and certainly that is the way in which the Clean Water Act has been applied and upheld by the courts.

The other example I would offer you, which is really part of the Clean Water Act, are the provisions in Section 404 of the Act relative to wetlands. We are talking not about waters that are in a lake or a pond or a stream or a river or in the coastal seas, but lands that are really riparian to those waters but are wetlands, dependent upon the water in those streams for their natural condition. Clearly the federal government is in the business of regulating wetlands and they are doing it pursuant to their commerce clause authority by all of the definitions I've outlined on how far the commerce power reaches based on navigability.

That only parallels the justification for a lot of the rest of what the federal government does. If you were to take all of the Congressional legislation which authorizes Congress to regulate various things, a significant chunk of it will be justified under the commerce clause, including even regulating loan sharking or regulating racial relations in public accommodations. The reach of the commerce clause is very extensive. When I teach constitutional law, we spend about three weeks going through these cases and we get to the end where we conclude that basically the federal government can do anything they want to under the commerce clause, and my students say, why did we spend all of this time studying all this stuff when that's the answer. I think we do it, and I did it here, only to illustrate how the federal power has evolved and what its theoretical foundation is. In many ways I think the limitations on federal power are much more political than they are constitutional.

There are other constitutional bases on which the federal government can get involved in the regulation and management of water and I'll just mention a few which the Supreme Court has said are okay. One, which is probably the most important, is the property clause in Article 4, Section 3, of the Constitution. Basically what it says is that the federal government has authority to manage and dispose of its property, pursuant to which most of the western United States developed as the federal government got rid of its property as it owned most of it and still owns, in the case of Oregon almost half the state and in Washington it's about a third I guess. So, the federal government has a lot of power relative to the property clause, and some of that has been important in terms of federal water development, particularly the Reclamation Act. Early on, in its first incarnation, the Reclamation Act was really based on the disposal of public lands contingent on the development of water and the agricultural use of water, and the feds were involved in building the projects to supply the water. It was only on public lands - that was the justification for the federal government's involvement in these water development projects. In a case called *Kansas vs. Colorado* in 1907 the Supreme Court said, that's fine - government can do things with respect to water if it relates to their property power.

They have also done things pursuant to the war power. I'm sure you're all familiar with the Tennessee Valley Authority. The justification which the Supreme Court found for the government's development of the Tennessee Valley Authority was, at least in part, the war power because they were supplying electrical energy to munitions plants in the Tennessee Valley; so, in a 1936 case the Supreme Court said the war power could be used. Another, and this is the vaguest of all, is the so-called "general welfare" power. Article 1, Section 8, says the government can tax for the purposes of promoting the general welfare. What's the general welfare? That could be very open ended of course and the Supreme Court has allowed the more general development of the reclamation system under that general welfare or taxing and spending power. So the government has plenty of constitutional authority; I guess that's the bottom line. If anybody is of a mind to try to stop the federal government from doing what it's doing, I don't recommend the Constitution as a place to look for a limitation.

Another topic of concern with respect to federal water, and again it relates to navigation, is the so-called "navigation servitude." Those of you who are familiar with property law terminology will know that a servitude in property law terms is something like an easement. If I own an easement on your property to drive across to get access to mine, then I own something there. I don't own the land but I own a right to drive across, I own one of the sticks in the bundle as most property law teachers explain the subject to their students. What the federal government has, partly because of the commerce clause, is a navigation servitude on all of these navigable streams which means they can prohibit people from doing things which obstruct navigation. So, under the Rivers and Harbors Act of 1899, the government regulated things like building of piers into waterways and putting dams in to divert water for irrigation and all these kinds of activities which in one way or another impact on the navigability of the stream. The basic theory on which the government can prohibit people from doing that is that government really owns this easement, they own this servitude. It's the public that owns it and the government's acting on their behalf.

The other part of the rule which is important, and it's important both from the point of view of those who would try to develop federal projects and those who will be impacted, that is, the adjacent property owners, is that under the navigation servitude notion the government doesn't have to pay you if it intrudes upon your property for the purpose of preserving the navigation servitude. This rule was articulated by the Supreme Court in a 1913 case, and the questions that have arisen since then relate to the scope of the servitude--how far does it go? It's clear that it goes to the high water mark on all streams that are navigable in fact. You might have legal title, and in some states people have legal title to the low water mark, but you can't put something in that piece of your property between the high water mark and the low water mark without violating the navigation servitude; if the federal government wants to put something there to promote navigation, that is, they essentially want to take your property, they don't have to pay you for it because they, the theory is, already own the right to do that. You never had the right to exclude them from it in the first place. That's been an important rule in terms of the development of a lot of federal projects because it's reduced the costs to the government of having to deal with property takings problems. Since the 1941 case which defined the high water mark as the boundary there's been a fair amount of litigation. In 1967 the Supreme Court decided a case which essentially said the rule applied to all aspects of a federal water project on the Columbia River. Part of that was to put in electrical transmission facilities or offices for those who run the place and so on, and they put those on the fast lands; under this rule they didn't have to pay for those either. Congress said this doesn't look quite right, and Congress in the 1970 Rivers and Harbors Flood Control Act really reversed that Supreme Court decision; so it still seems to apply only to those waters that are below the high water mark.

The third general subject, and this I mention very briefly, is that the federal government has what's known as the preemption power because of the supremacy clause of the Constitution which basically allows them to preempt state regulations in those areas where the federal government has the power to act. I've already said that the federal government has the power to act very broadly if they choose to, so to a large extent the fact that the states play a dominant role in a lot of water management is only at the pleasure of the federal government. If Congress wanted to, if Congress decided to get into the business of managing water in a much more intensive way, it would be my opinion at least that the Constitution doesn't prohibit that.

The federal government can preempt the states in a whole lot of ways. The states, of course, will cry foul and try to find reasons for that not to be the case, and they do have one hook they might hang on which is the fact that many state constitutions say the states own the water and the states will therefore say that all they are doing is functioning as participants in the water market and not in another capacity. But that's a doctrine which is of questionable standing at this point, I think.

What the federal government has really been doing is deferring to the states. A couple of illustrations of that: one is the Reclamation Act of 1902, Section 8 of which says that basically the state can run the show, we're going to let them run the show with respect to a lot of things. But of course Section 8 could be repealed. What does Section 8 mean? The Supreme Court has interpreted a lot of cases on that subject. Early on the Supreme Court said, in the 1940's, that Section 8 meant that the federal government had to comply with state law in developing water projects. Then in 1958 the Supreme Court said that state law could control neither acquisition or management and operation of federal water projects. Then in 1978, in *California vs. the United States*, the Court backed away from that earlier decision and said that the state law controls the operation of federal water projects unless state control would be inconsistent with the purpose of the project. What we have is what Dan Tarlock in his treatise on water law describes as a "double veto." That is, the state can theoretically veto a federal project if it doesn't comply with state law but the feds can in turn veto the state's veto if they say that the state's action is inconsistent with the project objectives. The bottom line, again, is that the feds have the power if they choose to use it.

The second illustration of the federal government's involvement in deferring to the states is the Federal Water Power Act of 1920, Section 27b which is very similar to Section 8 of the Reclamation Act and has this sort of double veto consequence. The states have a role to play but ultimately the federal government is in a position to override that.

The fourth topic I'll touch on briefly is what some would call federal regulatory water rights. Others may just describe it as the consequences of any kind of governmental regulation, but when you're thinking of water from a water rights point of view; that is, who has control of what water, it's a useful way to think about it. That is, the federal government has a lot of regulatory authority pursuant to the commerce clause; we have Section 404 of the Clean Water Act with respect to wetlands, we have the Federal Power Act, we have the Endangered Species Act, we have the Northwest Power Planning Act which is of particular importance to us - all of those are sources of federal regulatory power. The question for private water rights holders and for the states that administer those systems is what happens when the federal government comes in and says pursuant to the Endangered Species Act that you have to leave the water in the stream in order to protect whatever the endangered species is. If the federal government can do that, and I would say that it's pretty clear that they can, then effectively they have a prior claim on that water. They have something that's very much like a water right in the sense that they can prohibit, through their regulatory activities, vested water rights holders from using the water.

A fifth general source of federal activity, one that's been debated and discussed and litigated a lot in recent years, is the Federal Reserved Rights Doctrine. Later in this conference there will be some discussion of Indian Reserved Rights and in many ways it's a similar doctrine in theory, but let me just say a couple of things about it in passing. Basically, when the federal government was disposing of all of these federal lands in the western United States they didn't say anything about the water early on so the states just started developing their own water law systems. Then, in a couple of federal pieces of legislation in the 19th century relative to land, the Congress said we'll just let the states keep doing what they're doing. They can allocate the water by their own terms. So the feds didn't say anything about who got the water on these lands. Then, in the late 19th century, the federal government, beginning with things like Yellowstone National Park and with the Forest Reserves, got into the business of reserving land. They were called reserved lands because they were lands that were not available for acquisition under the Homestead Act, the Timber and Stone Act, and the whole range of acts that allowed people to acquire private rights in these public lands. The federal government started setting aside areas like Mt. Rainier National Park and the national forests; again, they didn't say anything about water. They didn't say anything about who had title to the water or whether the feds had water rights on those streams, and so forth. Then, as you know, we had a lot of evolving legislation with respect to the management of those lands including management for multiple use purposes including watershed management and so forth. Eventually, and as a parallel to the Indian water rights issues which developed first, I'm sort of giving you something that happened after another development that you really haven't explored yet, the Supreme Court, to some extent by analogy and to some extent by looking to some dicta in some other cases, said that the federal government has water rights that relate to these reserved lands. So what water do you need to run Mt. Rainier National Park? What water do you need to manage the national forest lands? What water do you need to develop and use a military reservation?

There are two difficult problems for the states to deal with that flow out of these federal reserved rights and Indian reserved rights. One is we have to know where that right fits into the priorities if we're in an appropriations system as most western states are, and that's not too difficult a problem: it attaches to the date of the reservation. The more difficult problem is how much water are we talking about and who has the burden to figure that out. The state of Montana has sort of taken a lead in that regard and has set up a system for trying to adjudicate these federal water rights so that the state can know how much water the feds have. I think the reason Montana has done this is that the state has statutory authority to reserve water for future acquisitions. Actually, Washington has some similar water reservation provisions I think. So they went through this process on the Yellowstone River which drains out of Yellowstone National Park and flows into North Dakota. They got everybody in the state who had any interest in the water in the Yellowstone River and they had a big year-long proceeding; then, they sort of parcelled the water out. They reserved some to the Department of Health for pollution control purposes; they reserved some, a lot, to fish and game people for fish purposes. They went through this whole process and came out with an elaborate allocation. But through the whole thing they didn't even talk about the federal reserved rights. The reason they didn't is that they didn't know - they didn't know what to do, they didn't have quantities to attach to federal rights. If it turns out that the federal reserved rights and the Indian reserved rights, which on the Yellowstone are substantial because the Crow and Cheyenne reservations are in the Yellowstone drainage, the impact on that which they just went through may throw the whole thing into the wastebasket because they really didn't know how much water the federal government has. That's a very real problem the states are trying to cope with.

Lastly, I point out that the federal government has some role in the tasks of interstate water allocation, which I would suggest is one of our increasingly serious problems in this country from a political point of view if not a legal point of view. There are really three ways, or maybe four ways, in which the federal government impacts on interstate water allocation. One is that pursuant to the doctrine of equitable apportionment, the Supreme Court can allocate water between states on interstate streams. That is because the Supreme Court has original jurisdiction over disputes between states; so, there have been some wonderful lawsuits, from the point of view of lawyers, involving interstate water allocation because they employ lots and lots of lawyers on all these water interests who are fighting over the water. Eventually the Supreme Court does what's called an equitable apportionment which is based on all kinds of factors but by its name is designed to be equitable in its allocation. So, the federal government can play a very dominant role in that sense.

Congress also can play a role in two different ways. Congress can apportion water as was done on the Colorado River and was affirmed by the Supreme Court in *Arizona vs. California* in 1963. There are several *Arizona against California* cases because they've been fighting with each other for a long time about the Colorado River. But Congress can get into the business of apportioning these rivers. Congress can also have an influence through the interstate compact process; many interstate rivers in the country are subject to interstate compacts, and those are dependent upon the consent of Congress, and the federal government plays a significant role in the development of those interstate compacts.

Lastly, the federal government is involved by doing nothing under the so-called "dormant commerce clause," that is, if Congress hasn't done anything to regulate water interstate, the states may still be prohibited from doing certain things pursuant to the dormant commerce clause; it's an area precluded to the states. The illustration I'll give you is from a case called *Sporhase vs. Nebraska* where the state of Nebraska attempted to prohibit the export of groundwater out of the state of Nebraska and into, in this case, the adjoining state of Colorado, unless Colorado had a reciprocal authorization for interstate transfers of water. The Supreme Court said in *Sporhase* that because this water is in interstate commerce the states cannot put prohibitions on interstate transfers. It fell in line with a lot of earlier cases where states tried to prohibit the export of natural resources from the state in order to benefit in-state residents.

Basically, what I've tried to describe to you is that the federal government has certain regulatory powers under the commerce laws. They have significant powers under their property ownership of land which is significant in the west, they have the power to preempt state laws in those areas where the states have the power to act, and then they play a lot of roles in terms of all these other sorts of incidental connections to water. So, the federal government has a major role to play and, I think, a much bigger role if they choose to play it, although I think the politics of water remains one in which at the federal level it's viewed as the states' business in many respects. I would be surprised to see the federal government pushing the states out in a significant way, but I think that's always a possibility.

[See appenda for Professor Huffman's outline with specific citations].

WATER: WHERE? HOW MUCH?

**William H. Funk, Director
State of Washington Water Research Center
Washington State University**

It would be exceedingly difficult to tell you how much or where the water resources of the State of Washington are in 25 or 30 minutes, but I'm going to try with the use of slides in order to help us gain a little better appreciation of one of our state's greatest assets.

It has become more apparent to us in recent years, with the advent of the space program, that this earth of ours is really a water world. The other "worlds" in our solar system lack any appreciable water. However, our water, the substance so vital to us, covers three-quarters of the surface of the earth. It's very essential to us, in fact, it is the thread of life, but we treat it somewhat cavalierly. For example, this slide is an early morning view of one of the deepest lakes in the United States, Lake Chelan. I show it to illustrate another point -- we, the people in the State of Washington, do not always appreciate the water resources that we have. Our large bodies of water such as this lake and the other 8,000 or so lakes as well as our large rivers give the impression that our water supply is boundless. The truth, however, is that our reservoir and river resources are over-allocated and we are going to see more competition and conflict over their use as time goes on.

In Washington, about 54% of our water comes from precipitation. The remaining portions enter from our surrounding states, chiefly Oregon and Idaho, and from Canada. In contrast to the western side of the state where 70-180 inches of rainfall may fall in a year, the area east of the Cascades averages around 20 inches annually. Yet, this area is not a dirty, dry, brownish looking parched landscape as described in a recent magazine article. In fact, the Palouse area was voted one of the ten most beautiful spots in the United States recently by a national photographer's association. So the eastern portion of the state, receiving 20 to 30 inches of yearly precipitation, is very photogenic, esthetic, and exceedingly valuable in turning out crops important to the state's economy. Towards the center of our state there is a considerable reduction of precipitation, as low as 5-7 inches annually. Approximately one and one-half million acres of farmland in these more arid regions are irrigated with water from our streams and groundwater. In many people's thinking, we have solved the food shortages of the United States; therefore, it would make economic sense to leave the water in the river. On the other hand, as major aquifers are depleted across the United States, Washington State's water resources, including its irrigated lands, will become even more valuable to the state and nation for food production as we move into the next century.

We make many important uses of the water in our rivers. The withdrawals from our river systems are chiefly for irrigation, domestic, and agricultural uses, according to the U.S. Geological Survey. About 81% of the withdrawn water is used for irrigation, about 11% for industrial uses, and around 7% for domestic uses. The other uses of the river are transportation -- not only for shipping, but for anadromous fish transport -- fish propagation, and pollution dilution. Remember, in the latter use you can't get that last 1% of the nutrient and refractory materials that remain, even with tertiary sewage treatment. Our rivers thus act as systems to disperse these materials. Manufacturing is another major use. About 100,000 gallons of water is needed per ton of steel; it takes 100-200 gallons of water to produce an egg. It thus becomes apparent why water is used in such quantities and why it is so important to us.

We use water in the paper manufacturing industry. Water is used for cooling our nuclear electrical generating plants, and of course we lead the world in hydroproduction of electricity.

We should keep in mind that the water flowing into the ocean is not wasted water. I've heard that term many, many times. The water that enters the ocean has been used over and over again. One thing that I did not mention is that although 81% of the water withdrawals are for agricultural uses, a considerable volume comes back as return flows.

The question that we sometimes hear is: "Are we running out of water?" Generally speaking, the answer is "no," because water is a renewable resource. I was given the task today to attempt to describe how much water do we

have, how is it used, and where is it physically located. However, another point should be made at this time. Water can be polluted to the point where there are few, if any, benefits from its use. In fact, water pollution can be defined as adding impurities to the water to the point where downstream users cannot make beneficial use of it. We need to be very concerned about our water supply in the state, especially groundwater because it is extremely difficult -- next to impossible -- to clean up once it is polluted. Surface waters also can be seriously damaged even unknowingly and with good intentions. The slide on the screen is of a large algae bloom on Long Lake which took place during Expo '74, held in Spokane. Spokane had only primary treatment in those days. Thus Long Lake, located downstream from the city, received the partially-treated sewage effluent from five million visitors to what was an environmental fair! A similar thing took place in 1963 at Seattle's World Fair. In the latter case, Puget Sound received the effluent.

I point these incidents out because it emphasizes that we did not, and in many instances, do not concern ourselves about our water supply or wastewater disposal. When we step into our showers in the morning, we are more concerned about our soap, shampoo, and towels than where the water comes from and where the wastes go.

Our water supplies can be impaired, reduced, or lost by other factors -- even those of biological nature such as Eurasian milfoil. This imported aquatic weed has choked many Canadian lakes and has now invaded the Pend Oreille River, Lake Osoyoos, and Lake Washington. Most uses of these areas are reduced or lost when this weed invades an area. In the case of the Pend Oreille River, power production is also affected.

I also worry about major forest fires along water courses such as the Snake River watershed. I know such fires are supposed to be a helpful thing. Supposedly the forest will renew itself, and we don't have all the money in the world to stop forest fires. However, the heavy sediment influx in the spring from the burned over areas means that our water supplies will be impaired, fisheries habitat reduced, and the reservoirs filled in at a higher rate. With regard to our sources of water, as I briefly mentioned before, 54% (or about 146 million acre-feet) in the state originates from the atmospheric fallout of precipitation; that is collected by interstate watersheds, percolates through soils and replenishes the groundwater (about 7.5 million acre-feet annually), and ultimately is shunted through streams and rivers to the ocean. According to the Geological Survey, evapotranspiration amounts to more than 22 inches in the Olympic and Cascade Ranges, between 12 and 22 inches in the Puget Sound Trough on lower slopes of mountains and in timbered portions of eastern Washington. Less than 12 inches of evapotranspiration takes place in the Columbia Basin.

About 1970, the River Basins Commission and the Department of Ecology were formed by federal and state legislation, respectively. These agencies "divided" the state into sixty-two basin areas for inventory and study purposes. In the 62 basins, the water uses, the water needs, and water problems were supposed to be inventoried. The data taken to date should be available at the Department of Ecology's library. All inventories were never completed, as far as I know. There was insufficient time, money, and staff. During the last energy crisis, the Water Research Center contracted with the Department of Natural Resources to inventory our streams to see what could be done to increase hydropower generation. After taking a look at the available basin information, USGS gaging data, and other available sources, the investigators were able to determine that we could double our hydropower but there would be considerable environmental loss. However, people in this state would not tolerate that loss. Nevertheless, there are additional opportunities to improve both existing hydrostructures and environmental habitats.

At this time, I want to stop for a moment and take a look at the major river in the state, the Columbia. This massive stream illustrates that water is not distributed equally throughout the state. The amount received by any given area varies greatly from year to year. If we go back to near the turn of the century --1894-95-- there was a flow of 162% of average. In looking at the flow charts, it becomes apparent that the flow average of 140 million acre-feet happens relatively few times in a century. Even with computers, modern technology, and instrumentation it is still difficult to estimate, how much, where, and who will have water. These conditions make it very difficult for water managers, planners, and agricultural interests to work out water allocations for instream needs, irrigation, power production, and other water needs.

Water needs also change over time. For example, in the 1930's, 40's, and 50's, flood control and power production were paramount reasons for dam construction. There was extensive damage in the Snohomish area, Whitman County, Spokane, and the Okanogan areas due to excessive water. With nineteen dams slowing the flow of waters down the Snake and through the Columbia River to the ocean, flooding was greatly reduced.

Inevitably, fisheries and wildlife habitat were damaged by the construction of the dams. Efforts have been underway for the past 30 years to repair and replenish the anadromous fisheries. As for how water is used in the state, there have been steady increases for municipal and industrial water from around 440 billion gallons annually in 1975 to nearly 1000 billion gallons annually by 1990.

Irrigation use has been projected to be about 2700 billion gallons annually. As previously stated, however, a certain portion of waters utilized upstream may eventually be returned downstream as treated effluent and return flow irrigation and, to some extent, to the groundwater. It is estimated by the USGS that of the waters withdrawn for irrigation about 89% is consumed and 11% returned. It is also recognized that in some cases considerable impairment of water quality of the returned waters would have occurred through addition of organic materials, particulates, pesticides, and sediment. The instream uses such as hydroelectric power generation, recreation, water transportation, wildlife and fish production are not usually considered consumptive -- although some impairment may occur.

As we have seen in some water years, such as a 50-year flood, it is still difficult to contain the rivers. In low water years, such as 1974, all water needs cannot be met. In order to preserve instream needs and power production for municipalities, it is sometimes necessary to shut down some industries such as aluminum plants. Under these circumstances, it seems unreasonable to consider transfer of water from any Northwest river to the Southwest.

Groundwater uses have increased because of low water years, conflict among competing uses, and increased agricultural needs. According to the USGS, state publications, and other literature sources, there are four major aquifers from which water is withdrawn. The largest withdrawal (\approx 600 million gallons/day) is made from the Columbia River basalt aquifers of which 84% is utilized for agriculture purposes; lesser uses are 11% for public water supply.

About 452 million gallons per day is withdrawn from an aquifer located in glacial drift substrates. More than 50% of the waters from these aquifers are withdrawn for public supplies. The third highest withdrawal (\approx 158 million gallons per day) is withdrawn from the terrace and valley fill aquifers. Its use is almost equally divided between agriculture and industrial uses at \approx 30 million gallons per day with public water supply at 28 million gallons per day.

The final category is the alluvium and bedrock aquifer at 5.2 million gallons per day which is utilized entirely for public water supplies.

For people interested in estimates of the state's surface and groundwater, there are several publications to consider that summarize these data, they include: *National Water Summary 1987*, *USGS Water Supply Paper 2350*, Washington State Department of Ecology's *Water Resources*, and the Pacific Northwest River Basin Commission's *Water Today and Tomorrow*, Volume III.

Groundwater storage in the state is estimated at about 80 million acre-feet. We can withdraw about 7.5 million acre-feet before creating a deficit in our groundwater system. Withdrawals will vary from year to year because of fluctuating precipitation and the need to supplement or replace surface water withdrawals.

Groundwater levels have declined in portions of the Columbia Plateau, including significant declines in the Odessa/Lind area and the Pullman area.

The Spokane area has a large capacity aquifer which is showing no decline at present. It has been designated as a sole source area by the US Environmental Protection Agency. Local and federal agencies are cooperating to protect that source. However, considerable gravel has been removed from the valley floor for building purposes and large tracts of land in the eastern part of the Spokane valley have been developed for housing purposes. As a result, there has been increased septic tank usage, increasing the potential for aquifer contamination. Sewering and other measures are now being applied to protect the system. These actions are extremely important because groundwater is virtually impossible to clean up once damaged.

One of the things that is very important to us is that if we keep our waters clean or make our surface waters cleaner, then it is possible to attract not only tourists but cleaner industries to the state. This state is one of the best in the country for having a healthy and adequate water supply. I am sure we all want to keep it that way.

TRIBAL GOVERNMENT

**Don Tahkeal
Tribal Council
Confederated Tribes of the Yakima Nation**

...As a representative of my people, I not only have to try to struggle and fight for my peoples' rights which have been retained and keep them from unjust confiscation, but I also must speak within the same breath of multi-syllable adjectives of the scientists, the legal parlance of the mouthpiece, and sit there and hold my hands and grace and mercy of the Great White Father of the state or his delegated individual or the learned colleagues within the Senate and the House of Representatives. So, with this as a little background, I'm not trying to say that Indian business is one big glob sitting there and nobody can decipher or discern how to put it into order. Because every day I have do-gooders knocking on my door. They're like little flies--they fly in the mess. They see that they can't do anything expediently, which is the byword for efficiency, and so they fly out of the mess, then the inertia bound bureaucrat comes in, sits down and says, "Well, Chief, there's nothing we can do, we've got to abide by the rules and regulations; and so your treaty right must now take a back seat. The future of your people is going to be hinged upon how the attorney general or senior assistant attorney general is going to react to the irrigation community, to the forest community, to the fishing community, and then we'll see how your treaty rights sit." Thus, overlooking the primacy of the U.S. Constitution.

So, with those few words, I appreciate your presence because that is an indicator that all is well in the State of Washington and that because you are here, now is the time to address the water. Now is the time to initiate planning processes which are going to allow, maybe, less frequent water conferences in the future and more water for the people.

I would like to take this opportunity to say that it is an honor and a privilege to be with a panel highly esteemed as this and say a few remarks. Mr. Richard A. DuBey is an attorney whose principal areas of practice include environmental and administrative law, water quality management, land use, hazardous waste, and Native American natural resource law. He is also a visiting associate professor at the University of Washington's Institute for Environmental Studies where he has taught courses since 1978 in environmental law and the administrative hearing processes for non-law students. After graduating from the New England School of Law in 1975, and receiving his masters in law and marine affairs from the University of Washington School of Law in 1976, Mr. DuBey served as assistant regional council with the Seattle Regional Office of the Environmental Protection Agency. He entered private practice in 1980 and established the DuBey Law Firm in 1985. The firm represents Indian tribal governments and tribal organizations in Montana, New York, Arizona, Colorado, Maine, Alaska, and Washington. So that means there must be a few Indians out there somewhere in America. There are only 1.4 million Indians in America, but yet a startling statistic is that there are 20 million alcoholics. Are some of them sitting in the black robes in the courtroom? Are some of them acting as a mouthpiece? Are some of them sitting in the legislatures? To the Indian people, that presents a problem. But the Indian people still need to be assisted and heard, not in the Ivory Towers but in the world of reality.

TRIBAL GOVERNMENT AND LEGAL STRUCTURE

Richard DuBey, Attorney at Law
Stoel, Rives, Boley, Jones, and Grey
Seattle, Washington

What I want to do first is get a sense of how many people are lawyers. Give a showing of hands--maybe 20%. I want to try to give you the benefit of about 10 years of experience in working with Indian tribal governments across the country and help you understand some of the things that tend to be important at least insofar as I can understand them as a nontribal member in Indian country.

The one thing I want to say at the outset is that what I think is happening now is that the whole concept of water law and the relationship quantity which is generally a private right as against quality which tends to be a regulatory function of government, are not so easy to separate. What is happening is that some of the very treaty rights which have been subject to great controversy as to what in fact they entail for the Indian people, may well be the measure against which we can assess the health of our own environment. By that I mean that the ability of the fishery resource to survive is based on water quality, the ability of herbs and plants and wildlife to survive in which the tribe has an ownership interest or a treaty right whether on or off reservation -- are all dependent upon the quality of the environment, including the quality of water, to sustain life.

In short, most everything is for sale, except for the treaty rights. The Indian people in my experience, don't really understand, and perhaps it is us, that we don't really understand the issue of ownership. The issue of ownership is not what one person has as against another. Based on what I have seen, it is the gift that the tribe has received from the creator and their ability to sustain their community and subsequent generations on this permanent homeland that has been set up as a reservation. They're not making any Indian reservations anymore. There is no place for the Indian people to go and what has become very apparent is that without that land base, the glue that holds them together, their culture may well not survive.

Their culture is very important to us. We may not think about it very much but the very ability of us as democratic society to protect the minority society that is the most sensitive and vulnerable, is a measure of the strength of our own republic and of our own sense of morality. I'm not saying we should do this because it is a good thing to do. I'm saying that the Indian people are going to see that we do it whether we want to do it or not. As a tribal attorney, it's my privilege to have an opportunity to work with tribal leaders such as Don Tahkeal and Wendall Hanigan who is in the audience.

We have an interesting experience. My experience that the concept of protection of the environment, of water rights, of water quality is not something which is simply shared by those with an academic background, those that have the opportunity to not be concerned about their daily needs, but is something that is ingrained in Indian people as a whole. This I can testify to as being the truth. This is something that in the context of Puyallup Tribal Land Claim Settlement, protection of their fishery was the major concern, not dollars, but the ability to protect the fish and the ability to protect their way of life as fisherpeople.

My charge is to try to discuss the issue of water from the tribal perspective. This is a very timely issue. It is a timely issue because the body of law that creates the property right, in my view, is undergoing tremendous change. The concept of a private property right, whether it be in land or water, is something that must bend to the need of public trust. How we view the public trust also includes the responsibility to maintain instream flow, the biological life of the water course and then to allocate above that certain types of beneficial uses. The State of Washington has an instream protection law right now that requires that the biological health of the streamway or river be maintained and that no taking for private purposes may occur if that would adversely impact or threaten the fishery resources. From the tribal perspective, their interest in ecological protection goes much deeper.

It is not only the fact that the water is a habitat for the fish but the water is also important to the spiritual and the religious practices of the tribe. It is also something that we tend to take for granted, the existence of the water resource. We know that when we join environmental groups because we like to have a stand of trees preserved even though we may never visit. Does that really make any sense? We're not gaining any economic benefit out of that. I think I'm probably preaching to the choir here or else you wouldn't be at this conference. The issue really is one of trying to appreciate those things that maybe we can't fully understand, but we somehow sense that we have an obligation to protect and to preserve. I would suggest that Indian water rights as well as having a legal right also are in that category of rights.

This is a particularly timely issue. One need but look at the newspaper in order to see that EPA has found that pulp mill effluent may contain dioxin which may in turn be entering receiving waters; the waters are used for a variety of purposes: fish habitat, human consumption, contact sports, and whatever. So water quality and water rights are related to why tribes are now asserting as an implied environmental quality right. You can't have a resource unless it has a habitat. The habitat requires a volume of water to sustain it; the water must be of a certain purity. All those things are wrapped together. They are the bundle of rights you have when you have something protected and preserved by the Federal Treaty Power.

Something else just came out the other day: "Columbia Basin Development Hazardous to Surface Water and to Salmon." There are a variety of problems now that have been identified in development in the Columbia Basin; things that are happening now and adverse impacts as a result of land use practices upon surface waters, upon water quality. Measuring against what one can take as a water right if in fact the water is now polluted and not available to that particular application then you have no right at all. "Puyallup Valley to Get its Own Land Use Plan." One of the major areas of development is going to be in the Puyallup River Basin. What impact is that going to have for non point source pollution control? What is going to happen to the Puyallup River, the fisheries of the Puyallup River, the farmers who rely on the Puyallup River and all those inter-related impacts? "Corps of Engineers Foresees Busy Port of Tacoma." Because of the additional activities taking place in the Port of Tacoma, there is going to be more vessel traffic, there is going to be more of everything.

What we are all very well aware of is the tremendous population pressure on the Puget Sound region. How many people can Puget Sound accept until there will be adverse and perhaps irreversible consequences on the resources? We don't know these things? We are trying to wrestle with these issues. I suggest that the political process will not necessarily yield any results. There will have to be certain point in time when somebody says stop. We have been very ineffective at being able to say stop. We impose moratoriums sometimes; it's politically unsavory. But the need to protect the treaty right, whether it be habitat right or fishing right, or water quality right or an appropriated right, that may be actually the benchmark against which we can measure growth and redirect it in another way. We haven't been very successful in doing it, other than in the context of these federally protected rights.

EPA had a conference in March of 1989. It was the first water quality conference the EPA ever put on in planning for the 21st century. As well as having this first water quality conference, the issues that were discussed were state, tribal, and federal water quality and water rights, bringing those two concepts together into one panel for discussion. It was the first time that Indian tribes had been invited to participate in a conference of this nature. It was very interesting from the tribal and the state perspective. The reason was that there were many things that the Indian tribes and the states had in common. There was a common desire to protect the resource base because whether it be a pool of water, whether it be a pool of a fishery; that everybody benefits if that resource is healthy and no one benefits if that resource has been destroyed because the lawyers or the mouthpieces as my employer has referred to, are arguing jurisdictional issues. Lawyers love to argue; it doesn't necessarily yield any type of result. You, the scientists and the resource managers, have the results. Maybe it's time to tell lawyers to sit down and try to get about the business of protecting the resource base.

I'm not here to tell you when you can and can't take water, what quality the water has to be, and what your rights are with regard to the water. The issue that tends to always come to the forefront in terms of what an Indian tribe is, is important for us to understand as a basic touchstone of dealing with Indian water rights. All of us were not properly instructed in what our constitutional government is all about. I know this because it took me a long time sitting in tribal council meetings to really understand that there are truly three sovereign governments in our country. We were told that there was a federal government and a state government. Somehow Indian tribes were an interesting novelty that came up sometime during discussions.

In reality, there are three sovereigns and our Constitution mentions Indian governments in a very prevalent manner in that document, both from the standpoint of the Indian treaty commerce clause and the treaty clause, both of which are the supreme law of the land under the supremacy clause and take precedence over inconsistent state law. So there is a strong position of Indian tribes within our governmental structure. The source of tribal authority in dealing with tribal water rights comes from two basic places. One is the tribe's right as a property owner. As any private property owner, although the resource is owned communally by the tribal government on behalf of the membership of the tribe, it is a property right. It can be leased, sold, hypercated in some way, or used as collateral. What it comes down to is that it is the tribal government acting on behalf of all of the people in order to decide how that water is going to be used.

The second and more prevalent role of an Indian tribe is as a regulatory entity. The tribe is an inherent sovereign government. There are, of course, limitations on the exercise of its power and the context of both against Indians as well as non-Indians, tribal members, nontribal members against fee land owners within an Indian reservation and so forth. We're not really getting to all of those issues. I'm being told that I don't have much time left.

[Review of Diagram Presented to Audience]

For those of you who had any questions, this is the reservation. What I wanted to show you is that in the context of how a tribal government looks at water rights, you need to understand the overall concept of how Indian people view the environment. What I've tried to do here is show you that the issue of grazing and its regulation and the best management practices of the Clean Water Act and the ability of the tribe to assert such a regulatory program has a clear impact on the water quality of this lake and the ability of the tribe to use this lake at least this sector of it as a tribal wildlife reserve where one may not hunt or enter this area or to use this lake as a source of pure water for the tribal hatchery which is allowing the fish to enter the river and ultimately become a pool of fish that everybody may utilize. Additionally, the adverse impact on this lake as consequence of some kind of mining operation that took place in the 1920s where the Bureau leased this land for a mining operation. It has now become a leaching site for hazardous wastes, which in fact are also threatening to the lake, is another issue that the tribe needs to deal with from a regulatory perspective. Whenever we are protecting a property right, there is a need always to be able to regulate and assert control so that you are not diminishing or destroying the right and this is based on this type of past practice. It is a little easier to do that or to control community growth and to provide certain types of septic system activities for on reservation activities. When you have an off reservation activity, like this oil refinery, and the oil refinery happens to be sending sulphur dioxide and other pollutants that are falling out into the lake so we have airborne pollution, becomes a little more difficult because the tribe did not have regulatory authority over this off reservation source. So what is happening is that the tribe, through the development of an environmental program and its assertion of its water rights and being able to manage the allocation of water is gaining the skills necessary to participate in the state licensing process and bring these issues to bear, rather than sit and react to the problem.

What is really happening in the context of tribal sophistication, if you will, to better understand how to use the law to protect tribal values, is to be able to participate in the process in such a way as to assert and protect their rights, and what is really happening is that the rural counties that tend to be in close proximity to tribes with limited environmental staffs are now relying more and more on the tribe to protect their environmental quality because, as we know the pollution does not end at the boundary of an Indian reservation.

In closing I did not have a chance to say half the things that I wanted to tell you about, because there is so much to learn and so much that I think one needs to understand to be effective in this area. Let me close by saying that the ability of protecting the reservation environment and the off reservation resources upon which the tribal members rely, is something that is absolutely non negotiable and critical to the survival of Indian tribes. I would go on to say that clearly the endless cycle of life which must take place within the reservation and on ceded lands in which the tribe has maintained hunting, fishing and gathering rights would be broken if water quality and water volume protection was not asserted in such a fashion as to protect those values. I'm asking you to try to understand something which perhaps you have never had to understand before, but to look to the concept of economic development, of environmental protection, of tribal sovereignty as tools that are available and from which we will all benefit by allowing the tribes to take their proper place as one of the three sovereigns in our nation.

BUILDING BETTER RELATIONSHIPS: INTERGOVERNMENTAL COOPERATION

Kaleen Cottingham
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Today I'm here to tell you something very simple that you probably already know. It's how important it is to communicate face to face. It seems like a very simple subject to grasp but it's very difficult sometimes to apply this communication in face to face relationships when you're dealing in government. But the value of dealing face to face on numerous issues is obvious and will become more obvious as I go through my presentation.

Let me give you a couple of illustrations to lead into where I am going. If I'm talking to you over the phone and I need to meet you at the airport and I've never seen you before and I'm describing what I look like, I will tell you I'm blonde, mid thirties, wearing a green jacket, carrying a black briefcase, and I'll be looking for someone. I know that when I get to the airport there are probably 200 people that look just like me and are looking around looking for someone. It probably would have been easier if I had met you first face to face so we can discuss what we need to discuss rather than how we are going to get there.

Another one is how you get somewhere. You need to get to somebody's house; you get off the freeway, you take a left turn, you go down ten blocks, can't miss it. It would have been easier if I could have been in the car with you to direct you how to get there. The communication link dealing with people face to face is all the more difficult when you're separated by distance, culture, by orientation, philosophy, prejudice, fear or by past injustices. Coming together face to face implies more than just meeting as sovereigns, meeting on the basis of mutual respect and courtesy. It implies an environment of greater fairness and humanity.

The Gardner administration used these kinds of concepts in changing the way that this administration, and hopefully future administrations, deals with the 26 federally recognized tribes in the state. To sum it up, this past January 1989, Governor Gardiner signed a proclamation which declared that the state and the tribes will interact with each other from the state's perspective and from the tribe's perspective on a government-to-government relationship. This umbrella, if you will, is going to act as a kind of road map; kind of an etiquette guide of how we're going to deal with each other in the future to enhance decision-making on issues that we all care about.

It wasn't a unilateral decision on the part of the state; the state agencies and representatives of the 26 federally recognized tribes worked together to develop this process of dealing government to government; dealing as sovereigns. We developed and signed in August of this year what's being called the Centennial Accord—how we implement a government to government relationship with the 26 tribes in the state. [Copies of the Proclamation and the Accord are in the Addenda to Part II.]

Basically, there are three main points in the policy and the Accord which are tools. The first one is that this Accord and policy evidence our commitment to deal with the tribes and they to deal with us in a manner that recognizes our respective rights. Secondly, it's a tool that we can use to achieve mutual goals through improved relationships between these sovereign governments; and thirdly, it institutionalizes or aims to institutionalize this relationship within agencies of state government and within the framework of the various tribes. Sounds easy, it was easier to draft probably than it is to implement. It's going to be a long hard task.

Our first focus right now is to institutionalize the process, the policy within state government. We need to educate the ranks of state employees on the benefits of government to government relationships. We need to bring across the need for recognizing Indian issues as important and in respecting cultural values. Aside from in state government, we have another monumental task of explaining the benefits of this relationship to the public increasing public awareness of tribal issues, coming up with dispute resolution processes, and stressing the value of the government-to-government relationship.

Hopefully, this new policy, this new direction will improve the communications between state officials and the tribes, and this improved communication in turn will lay the foundation for better discussions on substance. View this as a process if you will, and it has been our understanding and experience that the relationship that you develop leads to better decisions on the substance of the issues.

In terms of bringing this to bear within state government, the agency directors, most of the agency directors primarily focussing on natural resources now, but we also have social and health services, trade and economic development, community development. For most of the agencies their job is executive accountability; they will be responsible for insuring that their agencies deal with the tribes that they interact with on a government-to-government basis.

How we got here is probably just as important as where we're going because we can learn from our past mistakes. The Accord, the Proclamation, and some of the issues that we're working on today you can see through our history where we have been.

As most of you know, the state of Washington had an extremely confrontational approach to tribal issues, especially those arising from treaty rights and from jurisdictional issues. In most of these confrontations, the state lost in federal court, not only lost but lost management control to the federal court system. At the same time and even probably longer than the state's been around, the national policies on tribal issues have vacillated. It's no wonder that the tribes are a little bit hesitant to deal with the state of Washington. So we have to set the new road map on our relationship.

Some of the turnarounds in terms of our relationships began to change, most notably starting in 1983. For those of you who are aware, in the fisheries arena, the Boldt decision kind of polarized everyone and we found that we were fighting every step of the way, through lawyers, in litigation and that the fisheries resource declined during that period. We found that the litigation mode does not improve the fish runs. At that point in time, the managers decided to start talking about issues of management, rather than on issues of allocation and the issues of rights. They found that through this cooperative approach dealing with the fisheries managers--fisheries managers from the state and fisheries managers from the tribal governments--that we could once again begin managing our resource on a government-to-government basis. Based on the successes in the fisheries arena, we moved into some other areas. Most notable are the Timber, Fish and Wildlife Agreement and the Puyallup Land Claims Settlement, where the state of Washington made the commitment to deal with the tribes involved in a face-to-face/government-to-government relationship.

The tribes have appreciated this, not necessarily only because of the substance of the decisions, but because for the first time, the state began to acknowledge that the state was treating the tribes as sovereigns, on a government-to-government basis. Again, I'll repeat that we've determined that it's our relationship with the tribes that lays the foundation for better decision-making on the substance.

With that--where we are today, where we've been, I'd like to lay out some of the big issues where we're going. I'll focus on three areas in the water arena--what we call the Phase II of U.S. vs. Washington, the Yakima Enhancement Project, and general water policies across the state.

As you all know, the most contentious issues of this state in terms of natural resources and growth are yet to come. How do we accommodate growth in this state while protecting our unique environment and our quality of life? The issues at hand will be water supply, water quality, habitat protection, and any of the other growth issues. They are political hot potatoes; they are coming down fast; they are more than emerging issues. They are on a very high curve--both publicly, politically, legally. The state and tribes have determined that we are willing and would prefer to deal with these issues on a cooperative basis rather than dealing through our attorneys in the court system. As I've said, the negotiation process means we can get to better results quicker, without spending money on attorneys. It's not, however, the cheapest route.

As we know in watching the Timber, Fish and Wildlife Agreement and the Puyallup Land Claims Settlement, there is money involved in cooperative management, but the results tend to move us forward. As I mentioned, the Phase II issue, may be one of the most wide ranging issues that the state will face in the near future. The Phase II issue is a spin off, if you will, an attribute of the U.S. vs. Washington case, also known as the Boldt decision. In 1970, when the case was being heard in the Federal District Court, Judge Boldt separated the fish allocation issue from the environmental right issue that Richard DuBey spoke of earlier.

In 1980 Judge William Orrick, Federal District Court, determined that the treaties included an implicitly incorporated right not to have habitat degraded by the action of man. While William Orrick did not determine that the state had violated this right, he set up some framework. It went up to the Ninth Circuit Court of Appeals, bounced around there for awhile and was vacated. It was vacated on the basis that it needed concrete facts to determine the scope of the right.

What is the right that accompanies that right to take fish on behalf of the tribe? Based on some other cases that have happened, most notably the Quackenbush decision in Eastern Washington, we have no doubt that there will be some sort of an environmental right attached to the treaties. What the scope is we don't know. The range is very broad because of the migratory range of anadromous fish associated with the usual and accustomed fishing grounds. How do we deal with this? Do we wait for each fact to come up to determine the sideboards, or do we enter into some sort of a negotiation process, if you will, with the tribes, with the local governments, with the agricultural community, with the environmental community. How do we deal with that?

The state and the tribes have put together a process document called a Memorandum of Understanding which we have just begun to circulate for review that begins to discuss how we shape the table for discussions on these issues. What is the scope? Do we look at early successes? Do we narrow the scope to dealing with a particular river basin or whatever? How do we deal with this? [A copy of the Memorandum of Agreement is included in Part II.]

To be successful, however, any process, in particular that process, but any process has to have the support of all the people necessary for the solution to succeed. Again, when you're dealing in the water area, local governments are critical. The agricultural community, the environmental community, anybody who is a necessary party for success must be at the table.

Right now the Memorandum of Understanding has a couple of tasks that are technical, if you will, and not discussion oriented and we hope to start into these very shortly. Things like looking at the current laws and regulations and ordinances that deal with habitat. Looking at current dispute resolution processes and how those might be used to help us. Maybe we need to model something completely new for this Phase II discussion because it crosses so many issues. It crosses non point pollution from land use practices, from agricultural practices, septic tanks; you name it, it covers it. We have also targeted in the Memorandum of Understanding a major educational effort to get the word out to the public--the risk in this issue and the benefits of dealing with these on a cooperative basis. It's going to be very labor intensive and it will probably take a lot of people's time, a lot of people who aren't in state government; a lot of people who are interested in protecting the quality of life in the Northwest, protecting our environment, dealing with economic growth, dealing with land use practices. It's going to take a lot of people.

Another issue that will probably benefit from improved state-tribal relationships, Don Tahkeal mentioned it a bit, is the Yakima Enhancement Project. For those of you who are not familiar with it, in 1977 following drought conditions, Congress authorized a feasibility study in the Yakima Basin to deal with future water supply. It had five components—things like supplemental irrigation water, enhanced irrigation on the reservation, increased stream flows for anadromous fish, water management plans, and also water rights settlements were kind of an attribute of all that. So, you have the Congressional-directed study; you have the ongoing state adjudication of the water rights in the basin, and you have efforts over the last several years to try to move forward on enhancing water supply in the basin.

In 1984, we started forward with Fish Protection Facilities and those are nearly completed. Since 1986 we've been trying to go beyond the Phase I in the Yakima Project. We've been learning from past failures and from issues there and even today, there is a draft of a bill which will be introduced this session of Congress that deals with moving forward in the Yakima Enhancement Project with issues like water conservation, with issues like looking at potential storage sites for water storage. Those are some of the things that the state and tribal relationship improvement could be helpful to moving forward. There is a round table that was formed by all the interests in the basin that is kind of the pivot point at this point in time for discussions.

Finally, one of the issues you will hear more of is statewide water policy, and it is another one where improved relationships could help. How are we going to deal with water for instream flow protections, for recreational protection, for aesthetic purposes? How are we going to deal with economic development issues? Are we as a state encouraging water-intensive industries into water poor areas? How do we figure all these things out? How do we deal with growth management issues, increasing population demand and the need for water, industrial water,

municipal water? You name it. Lawn watering water? How do we deal with agricultural water, protecting existing rights, encouraging conservation? How do we move forward in these areas? How do we fit them all together? How do we deal with environmental protection in relation to water? The dilution, somebody earlier mentioned, instream flow values to dilute water pollution or clean-up water quality issues? How do we deal with water in the sense of public health? Water for human consumption?

We believe that the state working hand in hand with the tribes, with local government, with the interests involved can perhaps come to a way of developing a process to discuss these issues and resolve them. It may not be in the state-wide arena; it may be regional; it may be basin by basin. But we are convinced that a process, rather than an imposition of a program is the best way to go. We have decided to, I mentioned the Phase II process—we have decided to merge the state's approach on water issues with the Phase II approach and develop a way to move forward in a discussion mode, a government-to-government mode, a respect and a focussing on mutual goals to move forward.

We're working right now, we're moving forward to try to integrate that direction with some of the direct deliberations of the Joint Select Committee on Water of the State Legislature. We're trying to come up with a process that everybody feels they can participate in and that they can help with the solution to some of these harder issues. We're still going to be moving forward in this arena and we need help; we need your assistance. How we structure it; what the scope is are questions that we don't know the answers to—you probably know the answers.

In conclusion, I'd just like to say in water, our challenges are abundant and waiting. We have the tools; as I mentioned, one of the biggest tools I think that we can use and that we can help local governments with, or other folks, is our improving relationships with the 26 federally recognized tribes. That focuses our commitment to respect each other, to work on issues of mutual concern, and to move forward. It's a legacy for the future, I believe, and it will insure a continuity of an honorable policy long overdue.

PROVOCATIVE QUESTION

I.

Should Washington Have Free-Flowing Rivers in the Next Century?

Presenter: Sandra Nelson, Executive Director
Northwest Rivers Council

Respondents: Merrill English, Director
Washington Rivers Coalition
Dayton, Washington

Representative Dick Nelson, Chair
House Energy & Utilities Committee
Washington State Legislature

Provocative Question No. I

SHOULD WASHINGTON HAVE FREE-FLOWING RIVERS IN THE NEXT CENTURY?

Sandra Nelson
Executive Director
Northwest Rivers Council

The questions posed at this conference are meant to be provocative. However, for myself, this particular question reaches the absurd. My mind struggles with the age-old quest of trying to imagine what it is like on the other side of infinity, or how many angels can dance on the head of a pin. I simply cannot (or do not want to) imagine our land without free-flowing rivers.

What is the opposite of having free-flowing rivers? Are we to imagine the Evergreen State with all its water impounded - lying still and stagnant - held within concrete walls - released at the whim of man? Are there to be no "riparian habitats" - living, breathing streams where wild flora and fauna meld in pristine beauty? Or do we prefer the idle, parasitic breeding grounds of reservoir habitats? My mind boggles at the prospect of all of our rivers entombed; no sparkling rush of water over boulders, sliding past the ferns and moss on the tree trunks, and reflecting sunlight with a playful dance - to be only still, torpid water waiting its turn to be utilitarian - changing the bathtub rings on the shoreline once a month.

Is it possible that such a nightmare could come true?

I really fear the answer is yes.

I would like to share with you some events which are true and, yet, which are truly of the theater of the absurd.

In the 1950's a proposal was introduced into the United States Congress by the U.S. Army Corps of Engineers which would have placed a series of 13 dams on the Colorado River through the Grand Canyon - essentially filling the canyon. These dams were to provide electricity (primarily for Southern California's endless consumption) and water diversions (to grow green grass in Phoenix and Tucson.) The dams would have a life span of 25 years of useful electricity production.

Are we so desperately hungry for electricity that we would drown one of the most spectacular of God's creations - for 25 years of running appliances and little gadgets! *For any reason?*

The testimony of an Army Corps colonel in writing is preserved in the Congressional Record; he truly stated: "There is no aesthetic reason to save the Grand Canyon - just for scenery - we have photographs of it to show our grandchildren."

Absurd? - No more so than the spectacle of a river that flows through a modern city catching on fire spontaneously - just from the buildup of waste and oil on the river's surface. The Cuyahoga River within the city limits of Cleveland, Ohio did just that in the 1970's. And downstream, Lake Erie was declared a dead lake - the fish all died and not even algae would grow.

An entire metropolitan population - a million people - lived along that river and lake and watched the death for decades. What was in their eyes and minds? Could they not see or think or react? - until it was too late? Is this "stewardship?"

Then we have the absurdity of waste. In the mid-seventies California was in the throes of a drought that brought the San Francisco Bay area to its knees: water rationing so severe that household consumption of water for drinking and cooking was regulated by the government and people were asked to only flush toilets once a day, (lawn watering, of course, was out of the question)...and yet in Los Angeles, folks still cleaned the autumn leaves off their driveways by hosing them down! When *watering cement driveways* in Los Angeles was finally prohibited two years later, a new device became popular - reverse vacuum cleaner backpack units - one could blow those leaves off the driveway using gasoline motors. How convenient? How absurd!

Why does this absurdity continue? We do know that population growth is the root of all our problems; it *isn't going away - it will grow worse*. Contemplate a frightening reality that if the population of Mexico continues to grow at its present actual growth rate of two percent per year, there will be in the year 2025 the same amount of people within the borders of Mexico as there are in China today. No! They wouldn't fit. There wouldn't be enough water or resources. Health and crime problems would be insurmountable. The growth rate is true; try it on your calculators. Can you imagine that reality? Consider Calcutta today.

So, what is the solution? A respected population scientist once proposed the concept of "floating cities." The land would no longer be used for all our human endeavors. Cities thirty stories high (and another thirty stories below water) would float offshore. Waste storage and industrial complexes would be located in the stories below the waterline; commercial centers, housing and recreational centers would be located in the thirty stories above water. The land of our continents would be used solely for agriculture, forestry, mining, and even recreational outings - for those who waited long enough and applied for a permit to "vacation ashore."

What a great solution! We might not have to consider finite space for population growth for hundreds, maybe thousands of years - until we cemented over much of the ocean. And, in the meantime, we would have saved the land - for the mere sacrifice of spending our human lives in a tower — watching the earth from afar with hungry eyes, or would we get used to this new life?

In a bit of poetic justice, this respected population scientist was given the money to build a model of his "ocean city," which sank in Honolulu harbor immediately after its christening. But technology marches on, other models have been successful...the Japanese are moving ahead with construction.

Is the solution so absurd? It *would* increase the chances of rivers flowing free longer. At what sacrifice to the quality of life? What is "quality of life"? Is human life separate from all other forms of life which depend on the Earth's ecosystem? Can we live without the flora and fauna which Nature provides in its *natural* environment?

Why must man's stewardship be one of repair and clean-up? The once plentiful salmon runs of the mighty Columbia have been reduced to a trickle by the "need" to build dams for cheap hydropower. Now, we try to restore them...to repair the damage of a decision that placed hydropower above the survival of a species. Did *everyone* involved in that conscious decision-making process believe that salmon fishing, both commercial and sport, should become a relic of a past culture? Can we ever restore the beaver to the streams in the West, the majestic herds of buffalo to the Plains? And, more importantly, how can we work to avoid such depletion in the future?

We value free-flowing rivers and streams because they have substantial natural resources and experience public and private use that does not occur on impounded water.

- * Anadromous and resident fish require a quality and quantity of water for spawning, rearing, and migratory needs.
- * Game and non-game species of wildlife require a variety of habitats for food, cover, and water for survival.
- * Wildlife use riparian areas as natural migration corridors.
- * Natural features exist in river corridors including plant communities and geologic features.
- * Recreational use includes fishing and hunting, whitewater boating, flat-water canoeing, camping, picnicking, swimming, and trails for travel and viewing by foot, horse, or motorized vehicles

- * Scenic quality provides enjoyment of many of the river uses by many kinds of user groups.

Free-flowing rivers also provide important water quality for various out-of-stream consumptive uses including unpolluted domestic water supplies and irrigation use, clean hydropower, industrial use and cooling, waste dilution, and recharge of groundwater aquifers.

Finally, there is the issue that future generations deserve the right to experience "*clean*" "*pure*" "*pristine*" free-flowing rivers in their spectacular natural valleys and canyons!

Ask *your* children and grandchildren if they *want* rivers that flow free in the next century.

Let us take a minute and examine why this question of *whether* we have free-flowing rivers in the future must be asked.

In recent years there has been recognition of the importance of instream flows and that mitigation of damage done in the past and setting of standards for the future must be accomplished. However, to reach these goals one runs head on into the whole panoply of present and future demands for use.

What are the pressures that require the human population to need to mess with Mother Nature's original plan?

There are many demands for water in our state. Probably the two greatest water-use pressures come from a growing population in the Puget Sound region and the agricultural needs of the dry regions of the eastern parts of the state. Two illusions exacerbate the problem in that the ever-increasing population lives in an area with sufficient rainfall to keep their surroundings "evergreen" and the Columbia River creates a perception of plenty even in the drier region.

It cannot be overstated that during decades of settlement and growth in our region the needs of instream resources were given a backseat to requests for off-stream allocations, resulting in a system of "inalienable" water rights that leaves little room for maintaining instream flows.

I believe that the legacy of the illusions and the history of water rights granted for out-of-stream uses with little regard of instream resources are combined in the greatest problem we have in meeting present and future demands — *inefficiency and waste are a way of life in our society.*

The majority of the public has little appreciation of "where the water comes from" or the impacts that our demands place upon our resources. I like to call it the "Archie Bunker" mentality. No offense, Archie, but Americans tend to consider garbage something they put out in the trash can that someone comes and takes away - and, equally, water is something that just naturally comes out of the tap. Oh, occasionally there may be restrictions on lawn-watering in the summer, but the expectation is that it will always be there!

There is rarely the thought that water is precious. Must we wait until the next century for that realization?

Equally, the history of "inalienable" water rights granted for out-of-stream irrigation, coupled with the doctrine of "use it or lose it" (translate that "*withdraw*" or lose it) promotes rather than discourages efficient use of water in agriculture.

But the complexity of water allocation issues continues to grow when considerations for the environment and issues of quality of life are thrown into the pot. The courts have given recognition to strong Indian treaty rights, international agreements have been reached for salmon protection, the Northwest Power Act required study and implementation of natural resource protection as well as mitigation and stepped up implementation of conservation measures.

Many of the studies done in the past decade have concluded that the state's water laws do a fairly good job of "...espousing this balance between preserving the natural environment and offstream economic development...but apparently fail to provide sufficient guidance for implementation of this policy."

We are in an era of stepped up study and policy formulation. So, as the state considers water policy and its enforcement for the future, let's hope some serious long-range considerations are included:

- * If we destroy the aesthetic and recreational values of Washington, will the state's businesses and industries have to pay higher wages to attract and keep workers?
- * The state's tourist industry is also dependent upon the attraction which people have for the natural values of Washington.
- * The very important commercial fishing industry in the state needs protected free-flowing rivers for anadromous habitat.
- * Are growth and development - which seems to raise our standard of living in the short run - worth it if the ultimate result is a decline in the future quality of life?
- * Many of the natural values of free-flowing rivers are difficult (not impossible, but difficult) to *quantify* in dollar terms to compete with economic needs, but they are *very real* and are easily and quietly eroded - lost or damaged, sometimes before we even know it.
- * Fish, wildlife, habitat and scenery do not have voices to be heard in the halls of debate, and those humans who do speak up to represent them often lack the time and money to compete with the more wealthy and organized economic interests.
- * Cumulative impacts of impoundments and diversions need to be researched and considered during planning - not afterwards. This kind of knowledge, along with the relationships between surface water withdrawals and groundwater, historical flows, and the chronological data of water rights, should be compiled in a complete hydrologic database for use in planning and enforcement.

What shall we choose as solutions? It is true that lots of policy already exists, even more study committees and task forces are seeking to identify more problems and answers, and that government could increase its efficiency and strengthen its enforcement. But, what about the **REAL** answers?

The public must be made aware of the costs and effects of removing water from streams, and the public should be provided with massive and creative education on the reasons for, the how-to's, and the benefits of water conservation.

Given that knowledge and opportunity, will conservation happen - without some form of heavy incentive or coercion? I'm sorry, I doubt it.

So, it should be mandated. Now. For the sake of the children of the 21st century - we should start.

Is it so unreasonable to state that the plumbing in our homes, businesses, and industrial buildings could be more efficient? Granted, it would be difficult to "re-fit" the pipes in all existing buildings, but why not mandate that all new buildings be built with some system of storage, purification, and recycling units that continually recycle the water from the "stations" that use water for drinking, cooking, cooling, and washing?

Let's not talk about it — do it.

It would mean different pipe systems and the technology of purification and recycling units for individual building plumbing. Is that so absurd? Could not our scientific minds and the technology of which we are all so proud accomplish this research and development task?

Some city governments in the eastern U.S. actually give away free "low impact" toilets - which take less water to flush. We could also encourage the public to flush less often... "when it's yellow, let it mellow; when it's brown, flush it down" is not unreasonable. Our current practices are unreasonable. [Editor's Note: The 1991 Washington Legislature required 3 gallon, then 1-1/2 gallon flush toilets to be phased in for new buildings by 1991 and 1993, respectively.]

The major stumbling block to developing alternative forms of water use technology is, of course, money. The re-thinking, retooling, and subsequent revamping of our water consumption habits would require tremendous amounts of time, energy, and capital. One day - and the next century is coming soon - we will not have the luxury of

choosing alternatives. We will, either by using our resources, including water, wisely and recycling, or die with our planet.

Here's an even simpler solution: state residents should be encouraged (or mandated) to replace lawns with native plantings which require less water - we really should remember that Mother Nature originally planned things well.

And, what about water rights? Without talking about taking them away, we can explore solutions. To help improve knowledge and enforcement, all surface water intake pipes must be adequately registered and a system of monitoring developed.

They need not be taken away - but users should pay the full cost of the water. Radical idea, I know. But why shouldn't the users of today pay for the water they use? Why must we talk of the future generations having to pay that price?

Tax incentives which encourage more efficient water use should be instituted as well as economic disincentives which discourage inefficient methods.

The issue of water use and conservation is a thorny one. We have so many diverse interests vying for this precious resource and, yet, very few people acting in its defense. For years, Washington farmers, industrialists, town planners, and utility concerns, supported by the prior appropriation doctrine of "use it or lose it," have unthinkingly dammed and diverted our states' rivers. It is high time that we **STOP** and take a step back to review this altogether reckless water-use policy.

Rivers were not created to be at our beck and call, in fact, they were not created for any "use" at all. They are delicate ribbons of life. Long before human manipulation, rivers were feeding the land and supporting a vast array of plants and animals that lived in harmony with, not appropriated from, their plentiful waters.

Rivers need to run free! Our perverse attempts to impound and control them run contrary to any natural plan. Through thoughtful research and development, we can have all the energy, drinking water, and general use water we need **without** further damming or destructive or wasteful diversions of this wondrous resource. It will be a terrible day when living rivers are something that we can only find in old *National Geographic*s.

Our grandchildren and future generations in perpetuity deserve the best possible world we can leave them. Included in this compact are clear, free-flowing and life-sustaining rivers.

Once they're gone, we cannot ever get them back.

RESPONDENT

**Merrill English, Director
Washington Rivers Coalition
Dayton, Washington**

Early in my life, the first five years after graduation from the college of agriculture, I went to Alaska. I spent these years living in the Eskimo and Indian villages. I've seen the eagles soar. I've floated the Yukon River, I've floated numerous rivers including the Snake, the Salmon, and the white waters of the James, and the White River in Missouri and Arkansas, the Buffalo and the Current River. I believe the Buffalo is a "Wild and Scenic River" now. I have been there. There is another side to this story—gather round, I want you to hear it.

It's called private property rights. We can have free flowing rivers in the 21st century and we can do it with the help of technology, the dedication by industry and all of us, plus private enterprise. We have a lot of hard decisions but we can make them. We've made some mistakes in the past; we'll make some more in the future. Minute by minute, the population does increase, throughout the world, and there are no signs that it is going to slow down. This puts more pressure on the remaining resources.

There are a couple of ways to save these rivers—free-flowing rivers—but basically what the Wild and Scenic Rivers Program is promoting is a sort of a **commons** for the good of all, owned by everyone and really managed by no one. The Yukon River with some of the most beautiful country in the world is one of the dirtiest rivers I have ever seen in my life. The garbage is put out on the ice in the winter time by the villages, white and native. When the ice breaks up in the spring it flows out to sea. There is so much land up in Alaska for the few inhabitants that we destroy it. We know it's a renewable thing; it flows out to sea and it's out of sight. This is what happens to a **commons**. A commons, for those of you who don't know, was created early in the world, when the herdsman would pasture their animals on a common pasturage. It finally became knowledge to each herdsman that the only way that he could get ahead was to graze one more animal on the common pasturage. As each herdsman increased by one animal, the pasturage was about to be destroyed by overuse and neglect. So, lo and behold, there comes private property rights—the nobles took the pasturage over. The nobles told the peasants—no more, you cannot graze unless we say so; we want to protect it, and they did. The price of overgrazing was too high and they were protecting their private property rights which they had just invented.

Other forms of the **commons** that we see right now in the world are our oceans and our fish. We have treaties; they are not always enforced. The **commons** of the ocean is for fishermen from all of the countries—if they want to catch more fish they use bigger ships. They have refrigerated ships which allow them to stay out longer, and we deplete the resource because it is overused by all. It's there—we believe it's everyone's fish. We do have the treaties, though, and I will try to get back to this in a moment, but Sandie talked about instream flows and out-of-stream use—it's been talked about all day.

The instream flows that we want to maintain for our fish—it's awfully hard when in the ocean commons our Coast Guard recently picked up some Asian ships that had a flotilla of refrigerated ships with it. We're trying to increase our salmon and steelhead. They had caught 22 million steelhead and salmon just north of the squid line. Now, back here in this country, we're trying for a little mitigation for the fish from the dams, keep the instream flows, build back our fish. We can build back the fish all we want, but if they're caught out in the ocean we're not going to have any fish. From a practical standpoint, I say that's a waste. I'm going to step on a few toes, I'm sorry; the Corps of Engineers, in the mitigation process for the Snake River dams, put no bypass screens in. The fish that come out of the river go over each dam; they have to go over six dams to get out to the ocean, to get down the Columbia. About five percent of them make it; then they are caught on the high seas by other countries and they don't get back to spawn.

We have some duplication of things we have to do. We have to take on some of our government agencies; we have to correlate some of these things. We have to take care of our treaties on the seas to maintain the fish--to use the instream flows we've been talking about.

Another **commons** we are destroying is our air. We think nothing of it because our exhaust goes into the air and we don't see it anymore. We continue to pollute our air the rest of the day because we can't see the bad air. Now, to the waters and rivers.

We can protect these rivers with private property rights of the farms and ranches and caretakers of the lands along the rivers, or our government can own and manage them. In Washington State we have a Scenic Rivers program; it has taken ten years since the designation to get a management program on line, and I'm not sure it's on line yet. Last time I talked to Washington State Parks and Recreation Commission, there was no management program in place. You can't take and lock something up and not have a management program if you are going to save it. The systems that have worked all these years have been private markets and the free enterprise system. If there is a value to it, we don't throw it away. I heard earlier that we don't pay for the irrigation water we use on our crops, but yes we do; it is paid for in the taxation upon the land. There are some different ways to manage these commons, and I would like to throw out some ideas because I would like to see free-flowing rivers.

The government manages or the government owns, and from what I can see the government, due to the nature of bureaucracies, is much more wasteful than private enterprise. I have nothing against The Wilderness Society, the Sierra Club, or the Audubon Society making bids on Yellowstone National Park to manage it. They can do it cheaper than the government can do it. Your career Interior Department people won't like this. But they spent \$120-\$150 million last year and a like amount on the fire. I think that we have some ecologists, some environmentalists, some economists that would love to have that challenge and could do it cheaper, could save the resource, get better use of it. That's one recommendation.

Basically for our rivers I really believe that England and Scotland have a better method where the people that own the land manage the river. They sell the rights to the fishing of the salmon. They do the same on the ponds. They manage it correctly and people pay a fee. I spend a lot of time in the wilderness area behind where I live—I love it. It's getting worn out. There are too many people that go back there. The wildlife is not in the wilderness area anymore—they're along the edges of the wilderness area eating my alfalfa which is fine. I leave the last cutting for the deer and birds, being a good steward of the land. We can do these things better with private enterprise than we can with the bureaucracies of the government and by destroying them in the **Commons**.

One last comment. As private land owners and as advocates of property rights, be it water rights, trespass, ingress, egress, whatever, we have done a remarkable job with the lands that we own and operate for all of us. As of 1985 the following has been accomplished—this is what land owners have done for the environment and for the wildlife. We have done more than any other group. There are 3 million acres that have been diverted from crop land to wildlife habitat. Over 72% of all wildlife food is provided by the private land owner. Wildlife habitat has been improved on 21-1/2 million acres; 21 million acres have been planted to trees; 17 million acres of rangeland have been reseeded. Watershed projects hold over 17 million tons of sediment out of our streams annually. More than 55 million acres are contoured farming. We no longer plow straight up and down a hill. Over 20 million acres of crop land have been converted to grassland and 3.5 million to forest. Last, over 50% of all of our recreation occurs on private property, and 75% of that is on agricultural land. We have a big job ahead of us; we're all working for the same thing. I consider myself an environmentalist, a conservationist, and a property rights advocate.

RESPONDENT

Representative Dick Nelson
House of Representatives
State of Washington

I share Sandra's reaction to the question that has been posed to us, and using a speaker's prerogative, I'd like to revise it. A more appropriate question is: Will Washington have free-flowing rivers a century from now? It is incredible to contemplate, yet possible that we won't.

There may be some who believe that we can adapt to a life without free-flowing rivers by devising and using technology. But they are a minority, and we should keep them that way.

We, humans, Washingtonians, have a natural affinity to free-flowing rivers, witness our patterns of development and activity. Recreation and year-round homes line our rivers and they are only limited by public land prohibitions. Fisher people stand shoulder-to-shoulder on their banks at certain times of the year.

We are attracted to our rivers just as the fish, animals, and insects who depend on their habitats are attracted to them. And many of us have shared the spiritual sense of rivers that our native American friends know so well. But the pressures of population growth and urban development threaten to overwhelm our natural affinity to our rivers—our need for values that water flowing in its natural course provides.

We acknowledge, as Sandra has, that our rivers are necessary to sustain life—that there are essential instream and out-of-stream uses. We acknowledge that there can be withdrawals that do not jeopardize a river's natural ecosystem.

But we share her concern that our rivers have been undervalued, and that they have been allocated in ways that reflect a belief that the water running in them has no limit. Now we know better. Our water is exceedingly valuable and it has finite limits. In fact our rivers have many valuable uses which become more apparent as the pressure on them grows. The increasing demands to allocate our river to new and competing uses will require our best legislative, regulatory, and advocacy efforts.

As Sandra, and others, have indicated, experience elsewhere suggests that our affinity for free-flowing rivers may not in itself be strong enough to withstand the pressures of population growth and economic development.

For this reason I support her recommendations:

- 1) Our state water laws, especially laws relating to minimum flows and allocations, need to be amended so that state agencies have sharper tools to both preserve the natural environment and provide for consumptive uses. (The Joint Select Committee on Water Resources Policy and its advisory committees are at work on legislation for the 1990 session and beyond.) [Editor's Note: Legislation required that two pilot basins be chosen for planning.]
- 2) All current and future (as far ahead as we can even dimly see) uses need to be identified and appraised.
- 3) Much better data bases on supply and use are essential.
- 4) Cumulative impacts must be understood.
- 5) We need to set aside reaches of streams that have significant values in addition to fish and wildlife habitat already protected under the Northwest Power Planning Council's Protected Areas Plan. (There is a state task force at work on a state protected areas plan which will build on the NWPPC's plan.)
- 6) The public needs much better information about the sources of the water they use, and about competing uses and users, who are most likely themselves.

- 7) We must pursue increased efficiency of water use, including the enactment of building codes that require cost-effective, low-use water systems. (The legislature began to address water use efficiency and conservation last session.) [Editor's Note: Legislation was adopted to phase in low-use water toilets and faucets.]
- 8) Whenever it is appropriate, we should encourage recycling and reuse of water.
- 9) Pricing should encourage efficient use.

There are two approaches to water conservation: voluntary, with appropriate price signals and information, and mandatory, when the market does not work well—when life cycle operating and maintenance costs are not readily apparent.

I predict we will discover that enormous amounts of water can be conserved, just as we did for energy. We are the people that use far more water than other developed countries; four times the per capita consumption of Switzerland, for example.

But conservation has its limits with water, just as it has with energy. Population growth and economic development will increase the demand for new water resources. Meeting that demand must be related to our approach to growth generally.

Growth, and its impact on public services and our financial resources, is at the top of our public agenda in the Central Puget Sound region and other areas of the state.

The focus has been on transportation. I suggest that water will soon be as important in the growth management debate. Not only with respect to water quantity and quality, but also with respect to its source. The location of our water supply for domestic and industrial purposes may control the distribution of population growth in this region and state.

There are proposals on the table (or close to the table) that would transfer water between river basins on the west side of the state to supply the growing demand of King and Snohomish counties. Interbasin transfers now occur to supply Seattle and Tacoma's needs. Should interbasin transfers be restricted? What effect would this have on the distribution of growth and development across the state, and what would be the environmental and economic costs and benefits of this policy?

My personal belief is that water availability should determine where growth occurs, and that environmentally sustainable development will be more likely if water transfers are restricted. I expect these questions will be addressed by the Governor's Growth Strategies Commission. [Editor's Note: The Growth Management Act of 1990 requires that water availability be verified before development occurs]

Finally, let me echo something Bill Funk said earlier. Global warming is a reality. How fast our global climate changes will depend on our ability to change our energy habits in the next few years, especially our voracious appetite for fossil fuels. And what effect it will have on our state and its regional climates remains to be determined by better models and bigger computers, and even then we may not know until the temperature rises.

What we have is a situation of tremendous uncertainty, both in the timing of stream run-off but also in the quantity of water flow.

We learned in the energy area that when you have a tremendous possible range of future demand—from zero to fourteen large thermal plants by 2010—you have to devise supply alternatives that are flexible and unique.

The situation is reversed for water. We are faced with a future supply we can't predict. So we will need to be far more flexible in how we allocate use, to avoid major impacts on our environment and economy. This will require a totally new approach to water resources policy and planning, just as was needed for energy.

We obviously have a big job ahead of us if we want to have free-flowing rivers in the year of our Bicentennial.

PROVOCATIVE QUESTION

II.

How should Treaty Reserved Water Rights, With Regard to Quantity and Quality, Fit Into State Water Plans?

Presenter: Mason D. Morisset, Esquire
Pirtle, Morisset, Schlosser & Ayer
Seattle, Washington

Repondents: Floyd Ivey, Esquire
Kennewick Irrigation District
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Betty Tabbutt, Research Analyst
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Provocative Question No. II:

**HOW SHOULD TREATY-RESERVED WATER RIGHTS,
WITH REGARD TO QUANTITY AND QUALITY,
FIT INTO STATE WATER PLANS?**

Mason D. Morisset, Esq.

Before discussing how treaty-reserved water rights should fit into state water plans, we must understand just what those water rights are, for they are substantial.

Indian tribes in the State of Washington have important rights based on an entitlement to a quantity and quality of water guaranteed by Federal law. These rights need to be accommodated in the formulation and implementation of state water policy.

Tribal water rights in the state have three components.

1. Water Rights Based on Treaty.

The first source of Indian tribal water rights are the treaties between the United States and Tribes and the reserved fishing and hunting rights contained in those treaties. As we know, the Supreme Court has affirmed the reserved right to hunt and fish beyond reservation boundaries.¹

The treaties themselves thus contain an implied reservation of water sufficient to maintain fisheries resources upon which the tribes depend.² This reserved water right differs substantially from the Winters Doctrine rights discussed below.

First, the right attaches to waters not only on or near reservations but to waters throughout the state wherever tribes have usual and accustomed fishing places or wherever it is necessary to maintain water quantity and quality sufficient to maintain fishery stocks upon which the tribes depend. Thus, where there is insufficient water for both agrarian and fisheries purposes, treaty fisheries may have priority.³

Second, the reservation of right is by the tribes and not the Federal government as in the case of Winters Doctrine rights. This is important in determining the full scope, nature, and extent of the right as legal rules of interpretation favorable to the tribal understanding of the right must be applied.

Finally, being based on treaty and being reserved by the tribes themselves in the treaty, the priority date of the reservation is time immemorial.⁴ This priority date means that this water right predates all other water rights and is not subject to the pro rata reduction as might be the case in a situation where all water rights had the same priority date.⁵ Because these are Tribally-owned rights, no pro rata reduction of state-created rights can affect the Tribal rights.

2. The Environmental Right.

The second component to tribal water rights is the "environmental right." This right also is based on the treaties and was best explained by Federal Judge William Orrick as follows:

Implicitly incorporated in the treaties' fishing clause is the right to have the fishery habitat protected from man-made despoliation. . . The most fundamental prerequisite to exercising the right to take fish is the existence of fish to be taken.⁶

While also protecting the right to sufficient quantity of water to sustain fisheries resources, this treaty-based environmental right also relates to a much broader number of factors. These include water quality and broader environmental problems which might affect the habitat such as road building, forest practices, urbanization, industrial, agricultural and domestic pollution of all kinds.

3. "Winters Doctrine" Rights in Indian Country.

The most familiar Indian water right is based on the so-called "Winters Doctrine." Within what is known as "Indian country" (i.e., essentially all reservation lands and any lands off reservation held in trust for an Indian or Indian tribe by the United States government), Indian water rights are guaranteed by the "Winters Doctrine".⁷

Under the "Winters Doctrine" the Federal government, when it established any reservation, including Indian reservations, reserved "appurtenant water then unappropriated to the extent needed to accomplish the purpose of the reservation."⁸

Pursuant to this Doctrine, the United States reserved rights on behalf of the Tribes in unappropriated water which vested on the date of the reservation. These rights were and are superior to the rights of future appropriators. Winters Doctrine rights do not depend upon treaty, although the establishment of a reservation typically included the reservation of water was part of the promises in the treaty. Nevertheless, Winters Doctrine rights apply within Indian country whether or not there is a treaty between the United States government and a particular Indian tribe.⁹

The Winters Doctrine has been applied to find that sufficient water was reserved to allow irrigation of irrigable acreage on a reservation and for establishment of fisheries and to facilitate natural spawning of fish.¹⁰

4. Planning for the Future.

State authorities must realize that they will have to recognize this considerable body of rights in a meaningful way or face litigation. It should be remembered that under the Supremacy Clause of the United States Constitution, Indian water rights are protected by Federal Law and "are not dependent upon state law or state procedures."¹¹

As to the concern that the treaties provide "special" or "superior" rights to Indians, the Supreme Court has said:

The simplest answer to this argument is that this Court has already held that these treaties confer enforceable special benefits on signatory Indian tribes . . . and has repeatedly held that the peculiar semisovereign and constitutionally recognized status of Indians justifies special treatment on their behalf . . .

Washington v. Fishing Vessel Association, 443 U.S. 658 at 673, n.20 (1979).

At the same time the tribes recognize the other considerable and important interest in the state for water, including agrarian, municipal, industrial, and recreational uses.

To deal with Indian needs on their reservations and needs relating to the quantity and quality of water necessary to sustain fisheries resources the following steps need to be taken:

- a. Interim instream flow regulations must be adopted which protect fisheries resources pending revision of state water policy. This may include a moratorium on any further appropriations until such regulations are adopted. If that is not possible, then any such appropriations should carry a disclaimer that they are subject to outstanding Indian treaty water rights to minimum flows to protect fisheries resources.
- b. A comprehensive assessment of water needs necessary to protect fisheries on a watershed by watershed basis must be undertaken. In this regard the state and tribes should cooperate to obtain funding to carry out such an assessment.
- c. Any state processes, including regulations or policies which deal with water appropriation and which purport to appropriate water, must be accompanied by the disclaimer that any such appropriation is subject to

possible overriding and superior water rights of the tribes based on the Winters Doctrine or the treaty reservation of water.

d. State agencies and tribal governments should continue negotiations looking towards a comprehensive state water policy which fairly addresses all competing water needs.

e. Water quality regulations necessary to protect water quality for the production of fish must be thoroughly reworked and upgraded to provide that protection. Forest Practice Act regulations are notoriously inadequate to protect both short-term and long-term water quality for fisheries production.

f. More planning on a regional basis is necessary to protect both water flows and quality. Recent examples such as the Snoqualmie Valley plan which attempt to limit growth and development must be expanded to include broader areas.

5. Conclusion.

Indian Tribes have water rights based on treaty with a priority date of "time immemorial." This fact, coupled with the supremacy of treaty rights under the U.S. Constitution, means that Indian tribes are a major force to deal with in determining state water policy. Tribal rights simply must be accommodated unless the state and its citizens are to be engaged in endless and usually unsuccessful (for them) litigation over water rights. Policies which develop minimum flow and quality standards, which protect the treaty right until such standards are met, and which put all citizens on notice of such rights, must be adopted and implemented by the state forthwith.

1 Washington v. Fishing Vessel Association, 443 U.S. 658 (1979).

2 See: Joint Board of Control of Flathead, et al v. United States, 832 F.2d 1127 (9th Cir. 1987).

3 See: Kittitas Reclamation District v. Sunnyside Valley Irrigation District, 763 F.2d 1032 (9th Cir. 1985).

4 See: Joint Board of Control of Flathead, et al. v. United States, 832 F.2d 1127 (9th Cir. 1987).

5 See: Joint Board of Control v. U.S., FN 6.

6 U.S. v. Washington, 506 F. Supp. 187 at 203 (W.D. Wa. 1980). Note: This decision was ultimately vacated and remanded to the District Court by the Ninth Circuit as premature. U.S. v. Washington, 759 F.2d 1353 (9th Cir. 1985). As of this date, no action has been taken in District Court as the state and tribal parties to that case continued to negotiate. Judge Orrick's decision still remains, however, the best explanation of the so-called "Phase II environmental right."

7 Winters v. United States, 207 U.S. 564 (1908).

8 Cappaert v. United States, 426 U.S. 128, 138 (1976).

9 See: e.g., Colville v. Walton, 752 F.2d 397 (9th Cir. 1985).

10 See: e.g., Colville v. Walton, 752 F.2d 397 (9th Cir. 1985).

11 Cappaert v. United States, 426 U.S. 128, 138 (1976).

RESPONDENT

Floyd Ivey, Attorney

I'm wondering how provocative this question is; that is, the question of treaty water rights and to gauge that, I would like to first introduce you, the audience, to me. I'd like to know how many here identify tribal concerns as a primary interest. How many identify environmental concerns as a primary interest? What about economic development as a primary interest? How many identify nontribal irrigation as a primary interest? I don't see many hands up on that.

Let me tell you that Counsel Morisset has identified his role in tribal representation, and I represent nontribal irrigation interests in Eastern Washington. I am involved in the general adjudication of the water rights of the Yakima Basin in the case of the State of Washington versus James Aquavella.

My comments today will relate primarily to that adjudication. The tribal interests in Aquavella are represented by the United States Department of Justice and the claim asserted on behalf of the tribe is for agricultural use (one million thirty thousand acre feet per year); for non-agricultural (fifty thousand acre feet per year); and for fisheries (one and one-quarter million acre feet per year). That claim amount equals the total present tribal and nontribal usage and, consequently, it is essentially a claim for all of the water of the Yakima Basin.

A motion for summary judgment is at this time pending, wherein the Yakima County Superior Court will be asked to determine that the Yakima tribal water rights have been previously quantified. The moving parties, and the moving parties are the nontribal irrigators, will submit briefs on November 1 of this year and the motion will be argued in the spring. The court has indicated its intent to rule prior to the commencement of the 1990 irrigation season. I disagree with counsel that the determination of tribal water rights have only the components he mentioned here today. I want you to be aware that my present participation in the Aquavella case requires that I be somewhat circumspect in making references to the particular bases upon which arguments will be made. These will be published November 1 [1989].

With that in mind, I contend that the most prominent determination of present tribal water rights has come about through Congressional acts and the claims pursued by the tribes themselves. Acts of Congress have demonstrated a balancing of interests between settling the West and fairly dealing with tribal interests. An attitude of likewise dealing fairly with those settling the desolate western states is seen in Senate debates. That brings us to one of the principal issues on which I disagree with Counsel Morisset.

What is the basis of present tribal water right claim? Is it by treaty? Winters Doctrine, or is it defined by other historical action? Alternatives to the basis recited by counsel are suggested in congressional and tribal actions which were spread over the decades. The Winters Doctrine of 1908 held that reserves of water were established for the reservation which were not to be diverted by settlers. What did the Senate think of the Winters Doctrine in 1914, six years after the doctrine was established by the United States Supreme Court? Their attitude of balancing tribal issues with interests of settlers is easily observed. In 1914 the Senate debated a gratuity appropriation relating to the Yakima reservation. They found that large irrigation projects had been established under the laws of the United States so that the entire flow of the Yakima River had been appropriated under the laws of the State of Washington. The Senate noted the bitterness, the conflict, and the litigation that was present at that time. They concluded that with practically all the water having been diverted to use by settlers on non-reservation land that a gratuity appropriation of 1-1/2 million dollars to the tribe would be the preferred alternative to the taking of the waters away from the settlers.

The Senators were concerned with both the lack of quantification of water under the treaties and the lack of the determination of a time certain within which the tribes would be required to make a beneficial use of the reserved waters. Senator Warren (Warren of the Warren Act) expressed his anxiety over the potential of such undefined reserved water to lock up the entire irrigation water supply of the country. The Senators enquired whether anyone believed that a reservation would have the right to divert all of the water from a stream if it was necessary to irrigate

their land. This potential was rejected by the statement that it is apparent to everyone here that the total water available for irrigation will not be appropriated by those tribes. They noted a fishery rights case from the Northwest involving treaty reservation of rights of fishery. They noted that the tribe continued to have the right to fish upon streams and that that was obviously a very different thing from the use of the waters of the stream. They also observed the hindrance to development associated with the constraints imposed on available irrigation water. What did Congress do, this attitude that we see between settling the West, developing the West, and tribal interests? They had already by 1914 passed important acts: the 1902 Reclamation Act to reclaim the arid countries of the West; the 1905 withdrawal by the United States of unappropriated water of the Yakima Basin; the 1906 settlement by adoption of the Jones Act which set the Yakima Nation water right at a quantity of 147 cubic feet per second. There is the 1911 Warren Act; 1914, the same year of the Senate debates that I refer to, an Act of August 1, 1914 establishing a 720 second-foot water right for the Yakima Nation without repeal of the Jones Act.

Separate from these congressional acts and other acts of Congress that I have not mentioned were significant actions pursued by the tribes with the Indian Claims Commission. These Congressional acts and tribal claims with the Indian Claims Commission have superseded Winters and the treaty reserved water rights.

Tribal water rights have been quantified by congressional actions, lobbied for by the tribes, and by congressional policy decisions which resulted in the settlement of these arid western states. The court in *Aquavella* in Yakima County will be asked to find such acts and claims to be a part of the basis of holding that the Yakima Nation claims have been previously quantified.

Counsel Morisset also suggests or, rather, virtually threatens, that state authorities must realize that they have to contend with and recognize tribal water rights or face litigation. Of course, litigation is presently common throughout the West and, of course, we are in the midst of protracted litigation in the case of *Aquavella*. *Aquavella* commenced in 1977; in 1988 the Department of Justice was directed by the court to state the claim it would assert on behalf of the Yakima Reservation. On July 14, 1988, after 11 years of litigation and preparation, the United States was then unable to state the claim, indicating its need for yet more preparation. The claim for all the water the Yakima River provides was not finally asserted by the Department of Justice until the spring of this year [1989].

What role does the Department of Justice play in representing the tribal interest? It is at the outset an expensive role. Expressions within court indicate claim development expenditures by the Department of approximately \$6 million by 1986. The Department will not conclude its primary claim preparation until by court order December 31, 1989. There has been no revelation of expenses incurred since 1986. Should the Department of Justice provide like support, as it is to the tribe, to nontribal irrigators in their defense of asserted tribal claims?

At least two separate events have occurred which indicate such support should occur. In 1905 Irrigation Districts entered into limiting agreements with the Bureau of Reclamation in return for Bureau development and additional irrigation capacity. The irrigators agreed to specified limitations in return for specified quantities of water. Pursuant to the Warren Act of 1911, contracts were executed between districts and the Reclamation Service wherein the government promised to provide specified quantities of water to districts in all years except those of exceptionally low runoff when all uses would be prorated. It is doubtful that the government could abide by these promises to deliver water to the districts if the Department of Justice was successful in its present claim on behalf of the tribe.

Consequently, has the United States either a trust or a contractual duty to assist in defending against the very claim it asserts for the Yakima Tribe? Support for this is found in a solicitor's opinion expressed this year, dated July 6, [1989]. The opinion's genesis is the *Aquavella* case. It refers to the directive of the Reclamation Act of 1902 that the Secretary reclaim arid lands through irrigation projects and then restore the lands to entry pursuant to homestead. Citation is made to *Nevada versus United States*, a 1983 case where the government argued that it had properly appropriated project water rights and therefore owned the water diverted, stored, and distributed for the project. The Supreme Court rejected that argument, holding that once these lands were acquired by the settlers in the projects, the government's ownership of the water rights was at most nominal; the beneficial interest in the rights confirmed to the government resided in the owners of the land within the project to which these water rights became appurtenant upon the application of project water to the land. The United States was placed in the position of bearing water on both shoulders, a tribal shoulder and a nontribal shoulder, and required to act in a trust relationship with both the tribe and the nontribal irrigators. The Department of Justice will have further contact from nontribal irrigators regarding this issue.

The United States as sovereign, has dealt with tribes as semi-sovereign. Policies implemented with numerous congressional acts have promised and delivered vital irrigation systems required to entice settlers to the West. Those congressional acts—federal laws—have impacted water rights of all, including tribal rights. Tribes have pursued claims of their own which have resulted in settlements and judgments quantifying water rights. There is no longer an aboriginal right, and treaty rights have been sold through claims and changed through the law throughout the decades of settling the West.

RESPONDENT

**Betty Tabbutt,
Washington Environmental Council**

Addressing the question, "How should treaty-reserved water rights, with regard to quantity and quality, fit into state water plans," I will emphasize the planning, but I do want to respond to Mr. Morisset's comments and, of course, Mr. Ivey's.

I'd like to first respond simply as citizen with no particular agenda other than just the fair and rational apportionment of water, if it is possible to be a citizen with no other interests. If it is, the most important thing that I would like to do is to acknowledge those tribal rights which Mr. Morisset has identified: the rights to both clean and adequate water supply which predate state's rights and are an obligation upon all of us, regardless of what our preferred use of the rest of the water is. I disagree with Mr. Ivey. If I understand his comments, he would rather look at the history of Congress, and the mood in Congress about our obligations has changed throughout the years. I think that what we need to do is look back to the treaties when they were created and the spirit of those treaties and put our emphasis there. I think the validity resides in the spirit of the treaties, rather than in the various changes that have occurred during history and in Congress.

It is interesting that Mr. Ivey did cite the trust and the contractual duties of the U.S. Government with regard to their duties toward irrigators to whom they promised water. I'd like to see that trust and contractual duty go a little further, back to the treaties themselves.

Even acknowledging those treaty rights, we still have a dilemma. Physically and quantitatively, we do need to know how much water is left over after we have satisfied that obligation. How can we proceed with the business of giving away water if we don't know how much water there is to give away. Have we already given away more than we have the right to give?

Creating state water plans, or, indeed, creating a process to proceed with planning, is a fruitless exercise unless we somehow face that dilemma and tackle it head on. Mr. Morisset suggests a cooperative effort between the states and the tribes to do the difficult but essential job of assessing water needs. He specified starting with the water needed to protect fisheries and doing that assessment on a watershed by watershed basis. I agree that this should be a first effort. I would also submit that that might be the easiest part of the job. We still need to know how much water the tribes are going to need as withdrawals to satisfy that other right; the right that is involved in the Winters Doctrine. Several people have mentioned the difficulty in assessing that need, and I certainly don't want anybody to walk away from here thinking that will be an easy task.

If, miraculously, we could quantify all the water which the tribes have right to and have a priority to over other allocations, then we could imagine a simpler situation. That is, the state could carve out and reserve that quantity of water and start at that flow level with their job of creating a state policy and managing the rest of the waters. However, we all know it's not that simple. There is, in fact, some real overlap between the water which will be needed for satisfying and fulfilling treaty rights and the water which the state will need for protecting important values. It all comes together with the instream flows. Some water remaining instream will satisfy treaty rights—some, but not all. Likewise, there will be other needs for instream flows beyond what will satisfy the treaty rights.

So that brings me to my response to the question, as a citizen who is concerned with environmental quality. I would state that my concern is that the state policy must reflect the non-consumptive needs that may, in some specific instances, go beyond the needs of the treaty tribes. We as a state cannot assume that treaty rights, including the right to clean water as it was articulated under the Orrick decision, will in all cases protect the values which the citizens of the state have, up until now, taken for granted. Aesthetics, wildlife, recreational needs, water quality (in situations where a viable fisheries can probably not exist) still need protection.

I was pleased that Mr. Du Bey made a special effort to emphasize the connection between water quality and water quantity. Mr. Morisset did that as well. We need to continually keep that mindset in our thinking—that water quantity, the allocation of water is going to have a direct impact on water quality and vice versa.

So here's my warning to the provocative question that was being asked. It is simply that it might be too easy for all of us, even citizens with environmental interests, to just assume that the tribes under the Phase II decision will, either by litigation or by other means, protect and preserve our fisheries and therefore protect and preserve all of our interests in non-consumptive water needs. I suggest that it is the job of the state on behalf of all its citizens, not the responsibility of the tribes alone, to recognize and protect the full array of non-consumptive values and to be sure that they are built into state policy.

I would tick off what I think is necessary for a planning process to be fruitful. First of all, it is important, even essential, that the tribes participate and, as best as possible, assess their water needs, which under the reserved rights or treaty rights, have priority. Clearly for the tribes to want to participate at all, the first essential step is clear recognition of their right built into the planning process. I was particularly pleased to hear the representative of the Governor's office state that that recognition is being made and that it is essential for the tribes to be a part of the planning process. That's the most important thing, to have everybody at the table.

Secondly, the state must articulate a policy for that water which remains after the treaty rights are satisfied—that water which is the state's responsibility to manage as a public trust. To fulfill the public trust responsibility of the state, water quality, aesthetics, and other public values must be reflected within that state policy.

Where instream flows can protect both state policy and the obligation to the treaty rights, that overlap in quantity, can be reflected specifically in basin-by-basin plans. Again, I would warn that complete overlap is not a "given." Instream flow might need to be greater than just for the satisfaction of treaty rights or fisheries protection. As Mr. Morisset warned, future appropriations should carry a disclaimer that they are subject to Indian treaty rights. I think it's important that we build this disclaimer mechanism into the planning process. He also raised the question about what do we do in the interim while all this planning is taking place. We cannot let all the water dribble away while we are finding the answers. That is also an important element of the planning process.

For the more difficult planning exercises, where we have allocated more water than the state had to allocate, we must face up to hard reality. We simply must build into our planning process some reasonable way to redress that situation. I do agree that litigation by the tribes is not productive, particularly not productive for the state. The Public Trust Doctrine is the clear justification for the state to reclaim water. That will not happen without some legal struggle as well. At a minimum, in situations of overallocation, the state should be aggressive about reclaiming water by conservation (either by very strong incentives or, where necessary, by requirements) and by claiming unused water rights.

From my perspective, particularly concerned with environmental quality, I feel it essential for us to have comprehensive water planning. For a state planning process to be successful, we must, first, all accommodate the treaty obligations which predate the state's rights. We must recognize that the public trust responsibilities to protect environmental concerns will not automatically be satisfied or accommodated with the treaty obligations; they are not necessarily the exact overlap.

We must address some interim conditions while this planning is taking place so we are not losing water as we speak, and we must build some kind of a conflict resolution element to deal with overallocation.

PROVOCATIVE QUESTION

III.

Can Western Water Law Rooted in the 19th Century Serve the Public Interest in the 21st Century?

Presenter: Ralph Johnson,
 Professor of Law
 University of Washington

Respondents: Donald H. Bond, Esquire
 Halverson & Applegate, P.S.
 Yakima, Washington

 Audrey Simmons, President
 WaterWatch
 Portland, Oregon

Provocative Question No. III:

**CAN WESTERN WATER LAWS ROOTED IN THE 19TH CENTURY
SERVE THE PUBLIC IN THE 21ST CENTURY?**

WATER POLLUTION AND THE PUBLIC TRUST DOCTRINE

**Professor Ralph Johnson
School of Law
University of Washington**

Professor Ralph Johnson gave a similar talk at Lewis and Clark College (Portland, Oregon) in 1988 and asked that his paper prepared for Environmental Law [Vol. 19:485; 1989] be used in lieu of the transcript of his presentation for the Whose Water? conference.

I. INTRODUCTION

By some estimates, nonpoint¹ water pollution sources account for up to ninety-nine percent of suspended solids and between fifty to ninety percent of other conventional pollutants.² Up to fifty percent of toxic pollutants may be blamed on nonpoint sources.³ Nonpoint pollution is primarily responsible for the failure in most states to meet the Clean Water Act's water quality standards.⁴

Agriculture is a major source of nonpoint pollution in the form of sediments, pesticides, and pathogens.⁵ Fifty percent of the total sediments contaminating United States inland waterways began as cropland, and half of this, along with organic and inorganic contaminants, reaches the oceans.⁶ The drinking water of an estimated fifty million people in the United States comes from groundwater that is potentially contaminated with agricultural chemicals.⁷ Risks to human health from exposure to contaminated groundwater have been documented, and more are suspected.⁸

Several trends have increased the potential for groundwater contamination from agriculture. Four times more inorganic nitrogen fertilizers, a major source of nitrate-nitrogen groundwater contamination, were used in 1980 than were used in 1960, while the agricultural use of pesticides has nearly tripled since 1964.⁹ Meanwhile, up to ninety-seven percent of people in rural areas rely on ground water for their drinking water.¹⁰

The prior appropriation system of the Western United States was not designed to control this type of nonpoint pollution. Not surprisingly, this failure has led to a search for other legal solutions, such as the Clean Water Act (which to date has also failed), and a rejuvenated and enhanced public trust doctrine.¹¹

The battle lines of the debate have been sharply drawn in recent years concerning the application of public trust doctrine to prior appropriations.¹² The protagonists in this debate have seldom considered the relevance of the doctrine to water quality control, which is the main focus of this Article.

From the beginning, the public trust doctrine has protected navigation, commerce, and fisheries. Protection of fisheries necessarily implies protection of water quality, but in recent years, courts have increasingly identified water quality as a separate or specific, rather than derivative, interest protected by the public trust doctrine.¹³ This doctrine now provides a principled common-law theory for protecting water quality, especially against nonpoint pollution.

Because states and their subdivisions can enact zoning laws regulating land use, so can they enact regulations for controlling water quality. The law has never recognized a vested property right to pollute.¹⁴ Legislatures can prohibit or regulate pollution with little fear of successful takings claims. At least to the extent that irrigated agriculture causes pollution, the water rights associated with that use are subject to regulation.

The prior appropriation system itself can be used to control nonpoint pollution. This system requires that water be used for a beneficial purpose. Irrigation that causes pollution presumably can be regulated under the theory that the term "beneficial use" means both beneficial to the appropriator and not harmful to the public. Unfortunately little has been made of this approach to water quality control.¹⁵ Similarly, the requirement that prior appropriation permits be issued only in the "public interest"¹⁶ has not been effective to protect public trust interests. The definition of public interest is too vague to alter the inertia of the administrative practice to issue appropriation permits to all who apply.

Historically, the prior appropriation system has allocated water in all of the seventeen arid Western States. The doctrine originated as a common-law doctrine in the mid-nineteenth century, and most state legislatures codified it around the turn of the century. Its declared policy is that "first in time is first in right." For example, A diverts and puts to beneficial use water from a stream before B, thus vesting A with a permanent, legal property right to continue the diversion forever, although A must make a beneficial use of the water and has no right to waste it. A need not share her water rights with B in time of drought. If the water level drops, B may be totally deprived of water, but A will get her full appropriation.

During the West's early economic development, the prior appropriation system served exceedingly well, encouraging farming, mining, and industrial activities. In fact, prior appropriation has been so important to western development and so dear to agricultural water uses (whose land would often be worthless without water), that the doctrine has become cloaked in a powerful mystique; a mystique so strong that it deters analysis of the true scope, limits, and purposes of the doctrine.

Until the 1950s and 1960s there was little reason to study or write about the scope or limits of the prior appropriation doctrine. Competing uses were relatively few, and appropriators only occasionally used enough water to impair public trust interests. If a stream was overused, the public could go to other rivers or lakes for recreation or wildlife enhancement. The prevalent myth of the time was that the prior appropriation system was totally comprehensive,¹⁷ was fair to everyone, and took precedence over other claims to water use.¹⁸ The prior appropriation system, however, was and is a special interest doctrine designed to establish rules for surface water allocation among prior appropriators. It was not designed to control other resources such as groundwater, or other uses such as the discharge of wastes, boating, swimming, or fishing. It was not designed to affect public trust interests such as navigation, fishing, recreation, environmental quality, water quality control, or other instream flow interests.

Why rely on the public trust doctrine for nonpoint pollution control when the nation has a comprehensive national water pollution control system in place? The answer is that the national system has been ineffective in controlling nonpoint pollution.¹⁹

In 1972, when Congress enacted the Federal Water Pollution Control Act²⁰ and took over from the states the nation's water quality control program, optimists thought the nation had the pollution problem under control. Point sources were specifically controlled. Nonpoint sources were to be investigated by the states under section 208, and presumably would be controlled soon. Implementation of section 208, however, fell flat.²¹ Nonpoint source pollution, especially that generated by agriculture, has grown apace, essentially uncontrolled.²² Now we have section 1329 of the 1987 Amendments²³ calling for still more study and conferences on nonpoint pollution, eventually aimed at providing some control. Meanwhile, agricultural and other nonpoint pollution problems worsen.²⁴ Not surprisingly, the courts are being asked to plug this gap in the nation's pollution control program, often with the public trust doctrine.

II. THE ORIGIN OF THE PUBLIC TRUST DOCTRINE

The public trust doctrine originated from the widespread practice, from time immemorial, of using navigable waters as public highways and fishing grounds.²⁵ The *Institutes of Justinian* proclaimed that the air, running water, the sea, and consequently the seashores, are common to all by natural law.²⁶ Professor Joseph Sax, in his original article on the public trust doctrine, wrote,

First, certain interests, such as navigation and fishing, were sought to be preserved for the benefit of the public; accordingly, property used for those purposes was distinguished from general public property which the sovereign could routinely grant to private owners. Second, while it was understood that in certain common properties—such as seashores, highways, and running water—

"perpetual use was dedicated to the public," it has never been clear whether the public had an enforceable right to prevent infringement of these interests.²⁷

In the United States, three of the most frequently cited early cases are Arnold v. Mundy,²⁸ decided in 1821, Martin v. Waddell,²⁹ decided in 1842, and Illinois Central Railroad v. Illinois,³⁰ decided in 1842. In Mundy, the New Jersey Supreme Court announced an expansive doctrine, stating:

[B]y the law of nature . . . the civil law . . . the common law . . . the navigable rivers in which the tide ebbs and flows, the ports, the bays, the coasts of the sea, including both the water and the land under the water, for the purposes of passing and repassing, navigation, fishing, fowling, sustenance, and all other uses of the water and its products . . . are common to all the citizens.³¹

In Martin v. Waddell, the United States Supreme Court said that the "shores, and rivers, and bays, and arms of the sea, and the land under them [were held] as a public trust for the benefit of the whole community, to be freely used by all for navigation and fishery, as well for shell-fish as floating fish."³² In Illinois Central, the Court said that the title to beds of navigable water is "held in trust for the people of the State that they may enjoy the navigation of the waters, carry on commerce over them, and have liberty of fishing therein freed from the obstruction or interference of private parties."³³

III. THE WATERS AND LANDS COVERED BY THE PUBLIC TRUST DOCTRINE

In England, the public trust doctrine covered only waters where the tide ebbed and flowed. The United States, in contrast, has large navigable rivers like the Mississippi and the Columbia flowing inland for hundreds of miles. Not surprisingly, United States courts extended the doctrine to cover navigable fresh waters; the doctrine covers all waters that are "navigable in fact," whether fresh or salt.³⁴ Several western states have recognized public rights of navigation on waters that are not commercially navigable but are navigable for pleasure craft only.³⁵

In National Audubon Society v. Superior Court (the Mono Lake case), the California Supreme Court held that the doctrine applied to nonnavigable tributaries, citing the potentially adverse impacts of extractions on navigable Mono Lake.³⁶ While various cases have held that the public has an easement to use the surface of small, nonnavigable waters where the bed is privately owned, no case has yet held that the public trust doctrine limits withdrawals from nonnavigable-for-title streams where the only impact is upon the nonnavigable body of water.³⁷ Courts, however, have stopped appropriations from nonnavigable-for-title lakes or have awarded damages where the extractions harmed riparians.³⁸ The Idaho Supreme Court has said that the doctrine applies to all waters of the state.³⁹ Recent Oregon legislation⁴⁰ as well as cases in Hawaii,⁴¹ Montana,⁴² and New Jersey⁴³ appear to take the same position.

Several states have applied the public trust doctrine to upland areas. In New Jersey the doctrine covers dry sand above high tide.⁴⁴ Montana includes portages over private lands to get around obstacles or dangerous rapids in streams.⁴⁵ In Massachusetts the doctrine covers wetlands and state parks.⁴⁶ Professor Charles Wilkinson, in his seminal article on the public trust doctrine in public land law, concludes that the doctrine has gone beyond its original water based scope and now applies to public lands with special importance for the health, welfare, and safety of the public.⁴⁷

IV. THE INTERESTS PROTECTED BY THE PUBLIC TRUST DOCTRINE

The classic list of protected interests includes commerce, navigation, and fisheries.⁴⁸ Thus, not only are the underlying beds protected,⁴⁹ but the waters⁵⁰ and fisheries are also protected.⁵¹ This in itself is quite broad because protection of fisheries necessarily includes protection of water quality. Even from early days, however, the interests protected have been stated more broadly. In Arnold v. Mundy,⁵² the New Jersey Supreme Court included "fishing, fowling, sustenance and all other uses of the water and its products."⁵³ Recent cases have explicitly stated that other interests are protected. In Marks v. Whitney,⁵⁴ the California Supreme Court gave extensive treatment to this issue, stating:

Public trust easements are traditionally defined in terms of navigation, commerce and fisheries. They have been held to include the right to fish, hunt, bathe, swim, to use for boating and general

recreation purposes . . . and to use the bottom of the navigable waters for anchoring, standing, or other purposes. . . .

The public uses to which tidelands are subject are sufficiently flexible to encompass changing public needs. In administering the trust the state is not burdened with an outmoded classification favoring one mode of utilization over another. There is a growing public recognition that one of the most important public uses of the tidelands—a use encompassed within the tidelands trust—is the preservation of those lands in their natural state, so that they may serve as ecological units for scientific study, as open space, and as environments which provide food and habitat for birds and marine life, and which favorably affect the scenery and climate of the area. It is not necessary to here define precisely all the public uses which encumber tidelands.⁵⁵

A critical question is whether water quality is one of the interests protected by the public trust doctrine. While Marks v. Whitney does not list water quality control as a protected interest in so many words, it clearly is included within the terms "fisheries" and "food and habitat for marine life." Other recent cases, such as the 1987 Washington Supreme Court decision, Caminiti v. Boyle,⁵⁶ refer to the public rights of fishing, boating, swimming, water skiing, and other related recreational purposes generally regarded as corollary to the right of navigation and the use of public waters.⁵⁷ In Kootenai Environmental Alliance v. Panhandle Yacht Club,⁵⁸ the Idaho Supreme Court said that the doctrine protected property values, "navigation, fish and wildlife habitat, aquatic life, recreation aesthetic beauty and water quality."⁵⁹ The 1987 Oregon Legislature enacted two statutes indicating that the public trust doctrine covers water quality.⁶⁰ One of these statutes provides that the public trust covers recreation, protection and enhancement of fish life, wildlife, fish and wildlife habitat, and any other ecological values, pollution abatement, navigation, scenic attraction, and other similar or related uses protected by the public trust.⁶¹

In Mono Lake, the California Supreme Court, in addition to approving the Marks v. Whitney array of protected interests, stated that one reason for restraining the Los Angeles diversion was to keep Mono Lake's salinity from increasing. This would cause the algae to die, which in turn would reduce the numbers of brine shrimp and brine flies that feed on the algae. The end result would be damage to the brine shrimp industry, and a reduction in the gull population, which is dependent upon the brine shrimp.⁶² The court effectively ruled that water quality is one of the interests protected by the public trust doctrine.⁶³

In United States v. State Water Resources Control Board,⁶⁴ the California Court of Appeals held that under Mono Lake, the California Water Board could modify existing appropriation permits under the public trust doctrine, "in order to protect fish and wildlife" from pollution and excessive saltwater intrusion from the sea.⁶⁵

While the public trust doctrine has seldom been used explicitly to protect water quality, if it is to protect fish, wildlife, recreational, and environmental values, it must encompass water quality. As the California court stated in State Water Resources Control Board, although Congress in 1972 enacted what is now called the Clean Water Act, that law does not purport to control salt water intrusion, nor is it yet effective in controlling nonpoint pollution generated by irrigation return flow.⁶⁶

V. STATE POWER TO CONVEY AWAY PUBLIC TRUST RESOURCES, OR TO DESTROY PUBLIC TRUST INTERESTS

Ever since the 1892 Illinois Central case, courts have generally held that legislatures have the power to destroy public trust interests by legislative action.⁶⁷ For legislation to accomplish this, the legislative intent must be either express or sufficiently clear.⁶⁸

Significantly, in Mono Lake, the California Supreme Court held that the 1913 Water Commission Act⁶⁹ (California's basic appropriation code), and appropriation permits issued in 1940 under that code to the Los Angeles Department of Water and Power (DWP) to extract water from tributaries to Mono Lake for domestic use in Los Angeles, did not terminate the public trust interests in Mono Lake.⁷⁰ The California Water Board, in issuing the 1940 permits, explicitly stated that it had "no choice" but to grant the applications, despite the harm that would occur to the lake. The Board said:

It is indeed unfortunate that the City's proposed development will result in decreasing the aesthetic advantages of Mono Basin but there is apparently nothing this office can do to prevent it. The use to which the City proposes to put the water under its Applications [domestic use] . . . is defined by the Water Commission Act as the highest to which the water may be applied This office therefore has no alternative but to dismiss all protests based upon the possible lowering of the water level in Mono Lake and the effect that the diversion of water from these streams may have upon the aesthetic and recreational value of the basin.⁷¹

In 1982, when reviewing the Water Board's 1940 decision, the California Supreme Court said:

The water rights enjoyed by DWP were granted, the diversion was commenced, and has continued to the present without any consideration of impact upon the public trust. An objective study and reconsideration of the water rights in the Mono Basin is long overdue. The water law of California—which we conceive to be an integration including both the public trust doctrine and the Board-administered appropriative rights system—permits such a reconsideration; the values underlying the integration require it.⁷²

The court later added:

Once the state has approved an appropriation, the public trust imposes a duty of continuing supervision over the taking and use of the appropriated water. In exercising its sovereign power to allocate water resources in the public interest, the state is not confined by past allocation decisions which may be incorrect in light of current knowledge or inconsistent with current needs.⁷³

The California court did not believe that the 1913 Code and the permits issued under it were sufficiently clear to destroy the public trust interest in Mono Lake.⁷⁴

The California court could have reached the result it reached in Mono Lake by relying on the antiwaste and reasonableness requirements of article 14, section 3 of the California Constitution or by the beneficial use element of the prior appropriation system,⁷⁵ but the court chose to rely on the public trust doctrine instead.

The Mono Lake court apparently did not believe it was expanding the scope of the public trust doctrine. The court stated that, "[i]f the public trust doctrine applies to constrain *fills* which destroy navigation and other public trust uses in navigable waters, it should equally apply to constrain the *extraction* of water that destroys navigation and other public interests. Both actions result in the same damage to the public interest."⁷⁶

Equally persuasive is the argument that extractions by appropriators that degrade water quality and thus harm fish, wildlife, recreational opportunities, or environmental values, should also be constrained by the public trust doctrine. Again, the impact of water quality degradation on these public trust values is no different from the impact of a fill that damages these same values.

Prior to Mono Lake, no court had applied the public trust doctrine to the allocation of water between the public and an appropriator or riparian. In a 1976 decision, United Plainsmen Association v. North Dakota State Water Conservation Commission,⁷⁷ the North Dakota Supreme Court recognized the relationship between the two doctrines. The court enjoined issuance of an appropriation permit for a large water project until the state water agency completed a comprehensive plan that took account of the impact of such projects on the public trust interests of commerce, navigation, and fisheries. The court stated that the public trust doctrine applied to the allocation of water under the appropriation system.⁷⁸

VI. THE LIMITED SCOPE AND PURPOSE OF THE PRIOR APPROPRIATION SYSTEM

One of the salient features of the appropriation system is that, in its formative period, it took little account of water quality degradation. Pollution was not a problem during the development of the doctrine, so little attention was paid to it. Individual appropriators seldom contributed significantly to pollution.

Today, the prior appropriation system is recognized as a special interest legal doctrine, and as a major cause of pollution in the West. The system was designed as a means of allocating water vis-à-vis other uses. It was not designed to include public trust interests such as water quality. One reason the water quality problem has become so serious is because water was made available without cost to appropriators. This encouraged, and continues to encourage, profligate use of this valuable resource, which in turn causes pollution to worsen.

Most western states codified the common-law appropriation doctrine in the late 1800s or early 1900s.⁷⁹ An examination of a typical western appropriation code, Washington's 1917 Water Code, illustrates their limited nature. The Washington Code starts with a statement that appears to be totally comprehensive: "[A]ll water within the state belongs to the public, and any right thereto, or to the use thereof, shall be hereafter acquired only by appropriation for a beneficial use and in the manner provided [herein] and not otherwise. . . ."⁸⁰ One would assume from this exceptionally broad language that the Code covered the allocation of underground water, the use of water for waste disposal, and the use of water for swimming, fishing, boating, or anything else, but that is not the case.

In 1945, the Washington Legislature, deeming that the Code was intended to cover only surface waters and not groundwater, enacted a groundwater code to fill this gap and provide a statutory groundwater allocation method.⁸¹ It also became apparent in the 1940s that the Water Code did not cover waste discharges into public waters (certainly a use of these waters), so in 1945 the legislature enacted a water pollution control code.⁸² In addition, the Washington Supreme Court held early on that the 1917 Water Code did not cover uses for swimming, boating, or fishing.⁸³ In fact, in case of conflict, these common-law riparian uses prevailed over appropriative claims, at least as to lake levels. The court held that if an appropriation interfered with certain riparian rights, specifically the right to lake levels, the riparian landowner prevailed.⁸⁴

Examination of appropriation codes in other states reveals provisions similar to those in the Washington Code, especially regarding pollution control,⁸⁵ groundwater,⁸⁶ and swimming, boating and fishing.⁸⁷ This experience teaches that the prior appropriation codes and doctrine, although customarily cast in all-encompassing terms, were in fact vehicles to allocate water *between and among appropriators*. The codes were not designed to cover groundwater, waste discharges, fishing rights to surface use, *nor public trust interests*.

Nothing in the appropriation doctrine either explicitly or implicitly purports to cover public trust values. While recent amendments to some water codes consider these values,⁸⁸ this legislation is contemporary and does not alter the historical fact that neither the common-law prior appropriation doctrine nor the legislation codifying that doctrine took account of public trust interests. Public trust interests are still alive and well, and can properly be recognized and implemented by courts and legislatures.

VII. THE CONFLICT BETWEEN PRIOR APPROPRIATORS AND THE PUBLIC OVER THE RIGHT TO CONTROL WATER QUALITY

Until recently the prior appropriation doctrine and the public trust doctrine operated entirely independent of each other. They are now being brought into contact and conflict. The prior appropriation system is based on the assumption that an appropriator obtains a vested, legal property right to public waters by extracting and using these waters for beneficial purposes. Taking this right away or unduly regulating it entitles the owner to compensation.

The public trust doctrine, on the other hand, is based on the proposition that polluters do not acquire vested property rights by their past history of water use for waste disposal, and state laws prohibiting or regulating pollution seldom give rise to constitutional takings challenges.⁸⁹ Cases have, for example, upheld the constitutionality of the Clean Water Act, which had as its 1985 goal elimination of *all* waste discharges into public waters and return of these waters to their natural state.⁹⁰

One would assume that the industries that had historically deposited wastes into public rivers and streams would often have claimed a vested property right to continue doing so and that they were entitled to compensation if that right was taken away, but there is a dearth of such cases. Environmental pollution law casebooks have neither sections nor cases on such constitutional questions, because the rule is clear that no issue is raised. No one has a constitutionally protected right to deposit wastes into or otherwise pollute public waters.

What happens when these two streams of jurisprudence are connected? In a case where the state takes a water right from prior appropriator A and gives it to B, then a potential takings question arises. Similarly, a takings argument

might be raised if the state takes a water right from A and puts it back into the common pool, although such action is arguably within the state's power as a trustee of a public resource. The test of taking in these cases is whether the state regulation "goes too far," or meets other constitutional takings standards. If the state regulates or even bans A's irrigation to protect water quality under the public trust doctrine, however, no takings claim is justified. One can arrive at the same result using only the state police power. No one can acquire a vested property right to pollute public waters. Thus, police power regulation or prohibition of pollution does not raise takings issues.

Thus, the problem can be approached two ways. First, the public trust doctrine protects water quality. The public trust doctrine antedates the prior appropriation system. Under the easement imposed by this doctrine, no one can acquire a pollution right that violates trust interests. Second, no one can acquire a constitutionally protected, vested property right to pollute that can stand against the state police power. Thus, polluters can be regulated, or banned, at the will of the legislature.

What is fascinating, even a bit mysterious, is that these three lines of jurisprudence, the public trust doctrine, the police power, and the prior appropriation system, have existed for many years and have seldom intersected. Now, because of intense competition for increasingly limited water resources, they are meeting, and sometimes conflicting.

When these doctrines come into conflict, as they did in Mono Lake, the public trust doctrine should prevail. The states, in granting property rights to prior appropriators, never considered the eventual impact of this system on water quality, and never intended, explicitly or otherwise, to convey away governmental power to control water pollution through the public trust doctrine or police power regulation.⁹¹

Prior appropriators might claim that their appropriation permits implicitly include a right to cause incidental pollution. Such an argument might be persuasive against other appropriators, but not the public. The public always has the right to control pollution. All waste dischargers into public waters are subject to control. A polluter may, under various state or federal pollution control systems, acquire a license to discharge wastes into public water for a time, but that license is revocable. It is not the vested property right claimed by appropriators.

Today, almost all extractions of water contribute to water quality degradation by reducing the quantity of water in streams, causing temperature changes and reducing the assimilative capacity. Extractions also result in return flows containing natural salts, selenium, and other chemicals leached from the soil, which cumulatively affect water quality and carry pesticides, herbicides, fertilizers, and other polluting agents.⁹² Individual extractions, although not necessarily significant in themselves, cumulatively degrade water quality. Individual actions that cumulatively cause pollution are clearly proper subjects of regulation or prohibition.

The San Francisco Bay delta problem demonstrates the pollution caused by the cumulative impact of many water withdrawals.⁹³ Extractions of water reduce freshwater pressure and allow salt water from the bay to intrude into the delta, causing harm to fish, wildlife, and other water uses.

The Kesterson Wildlife Refuge in central California dramatically illustrates the effects of accumulated pollutants in return flows.⁹⁴ Irrigation leaches natural selenium from the soils on several large farms served by a federal reclamation project. The chemical then concentrates in irrigation return flows collected in drainage canals that flow into the wildlife refuge where the contaminated water kills wildlife. Refuge employees attempt to scare away birds so they will not land and be poisoned.

The Colorado River is burdened with a serious salinity problem.⁹⁵ The many irrigation projects along the river, especially the Welton-Mohawk project, all contribute to this problem. Excessive salinity in the river has caused conflicts with Mexico over the quality of the water passing over the border, and created problems for downstream users in the United States. Hundreds of other rivers and streams in the west are polluted by chemicals brought in by return flows, or by extractions that often totally dry up these water bodies during the late summer months.

As problems like the San Francisco Bay delta, the Kesterson Wildlife Refuge, and the Colorado River multiply, legislatures and courts will be pressured to restrict and regulate water extractions under either the public trust doctrine or state police powers. Examples of controls that might be imposed either by the courts or legislatures on water extractors under the public trust doctrine include requiring increased efficiency and greater conservation; controlling times of day, week, or month for irrigation or other water uses; regulating the type, composition, and time of application of pesticides, herbicides, and other chemicals; and restricting the quantity of water extracted and used by

appropriators or riparians. Both Mono Lake and State Water Resources Control Board essentially adopted this last position. In Mono Lake, the court was concerned about the increased salinity in Mono Lake that would result from additional extractions, and the effect that this would have on the brine shrimp and ultimately on the bird population.

VIII. IMPLEMENTATION OF THE PUBLIC TRUST DOCTRINE IN WATER QUALITY CONTROL

Applications of the public trust doctrine can create problems. For example, what standards should apply in allocating water among conflicting users, and which of the existing water users are to provide the water needed to protect public trust values?

These questions are often raised as virtually insurmountable obstacles to the equitable application of the public trust doctrine. A solution is available, however, based on the Clean Water Act's approach to point sources. Standards could be set, such as "best practicable technology" or "best management practice."⁹⁶ These would apply to all irrigators or other appropriators similarly situated. Such standards could require lined instead of dirt ditches, or sprinkler systems instead of gravity flow irrigation. They might require irrigation at night, or even the use of less water. These determinations would ordinarily be made by the state agency administering water rights.

IX. POLICE POWER REGULATION

Police power regulation might be used to constrain existing water extraction rights of either appropriators or riparians. State regulations designed to protect water quality, recreation, fish and wildlife, or navigation values, should be upheld against a takings claim because these activities are already subject to the public trust. Alternatively, they are subject to the doctrine that there is no right to pollute. Under this doctrine, legislatures can modify or ban waste discharge into public waters.

On the other hand, if regulations are not designed to control pollution, but are designed to increase irrigation efficiency and make more water available to new users, or for some other purpose not related to pollution control, then the regulations should receive the same type of analysis as zoning regulations.⁹⁷ A substantial body of jurisprudence exists regarding the constitutionality of zoning regulations. This jurisprudence provides guideposts on the standards to apply to regulations about appropriators. The traditional analysis of such regulations is discussed below.

The constitutionality of police power regulations has often been an issue in zoning and other land use regulation cases. Both federal and state constitutions are involved in most cases. Because of the general nature of this Article, primary references will be to federal constitutional jurisprudence, although a few widely cited state cases will be included.⁹⁸

The seminal test of the constitutionality of land use regulations was enunciated in Pennsylvania Coal Co. v. Mahon,⁹⁹ where Justice Holmes said the test is whether the regulation "goes too far."¹⁰⁰ Fortunately, subsequent cases have supplemented this imprecise test. For example, in the recent case of Keystone Bituminous Coal Association v. DeBenedictis,¹⁰¹ the Court said that a land use regulation will only be struck down if it "does not substantially advance legitimate state interests, . . . or denies an owner economically viable use of the land,"¹⁰² The Supreme Court has also said that "[a] statute regulating the uses that can be made of property effects a taking if it 'denies an owner economically viable use of his land,'"¹⁰³ or if it denies the owners "reasonable 'investment-backed expectations.'"¹⁰⁴

The Court has made it clear that mere diminution in value of the zoned property is not, alone, a sufficient reason to strike down a zoning ordinance. A 1978 study showed that ordinances diminishing property values from \$1,500,000 to \$275,000, from \$450,000 to \$50,000, and from \$65,000 to \$5,000 were not sufficient to cause the laws to be held unconstitutional.¹⁰⁵

The Supreme Court applies a balancing test to determine whether a regulatory taking has occurred, as evidenced in Keystone. This balancing test is reflected in the widely cited Massachusetts Supreme Court case, Turnpike Realty Co. V. Town of Dedham.¹⁰⁶ In United States v. State Water Resources Control Board, the Supreme Court said:

[A] state regulation that merely restricts a party to the gains reasonably expected from [a] contract does not constitute a substantial impairment [and is not unconstitutional].

Nor is every impairment constitutionally proscribed. Contract rights, like other property rights, may be altered by the exercise of the state's inherent police power to safeguard the public welfare. . . "The key inquiry is whether the importance of the state interest justifies the impairment."¹⁰⁷

Police power regulation is not necessarily the only or even the best action in many circumstances. The Chesapeake Bay experience, for example, suggest that an array of controls, including both economic incentives and regulations, may be the best approach to solving pervasive, nonpoint source pollution problems. Chesapeake Bay has been polluted by multiple sources, including industrial and municipal pollution, farm runoff and irrigation return flows carrying pesticides, herbicides, and bacterial pollution. The massive multistate and state-federal cleanup program recently implemented depends primarily on education and economic incentives, but also includes regulation of land use and pollution sources. In 1984, the State of Maryland enacted the Critical Area Act,¹⁰⁸ establishing a permanent commission authorized to adopt regulations and establishing criteria and guidelines to assist local governments in regulating growth and development within a 1000-foot "critical area" zone surrounding the bay and its tributaries.¹⁰⁹

If regulatory controls are adopted they might require greater efficiency in water use; require more conservation, such as lining ditches; regulate types of crops to be grown; regulate methods or times of irrigation; regulate the amount of water to be used, or the times of day, week, or month for irrigation; or regulate the types of insecticides, herbicides, and other chemicals that can be used, and how they are used.

X. RELATIVE ADVANTAGES AND DISADVANTAGES OF THE PUBLIC TRUST DOCTRINE AND POLICE POWER REGULATION

The major advantage to use of the public trust doctrine is that it can be the basis of judicial as well as legislative action. If applied by the courts, the doctrine can sometimes give greater recognition to public interests at times when legislatures are under excessive pressure by special interest lobbyists. Nevertheless, the doctrine does not have a long and instructive history of use for water quality control that can assist in predicting its future scope and impact. Also, a court may bind only the litigants before it, rather than an entire industry or activity such as irrigated agriculture.

The principal advantage of the police power approach is that it emanates from a legislative process and therefore can apply broadly to an entire agricultural activity or industry. Also, such regulations have a long history of use by legislative bodies and are thus more familiar to those bodies, as well as to litigants, courts, and the public. One disadvantage of the police power is that legislative bodies are often subject to excessive pressure by special interest groups and as a result, provide less-than-adequate protection to the more diffuse public interests.¹¹⁰ At such times court decisions often lead the way toward legitimate changes, encouraging legislative bodies to follow with broadly conceived police power regulations.¹¹¹

XI. CONCLUSION

The prior appropriation system has served well in the West and the Nation for 125 years, providing a legal regime that permits and encourages enormous economic growth of agriculture, industry, and municipalities. This system, however, both in its inception and current application, fails to address or protect public interests in fisheries, recreation, environmental quality, and clean water. As a result, serious nonpoint water pollution problems are occurring throughout the West.

The 1987 amendments to the Federal Clean Water Act provide for study of the problem and state adoption of plans to resolve it. To date, this process has had little impact on water quality. Three approaches are being considered by states to solve these water pollution problems. Some states are applying the public trust doctrine. Some (but only a few) states are adopting police power regulations to control nonpoint pollution. Others are approaching the problem through the prior appropriation system itself, taking the position that beneficial use means use that does not harm the public through pollution.

The public trust doctrine is not a panacea that will instantly solve all the conflicts that now surround the prior appropriation system. It should be considered, however, as a basis for setting standards such as best practicable technology or best management practice.

Control of agricultural nonpoint pollution might be achieved by education, and possibly by economic incentives, rather than through the public trust doctrine or police power regulation. In the final analysis, however, education and economic incentives may be effective largely because of the existence and potential threat of the public trust doctrine and police power regulations.

No one—including irrigators, industries, or cities with appropriative rights—has a vested, constitutionally protected property right to degrade the quality of public waters. Thus, pollution control can be accomplished either under the police power or the public trust doctrine without becoming derailed by the takings issue.

The prior appropriation system was born in the 1800s out of the West's mining and farming needs, and responsive judicial activism. It has served the West's needs well over the past century, but it was and still is fundamentally a special interest doctrine designed to allocate water among and between appropriators. It was never intended to allocate water for in-stream uses or to control water quality. Both of these interests should now be given recognition and protection within a more inclusive legal system. The public trust doctrine provides the vehicle for such integration.

SEE FOOTNOTES IN ADDENDA TO PART I, PAGE 119.

RESPONDENT

Donald H. Bond, Attorney

I come here with a perspective like everyone else. I represent irrigators, farmers, and businesspeople in the Yakima River Basin who share with you many of the same values. They live and work where they do because they enjoy the outdoors. They appreciate aesthetic values and are sensitive to those things. They believe in some other things as well. They believe in representative government; in private property; in the Constitution of the United States, and they believe in survival. Those don't always take them in the same direction.

WESTERN WATER LAWS

We've heard a lot of talk already today about the difference between the common law rule, the Winters Doctrine, and the western water law doctrine of proper appropriation. The Riparian Doctrine (the common law rule) laid heavy emphasis on keeping the waters in the stream where they are not unreasonably diminished or unreasonably impaired. The need to settle the West changed that. To settle the West it was necessary to take water out of the streams. The Riparian Doctrine was largely abandoned in most of the western states. California kept the Riparian Doctrine to a significant extent; Washington has it to the same extent; many of the western states do not have it at all.

The doctrine of prior appropriation creates a property right. As a matter of fact, it provides the basis for most land values in the arid west. I think you probably heard this morning that land values are relatively small without the water placed on them. That is precisely correct. Land may be worth \$200-300 an acre without water; it may be worth \$1500-2,000 an acre with water, depending upon the particular conditions at a given time. So if a person owns farm land, a large part of the value they own is the water right and it is essential that you recognize when you're talking about the value of those farms, you're talking about the value of the land with the water right. That water right is essentially appurtenant to the land and that's part of the law. That means that the water right is a part of the land from a legal standpoint. While it may be transferable, transfers are permitted only under regulated conditions. In this state, one has to apply for permission to transfer through the Washington Department of Ecology.

The doctrine of prior appropriation was the key to settlement of the West. It was the key to settlement of the Yakima Valley, the area I come from; that's the area it's easiest for me to talk about.

Once again, the basic concept was and still is that the water right and land were part and parcel of the same thing. That is important as you'll see in a minute when we get into discussing the Public Trust Doctrine. The Yakima area was settled originally by people who came in under state law and appropriated water. In 1905 the Bureau of Reclamation moved in and, as I think Floyd Ivey has already indicated, it then appropriated all of the unappropriated waters of the Yakima River Basin. It appropriated all of these waters for a basic, single purpose. That was irrigation of the lands in the Yakima Basin. That was the sole purpose of the Reclamation Act at that time.

The U.S. in effect was developing land, and the purpose of the Reclamation Act, like the purpose of the Homestead laws in the 1860s and the Desert Land Act in 1877, was to encourage settlement of the West. Although these early water laws have been referred to as special interest legislation, the interest was that of our nation to develop what had been known as the Great American Desert into a productive area where people could live and live fruitfully. That effort has succeeded as you all know. That effort is what has made it possible for the later development of the West to occur.

Our Washington Constitution states that the use of water for irrigation, mining, and manufacturing shall be deemed a public use. There is no question that this is something more than a special interest approach to the law. It was the effort to create a society in an environment that was not habitable without diversion of the water from the streams. It is quite accurate to say that the prior appropriation doctrine was never designed to prevent pollution. It was designed to create a property right system; a right to the use of water. The regulation of the use of water was

always subject to the police powers of the state and federal government, as appropriate. Nobody has any argument with that. The police power always exists; the police power is exercisable by your legislatures; it's exercisable pursuant to legislation by the executive branch of the government. That is part and parcel of our representative system of government.

Before irrigation, the Yakima River Basin was barren desert land which was not habitable. It was turned into a very fruitful, habitable area by the application of the waters of the Yakima River to the land. I daresay that 90% of the value of land in the Yakima Basin is attributable to the water rights belonging to that land. This area presently supports between 150-200,000 people. Without water on the land, it simply could not do so.

We often hear a great deal of discussion about, "Well, these farmers are a bunch of fat cats that are getting subsidized water rights." It is true that in the beginning these water rights were subsidized by the government, but the price paid for subsidized water was hardship and heartbreak and lives invested in creating usable, farming land. Not everybody succeeded. A lot of people went to the sand hills near Pasco, Washington, and found they couldn't run water from one end of a row to the other. They failed and went broke. That land became usable only many years later with the advent of pumped water and sprinkler systems. Other settlers went through their lifetimes never really making it. Only succeeding generations made something out of the farmland.

If there is a value to subsidized water, that value is reflected in the prices that people have paid over the years for irrigated farmland. Present day farmers by and large have paid their dues. They have paid full value for land and water rights. They do not have an easy economic task; they don't have any gifts in view of the prices they've had to pay. If there was something wrong with the principle of the Reclamation Act of 1902, it was in the idea that people should have been encouraged to sacrifice to settle the West. In 1902, Congress was definitely of a mind that settlement of the West was well worth the price.

THE PUBLIC TRUST DOCTRINE

The Public Trust Doctrine has been presented to you as some kind of doctrine that has a long-standing existence in the eyes of the law. That is undoubtedly the case, but I think we need to talk about the Public Trust Doctrine as it has been articulated and asserted today. The Mono Lake case in California asserts a variation of the Public Trust Doctrine that is a Johnny-come-lately kind of idea; that is, that people can invest their capital in the development of farm land, in the use of water, and then find out that they don't have a property right in the use of water and that government can largely, if not entirely, take the value of their land from them.

The problem is, and I think Professor Johnson was talking about his debates with Charles Meyer, a friend of his who was a dean of the Stanford Law School. Charley Meyer used a very good analogy as far as it went. He said, "The public trust doctrine is like a law that's applied after a person has built a ten-story building. The government comes along and says that the public has an interest in the top two floors and we are going to take them from you for our use." As far as it went, that was a good analogy but the difference in reality is that the ten-story building is really a condominium and the people on the ninth and tenth floors are going to lose everything when the floors are taken. That's how water rights work.

You saw the system of priorities that Professor Johnson drew on the board and you know as water quantities are decreased, the the junior users lose everything. We have an example in the Yakima River Basin. Normal water supply in the Yakima River Basin is approximately 2.7 million acre feet. In the pending litigation, the United States is claiming as instream flows 1.2 million acre feet. You may say, that's not too bad. That leaves 1.5 million acre feet for the irrigators. I should tell you that in 1905 before they started the project, the Yakima River was fully appropriated and the water for the Yakima project was all obtained by taking flood water, putting it in storage so that it did not run out to the ocean during the off season, but was kept in reservoirs and was available for use during the irrigation season. In any case, the tribal claim in the Yakima River Basin adjudication made by the U.S. for 1.2 million acre feet of water doesn't just leave 1.5 million acre feet. It leaves 1.1 million acre feet to a class of water users that are classified as non pro-ratable water users. In other words, there is a class of water user in the Yakima River Basin that would receive only 25% of the amount of water to which they were entitled if the tribal claim was allowed.

It may be said that under the Public Trust Doctrine that this is not really taking a water right because the farmers never owned this water. I submit to you that that was never the understanding of the water rights at the time appropriations were made under the prior appropriation law. People understood that they had a right to appropriate

all the water that was in the stream. That was the common understanding; that was the basis upon which investments were made in land and it was only recently that this assertion is made which is a very sophisticated assertion but represents a remarkable and major change and application of the Public Trust Doctrine. I daresay that if this doctrine had been asserted in 1870 it would have been rejected out of hand. We are seeing a change in the rules that's being made right here. It is a very fundamental one as you can see from the examples given.

This new application of the Public Trust Doctrine is analogous to a case where you have a home on a street and it is discovered that after you bought the home, traffic increased over the years. It would then be said that you and everybody should know that streets have to be widened to handle an increasing volume of traffic and therefore, the state has a right to come in and take your front yard without compensating you for the loss. That is I think a pretty close analogy of what we are talking about with the application of the Public Trust Doctrine to water rights.

There are other solutions to the problems of water pollution. There are police powers which have always existed. Police powers are exercised through democratic process, through the legislatures, actions of the executive branch of the government. That's the proper and appropriate way to handle that kind of problem. That's not to say that the police power cannot be exercised so it also amounts to a taking.

There is a line of cases in western water law which are sometimes talked about as the "water wheel" cases. The original case grew out of a diversion on the Snake River in Idaho where there was a large water wheel that was dipping water out of the river, lifting it up to flow in a series of flumes down to irrigate a certain small acreage. It was desired to build a dam or something downstream from the water wheel. The water wheel, however, could not work if that dam was put in. The court there said you can't stop that kind of development; the water wheel is an unreasonable way to take water out of the river.

That same principle has been applied more recently in Utah. In those Utah cases, they've said, that's a good doctrine. You've got to change in those situations where you have inefficient means of diversion to a more efficient means. However, since you, Mr. Diverter, seek to do this, then you should pay the cost of changing the means of diversion. That's the fair way and that's the way you can proceed under existing governmental powers without resort to the Public Trust Doctrine.

You can condemn a person and pay them a value of what you are taking. If it's worthwhile doing, then you raise the money to do it. But the Public Trust Doctrine as it's enunciated in the Mono Lake case calls for something entirely different. I think it calls for something that departs from our idea of representative government. It departs from our idea of constitutional law. I submit to you that it is an idea that should never reach its time.

RESPONDENT

**Audrey Simmons, President
WaterWatch of Oregon**

I'm somewhat awestruck and those of you who know me as some of you do, know that this is not something that happens to me frequently. I am in the presence of so many lawyers; I've heard so much good legal jargon and so many ideas in the short time I have been here today. I have to tell you I am not a lawyer, but I have worked with water law for 15 years as a private person working in the public interest. I am terribly concerned about the management of our water resources for the future and the question, "Can western water law rooted in the 19th century serve the public interest in the 21st century?"

I would maintain unequivocally that, without some basic changes in the Doctrine of Prior Appropriation, some flexibility brought into this doctrine, the courts will, sooner or later, step in to do so. Changes in social and economic circumstances and values are going to force people and courts to recognize that something called a "water right," issued without any provision for future review, may not be good public policy in the future. I would like to begin not to use the word "right". I would suggest we use the word "permit" because from our point of view, that is what it is, a permit for the use of water. We do not want to take that permit away. We do want it reviewed periodically for beneficial use without waste—perhaps every 25 years or so, on a cyclic basis—and the amount of water adjusted as called for by that review.

We are going to have to use every means, including the Public Trust Doctrine and any others we can find, to build flexibility into what today is a rigid system. We must do this if we are to address the added demands society is putting on a finite resource. We need to have mechanisms in place for the protection of instream flows with the same safeguards as those granted any out-of-stream diversion. The Doctrine of Prior Appropriation has held firm in requiring a diversion for a water right. In Oregon, in 1987, the Legislature passed an instream water right statute creating an instream appropriative right which does not require a diversion. These instream water rights are to be held by the Water Resources Department in trust for the people of Oregon.

That law has not been tested in the courts as yet. I have a strong feeling this may come before too long. Recently, the Water Resources Commission was addressing the Umatilla Basin Exchange Project which involves the exchange of water from the Columbia River for some of the Umatilla in order to protect and restore fish runs. There is an instream water right conversion involved. I would not be surprised to see that one tested in the courts. I have every expectation it will be upheld eventually should that come about.

Continuing with the concept of increasing water instream for public uses, public benefits, we are working for legislation which would restore those streams which have public uses. The bill would restore, over a period of years, instream flows to the level that would support public uses. Once that level has been restored and protected, any overage would be available for out-of-stream appropriation.

How to do this? The 1987 instream water right legislation provided for the purchase, lease, or gift of a water right to the state for instream use. So it would be possible for people interested in fish, wildlife, recreation, and pollution abatement to purchase, lease, or give a right to the state; by allocating abandoned and forfeited water rights to the state; by allocating previously wasted water to instream uses. Much of Oregon's water which could be available to enhance instream flows is presently being wasted. With rights reviewed for beneficial use without waste and adjusted, much of this water could be used to restore instream flow levels. All this will require years and will cause real adjustments on the part of many people, but changing social and economic pressures are going to bring such innovations about.

I was interested in reading recently a newsletter published by the American Society of Civil Engineers, Volume 2, Number 9, September 1989, and I quote, "It is time to change from a consumption philosophy to a conservation philosophy. The way to conserve is to enforce existing laws, meter water use, and quit pumping ground water in

excess of natural exchange rates." It goes on, "economies that rely on detrimental practices are illegitimate because they cannot sustain themselves. We cannot create more water and must acknowledge the limitations of climate and natural conditions."

If the Doctrine of Prior Appropriation is to last into the 21st Century, it must evolve into a doctrine of resource stewardship for the benefit of all the people and in support of all the uses, public and private, instream and out of stream. It will take all branches of government—the executive, the legislative, the judiciary—and the citizens working together to accomplish this. In the crunch, it will be the citizens who work with the people who make public policy that are going to create the atmosphere in which we can evolve the doctrine into one that will last into the next century. We of WaterWatch hope this can be done in an evolutionary manner, not a revolutionary one. If we do not address the issues of public uses and public benefits, sooner or later, we will find ourselves in a revolutionary mode. Given the choice, evolution or revolution, we prefer evolution.

PROVOCATIVE QUESTION

IV.

How Should Economic Considerations Affect Allocation Decisions?

Can the Pricing of Water at "True Costs" Improve the Allocation of Water?

How Can Values That Cannot Be Reduced to Dollars Be Protected?

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Provocative Question No. IV

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WHOSE WATER? OURS: Clearing Fallacies about Implementing Common Rights

Professor Mason Gaffney
Department of Economics, University of California at Riverside

Hold the waters in the hands of the people.
- John Wesley Powell

Cato once observed that, "A wise man can learn more from a fool than a fool can learn from a wise man." That ancient wisdom may explain a lot today about the continued viability of higher education in America. I hope it may also motivate you to attend to what follows, even if I begin by calling foolish and false what you've been told is wise and true. Be patient: like Harry Truman's economist, I have two hands. Wait for the one you like better.

Once I was young and foolish and made many promises. I learned they are easy to make and hard to keep, so I turned to forecasts. Those are also easy to make, but hard to abide when they turn wrong. Next I tried prescribing public policy. That is safe if the advisee is in Tierra del Fuego, and you in the sanctuary of a U.S. academy or bank. The going gets rougher as you diagnose and prescribe closer to home and offend the local Chamber of Commerce or water establishment: these bite back.

Growing old and more cautious I sought safer outlets. To get a grip on the conservative side of water issues, I bought a small irrigated farm with a senior claim on the Santa Ana River. A second outlet is to name and refute fallacies, the theme of the present paper. This is good fun, and fair and relevant when you hear and read these fallacies daily. It is also constructive. These fallacies, some of them spread by special pleaders *ex parte*, muddy the waters and darken the light needed to implement common rights, draft better water legislation, and raise the general welfare.

The late Senator Albert Beveridge of Indiana was retired by the voters in 1922¹. Thereafter, he mellowed into being a scholar and biographer. In these years he wrote, "You know, I've learned in the Widener Library at Harvard that most of what I was taught as a boy in Indiana is pure bunk." That is also true of much that we ordinarily read and hear about water. I am giving you a list of things I submit are pure bunk, or mostly so. My first points may seem radical, but stay your judgment, I have many free-market thoughts coming "on the other hand."

FALLACIES CLOUDING THE WATER

1. "Water rights are real property"

Wrong! To begin, "right" is wrong. A right is something like free speech, possessed by everyone. The only water rights, properly speaking, are common. Blackstone wrote, "... water is a movable, wandering thing, and must of necessity continue common by the law of nature; . . ." (cited in Roy Huffman, p.38). Private water interests are

claims, licenses, permits, holdings, reservations, privileges, or possessory interests. Water is the property of the states.²

Most private water claims are licenses, at least in the 17 western states. As Law Professor James L. Huffman says (James Huffman, 1989), most state constitutions read that the water of a state belongs to the state (on behalf of the people of the state). Professor Ralph Johnson cited a phrase to that effect from the Washington Water Code. In California it is Water Code Section 102: "All water within the State is the property of the people of the State, . . .". The 1879 Constitution declared, "No special privileges or immunities shall ever be granted which may not be altered, revoked, or repealed by the Legislature, . . ." (Article I, Sec 21).

Rarely, one finds a pure ray of light like this: "It does not seem to me that water use in this country ever rose above the dignity of a mere privilege over which the state had complete control" (Oregon Chief Justice McBride, In re Hood River, 1924, 190-91). More generally, there is a good deal of paltering on the matter. Legal opinions seldom stop with the bottom line. Putting the best light on it, circumstances alter cases; putting a worse light, there is a good deal of double talking in order to secure licensees the benefits of owning property without the obligations.

When you dig, however, it comes out like this. A water license has about the same standing as the privilege some airlines had (before deregulation) to occupy certain airport gates and time slots; the privilege of a cab to work the streets of New York after securing a medallion; a license from the FCC to use a specified frequency; or a grazing permit on Federal lands. It is like the old Oregon and California Railroad land grant which was revoked when the grantee failed to perform. It is subject to conditions, and to forfeiture for failure to meet same.

The evidence is, you do not find water licenses recorded along with title deeds to real property. More important, you rarely find them on the property tax rolls.³ Seldom have you heard a licensee demand to be taxed because he holds real property. He may, if pressed, tell you the water right is taxed indirectly through the value of taxable real property it serves.⁴ There is no more than a half-truth there. The untrue half is that unused and misused water reservations (the standard case in California) do not much raise the value of any land anywhere, and are not taxed at all, directly or indirect.

Lawyers habitually intone "property" when describing water permits, especially their clients'. This is ceremonial and tendentious, to bolster the particular case. The magic word is used in some court decisions: it is also a group shibboleth, to bolster all clients' cases against all the outside, unlicensed public. Call it a class bias. After all, most lawyers get in this field to represent licensees. Generally, their dual interest is to make permits seem solid and "real" property, except when the subject is property taxation, or moving the place of use: at these points the permits collapse into something else. The resulting double-talk has been deplored in Gaffney, 1962.⁵

The upshot is that The Legislature has more latent power than most of us imagine. As electors and citizens our hands are not tied, just our minds. So much the more honor to law professors like James Huffman, Harrison Dunning and Joseph Sax, who help lay citizens know their latent powers over water permits (Huffman, 1989; Dunning, 1982; Sax, 1990⁶).

2. "Real Property is Sacred and Untouchable"

Wrong! Suppose this lay writer and the Oregon Chief Justice were in error, and water permits were real property. That would just be out of the frying pan, into the fire. What does "real" mean, applied to property or estate? "Real" is an elided English form of the French "regal," taken into English when English kings spoke French. Real property is The King's. We threw out kings in 1783, but not the regal powers. Rather, we transferred those powers to our state governments, appropriately naming them "sovereign." By succession, real property means government property!

Every landowner is a tenant of the king or his successors in interest. The very word "own" comes from "owe." An owner is one who owes. What he owed historically was fealty to his sovereign. That used to mean bending the knee, kissing the royal foot, swearing allegiance, and showing up on demand to smite the enemy. It has evolved

into servitudes like eminent domain, the police power, the public trust doctrine, and the tax power. We will return to the last.

These concepts are basic to the common law which, as Professor Huffman points out, has been brought into every U.S. state constitution (save Louisiana's). Moses was not just whistling Dixie when he quoted The Lord as saying "The land shall not be sold forever; for the land is mine, and ye are strangers and sojourners with me." Chief Seattle would have approved. So would Brigham Young, who founded the once-independent nation of Deseret on that principle.⁷

Moses and Brigham Young were also speaking just as William the Norman spoke after he conquered England, except that William was not also a theocrat. "You hold title to this land from me; observe my rules." That is the law we have inherited; that is how the system works. In one form or another it is found around the world, except in the minds of abstract economic theorists like those of the Chicago School. These philosophers construct systems from introspectively derived axioms, turning away from the historical origins and conditions of the absolute property rights they preach.

That doesn't imply state power must be used autocratically. There was never so ardent a democrat as John Wesley Powell, army officer and Federal bureaucrat, who said, "Furnish the people with institutions of justice, and let them do the work for themselves" (Powell, "Institutions for the Arid Lands" 113, cit. Worster p.140). That will do as our text.

3. "You cannot take real property without compensation"

Wrong! Whoever said that has not been following zoning law. As a rule of thumb, zoning can take away as much as 85% (Professor Sax says 90%) of the use value of land before it is declared an unconstitutional "taking" of property. The owner must be left with some "economically viable" use, meaning almost any use whose revenues exceed expenses, however small the net gain.

Rent control, too, is consistently upheld. In a current case the court ruled that rent control helps tenants, and the fact "That rent control may unduly disadvantage others, . . . do(es) not affect the constitutionality of the rent control law." (Egelko, 1991)

As to other property, well! No one has yet been compensated for losing the fruits of his sweated brow to the IRS, at rates which once soared as high as 90% in the top bracket. Let's put a lid on loose and wishful preaching about absolute property rights that never existed. Property is not an end in itself; it is a means of getting resources put to their best use for the general good. To secure that end, property rights are instituted among men, deriving their just standing from the consent of the unpropertied. Whenever any form of property becomes destructive of that end, it is the right of the people to alter or to abolish it, and to institute new principles most likely to effect their safety and happiness.

Consent of the unpropertied? That means property must work for the benefit of all, not just those who own property. But abolish property!?! That is a red flag indeed, but note I said alter or abolish, and it is our own Declaration of Independence I am paraphrasing.⁸ Like Jefferson, I generally prefer alter to abolish: "abolishing" something is nihilistic until we know what we want to replace it with. The point is, we have many degrees of freedom as citizens; we are not bound body and soul by decisions made, or allegedly made, in the past.

4. "The cost of water is passed through to consumers in higher prices"

Wrong! Prices are determined by supply and demand, not cost. If you sell in a national or world market, or even a competitive local market, you are a price-taker, not a maker. You can't pass cost hikes on to consumers; you have to eat them.

In addition, water (like energy) is an unusual kind of input whose high price may actually increase production. It would be easy to assume, using the good old idea of diminishing returns, that dearer water would reduce intensity of

land use. It certainly cuts water use, but when you pay more for water you often switch to higher-valued crops. That is what southern California farming is all about. You substitute capital and labor for water on the same land, and often raise yields per acre. Note that is not just higher yields per acre-foot of water, which conventional thinking would predict; that is yields per acre of land. Less water per acre may mean more output per acre, an uncommon and momentous relationship.

Conversely, when water is cheap you substitute water for labor and capital. Water is such a potent substitute for labor and capital that more water often means lower yields from each acre. I am not sure that farm production economists have ever really faced up to that phenomenon and its implications.

The effect of cheap water may be seen in Fresno, Kings and Tulare Counties, California. Their populations grew by 32% in a decade of dear water, 1940-50. Then they received an influx of cheap water from two Federally subsidized projects: Pine Flat Dam on the Kings River, and the Friant-Kern Canal of the Central Valley Project. What happened then?

For the next 30 years their populations stopped growing and even fell through outmigration (Ballard, p. 30). In Tulare County, 1974, wages and salaries accounted for only 50% of income payments (California Statistical Abstract, cit. Ballard, p.28). Farms receiving the Federal water subsidy average 7.2 times larger than other California irrigated farms (calculated by Villarejo, 1986, p.20). By 1980 California's Central Valley contained six of the ten American cities with the highest proportion of people on welfare (Metropolitan Area Fact Book, 1984, cit. Villarejo, 1986, p.109). Two of them are Visalia and Fresno.⁹ Cheap water has not converted the Great Valley into a beehive, any more than cheap power has converted the Tennessee Valley. Arguably, it has degraded life in the Great Valley.

With dearer water, on the other hand, you use less by controlling it better, switching from primitive furrow irrigation to sprinklers, spitters and drip. This in turn lets you do new things like growing avocados on steep hillsides formerly barren, yielding more dollars of product for less water (and in this case on waste land).

You cannot afford to dump high-priced water on barley, or alfalfa, or rice, or irrigated pasture, or any other of these domesticated phreatophytes that guzzle up most of our underpriced water today.¹⁰ A number of fairways and cemeteries would also give way to higher-valued uses.¹¹

The above facts point to a fascinating, consequential corollary: you can tax water withdrawals without wrecking the water economy. On the contrary, such taxes (carefully crafted to be constructive) can encourage conservation, getting more bins for the bucket, so to speak, and opening more opportunities for useful labor. Americans are raised on anti-tax slogans masquerading as economic analysis, always presuming taxes destroy good incentives and wreck the economy. Here is a kind of tax that raises revenue while strengthening the economy. This corollary is too good to drop, and is highlighted later.

5. "You can't stop a landowner from pumping on his own land"

Wrong! You can even control his hunting and fishing there, overfly, prohibit and extinguish fires, limit crop acreage, search the home, and arrest the owner for smoking pot. As to pumping, it depends on whether he owns what is under his land. If it is oil, mineral rights are routinely severed from surface rights by sale, reservation or lease. Water can be subject to constraints, too. They are traditionally weaker, but not always, and never necessarily.

Limits on pumping water are not as common or severe as Huey Johnson and I think they should be, but they exist and are growing. In coastal areas, pumping is limited and/or taxed to stop salt water intrusion. Districts that replenish ground water may and do charge those who pump it up again¹². Further inland, pumping can be stopped to control movement of toxic plumes that destroy valuable aquifers: this is done in the Bunker Hill aquifer under the Santa Ana River, threatened with fouling by toxins from Norton Air Force Base, San Bernardino.

Pumping is routinely stopped to prevent "export" of water from lands overlying an aquifer: California calls that the "correlative rights" doctrine. It is not always well observed, and not often well-advised, but very well established

(Katz v. Walkinshaw, 1903). If that does not suffice to stop overdraft, pumping is controlled to prorate water among surface owners, and shorten pump lifts (City of Pasadena v. City of Alhambra, 1949). Also, pumping wells near streams can be stopped to prevent the indirect diversion of surface water (Tulare I.D. v. Lindsay-Strathmore I.D., 1935). This happens on the alluvial fans that are so common in the west.

A simple solution to half our intractable water problems would be a severance tax on water withdrawals.¹³ If you can regulate it you can tax it.¹⁴ A tax, properly gauged, is an economic price charged by the owner of water (the state) for using its property. If Chicago-School economists, and allied "new resource economists," were more consistent in their ardor for the price system, and less consistent in their mistrust of legislatures, they would seize upon this application of the price system and boost and perfect it with all their considerable influence and talent.

Whether one chooses taxation or regulation, we must control pumping in some manner if any system of surface control is to work. As Huey Johnson points out, while California rations and conserves surface water, landowners in the arid San Joaquin Valley just punch more and more wells into the aquifers and pump up free water the State and Federal projects keep recharging at high cost. In the drought of 1976-77, 10,000 new wells were drilled in the San Joaquin Valley (Weatherford, p.1031). Thus they play out their destined role in *The Great Water Treadmill*: subsidized water supply followed by overdraft followed by State rescue projects followed by new overdrafts, etc. ad bankruptcy.

This treadmill got well started in 1913 when Los Angeles tapped the Owens Valley waters to supply free water in the San Fernando Valley. The lands there were timely prepurchased by insiders before annexation, giving a clue to the forces behind the premature seizures and diversion of water. The episode was dramatized in the cinema Chinatown, so the scenario is often now labelled the "Chinatown Syndrome," although key names like Mulholland, Van Nuys, Sherman, Huntington, Otis and Chandler sound distinctly occidental.

It is not just history, the Great Treadmill keeps turning. The Metropolitan Water District of Southern California (MWD) keeps pressing for more water sources, wringing its hands over the drought, preaching domestic conservation and imposing rationing on its old customers - and annexing new desert lands to water. "It's hard for the public to understand how you can annex and talk about a water shortage," is all the comfort offered by Lois Boylan Krieger, MWD Board Chair, as the Board approved another drought-year annexation (Metzler, 1991).¹⁵ A month later she proposed making more water available for farmers (Bankole, 1991). She insists on maintaining a "balancing fund" to subsidize waste by keeping prices low during droughts (Krieger, 1991).

Excess landowners in and around Central Valley Project service areas routinely gain from recharge that others pay for: CVP contracts even "declare that such water shall not be considered as furnished by the project" (Ivanhoe v. McCracken, 1958, p. 296-97). Kern County landowners keep irrigating desert lands, overdrafting, and petitioning Sacramento for "emergency" aid. They even oppose metering city water, fearing that "if cities get slapped with meters, their wells are next." (News Services, 1991).¹⁶ They nicely summarized their attitude as follows:

The existence of overdraft in the southern San Joaquin Valley does not indicate an "unmanaged" situation, but only the absence of an adequate supply of supplemental water . . . " (Weatherford, p. 1038).

On the other hand, the wild and cottony State of Arizona authorized a pump tax in 1980 (for later implementation), and set about retiring some farmlands to reserve water for higher uses (Dunning, 1982b, pp. 41-43). The pump tax is only at token levels now, but so, once, was the first sales tax. They are relying heavily on direct regulations to promote conservation (Brown and Ingram, pp.23-24). If those quirky individualists can do it, who can call it impolitic anywhere? May we not also anticipate that, once committed to groundwater conservation, they will come to see the advantages of using the price system rather than relying so heavily on direct controls?

6. "Economics is hostile to environmentalism"

Partly wrong, although some economists are guilty as charged. Economics, properly pursued, deals with how best to meet human wants. Recreation, fishing, wildlife, amenities, clean air, pure water, sustained resource supply,

watershed protection, good health, and conservation are legitimate human wants. Many economists, I confess, are deaf and blind to such values, and think only of maximizing GNP measured in the brutal old-fashioned way, developed during World War II for war's emergency purposes and never revised. Others, cowed by cow college deans, dare not think at all, and write only of sustaining farm land values: damn the cost to fish, wildlife, and the taxpayers (Knapp and Vaux, Jr., 1982)¹⁷. The writings of Professors Buchanan and Tullock give a convenient philosophical basis for such an attitude (Buchanan and Tullock, 1975).

Many others, however, are leaders in developing environmental and resource economics. Today wise environmentalists, rather than sniping at all economists, are allying with the last kind. Here are four reasons why environmentalists and economists are natural allies.

A. Economizing is conserving.

Rationalizing water use, the proper aim of economics, is inherently conserving. For example, if we put the Santa Ana River to its highest and best use, it would obviate mega-megatons of water imports, and the associated environmental damage. I myself possess a share of this river, which rises naturally in an area of intense water shortage, yet I waste it. Why? There is only a trivial variable charge. There is a yearly fixed cost, at about \$20 per acre-foot for a "standard" amount.¹⁸ The "standard" hasn't changed in a century, and is much more than I properly need.

Meantime, the State is importing water here at a true social cost of about \$2,000 per acre foot, 100 times what I pay (see Section #11, *infra*). If there were a market where I could sell my quota for a tenth of that price I surely would, but there isn't, so I don't. If there were a price at one-tenth of that amount I would not buy, but there isn't, so I do. Thus I, and thousands like me, keep wasting water.

Abuse of local waters in arid areas of high demand, like southern California, results in "hydro-imperialism."¹⁹ The prevailing ethic is mixed-up macho. Conservation is for sissies: Real Men don't conserve water; Real Men prove their potency by preying on powerless people's possessions. The imperialists then improve their prosperity per pushy porkbarrel politics, promoting putatively "public" projects for private profit whereby poor impoverished patsies pay the publicans to provide plenty of pecuniary power to pump the precious potable prize through pipes to provide in perpetuity for potato patches, plus putting greens, pools, ponds, par-fives, parklike prospects, playing places, plazas, impoundments, and riparian playas appurtenant to parcels of property they would purvey to paying guests or permanent purchasers, or hypothecate with paper to be placed with Prudential, or occupy for imputed personal pleasure and pampering their progeny in the parched provinces pilfered from the primitive pastoral Papagos who previously prevailed in these parts proximate to Palm Springs.²⁰

B. Subsidy wastes both dollars and ecologies.

Hydro-imperialism is the common enemy of Sierra Clubbers and economists. That is lucky for economists: Sierra Clubbers have more clout. Twenty years ago some porkbarrellers proposed having Congress pay for pumping water a mile up and 1500 miles west from the lower Mississippi River to West Texas, to rescue landowners around Lubbock from the consequences of their overdrafting. It was to be one of The Great Boondoggles.

I laughed when I read ecologists were fighting it to save the habitat of some forgotten dicky-bird, say the "Least Southwestern Shiny-rumped Fleapicker." It seemed funny, and kind of pathetic, to have a few shy bird-nerds, those nostalgic nebbishes, trying to save their archaic, asocial hobby. Didn't they know this was hardball, with billions of real values like dollars at stake, and big, tough, cigar-chomping contractors in charge of crushing rocks and the opposition? I'm not laughing any more: the nerds won! How little I had understood power. Damn the billions, Congress doesn't care, but it jumps for organized ornithologists.

Yes, now I dare come out of the dawn mists, I'm a nerdy old bird-man myself, complete with bird study Merit Badge, and an honorable arrest for trespassing in hot pursuit of, as I recall, an Oven Bird. They told me to put away those childish things that aren't hardheaded and practical (like Economics). Ha! Who's practical now? Ornithologists are winning our battles; we are natural allies.

"You have no right to stop growth," says the hydro-imperialist. I agree, but insist on the counterpart: we have no duty to subsidize growth. Hydro-imperialists and allied land speculators have no right to demand subsidies.

Water supply and flood control and navigation projects, the traditional kinds, are heavily subsidized. Subsidy generates waste almost by definition, in the amount of the subsidy. If it is a subsidy to withdraw water it also creates scarcity of water where nature may have given us plenty. Consider the lower Colorado River. Every major user is subsidized, mostly by Congress. No one pays a dime for water at the source, but everyone gets paid to suck it up and take it home. No wonder there is a shortage. No wonder there are 82 golf courses operating in the Coachella Valley, a Sonoran desert, and 50 more planned. No wonder The U.S. Bureau of Reclamation can't even find takers for water carried to Phoenix in its multi-billion dollar Granite Reef Aqueduct. I could go on, but exhorting Congress not to waste money is scolding sinners in Sodom. Come on, ecologists, find an endangered species!

C. Correct economic analysis prescribes more water for fish.

Twenty years ago a study²¹ on the S . . . River of B . . . prescribed sacrificing the fishery to a proposed power project, reasoning as follows. The fishery has no value because it is overcrowded: its "rent has been dissipated by the tragedy of the commons." The value of the catch is only great enough to pay the fishermen. The fishery as such therefore has no residual value; it adds nothing to the total value. Take it away and nothing is lost, net of costs.

That is a profound fallacy. You will have noted it is a way of "dehumanizing" fishermen and assuming away their readjustment costs, but this is not my main point. The fallacy is to say you should remove water from the use in which it is most scarce, precisely because it is scarce. This violates the basic law of diminishing returns (aka variable proportions). It violates good marginal analysis, a bedrock of economics.

My friend the author happened not to be an economist by training, but (alas! for education in economics) some "trained" economists would do the same. He probably got it from one of them. However, the crowding of a resource does not mean it is worthless. Rather, it has become extremely scarce to those crowded onto it, and the marginal value of water added to that use is extremely high. In terms of redressing unbalanced factor proportions, it has the same effect as subtracting some fishermen, which the writer would have approved.²²

D. Correct economic analysis presumes a public trust doctrine.²³

Another thing some economists do right is to acknowledge that "entitlements" - the initial assignments of property rights - have a major effect on the relative bargaining power of different parties. For years, economists would ask, say, canoers what they as individuals would pay to keep a river wild. They got rather low valuations, and duly reported them as the value of recreation. This was an effective defensive strategy for dam builders.

One day it occurred to some unsung genius to invert the question: ask not what canoers would pay for the wild river; ask what the power company would have to pay the canoers to take it away²⁴. The second question presumes that canoers, as citizens, already own the wild river. Lawyers Huffman and Johnson have told this Conference, in fact, the citizens do (and not just canoers, but all citizens). Professor Joseph Sax (1990) confirms that.

In recent years ecologists have been catching onto this point and rubbing the noses of legislators and bad economists in it. In the current lingo, one arguing ex parte the canoers stresses that canoers' WTA (Willingness to Accept) is the relevant dollar value, and it is higher, perhaps much higher, than their WTP (Willingness to Pay). (WTA is also called a "compensation-demanded valuation.") In its basic CERCLA²⁵ legislation, 1980, the U.S. Congress specified it wanted measurements of WTA, not WTP (Carson & Navarro, 1988, p. 830). Many pollster-theorists fret that "received theory" has "been unable to explain . . . the persistently observed differences between WTP and WTA measures." (Cummings et al., 1986 p.41.)²⁶ Could it be that "received theory" was received damaged?

In defense, black-hat economists are developing a strategy of trivializing the matter by claiming WTP = WTA (Mitchell and Carson, 1981²⁷). They follow a Chicago-School guru, Ronald Coase, who has written it doesn't really matter how you assign entitlements so long as it is clear and firm. Then just start the game of "Free Market" and

deal: everything works out for the best. Resources end up allocated the same, no matter who starts the game with all the chips, because $WTP = WTA$.²⁸

Bunk! You are not surprised, even in our mobile, commercial society, when someone says, "My home is not for sale. I will not sell at any price, don't call again." She can take that attitude when she holds the initial entitlement. You would be amazed to hear anyone say, "I will pay any price." There are many documented instances of a person swearing under oath his land is worth no more than \$X for tax assessment purposes, and soon thereafter swearing again it is worth \$15X when being condemned for a park or other public use, because he wouldn't sell it for less.

"Modern" micro-economics, dominated by followers of Coase, is a throwback to the old Manchester School, some of whose members carried Adam Smith far beyond Smith's language or spirit. They prescribed "free trade in land" as the solution to all resource problems - free trade beginning with entitlements inherited from millenia of conquest, corruption, aristocracy, confiscations, negligence, covin and fraud.

In this narrow view, everything is for sale; everyone has his price; all values are determined at the margin; etc. Facts are forced to fit that theology. One Coasian, Richard Carson of San Diego, works the northwest Pacific Coast these days polling folks. (In econo-newspeak, he is "applying the contingent valuation method," or CV, because the questions are hypothetical.) The purpose is to put a value on environmental damages.

One review faulted "the high rate of unusable responses." (Fischhoff, p.287).²⁹ Why "unusable"? Carson has written that he throws out WTA answers when they exceed WTP answers by more than 5% (Mitchell and Carson, 1981, 1988; see also Mitchell and Carson, 1989, pp. 32-34, 226³⁰). Modern Economic Science has no time for wrong answers: Shred and Trash!³¹ Sometimes over 50% of the responses are "invalid." They don't fit the Coase model; they must be, in Carson/Mitchell's phrases, "methodological artifacts," or "outliers," or "protest responses," or "aberrations."³²

If so, aborigines are aberrational. Consider Indian tribes with Treaty Rights to fish. Their WTP for those rights is minimal, partly because their ability to pay (ATP) is minimal. In addition, the mere hypothesis they are the ones who must pay implies they are impoverished and cannot pay anything.

On the other hand, their WTA presumes their Treaty Rights are valid and they are in control. In their culture, traditional land rights rank high relative to money. They have seen people squander money and be ruined. Land is not squanderable: by nature, it never wears out, especially the way they use it.

Land has more than marginal value to them because they have just one way of life, based on fishing. Substitution of other lands is not part of their ethic. Their religion is also a factor: must our rationality make them renounce that, too? It is entirely believable they mean it when they say they will not sell "at any price." They may be unreasonable, but that's the point: ownership lets you be as unreasonable as you please.³³ We notice mainly when it is someone else, especially someone different.³⁴

Politics and institutions are involved: Treaty Rights are the most valuable mode of holding property there can be. They enjoy legal supremacy as high as The Constitution itself (Article VI, Section 2), preempting contracts and ordinary legislation. All those, and other important institutional and sociological considerations are outside the "perfect-markets" ambit of Carson and his sometime co-author R.C. Mitchell.³⁵

Indians are an extreme case, but most of us have a streak of their psychology. Not many generations back we shared the same kind of culture, a dependence on traditional lands we held in common, in implied trust for our descendants. These traditions are still part of the cultural subconscious, and affect current attitudes. Yet they are totally disregarded in mechanical-type formal micro modeling (except perhaps as tautological "revealed preferences").³⁶

So, a pox on economists who belittle the question of entitlements. Such economists deserve the scorn and paranoia³⁷ they evoke in environmentalists. The proper answer to them is, "If entitlement doesn't matter, give it all to me: then let's talk." That smokes them out.³⁸ At the same time, give a break to other economists who are on your side. We need all the help we can get.

7. "Water conservation begins at home"

Wrong! Charity and consciousness-raising begin at home, but cutting domestic water use is mostly tokenism and guilt-tripping. Put bricks in the toilet tank, they say; shower with a friend, drink less water, drain your pool, wear clothes that reek, use paper plates, drive a dirty car, never hose the front walk, and so on.

In Solvang, a tourist trap near Santa Barbara, a sign on the restaurant table says they don't serve water unless you ask. This is by request of the local water conservation authority. Be a good citizen; do your part; help the victims of drought; (order from the bar, instead.)

Bunk! Solvang is surrounded by sleek horses, playthings of the prodigal, chomping happily on irrigated pasture. There is a vast luxury golfing resort. On the back of a paper doily I calculated how many glasses of water it takes to irrigate a golf course. One acre-foot is about 4.5 million glasses of water. One acre of grass drinks some 6 acre-feet/year, or 27 million glasses. One golf course is 200 acres or more, needing over 5.5 billion glasses a year. That is what a lawyer might call the "incorporeal hereditament" of a golf course. Go ahead, drink your water without guilt, you're as good as a horse or a golf ball.

Most "domestic" water use is not in-house at all, it is watering lawns. Most water use is not urban at all, but farm use. Most farm use is not in labor-intensive, job-making crops like berries, tomatoes or fruits, but in low-yield uses like alfalfa, irrigated pasture and rice. Huey Johnson points out you can, indeed, save significant shares of in-house water putting bricks in the toilet tank, in spite of what a minuscule share of total water use that is. It gives you some idea of what a loose water economy we have, and how really non-radical are the adjustments needed to overcome a water shortage.³⁹

If you're still worried, consider the California "Water Bank" experience. In 1990, after five years of drought, the State bought surplus waters from "water farmers" on the Yuba River in the Northern Sierra and offered its free service as broker and wheeler to move it south to droughted desperate growers. Some prospective customers then said, "Thanks, but no thanks," leaving the "Bank" with water it cannot sell at cost.⁴⁰ The fact is, demand for farm water is highly "elastic" (price-sensitive), because so much is now being wasted. It can and would be spared any time we see the light and put a price on it.

8. "Water is too important to be left to the market"

Wrong! Yes, I have read Dickens with appreciation. I have seen Les Mis, and got the point hearing Threnadier sing "Master of the House." I have been rooked and cheated a few times - who hasn't? But what have you found that works better than the market?

Real estate, which is even more basic than water, has been allocated by the market for a long time. It's not the most efficient market we have; I am a severe critic and ardent proposer of reforms. However it does work, even in its present crippled form, better than anything known in Cuba or Russia. Lois Krieger, Board Chairman of MWD, has said that water markets would never work, your "water is here today and gone tomorrow." Now she is in the market herself, trying to buy water from the Imperial Irrigation District. We all can learn, sometimes by force of circumstance.

However, she articulated a common anxiety. "You can't trust the market because it may take away your water and never give it back!" If you can't get it back, it's not a market. The market looks like a one-way street, only leading away, to those who are used to getting things for nothing. Ante-bellum southeastern slave-owners felt that way: "A labor market will never work, the workers won't be here unless you own them." Of course they won't be here if you won't pay them. Likewise, water won't be yours unless you pay what it's worth, year after year, like your other bills. That's what markets are all about; that is how they will shift our waters to more productive uses.

In 1972 Newsweek had an issue headed "Are we running out of everything?" Panic! Raisins were short, coffee was short, even toilet paper was short. These minor shortages were left to the market so responsible public officials could focus their rare talents on the really important one: energy. Within a few weeks hoarders disgorged raisins,

coffee and toilet paper, shortages disappeared and were forgotten. The shortage that lasted was energy, the one that was too important to leave to the market. The market really is pretty good at handling shortages.

9. "The market can solve all problems"

Wrong! I warned you I have two hands. Dearly as I love the market, it has limits. Here I discuss four of them.

A. Some human rights are unalienable.

You may not pledge your body for debt. You may not sell a child, or pledge its body for debt, or leave your debts to the child (unless attached to assets you leave).

If you may not sell a child, may you sell the common rights of a child, rights bequeathed to you by earlier generations? May we collectively sell the common rights of all children, or pledge them for debts, or let them be taken away through our negligence or ignorance? Here we are on contestable ground. The Nation has been hocking its future tax revenues to service a soaring debt. The debt is a lien on children's future taxable incomes. If individuals refuse to pay, they can be jailed. In this way, we have been indeed selling our children's bodies to cover our debts.

Putting it that way, it looks like bad policy, but the guilty deed is done. To atone, I suggest we begin now protecting whatever other birthrights we can leave future generations. What common birthrights belong to all infants? Water belongs to the states, as trustees for all citizens.⁴¹ I construe that to mean the states are trustees for the rights of every helpless child born to pay future taxes.

That may be a right of access, where feasible. Increasingly, open access is not feasible. As Merrill English points out, access must often be limited in order to manage the resource efficiently. Historically, this has often been the occasion to extinguish common rights, as happened in England during the enclosure movements. It need not be so, however. We need merely replace the common right of access with a state duty to collect revenues, and use them to serve common public needs.

A right of revenue means a state would charge people for withdrawing its water to use on private lands, instead of subsidizing them to do it, as now. It would "turn Negabucks into Megabucks" for state treasuries. Not only would the price raise revenue, it would promote efficient water use: two major birds with one stone. Has anyone even suggested another policy to achieve so much at one stroke?

B. Water development and distribution are natural monopolies.

Most big water projects are multi-purpose. Dams provide not just water supply but flood control, power drops, navigation improvement, salinity repulsion, fishery protection, flatwater and whitewater recreation, and so on. I don't think even Terry Anderson has figured out how the market coordinates and synchronizes those functions.⁴² In a large basin like California's Central Valley, with dozens of streams with benefits from integrated development, the possible gains from valley-wide integration, with "billiard-ball" movement of waters from north to south, are staggering, and have inspired progressive engineers since the 19th Century.⁴³

Water moves through pipes and canals. An aqueduct's capacity grows with its cross-section, which grows with the square of its radius. Its capital cost grows with its circumference, which grows with the first power of its radius. It follows that more capacity always means lower cost per unit of capacity, so there is no place for parallel, competing lines.

There is also the legal and spatial matter. Rights-of-way are acquired by eminent domain, imposing a public servitude on the owner. Accordingly, water conveyance and distribution are almost everywhere public, cooperative, or regulated. There is no free market in water conveyance, nor could there be.

Some of those who preach for free markets do so mindlessly overlooking this vital matter. Others, more advanced, give it some thought, and solve it to their satisfaction by denying the relevance of the reasoning above. They note that conveyance lines are getting longer, reaching out farther and higher to find supplies and, at the demand end, doing the same to reach sprawled-out customers. Then they "meld" all costs together (consolidate accounts), and find that more capacity means higher, not lower cost per unit. Presto! Competition, marginal cost pricing and free enterprise are again viable.⁴⁴

Such "melding," however, violates the spirit of marginal analysis on which it relies. Marginal analysis calls for deconsolidating accounts, looking at increments separately, and distinguishing different effects. These thinkers have failed to distinguish "volume effects" and "distance effects." The effect of greater distance is to raise average costs, true. The effect of greater volume, carried a given distance, or distributed within a given perimeter, is always to lower average costs. It thus remains true that conveyance and distribution are natural monopolies.

Water markets, water "banking," water pricing, and other excellent economic ideas now emerging from a century of suppression, are music to my ears. They will not work, however, just by chanting, "The Market Will Provide!" In this church Salvation is by Works, not Faith. There must be a central conveyance agency, regulated in the public interest at a high level of economic and financial sophistication, doing what a market would do if a market would work.

That is not a simple task, yet neither is it an idle dream. It is substantially what the state public utility commissions do for electric power, gas, communications, etc. These commissions are imperfect - what isn't? It takes hard work to keep them honest and capable. My plea is to accept that necessity and get on with it. A battery of dedicated professional lawyers, engineers and economists have been doing so industriously, often capably, sometimes thanklessly, for a century. They need your support.

C. Markets only work when sellers are motivated.

In the 1950s the learned journals were full of sanguine allegations, right out of Dr. Pangloss, about all the water trades taking place. The problems of the past had been solved, the wise men said. Investigation, however, showed their claims to be without substance (Gaffney, 1961).

Among the false prophecies of my youth is that ridding water of legal barriers to alienability would make it merchantable and let the market move it quickly to serve higher needs. With doctrinaire zeal and righteousness I upheld this position in a debate (Gaffney, 1962) with Frank Trelease (1961), a Law Dean, and pleased a few Chicago-school colleagues in Economics: market freaks were a beleaguered minority then. I wish dear Frank were still with us to know he taught me something.

Now we market freaks are a majority, a condition that lets doctrinaires run wild. I still believe in markets, within reasonable limits. "New Resource Economists" like Terry Anderson are preaching the market without reasonable limits. The pink-slip⁴⁵ is the new panacea. Firm up property rights, they say, give out negotiable titles, declare a free market, and let the good times roll (Anderson, 1983).⁴⁶

Water marketing is all the rage. A progressive legislator, Richard Katz (D - Sylmar), reflecting in part the Anderson-RAND viewpoint, carried a statute in 1982 to remove certain ancient legal barriers to selling or leasing water permits⁴⁷. Climbing on the wagon, the Environmental Defense Fund, an activist reforming group, has converted itself into a brokerage, combing the state to negotiate deals. In 1986 a new Katz bill let water transferors use conveyance facilities of public agencies⁴⁸.

The results, sadly, are meager, considering the pent-up pressures for economical transfers.⁴⁹ There are offers and refusals, but a wide gulf between negotiation and consummation. The water market is still no more fluid than glue. Only one of the big, obvious deals has begun to go down, and that partially and haltingly.⁵⁰ This is true after five years of drought, with severe crises in Santa Barbara and Marin County, whose ability to pay cash for water is maximal.⁵¹

Dauntless, Assemblyman Katz has moved a third time, seeking to remove still more obstacles to water sales (Ellis, 1991b; Ellis, 1991c). The latest proposal was to let individuals sell without approval of the water districts that serve them. This tracked a major RAND recommendation (Phelps, et al., 1968). It enjoyed editorial support of the Los Angeles Times, ever thirsting.

Marketing is a worthy goal and deserves support. This move, however, savored of a priori faith without reasonable limits. The problem is, this change would subvert the integrity of district distribution systems. It would not tap a new artery, but a scatter of capillaries.⁵² Actually, some "Mutual Water Companies" already provide long experience with alienable individual shares. It took a constitutional amendment, but irrigation districts can and do buy and hold shares in these companies.

It would be prudent to observe the results. In the Kaweah Delta, this has resulted in a Balkanized, intertwined, overlapping, money-wasting, water-wasting set of distribution lines and service areas that stagger belief, and cry out for rationalization and economy (analyzed in Gaffney, 1961). Frustration over market torpidity could lead to damaging, ill-considered measures. This one died in the Senate Agriculture and Water Committee (one hopes for the right reasons) in mid-August, 1991 (L.A. Times, 26 August 91). R.I.P.

The Los Angeles Times had already, prematurely, been hailing a new era, but this ignored that water has been alienable, at least after a fashion, for many years already. California Water Code Sections 1700-05 spell out procedures. Citing a 1942 case, Wells Hutchins wrote "The appropriative right is . . . separable and alienable from the land to which it became initially appurtenant; ..." (Wright v. Best, 1942, cited in Hutchins, 1977, Vol. III, p.191.) 51 years ago in 1940 the Madera I.D. sold its water "filings" on the San Joaquin River to the U.S. Bureau of Reclamation for the Central Valley Project (Downey, p.6). More generally, galloping urban sprawl in southern California has been watered by continual urbanization of indigenous farm supplies, using condemnation and the legislated domestic priority where necessary.

"Water banking," too, has been around a long time. Irrigation Districts along the Friant-Kern Canal were selling surplus Federal water in the 1950s, with Federal blessing (Maass, 1952). Water filings by the Feds were granted by the State not to certain lands, but "for the use and benefit of said Central Valley Project," to further a "general or coordinated plan . . ." (California Farm Bureau, pp. 58, 60). The U.S. Supreme Court upheld the mobility of these filings decisively in 1958 (Ivanhoe v. McCracken). Such pooling and banking was inherent in the ambitious "Marshall Plan," the comprehensive Statewide plan of the 1920s that devolved into the present Central Valley Project. In the 1977 drought there was active banking along the California Aqueduct (ironically, from south to north, and from urban to farm use) (Angelides and Bardach, p.17; Robie, p.49). In 1977 Congress authorized the U.S.B.R. to broker water sales (Robie, p.49; Saliba and Bush, p.113; Wahl, pp. 136-38).

So water has long been legally alienable and transferable, albeit with high hurdles. Something else is obviously wrong, however, and it is this: the sellers are unmotivated. Water flows are perpetual; sellers do not feel very urgent. Unmotivated sellers love to negotiate, while every year the demand rises. Real estate brokers understand that well, from costly experience. They learn to screen out unmotivated sellers, who waste everyone's time. The broker's delight, the motivated seller, is an ordinary family moving to Philadelphia, or anyone with surplus land subject to debt and/or property taxes. A cash drain is what attracts the attention of any seller and moves him.⁵³

Farm water districts are the broker's despair. They are not moving to Philadelphia, even if individuals do. The lands they serve are not moving. Water permits are free of debt (banks don't lend on precarious tenures), and generally free of property tax. Districts with surplus waters are like hoarders during an energy crisis, except it is a perpetual condition. Demand keeps growing: why not hold out another few years?

Another factor is nicely put by the PR officer of the Westlands Water District: Rob Leake cited the "general reluctance" of growers to sell water, thereby creating "the perception that there are surpluses . . ." (Levin, 1988.) Those with precarious tenures know they are insecure, and tiptoe accordingly⁵⁴.

Even if a few big deals are finally cut some day, that won't prove much. The real estate market works, such as it does, because there are hundreds of thousands of deeds recorded every year. A good water market would call for the

same level of activity; it is nowhere in sight. To change the motivation, and get this market working for the common good, we need some constructive use of property taxation or the equivalent.⁵⁵

D. "Rent-seeking" perverts the market.

Scarce waters, where demand exceeds supply, yield rent. With demand growing, abundant waters where demand is now low are expected to become scarce, and yield future rents. In anticipation, persons and organizations with an eye to future rents are ready to do what is needed today to lay claim to future waters.

"What is needed today," by case law, is to divert water and put it to "beneficial use." This is the prevailing appropriative doctrine of water law, under which no one pays a state to take its water, now or in the future. Rather, one acquires a permit that ripens into something resembling perpetual ownership, by the very process of taking. In practise, "beneficial use" is nominal, a token, an economic bad joke. Taking is the essence. Local water boosters call this "foresight," and hail it as first among the cardinal virtues. "Use" may be wasteful, and often is.

This appropriative doctrine is the locus classicus of what is now called "rent-seeking," i.e. distorting present investment to secure future rents. The motive is to divert, develop and half-use water before its economic time, to lay claim to its future. Bismarck is often quoted that those who like sausages and laws should not watch them being made. Let us add water licenses to Bismarck's list.

The concept of "prescriptive rights" is even more perverse. Here, ownership is established essentially by "adverse use," i.e. interfering with someone else's use. The taker's beneficial use becomes even more incidental. In 1949 the California Supreme Court triggered a "race to the pump house" (Krieger and Banks, 62) when it proclaimed the doctrine of "mutual prescription" for groundwater basins (City of Pasadena v. City of Alhambra, 1949). This "encouraged defensive ground water overdrafting by pumpers in other basins who anticipated ground water adjudication" (Gleason, 709).

Market fundamentalists tell us to firm up property rights, then let the market work its magic. They blind themselves, as though willfully, to the process of firming up. In their faith and anti-statist passion they can think of no process but giveaway to privatize resources.⁵⁶ Claims to water are constantly being made, expanded and firmed up, and any giveaway process violates all the virtues a market is supposed to possess. The rule for society is "Waste not, want not"; for prior appropriators and adverse possessors it is rather "Waste today, want not tomorrow."⁵⁷

As we segue toward a market system there is a gray area between older, stationary water licenses and the coming new, portable ones. A class of speculators are moving in to acquire permits from present holders who still value them in their fixed, static, traditional uses. The speculators visualize commercializing the water for distant growing cities or industries, using their political influence to secure needed rights-of-way, and litigation/legislation to modify the water permits to make them more mobile.

This is a new, modified, more sophisticated form of rent-seeking, blended with plain old-fashioned land speculation.⁵⁸ It is raising great anxiety and resentment among environmentalists, and others too (Gottlieb, 1988, pp.261-80). It causes many to reject the idea of a market in water, saying, "A water market just means a plague of absentee speculators like Maurice Strong and his greedy consortium profaning our native waters with their foreign lucre."

There is a better way. Just as we never had to give away water to get it developed, neither need we give away unearned increments to get water transferred to higher uses. A policy of taxing water withdrawals (as advocated herein), based on the opportunity cost of water, will do the job without giving away the benefits. Of course that does mean our own governments must take a hand and assess the market value of water. It's that or the absentee speculators: take your choice. Thus far the choice has gone to the speculators; the results are neither just nor efficient.

10. "Indians are the Untermenschen of America"

Wrong, in part. Indians have many grievances (so do you); we have much to learn from Indian philosophy (and nothing to teach?); the Iroquois may have inspired our Federal system (it's still a moot question, and may be a passing fad); Indians gave us squash, maize, mocassins and potatoes (and tobacco, peyote and cocaine); Indians have dignity and noble bearing (and a high rate of alcoholism); Indians' ancestors were here first (mine were here before yours, though); Indians have treaty rights (I wish I did). All that, and more, I freely grant.

Americans take a dim view of privileges based on ancestry. Should Indians be an exception? The "aborigines" who happened to occupy parts of this land when Europeans arrived were the survivors of earlier and ongoing lethal struggles. They had displaced or were displacing earlier "aborigines." They allied with various Europeans to fight other Indians. They committed their share of atrocities. Their claims would seem no more ethically based than ours.

They have interbred extensively with Europeans and Africans over nearly four centuries, giving a new meaning to "we have met the enemy, and they are us." Can we not meet our moral obligations by taking them into our society as equals? We have, in fact, taken some in as our superiors. The Agua Caliente Band of Cahuilla Indians, for example, own some half of Palm Springs, California, a goodly heritage, where they collect market rents from "Anglo" and other tenants, in the same European tradition the Duke of Bedford applies in Grosvenor Square. That is better treatment than any Africans, or 99% of Europeans receive.

Tom Paine observed in his Agrarian Justice that the life of an Indian is a continual holiday compared with the poor of Europe. That was because the Indian enjoyed access to land and a living without paying rent. Indians believed the land is for everyone, a public trust. Chief Seattle's words are often cited. This is an aspect of Indian lore we are taught to revere; it would be ironic to turn it around to justify excluding most of us from the land.

Those who would fight for the underdog should consider the landless in America. The life of some Indians is still a continual holiday, compared to theirs. These landless ones are the true Untermenschen. They have nothing to sell but their labor power; they have to make the rent every month in order to have any right even to exist legally (for without occupying space on this Earth, how can anyone exist?); some sleep on sidewalks and under freeways; they are subject to income taxes and payroll taxes, when they are lucky enough to find work, and sales taxes when they buy; they enjoy no inherited lands or other privileges, but only the common rights and duties of all citizens.

As to water, they have no standing in court; they have no ability to put water to beneficial use, and hence to claim water permits that are given away free and with subsidies to those owning land; they have no voting rights in most kinds of water districts, even though said districts are organized under state laws, borrow the sovereign powers of the state, and are tax-exempt;⁵⁹ they generally lack money to sustain court cases. These are the Untermenschen that concern me, and I hope you.

Should some Indians, or those claiming to be partly Indian, enjoy special privileges because some of their ancestors got here first? Think what else that implies and entails. The Hurons would demand the return of lands from which they were driven by the Iroquois; the Sioux from the Chippewa; etc. ad inf. Europeans would be ranked in order of their ancestors' arrival. Mayflower descendants might come next in line, along with Hudson Valley Dutch, and Hispanics from St. Augustine and New Mexico. The D.A.R. would be right up there, except they would be upstaged by descendants of Tories who lost their lands to victorious revolutionaries and fled to Britain and Canada. The Daughters of the Confederacy would be heard from, demanding back their ancestors' slaves that were taken from them by force. Irishmen and Germans would be ranked by when their respective ancestors arrived, generally taking priority over Jews and Italians of the next wave.

In California and the rest of the Mexican Cession of 1848, many old Spanish grants, fraudulently or unfairly alienated, would have to be returned. Native Sons and Daughters of the Golden West would get the next priority. Descendants of Brigham Young would pose an interesting problem: is priority patrilineal or matrilineal? Hastening on, Asians from the 19th Century would outrank Okies and Arkies from The Grapes of Wrath, who would take priority over Asians and Central American refugees of the 'eighties. The last wave can only join Woodie Guthrie's

nice summary of life in the Golden West: "Believe it or not, you won't find it so hot if you ain't got that Do-Re-Mi."

Where would it end, if ever? Is that the kind of society we want? Is it a society at all? Could anyone enjoy quiet title to land anywhere? It seems more likely we should become like East Germany today, with multiple claimants for every parcel of land, and paralysis of production.

The problems are complex and philosophical, but I know a woman of action who, as women will, cut the knot with a stroke. Irene Hickman said "The solution is to give all the land back to the Indians, then tax it properly." Hmmm - think about it.

11. "The cost of water is the cost of developing it."

Wrong! It costs \$20/acre-foot to develop and distribute the water I get from the Santa Ana River, way down in Southern⁶⁰ California. Meantime, the State is wholesaling imported water half a mile from me for ten times as much, \$210 per acre-foot. MWD is preparing to reclaim polluted ground water for more than that. The controlling idea is that pure, sweet water rising naturally in this arid region is only worth what it costs to withdraw it from the river. At the source it has no value, and may be lavished and wasted accordingly. It makes more sense to say water at the source has a high value, proven by people's willingness to spend \$210/unit to buy other water just like it.

That's what economists call "opportunity cost." The true social cost of withdrawing water is the cost imposed on others by preempting it from them. It is the same as what FERC today calls "avoided cost," i.e. the cost of providing a substitute for what is taken. FERC (Federal Energy Regulatory Commission) has made good use of this concept, making electric utilities buy co-generated power from independent sellers at a price equal to "avoided cost."⁶¹

That's not the half of avoided cost, however, because State water is heavily subsidized in a dozen ways. Its wholesale price of \$210 is way below the high cost of bringing it down here. State water comes from the Feather River, 600 miles north of us, and is pumped over the Tehachapi Mountains. Its true social cost is more like \$2,000 per acre-foot, give or take a few hundred.⁶² \$2,000 is ten times what they charge for it, and 100 times what I pay for my local water.

A variation on this basic theme is to admit water has value at the source, but trivialize it by saying it is the historical purchase price, if any. Those few water holdings that are assessed as taxable property seem to be valued on this basis (LaBahn). This is like saying that Manhattan is worth no more than the \$24 Pieter Minuit once paid the Indians for it: case closed.

12. "We don't use water consumptively, but return it to the river."

Half wrong. This is the rice-growers' refrain. They do indeed return part of their extremely heavy withdrawals to the river. (They also lose 3-4 feet per acre to evaporation.)

Carrying this a step farther, any water user could cite the Law of Conservation of Matter, and disclaim using any water at all (or anything else, for that matter). He returns it all to nature. In terms of the Laws of Conservation of matter and energy we consume nothing, we just turn it into garbage. Ah, but that is the point, isn't it: who wants garbage?

To understand the meanings of "use" or "consume" in economics we must think in terms of The Second Law, the law of entropy. The water user adds entropy (chaos, disorganization) to water. He takes in pure water, at high elevation, at a time and place of his choice. He returns less pure water, at lower elevation, at another time and place of his choice, however inconvenient for those below.⁶³ August water is worth many times September water; rice growers hold August water on their land and release September water.

As to water quality, many return flows are worse than no return at all. Up north, the notoriety of Kesterson says it all. Down south, manure piles around Chino say a lot, too. Abundant groundwater in the Chino Groundwater Basin

"is currently untouchable because of poor quality." It is "contaminated with nitrates, byproducts of animal waste and fertilizers from the dairies and other farms in the area." (Salamon, 1991.)⁶⁴

Water users also often preempt water from those above. On many streams the senior permits are downstream. Many fine legal careers have been made as downstream seniors enjoined upstream juniors from diverting water, to be sure a suitable amount reached the downstream intakes. A good deal of valuable elevation is thus dissipated to the benefit of no one.⁶⁵

13. "You can't put a dollar value on a sunset"

Wrong! The market does it all the time, for example in pricing view lots. Putting a value on something simply means weighing it against other things. We do it every time we make a choice. It is a nihilistic cop-out to say we can't do it. We have to do it, and do every day in the course of living.

Mistakes are made, as with everything. Progress is a matter of doing it better. Jack Knetsch, now at Simon Fraser, and Marion Clawson, retired from Resources for the Future, have worked out ingenious practical ways to put values on parks, including those with water-based attractions (Clawson and Knetsch, 1966). Let's get on with such constructive efforts, and never be caught dead complaining we can't do something we must do.

14. "Common rights lead to the tragedy of the commons"

Half wrong, and misleading. Garrett Hardin in 1966 wrote as follows: "All men are, by nature, unequal . . . man is an animal . . . One World is a mirage. . . . survival depend(s) on the fragmentation of the species into well-separated populations. . . . It might be a matter of . . . some sort of caste system, that would permit genetic isolation with geographic unity; . . ." (Hardin, 1966). This early effort, overtly segregationist, reached only a narrow audience whose views were running against a strong tide.

Hardin struck gold, however, with another phrase, "tragedy of the commons." Here the racism and elitism, if any is still intended, has become subliminal, socially acceptable, and liberally correct. Hardin's phrase has become part of the culture. The culture had already possessed Arthur Young's classic epigram, "The magic of property turns sand into gold," from his 18th Century Travels in France, but Hardin's new version swept Young down the memory tubes. Coupled with Hardin's companion "lifeboat theorem" (pull up the ladder, no more room aboard), it seemed to justify exclusionary policies at all levels. It sounded the right chord to reconcile genetic isolation with liberalism.

Analytically and economically, however, it does not hit the nail on the head. Overdrafting aquifers is a tragedy, all would agree. Aquifers are not a commons, however: their use is restricted to overlying landowners, on overlying lands. The tragedy of overdraft could also be ascribed to landowners' unconstrained assertion of private property rights. Overuse per se is the tragedy. Blaming it on common rights is biased and tendentious.

Asserting common rights need not imply open access and unrestricted use. It is often the opposite. Here are five examples of asserting common rights by restricting use:

1. constraining water use by taxing withdrawals;
2. constraining hunters and fishers by imposing bag limits;
3. constraining pollution of common waters by imposing effluent charges;
4. protecting watersheds by regulating timber harvest practices;
5. protecting swimmers and small boaters by limiting size and power of boats.

Our leading economists like to believe they are "value-free." When they truly become so, they will replace the "tragedy of the commons" with "the tragedy of overuse." The latter phrase is free of class and race bias. Overuse will often be ascribed to suppressing common rights, not upholding them.

15. "Water trades are win-win deals"

Partly wrong. There are "win-win" outcomes in water trading, but too many of them are "win-win-lose" outcomes. The losers are the general public who aren't represented. The "win-win" sloganeers unconsciously rule the unlicensed majority out of the game. Of course that is what licensees and their lawyers have always done, but the new win-win evangelist, the Environmental Defense Fund, enjoys tax-exemption supposedly to represent the general public.

What we're losing is beneficial ownership of water. It is wonderful when and if trading moves water to higher uses. Every economist applauds better allocation of scarce resources as readily as he jerks his knee, and chants "Pareto optimality." As to distribution of the gains, he is taught "don't worry, be happy," only churls quarrel over spoils. However, every sale or trade of existing licenses creates another "innocent purchaser" to legitimize and sanctify the seizure of common property by powerful individuals and the "public" water districts they control. ". . . markets reflect and reinforce the existing distribution of water rights and wealth. . . ." (Saliba and Bush, p.252).

It is not just common water that is thus traded away; it is subsidies attached to the water: same idea, but more obvious. In December, 1988, the U.S. Interior Department issued a water marketing policy to let recipients of subsidized water from its projects sell the water and keep the profit. The "innocent purchaser" would seem now to have secured a right to be subsidized in perpetuity: he paid for it, didn't he?

The swindle is so obvious you'd think no one had the brass to support it with a straight face. "Because I was robbed yesterday, . . . is it . . . any reason . . . that the robber has acquired a vested right to rob me?" (George, 1879, p.365). Once you deny George's point and buy into the premise that usage creates property, nothing is too absurd, transparent or outrageous to follow. The policy follows the prescription published by The Institute for Contemporary Studies: "the water bank concept protects farmers from losing water they now have, and from paying more money for it" (Angelides and Bardach, p.33).⁶⁶

The uncontrollable urge to give away the store is no longer limited, however, to Colleges of Agriculture or brand-labelled right-wing think tanks. "The policy was hailed by the Environmental Defense Fund, . . ." (Levin, 1988). Resources for the Future chimes in, in the wooden postures of scholarly neutrality, ". . . federally subsidized water supplies have become property rights . . . the most effective way to confront the issue of inefficient usage is to recognize those rights Rather than attempting to reduce the subsidies embodied in existing contracts, federal policymakers should seek to make the current property interests in federally supplied water more secure and to allow voluntary market trading of the resource among water users" (Wahl, pp. 3, 5).⁶⁷

So this is where it leads, this promising talk about getting government out of the way of the market. To get it out, these writers would make government subsidies the permanent foundation of their system! They would make every boondoggle, every giveaway ever engineered through corrupt Congressmen and supple administrators into a property right.⁶⁸ They would bind taxpayers forever to incur costs of \$60/af or more to deliver water for \$3.50/af to landowners who can resell it for \$400/af.⁶⁹ Consistently, we may infer they would bind taxpayers also to subsidize farm price supports and export subsidies, maintain tariffs, cross-subsidize low farm power rates, finance cow-college R&D tailored to big landowners, etc. ad inf. This is the self-contradictory outcome of fundamentalistic rent-worship: the receipt of any state giveaway becomes a sacred cow the taxpayers are obliged to continue feeding and grooming in perpetuity.

Call it hypocritical, call it self-delusory, call it insane, call it anything, but don't overlook the message sent to future rent-seekers. In the name of the market, Angelides and Bardach and Wahl and the leaders of EDF are announcing to the world this policy: "once get your hand in the public treasury, you have established by prior appropriation a right to steal forever, and call it 'property'." Hirshleifer, Milliman and DeHaven, who helped start ideas of water marketing 30 years ago, were not out to sanctify subsidies, nor do I believe they would abide it now.⁷⁰ Their

objective was to obviate monumental new development projects, not foster more. They would see clearly two points: a) the motive to agitate for new subsidies would be multiplied; b) the state would be rushed to bankruptcy.

An additional subsidy has gotten into the system by substituting water "banking" for water "marketing." It sounds like a distinction without a difference, but what "banking" means in practise is that a State agency buys water at a high price, and risks selling for less or not at all. This is the fate of the California Water Bank today, in spite of both droughts and State deficits. It has found one seller, the Yuba County Water Agency, with a "phenomenal water surplus." The Yuba agency is charging \$45/a.f.(Bowman). It is not clear the water will all be sold. Late in August, 1991, after five years of drought, at the peak of seasonal water shortage, MWD is selling bank water at a huge loss, at bargain winter rates, water it contracted for earlier. The water is going into ground storage (Muir). Ground storage is a traditional route whereby small users cross-subsidize large ones (Fellmeth, 1973, 168; Teitz and Walker, 59-67).

"Win-win" has a constructive ring, (and is easier to understand than "Pareto-better," the Economese translation). No amount of happy talk, however, can blot out the basic fiscal truth: no one taps the Treasury or grabs the public domain without hurting everyone else. Those who steal public property in the name of the free market are not promoting the market, but exploiting its good name for private monopoly. They are the market's worst enemies: they stigmatize it with their own counterproductive greed, and give arms to its critics. T.R. said it long ago: he wanted to save the rich "from the ruin that they would bring upon themselves if they were permitted to have their way" (cited in Seckler, p.262). Who will save them, and us from them, today? Not, alas, think tanks subsidized to rationalize giveaways.

Water banking is a great idea, in principle. So is implementation of common rights. What we need is a "win-win" deal. We can have water banking and common rights: make water permits transferable, but only after permittees and contractors have paid for what they are getting. First, contractors getting subsidized water from Federal and State projects should pay the full cost of project services, i.e. without subsidy. LeVeen and King, for example, have outlined a workable program for the Bureau of Reclamation (LeVeen and King, 1985, pp. 148 ff.).

Second, the basic privilege of withdrawing rent-bearing water, surface or ground, should be subject to a user charge - a form of revenue enhancement we might as well call taxation. With growing demand and scarcity this, rather than other project costs as conventionally counted, is the pivotal matter. Severance taxes, property taxes, and gains taxes, in combinations of your choice, should do nicely. This way Smith wins, Jones wins, and the public wins (win-win-win).⁷¹

16. "Private property rights will make the market work; bureaucrats are the obstacle."

Wrong! In the 1940s and 1950s some bureaucrats (those awful people) in the U.S. Bureau of Reclamation tried to implement water pooling along California's Friant-Kern Canal (a facility well suited to it). They were implementing a policy of President Franklin D. Roosevelt, who consistently ordered that "all units of the plan should be fully coordinated on a regional basis" (Maass 1951, p.233 et passim). They promoted the "9(e)" or utility form of contract under which water ownership never vested in the landowner-customer, but only in the seller, who provided it to customers for a price: no pay, no water. Water had to be measured. Water could be exchanged. There was room for periodic review, renegotiation, repricing and reallocation (Graham, 172-90;⁷² Taylor, 1949; DeRoos, Chap. 11).

The Bureau's avowed aim was to act like a public utility, so each reservoir and canal "would be operated in coordination with other reservoirs and canals in the comprehensive plan to deliver water to all areas in the most economical manner" (U.S. Bureau of Reclamation, 1949, p. 127; California Farm Bureau Federation, p.62 ff.). The concepts of planning, coordination and integration were not Federal impositions or New Deal innovations, as later alleged, but had originated in California as "The Marshall Plan" in the 1920s, promoted by Robert Bradford Marshall and other private citizens of California, notably Rudolf Spreckels the sugar baron.⁷³ The disputed 9(e) or utility-type contracts had also originated in California in 1935. The U.S. did not authorize them until four years later. California invited the Feds in to get Federal money.⁷⁴

The Bureau wrote and spoke of "pooling," and "integration," and sending water "to whichever demand develops first." "Conjunctive use" of surface and ground reservoirs was a buzzword. They were, in short, to act on a regional scale the way city water departments act locally, and rationalize a Balkanized system. They were doing so only with new waters they developed, leaving existing uses undisturbed and unpriced.⁷⁵ They were doing so only as a wholesaler, leaving retailing to existing local districts (Maass, 1952, p.546). The contracting local districts could and did sell surplus contract waters outside their boundaries. Much of it was used for recharge.

Who opposed these market-oriented proposals? Big landowners, invoking Private Property. Apart from acreage limitations, "the principal public attack . . . has been focused on the employment of the so-called 9(e) form of contract . . ." (Graham, 172; Crampton, 99).⁷⁶ Landowner lobbies pushed for undis severable attachment of specific waters to specific lands. "Appurtenancy" was their slogan.⁷⁷ "Pooling" was anathema; "integration" evoked images of communism and miscegenation,⁷⁸ and similar overheated reactions. The private landowners' concern was with distribution, not allocation; all they wanted was more.⁷⁹ Apparently they read the State's motto as "Bring me Men to Snatch my Mountains." The big landowners advanced "a moral claim to water in proportion to their landholdings, . . ." (Taylor, 1955, p.478).

California's U.S. Senator Sheridan Downey was the landowners' leading spokesman. Here is what he demanded in 1947. ". . . that the land and water should be joined together, never to be cut asunder; that the farmers should enjoy in perpetuity the use of the water . . .; that when the land is sold, the right to water shall also be sold with it, and that neither should be sold separately" (Downey, 1947, pp. 226-27, emphasis supplied). Ipse dixit, and ipse spoke for Private Property.

An allied writer found "the clue to the bureau's arbitrary and seemingly stupid actions" (as he put it) was its hidden agenda to transfer water to cities. "Sober Californians, however, realize that agriculture is the basis of the state's wealth, and that it must not be jeopardized" (Crampton, 102). In its 1957 Ivanhoe decision (reversed, as discussed below), the California Supreme Court covered unappropriated waters with a right based on landownership, i.e. a new right modeled on the riparian law making water "part and parcel" of the land to which applied (Taylor 1957, p.83).

That does not leave much room for water marketing or banking. It does not support the belief that private property leads to free markets. Rather, it reminds us that the philosophical godparents of free markets, men like Francois Quesnay, A.R.J. Turgot, Adam Smith, David Ricardo, and J.S. Mill, were mostly engaged in fighting landowners who wanted protected markets.

Just so, an earlier spokesman for Private Property, Henry Miller the riparian, had successfully demanded that waters be made "part and parcel" of his riparian lands, letting him monopolize most of the San Joaquin River (Lux v. Haggin, 1886). Just so again, today's landowners want and get farm price supports, preferential tax exemptions, export subsidies, protection against foreign sugar, control of the cow colleges, and subsidized water.⁸⁰ By now we should have gotten the picture sharply in focus: Private Property is a distributive, not an allocative arrangement. The owners want their unearned increments first. Then, maybe, a little free competition will do, carefully measured out when it might add to their rents: otherwise not.⁸¹

Further to frustrate flexible water marketing, Sheridan Downey and the landowners invoked the complaisant Army Corps of Engineers. There was no domestic truce during World War II. The Flood Control Act of 1944 turned over to them several key rivers: the Kings', Kaweah, Tule and Kern, their flows never to be integrated with the San Joaquin or, for that matter, each other (Morgan, pp.70, 404; Kahrl, 1978, p.50; Maass 1951, pp.215-59; Gaffney, 1960; Cooper, p.158). Arthur Maass and Arthur Morgan describe this as "an enormous financial grab."⁸² President Franklin D. Roosevelt complained "of the desire of certain large land interests in California to obtain irrigation and other benefits without being subjected to the repayment requirements . . ." (Maass, 1951, p.235). Again, allocation and efficiency were sacrificed to promote distributive inequity.⁸³

There's more; here is the smallest sample. The Kings River Water Association made 15 demands on the Bureau of Reclamation in 1946. #1 was that "all Kings River water remain within the presently irrigated area." #4 was that the Kings River remain a separate entity from the Central Valley Project (Kaupke, 1957, p.51). In 1956, according to Wahl, they secured permanent rights to federal project water "within the boundaries of the contractors' district"

(Wahl, p.175). In 1979 they were still fighting the Bureau of Reclamation, and their neighbors, going to great lengths to distance themselves from the neighboring Westlands Water District (Leake and Barnes, pp. 19-20). Balkanization was Americanism.

Now, however, the California "water community" is ready to move water around, it is the free market at work. "Everybody wins" with happy faces, because we are to give away unearned increments in the process. Forty years ago, when Federal bureaucrats tried to create a flexible market in water, it was "Communism," "fellow-travelling," and the baleful influence of Henry Wallace and James Roosevelt (Downey, pp. 30, 40, 41, 49, 167). A California trial judge ruled that the Bureau of Reclamation was "Marxian" (Albonico v. Madera I.D., 1951, p.10, cit. Graham p.74, n.236). "What partisan motives, what ideology, what pathological processes, what mysterious political influence . . ." moved these sinister people? (Downey, p.49). Could it depend on whose ox was being gored?

There was an ancillary policy, acreage limitation, that also offended big landowners.⁸⁴ It is not clear which issue aroused them more, but the two together made the Feds, who had been welcome to subsidize their water supply, their target (Cooper, pp. 154-66). There was nasty snarling⁸⁵. Bureau personnel were "Communists," supported by the Daily People's World (Worster, p.251, 254; Downey, p.41; Kirkendall, 1964, pp.200-01). Efforts to pool waters and integrate the system are ". . . a careful, fully conscious and deliberately planned attempt to bring about in the U.S. the same kind of collectivization they have in Russia" (Kings River Water Association, 1950, p.15). Covering all bases, they add ". . . Fascism is exactly what we will get" (op cit, p.19).⁸⁶ Trading on the anti-Federalist bathos helped people forget that full integration of all Sierra rivers was the essence of the California Marshall Plan of the conservative 1920s, approved by the State Legislature.⁸⁷

Traducement anticipates persecution. The lobbies played very hard ball. The spirit was mean and vindictive, as if to verify Steinbeck's image of Valley growers with pick-handles. A complicit agency, The Bureau of Agricultural Economics in the U.S.D.A., was singled out for attack in Budget Hearings for 1946-47. Its offense was to shelter Marion Clawson, Mary Montgomery, Edwin Wilson and Walter Goldschmidt in its Berkeley office. They had supported the Bureau of Reclamation by conducting landownership surveys and planning studies of the project area, and reporting on the unequal distribution of land to receive project waters (Worster, pp. 245-49). "The upshot of this . . . was that Congress made deep cuts in the BAE budget . . . With budget cuts resulting from their objectionable work they (Marion Clawson and Mary Montgomery) were dropped by BAE, as was natural" (Downey, p.52). Walter Goldschmidt and Edwin Wilson were also "separated from the Bureau" at this time (Downey, p.256; for Clawson's perspective, v. Clawson, 1987, pp. 150-60; for more on Goldschmidt, see Taylor, 1976).

California sets trends. The McCarthy era followed. Joe McCarthy's local counterpart, Jack Tenney, ran an inquisition in Sacramento⁸⁸. The University made professors sign a loyalty oath. Senator Downey published long ad hominem attacks on Richard Boke, Bureau Chief in Sacramento, and caused his salary to be suspended for nine months, a virtual Bill of Attainder that was revoked only upon the surprise election of Harry Truman in 1948 (Taylor, Vol. II, p.193). George Sokolsky and Fulton Lewis, Jr., inflammatory columnists, joined the pack in full cry (Kirkendall, 1966, pp. 223-25). The BAE was never forgiven, and was "disappeared" in 1953. They called it a reorganization. Heads rolled. Careers in the U.S.D.A. and the Bureau of Reclamation were broken or made, survivors cowed.

Even Clawson, a strong man who survived and prospered, became cautious and cynical. Reviewing the matter recently he writes he learned this lesson: "Follow not too closely at the heels of truth, lest she kick your teeth in" (Clawson, 1987, p.160). Donald Worster sees young Clawson as a "devoted New Deal liberal" (Worster, p.245). Sober-sided, scholarly Richard Kirkendall, reviewing Clawson's correspondence in the National Archives, describes him as having been "passionately involved" (Kirkendall, 1964, p.206). Clawson's later career has been productive and creative, but "passionately involved" he has not been. According to Worster, he had "surrendered" as early as 1944 (Worster, p.253), although that did not stay the persecution.⁸⁹ He never again touched the region or the issue.⁹⁰

Walter Goldschmidt, too, has prospered, even within the University of California system. He adapted, however, by transferring his studies to Africa, far from the AES⁹¹ and its turf. The tragic Sheridan Downey, ill-starred and self-destructive money-servant,⁹² still reached from the grave to inhibit his survivors.

The treatment of Wells Hutchins was friendlier. Hutchins wrote USDA and AES bulletins about the sanctity of property rights in water. His pamphlet on Irrigation Water Rights in California (Hutchins, 1954, rpt. 1967) gives the flavor. The title page is gratuitously emblazoned in headline type, WATER RIGHTS ARE PROPERTY RIGHTS, repeated boldly on p.11 in a bright blue frame. The heading on p.11 also says, "The water right is real estate," although the text does not support or even mention it. That is the message and the style. The quality is variable: Hutchins was capable of good work.

The waterlords found it useful. "States' Rights" was their theme, and they needed authoritative sacred writings from a known friendly source. After Hutchins reached 65, The California Water Council and the National Reclamation Association asked Secretary Ezra Taft Benson to keep Hutchins on a "retired annuitant" basis, which Benson did (Western Water News, February 1958, p.1). Hutchins was kept on the U.S.D.A. payroll 17 more years until his death in 1970, aged 82. It took seven more years for two other writers to complete his Water Right Laws in the 19 Western States. The handsome, expensive publication of these three volumes breathes endorsement, legitimacy and approval. Wilson and Clawson's classic BAE study of landownership concentration, in contrast, is cheaply mimeographed, barely legible, and hard to find;⁹³ Goldschmidt's classic study was suppressed, and had to be published privately.

If you want to credit private property with supporting free markets and fair play, in water, land, outputs, ideas, or promotions and retirements, pause and review this object lesson. Theodore Schultz wrote of it, "To understand the vulnerability of the BAE one has to appreciate the profound unfriendliness which these organized political forces . . . feel for agricultural economics research that does not provide the 'right' answers." (Schultz, 1954, p.19.) He had been there, having been bounced from Iowa State University for finding oleo to be as good as butter.

Thus it is that "government" water agencies become really private agencies masquerading as public ones. They enjoy government powers and immunities, but carry water for the private landed establishment. This in turn harks back to the original distribution of landownership, when politicians distributed public lands to private parties on highly political criteria (if corruption and jobbery may be so dignified). Subsequent laws are twisted in application by the political weight of the original beneficiaries and their successors interlocked in power at the apex of the pyramid.⁹⁴ They get away with it because the original land grab gives leverage and power to get more, and most people go along to get along, weakly and meekly.⁹⁵

More recently, in 1978 both the Rand Corporation and the Governor's Commission to Review Water Rights Law proposed a few mild and politic controls on waste, and facilitating transfers. Senator Nejedly's proposals in SB 1361 were so mild that DWR even supported them, "but the powerful agricultural and land development interests" - i.e. Private Property - blocked legislation to implement them (Dennis, p.60).

Let us not leave this topic seeming cynical. In 1958 the U.S. Supreme Court, under California's former Governor Earl Warren (R), stunningly reversed the trial and appellate courts, and a divided California Supreme Court, and unanimously ruled that the U.S. Bureau of Reclamation held water in its own right, not in trust for landowners of the contracting districts. If there was any implied or constructive trust, it was on another principle: "The project was designed to benefit people, not land" (Ivanhoe v. McCracken, 357 U.S. 275, 1958, 296-97). The 9(e) contracts were valid (op cit, 299-300).⁹⁶

Thanks to that decision it is possible to market federal water today (Graham, 172-90).⁹⁷ The California Supreme Court, shot down, had to eat humble pie and admit their misuse of the trust doctrine. "(I)t was established that the title of the U.S. was or can be made unlimited" (53 Cal. 2d at 716, cit. Graham 101).

Arguably, it is also the Ivanhoe decision that makes it possible to market State water. In the Burns-Porter Act of 1959, the State's answer to Ivanhoe, the State elected to use utility-type contracts on the 9(e) model (Graham, 188-90).⁹⁸

It is not to despair; rather, let us learn the right lesson for future guidance. Do not look to Private Property to give us free markets. The white hats were a handful of idealistic populist battlers who persevered against ridicule, misunderstanding, indifference, the press, the landed/monied establishment, and daunting odds. We've always

suspected democracy depends on such die-hards; "New Resource Economists" need to learn free markets depend on them, too.

17. "Appropriative water licenses are intensely democratic, like squatters' rights. Everyone has had an equal chance to appropriate water, and rights are based on use only."

Wrong! First, you need to have been born long ago, in the right place, of Caucasian parents.⁹⁹ A fast draw didn't hurt; neither did low ethics and political connections. Second, you need to have had land whereon to use the water beneficially: a water license is usually "appurtenant" to specific land.¹⁰⁰ Landownership in the southwest has been highly concentrated from an early time.¹⁰¹ It remains so in recent times.¹⁰² All three major doctrines of water law (riparian, appropriative, and correlative rights/mutual prescription for ground water) in effect restrict control of water to those with prior landownership.¹⁰³

Third, you need to have had ample front money to appropriate water. Remember, the appropriative rule "first-in-time, first-in-right" motivates rent-seeking. Rent-seeking means investing capital decades before any payout. That means front-money wins, front-money gets, front-money rules.¹⁰⁴

One commonly reads that the appropriative doctrine originated with the Forty-niner miners in the northern Sierra, along with their possessory placer mining claims. That would make it as intensely democratic as squatters' rights. However the history is disputable,¹⁰⁵ the resemblance specious, the analogy false.

Placer mining claims were narrowly limited in space and time. They were just "ten feet square" in the good locations (Robinson, p.137), which were ant-heaps, but without the community spirit. One claimed only as much land as he could work himself, and guard constantly. Chinese squatters were driven away, perhaps killed. It was a nasty, brutish life, fit for the wretched and the reckless. Water claims, in contrast, are limited only by one's lands.

As to time, placer mining claims expired when the mines ran out, usually soon. The idea was to get in and out fast. Water diverted to wash gold would be needed only temporarily. Under these conditions it was plausible for the California Supreme Court in 1855 to invoke a natural rights doctrine, ruling that prior appropriation was fixed by "a universal sense of necessity and propriety."¹⁰⁶ Water was for immediate use, not future rent-taking. John Locke would have approved. Henry George did approve: ". . . it was by common consent declared that this gold-bearing land should remain common property, of which no one might take more than he could reasonably use, or hold for a longer time than he continued to use it" (George, 1879, p.286, my emphasis).

Water, however, flows on forever, yielding rents that grow and grow. Rent-seekers didn't go for the gold, which was toil, strife and hardship, soon exhausting both men and land. True rent-seekers went for the water, and inexhaustible lands to use it on. Long-term rent-taking is not fixed by "a universal sense of necessity and propriety," but is thoroughly anti-Lockean. It was born in the minds of rent-takers and their apologists, not in the creeks of the Mother Lode country.

How about beneficial use, and "due diligence"? These requirements are laxly enforced, but just to double-bar the gate, State filings have been exempted from due diligence. The State thus reserved waters for its State Water Plan. This Plan, finally authorized and financed in 1960, is specifically designed to carry water for the primary benefit of a minuscule handful of the Lords of Creation owning all the land on the west side of the San Joaquin Valley and Tulare Lake Basin. Any resemblance between this and squatters' rights is only in the peculiar Australian sense.¹⁰⁷

18. "A super-district like the Metropolitan Water District of Southern California will rationalize the system and solve our problems."

Wrong! I was once enamored of this idea, and guilty of pushing it. A large system, professionally administered, would overcome pig-headed Balkanization, set reasonable, cost-justified rates, coordinate, conjoin, and synchronize plans and operations, and maximize the common welfare. Attorney Albert Henley has long argued for "super-districts," and presented his own Santa Clara Valley Water Conservation District as the living proof (Henley, 1957). Leland Graham has argued larger districts can achieve more "pure economic efficiency and a higher degree of equity

among . . . beneficiaries of what fundamentally is a publicly-owned resource" (Graham, 193-94). It seemed so reasonable, so feasible . . . Then I got to know MWD as it really is.

MWD is run by a Board of 50 Directors, representing 27 cities and districts that it serves. These Directors are not elected but appointed, resulting in an "old-boys' club" where some Directors sit for over 30 years. Business is conducted by committees; seniority is a ruling factor. "Not a single member of your board is elected by the people, yet you collectively assert the right to pass on statewide policy" - Governor Pat Brown, 1960. Half the Directors are developers or large landowners; others own engineering or construction firms, or banks that lend to them (Dennis, p.128).

How about the elected officials who appoint the Directors? Those from cities are elected on the basis of "one-person-one-vote." Those from several outlying districts are elected by a land-based franchise: "one-dollar one-vote" - thank you, Sacramento, for delegating the people's sovereign powers to these landowner-owned districts¹⁰⁸. Control may be completely non-resident. Representatives from landowner-owned districts remain the same from election to election, gaining seniority to dominate the 50-person Board and its ruling committees (Goodall et al., 1978, pp. 97-98. Bradley and Morales, 1981.) "At times the control of public government -- in this case the water district -- by private organizations may be complete." (Goodall, et al., p.98)

Example: when one Lansing Eberling resigned as a Director of the Irvine Ranch Water District, the Irvine Company recommended its Corporate Secretary and Vice President, Warren Fix, to fill the vacancy. The Board then simply appointed Fix. (Hall et al., Stipulation, p.7).

Thus a handful of speculative landowners, some living in other countries, have as many votes as millions of city residents. Accordingly, MWDSC preaches water conservation and guilt-tripping to the conscientious middle classes in the cities while it keeps annexing new speculations, and serving new developments with artificial lakes and golf courses. They plunge ahead, heedless of five years of drought, and their own water-conservation jawboning. It is probably no accident that its current Chair, the one who frets that some voters just "do not understand," was appointed a Director of MWD by the Board of the Western Municipal Water District of Riverside County, an area dominated by land speculators.¹⁰⁹ Many economists have criticized MWD's persistent refusal to consider any kind of economically rational, cost-justified rate structure.¹¹⁰

To give a notion of how this works, consider the Newhall Land Partnership. It holds 123,000 acres, mainly in Los Angeles and Ventura Counties, from Valencia and Magic Mountain west down the Santa Clara Valley of the south toward Piru and Fillmore. The Newhall family controls the public partnership, with 40% of the shares [L.A. Times, 3-86, 8-87]. The Newhalls are developing the city of Valencia, but slowly: 7,000 of its 10,000 acres remain undeveloped.

The Newhalls were early, major financial backers of the political campaigns for the 1982 Peripheral Canal bond issue to bring more northern water south¹¹¹. MWD was the front. The purpose of this proposed project was to valorize speculative landholdings on the fringe of the southern megalopolis. They joined in this campaign with other large development interests: the Irvine Company, Southern California Edison, Security Pacific Bank, Rockwell, Mission Viejo (the O'Neills), Bixby Ranch, and Union Oil [L.A. Times, 1-80]. Yeager Construction Co. (highways and landholdings) led the campaign in Riverside County.

MWD solicitude for speculative landowners does not stop at its boundaries. It has a history of releasing a large part of its entitlements in California Aqueduct water to a few water districts in Kern County.¹¹² It has gone along from the start with pricing policies egregiously unfavorable to its own people, to subsidize the Kern County Water Agency (Storper and Walker, 1984). This agency serves lands straddling I-5, owned by a few major oil companies in which MWD Directors have significant interests.¹¹³ Another huge owner is the Chandler family, whose interests include the Los Angeles Times, and the vast Tejon Ranch and (part of the) J.G. Boswell landholdings of the southern and western San Joaquin Valley (Gottlieb and Wolt, pp. 500-509; Villarejo, pp. 3-10).¹¹⁴ The Times spearheaded the Peripheral Canal campaign¹¹⁵.

That is not to disparage the MWD ideal. It's the practise that is faulty, and the problem is the same as with the U.S. Bureau of Reclamation: landowner domination of what should be a democratic institution. The remedies are the same as those advanced by Progressives like Hiram Johnson (R) and Woodrow Wilson (D): democratic control with professional leadership.

That seems so long ago as to be irrelevant, but I wouldn't despair. What destroyed Progressivism was The Cold War, which really began in 1919 with The Palmer Raids and is only now just ending. This seems a good time to pick up where The Progressives left off. The old bones are stirring. Merrill Goodall's studies have analyzed the problem. The Center for Law in the Public Interest, representing the disenfranchised citizens of Irvine, won its 1979 case forcing reform of voting in Irvine Ranch Water District. It's a matter of marshaling a few troops to win the battles of democracy. As Clarence Darrow said, "Authority is nothing more than what the rich and powerful can put over on the rest of us."

19. "A severance tax on water withdrawals would destroy incentives and hurt the economy"

Wrong! Americans are reared on anti-tax slogans; "down with taxes" is what "economics" means to half the people. Let's pull together and review, however, what we've already said about this. When you pay for water, you often shift to higher-valued crops. You substitute capital and labor for water, raising yields. Thus, we can tax water withdrawals without wrecking the water economy, but getting more bins and bales for the bucket. Here is a kind of tax that raises revenue while strengthening the economy (item 5).

We must control pumping to prevent overdraft, if any system of surface control is to work. A tax is nothing but an economic price charged by the owner of water, the state, to control the use of its property (item 6).

Common rights may be asserted as open access, where that is feasible; or rights of revenue, where efficient management calls for closing access. Not only would the tax-price raise revenue, it would promote conservation and efficient use, turning "Negabucks into Megabucks" for state treasuries and their trustors, the people (item 10,A).

Water markets do not work today because sellers are not strongly motivated. Most sellers are at most weakly motivated because water permits are not subject to any cash drain, and prospective selling prices keep rising indefinitely. To overcome this resistance, we need to subject water licenses to heavy property taxes (or the equivalent) based on their opportunity cost values (item 10,C).

Taxes on water would let water markets work without granting unearned increments to speculators in water rights (item 10, D; item 16).

Taxing water withdrawals is a practical way to express common rights to water under conditions when it is not practical to allow open access (item 15).

There, then, are 19 fallacies to filter out, and some better ideas to replace them, as you set about implementing common rights to water. Be warned, though, that I have been scolded for speaking out on public policy. Academicians should maintain silence before practical persons, I am told, and never, never give any answer to "Whose Water?" other than "The present property owners, of course." How should one respond?

Academia is not the safe haven of legend; it is penetrated by the jungle. Much of the system has been coopted, with rewards for those who fawn and truckle, and penalties for those with more dignity and dedication. To the extent that academicians are free to tell the truth without running, be glad. Society needs people to honor the memory of John Wesley Powell by acting in his spirit, withdrawing their consent from error and corruption. Being funded by the taxpayers, without compulsion to cater to wealthy patrons, academicians in public institutions have an unusual chance to speak for the public interest.¹¹⁶ We would be derelict not to.

We all have to work in the system to live. Some also manage to invest in the system, to rise above subsistence. One goes along to get along. However, it's not just the going along that implies consent: it's the compulsion to rationalize and defend going along. Withdrawal of consent has to start in the mind, and be conserved and nurtured there during adversity. The uncoopted mind is your bridge over troubled waters to the rest of the human race. We have to survive, but we don't have to love Big Brother. Revere your mind, don't ever give away your freedom, not even to your material interest. The last is only of the moment, a ripple in the ocean, and is probably adverse to that of your own children. Your free thoughts are for everyone, forever.

"Let us cherish and keep this one part of our lives,
and the rest we're going to find one of these days."¹¹⁷

SEE FOOTNOTES IN ADDENDA TO PART I, PAGE 125.

Respondent — Out-of-Stream

**Jim Miller, Chair
Washington Water Utilities Council**

"How dare you charge us for water! It's not yours—it comes from God—it comes out of the sky. How can you charge us? You get it free." I heard that at one of our rate hearings. How many think that we ought to deliver water free? How many think we ought to charge more for water than we do now?

It costs money to deliver water. It costs money to have conservation programs. Conservation kits cost money—to buy first of all and to mail out. It costs money to mitigate damage done to the environment. It costs money to enhance the environment and to enhance habitats. So I would submit that the issue here is not really water, but money. That's why we have an economist on this panel. I'm not an economist, so I can speak and I might hit some of the fallacies, but I can't hit them all.

Scott Barr, the chair of the [Legislature's] Joint Select Committee on Water Resource Policy, just two weeks ago said, "Really, money is the issue." But money is the root of all evil. Are we dealing with evil here? That's getting a little bit beyond me. At an earlier water conference a year or so ago, one of my professors from the University of Washington, Brian Mar, said, "We don't have a water shortage. What we have a shortage of is cheap water." Really that's the issue again—it comes back to money.

The utility I used to work for, in its mission statement, included a phrase that said, our mission is to deliver high quality water, and an adequate supply of water at the lowest possible price. Lowest possible! You wonder why people are not too enamored with utilities. We have this mission. In the utility I now work for, I managed to get that mission statement changed to the lowest reasonable cost or price. So we're getting a little more reasonable. Maybe eventually we'll get the term lowest removed.

When Mason (the economist on the panel) talked about the cost of water, is that the right cost; and if the objective is to get it down to the lowest, it's obvious that some are going to try, just like bartering in a marketplace, to get something for the lowest cost. The only trouble is, over half of you raised your hand thinking we should charge more for water. Unfortunately, I have to inform you that you are in the minority, based on responses we get from our customers, based on responses at hearings. They want our rates lowered or not raised. I'll ask you all another question. How many of you have come to a utility rate hearing and advocated that you really should be charging more for water? Three.

That's quite a bit fewer than raised their hands and said we ought to charge more for water. One of the fallacies that Mason indicated that I'll dispute is that increased costs get passed on. Maybe in a truly free marketplace. That doesn't happen. We as utilities have (I don't know the economic term) but it's in essence a monopoly. We're also non profit. So we're not supposed to make a profit which we very likely might do if we charge more for water unless, as Mason said, you increase taxes (on water), in which case we would just pay those taxes to somebody else and keep the balance sheet even.

I might add that we, as utilities, are taxed. Don't let it be known that I said it wasn't enough, but we're taxed at about 5% which goes to the state. I can account for less than 1% of it that goes into water programs; don't ask me where the rest goes. So we have this situation, this pressure to keep the rates down. There was one city councilman who absolutely refused to vote in favor of any rate increase just as a matter of principle. That particular council member happened to represent a low income, predominantly minority portion of the city; that's something else to think about. I would submit that there aren't too many representatives of the low income, elderly, the homeless, the poor at this conference or who are advocating higher water rates. It is a social problem that we have to deal with. There are, however, utilities that have exceptions and do have subsidies, if you'll pardon the term, Mason, for lower income customers.

Sandie Nelson said yesterday, water is precious. I agree with her. I agree wholeheartedly. But back to the economics. Do you know that here in the city of Seattle, for one cent you can get eight gallons of water? Eight gallons! Just milk itself costs a thousand times that much. You people who like white river rafting. Try milk. It costs a thousand times more; beer costs even more. I love the Olympia beer—it's the water. They have that beautiful waterfall on their beer cans. I love waterfalls. I've been there. I'm a waterfall nut. I go on hikes to

waterfalls. I don't go to fish—get too bored, too much time. So there is an aesthetic value to waterfalls. Sandie mentioned that somebody suggested for the Grand Canyon, take a picture; the same applies to waterfalls. I collect pictures of waterfalls. Yesterday, I wanted to get some pictures of the slides she put up on the screen. Or, you can take movies with sound so you can get the sound. That still doesn't quite make it. With me, sitting by a waterfall—there is power that is almost a spirituality. There's the mist; you can't get that on film—although they might someday.

But, back to the issue at hand. The free enterprise system; is that going to solve it? I think Mason indicated that the market really can't solve all our problems. Merrill English, said yesterday, private industry can take care of it; they can do better than government. Maybe in some cases that's true. I don't think that's the case here. In fact, it was Churchill who said, in many cases, a person's profit is in direct proportion to the disservice he's done to the community. That's a kind of drastic thought, and I don't mean to imply that. Merrill indicated that you leave the alfalfa along the fringes and his last cut is for the animals, for the wildlife; so there are people in private practice who I think have a social conscience. We'll get into the ethical question in the next block of questions. But, unfortunately, the marketplace is based on one thing—money. How do we deal with unquantifiables, the intangibles?

In the 1971 Water Resources Act, it says that allocation should be based on maximizing net benefits. That's something I learned in my water economics class. It can all be computed. There is a missing link, however. What do you do with unquantifiables? There are ways to develop imputed values. The Metro Council recently had to deal with saving a beach. It was worth over \$200 million. By one vote, the vote was that the beach wasn't worth that. But it was that close. That's really where those questions will be answered—in the public forum.

How do we deal with it? We have these intangibles. You heard yesterday from the attorneys about the Indian rights. How do you quantify those? That is probably the biggest unknown that we have to deal with at the moment. I think we need to take a step back from the approaches we've used in the past, based on technology, based on economics. We're really looking at a question of what is socially acceptable, what is environmentally acceptable and how do we address those?

I was talking to Wendall Hannigan from the Yakima Tribe yesterday and he says, really what we're trying to do is look to the future and provide for the future. My response is that utilities, in a sense, are doing the same thing. Unfortunately, the growth rate that we're trying to provide for is much greater than in the case of the Indian nations. So, we have a real disparity there. Therein lies the other big issue; the thing that is really driving the situation is growth. Dick Nelson mentioned it in his talk, and I commend him for his recommendation. The Governor's Growth Strategy Commission should address that question. They've been kind of aiming it toward transportation. I think we could learn from transportation. Usually they wait until it is too late, until it's a real mess; you have gridlock. You have the same thing with water, but I think we have some time to do proper planning and plan ahead in the case of water. But you have to look to the long term.

This is one of the things I think we can learn from the Indians. They have a much longer perspective in looking at the issue. We've gone through a century as a state. Now, let's look at the next century, is the approach they take. One of the problems, I think, particularly in politics: when you have people elected for rather short terms, you get a rather short-sighted approach to things. They look at water rates next year or even several years from now. The so called conservation paradox—we may have to increase rates as a result of conservation; that doesn't seem to make sense in a marketplace. You might end up with a question, not of how much the water costs, but do you have the water there or not.

What I'd advocate is that I think we have to look at a new process. The present planning process that we've had has served us up to now, but it is going to have to change. I think we need a process with the key players at the table, recognizing the Indian nations as governments, just like the state. We need to get correct information—what are the needs, and we have to understand those. There has been a tendency for the different groups go off to their different camps and develop their cases. Mason alluded to that's what attorneys are good for. Not to disparage attorneys, but I've found in negotiations, I would leave them out. Bring them in at the end and they can check the language, some legalities, but I think if you get too legalistic, you can go on and, in essence, you end up in court. If you're looking at a non-court settlement, an out-of-court settlement, I think the experts—the people that know water, the people that know fish, the people that know habitat—are in the best position to work out the problem and to develop a solution together.

I think we've talked enough about the problem—yes, there is a problem, lots of problems. I think it's time to start working together for solutions. Let's look at it in a constructive way. No doubt there is going to be cost. I will close on an economic note here. There will be a cost. Just as we will share in developing the solutions, I think we're all going to have to share in the cost. To what extent is somewhat of a question mark. As Mason mentioned, there will be conflicts. One of the things I've learned in my career, conflicts are not necessarily bad. I won't say they're good—they're neutral. The real question is how do you deal with those conflicts. You can either create a bad situation or work together toward a good situation. We really have the opportunity to resolve the conflicts by working together in a way that really addresses our offspring, be they children, grandchildren, great-grandchildren—what will they have to live with in the future?

Respondent — Instream

**Ed Whitelaw, President
ECO Northwest,
Eugene, Oregon**

I fear I will appear as a nonsequitor in this series. I'm going to try to get through five points rather quickly. Let me explain the context.

For the last couple of years, I have been on the governor of Oregon, Neil Goldschmidt's, Economic Development Commission. My principal role was, in Goldschmidt's words, that of the policy-parent for the state. I, along with a herd of others, developed a long-term strategy that the Governor presented to the state last spring and now we're in the process of figuring out what to do with it. There are three main components.

One focuses on trade--I managed to suppress the term international, persuading others that domestic trade might dominate international trade, out of Oregon anyway. The second component was education in the workforce, and the third is unusual, perhaps even unique among state strategies, at least published state strategies across the country, and that is quality of life, with special emphasis on quality of the environment. The distinction there is between the probability of getting mugged and the access one has to a forested mountain or a pristine beach.

What I want to do, and actually I'm not a complete nonsequitor here because I am addressing Mason's sixth fallacy, if not several others; namely, that having to do with instream uses of water to the program and recreation values and the like. That's simply calisthenics to try to get through these five points. I'll go through them fairly quickly and see if I can get them across.

The first is a brief history of regional economic development in North America. Let me characterize it by describing to you Newfoundland 300 years ago. The growth began with ships coming over from England, getting fish, having brought with them barrel staves and steel bands, got the fish, salted them and took them back. It was some time before growth occurred on land in Newfoundland. Whereas now the barrel staves were obtained locally, the steel bands still came from England. The fish, of course, came locally. Growth occurred very slowly because population derived exclusively from the jobs based on the export of that staple commodity--fish. As we trace development across North America, many of the regions grew in just the same way. In the Northwest, of course, we have the fish, we have lumber and wood products, we have aluminum ingots from the cheap hydroelectric power. Of course we have Boeing. For the staples, we have agricultural products.

Summarizing regional economic development, growth begins slowly and then accelerates. That corner, almost like a hockey stick lying on its side with the blade sticking up--that corner--represents the point when the region begins to substitute local production for what were previously imports. That import substitution (not as simple as the corner in the hockey stick) feeds on itself. Turning the corner is not inevitable. Butte, Montana, for example, never will, I suspect.

The outcome, that is the blade, could be measured in urbanization or industrialization, more simply in jobs. Let's just take it as a proxy for economic development. The Northwest is sort of scattered along that corner with Seattle obviously way up the blade, Portland and Spokane further down. You can go all the way out--each of us has the anecdote--there's Dufur, Oregon; Ekalaka, Montana; and so on that are way back on this flat part of the blade. That's the end of the history of regional economic development.

What's unusual with the Northwest is that we have California to the south, we have Puget Sound, and we have British Columbia (it's growth recently enhanced by Tiananmen Square). That growth is likely to accelerate and push us around the corner whether we like it or not. So the issue is no longer can we turn the corner, but rather what will be the condition of our economy; what will our economic lives be once we've rounded the corner? Those outcomes are not independent of the policies we undertake now, mainly investment policies, in education and the like.

I feel that quality of life, quality of the environment, recreation and the like are a comparative advantage for the Northwest that has special importance out here and I also feel that it can contribute to lower production costs, higher professional skills, entrepreneurial talent and the like if we pull it off well. This gets to the source of conflict with instream uses and out-of-stream uses.

I will try to illustrate the conflict in the following way by first addressing a point that Mason and practically every other economist who's ever coped with this problem has suggested--that perhaps we're underpricing water. The issue here, at least in this context, is that if we overconsume water for out-of-stream uses, we may be underconsuming water for instream uses. And here's the kicker for the Northwest if you buy the earlier argument--we may be jeopardizing the future economic development of the Northwest. Perhaps not for the Puget Sound area, perhaps not for Portland, but certainly for the balance of the region.

Let me try to illustrate why. It isn't clear to me that the challenge is so much analytical as it is rhetorical. We can handle the technical stuff. That isn't the issue. But persuading the institutions to change their behavior is the real challenge. Let me illustrate. If I wanted to suppress incomes and jobs in Spokane and the Tri-Cities, I would join the Spokane Chamber of Commerce and the Tri-Cities Industrial Development Council in supporting the Columbia River Irrigation Project. That is, those institutions that are nominally pushing for short-run economic development in Eastern Washington, if you buy this argument, in fact are jeopardizing the long-run economic future of both Eastern Washington and Eastern Oregon.

It's easy to come across with that line but the challenge still remains the rhetorical one; namely, what are the metaphors that we substitute for the mindless economic-development jargon that we usually get, what are the bumper stickers that will convey this notion of shifting from whatever it is we do now with water planning to one that incorporates more fully our long-term strategies for the economy and our lives in the Northwest.

PROVOCATIVE QUESTION

V.

What Are the Ethical Considerations Related to Water and Present and Future Generations?

Presenter: Ernest Partridge
Professor of Philosophy
California State University, Fullerton

Respondents: Representative Karla Wilson, Member
Joint Select Committee on Water Resource Policy
Washington State Legislature (1989)

Robert Benton
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Central Washington University,
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Provocative Question No. V:

WHAT ARE THE ETHICAL CONSIDERATIONS RELATED TO WATER AND PRESENT AND FUTURE GENERATIONS?

CLEAR WATER AND CLEAR RESPONSIBILITIES

**Professor Ernest Partridge
California State University, Fullerton**

On my study wall is a memorable Sierra Club poster with a photograph taken in the Cascade range. The scene portrays a sublime result of natural processes at work through trackless time. Looking upon that scene is balm to the spirit, even to a scholar, confined to his study in Orange County, California. Yet, as we all know, that photograph conveys the truthful half of a half-truth. The other half appeared through the window of my jet airliner, as I flew to Seattle from California -- a checker-board pattern of clear-cut tracts along the slopes of the mountains, smog in the valleys, and unnatural striated hues of brown and green in the rivers and streams that once ran clear and blue. The photographers who compose landscapes for the Sierra Club calendars, must go ever further to find sufficient provocation to expose their film.

I.

I report, herein, personal evidence of a fact that is better known and documented to most of you than it is to me: our water supplies, locally, nationally and globally, have been seriously and enduringly impacted by human settlement and industry. Moreover, there can be no doubt that our generation's treatment of water resources will have profound impacts upon future generations.

Consider some of the legacy in water resources that we leave to our posterity:

- Deforestation and settlement of upstream regions have destroyed sources of steady and pristine water -- sources which could only be restored after several centuries of succession, in the unlikely event that we choose to return these areas to their natural state.
- Transuranic elements and isotopes released from "storage" at the Hanford nuclear facility have contaminated the Columbia River system, and will continue to do so, irrevocably, for tens of thousands of years.
- Toxic materials now locally sited in the ground, will inexorably find their way into aquifers -- perhaps safely contained for our generation and the next, but fated to poison the water supplies of future generations, as their plumes spread beyond the reach of remedy.

"Our duty to posterity," so readily and routinely proclaimed in commencement speeches and editorials, is far less evident in our "use it now, toss it away" economy.

Can we be said to be "morally responsible" for these assaults against our environment and transgressions against our successors? A simple analysis of that concept, *responsibility*, would suggest that we are.

Moral Responsibility, I would propose, consists of four essential elements:¹

- *knowledge* of the consequences of a proposed act or policy, or at least an ability to acquire this knowledge. (Willful ignorance or "plausible deniability" is no excuse).
- *capacity* to perform that act or implement that policy.

- *choice* -- which implies the option to do otherwise.
- finally, *value significance*, the act or policy in question will affect the welfare or impinge upon the rights of other individuals.

Applying these four criteria to our dealings with the environment would surely indicate that we are morally responsible for these dealings. And since many of those to be affected by our actions will live in the remote future, it further follows that we have responsibilities to future generations.

And yet, when we are thus challenged to face our "responsibilities to future generations," we are often reminded of the old cynical taunt -- "What has posterity ever done for us?" After all, remotely future generations do not exist in our lifetimes, and thus can not reciprocate favors, press claims, or retaliate against us. In fact, there are several well-articulated arguments that run contrary to the commencement speakers, and in support of short-term business-as-usual -- arguments to the effect that future generations have no rights-claims against us. Of these, I will address, and attempt to refute, four:²

- The "*Time-Span Argument*": That the economically axiomatic principle of "discounting the future" removes remote generations from our moral purview.
- *No Claims*: That future generations, being presently non-existent, can make *no claims* against us.
- *Non-actuality*: That we can not have meaningful obligations to beings that do not exist.
- *Indeterminacy*: That future persons, being indeterminate as individuals, are not proper subjects of moral consideration.

These, I submit, are the strongest and most persistent philosophical objections to the claim that we have responsibilities to the remote future. I shall attempt to refute each of these objections.

II

The Time-Span Argument, like the others, objects that duties and rights cannot meaningfully be said to hold over long periods of time and between persons with non-concurrent lives, who are thus denied reciprocal communication and interaction. But with this argument, *time* itself is the foremost reason for this moral disconnection.

Two defenses of the time-lag argument deserve our attention. First, there is "future discounting" -- the economist's observation that rational individuals have a "pure time preference" for early over delayed "payoffs," and for delayed over prompt payments due. Hence the existence of interest rates. It follows that, through negative compound interest rates, the remote future vanishes into insignificance.

A second argument, the "generational domino effect," is put forth by the philosopher John Rawls, who states that if we pay adequate attention to the needs of that "posterity" that we can know and love directly -- our children and grandchildren -- and they in turn to their immediate posterity, then remote individuals will be cared-for through the moral linkage of intervening generations, similarly concerned for "their own."³

Do long durations of time erode moral responsibilities? Can we, and should we, concern ourselves with the welfare of remote posterity? For the moment, consider, not the moral, but rather the causal and epistemic connections through time. According to informed scientific opinion, some technological innovations and social policies enacted during the last few decades, and others now being contemplated, may result in both short-term advantages for some of our contemporaries, and devastating long-range effects for our successors. Such long-term effects, which are tied to their remote causes by quiet, continuing, and accumulating processes, are called, by ecologists, "time-lag effects." Consider some possible cases: First, the manufacture of thousands of nuclear weapons, and the decision to invest heavily in nuclear fission energy, has resulted in the production of highly toxic, long-lasting, radioactive by-products. Some of these substances (i.e., the actinides) must then be isolated from the biosphere for hundreds of thousands of years.⁴ Some of these substances are now irretrievably scattered in the central Washington desert, working their way inexorably toward the aquifers. The "time-lag" between the disposal and dispersal of these

substances and their reappearance is unknown and unknowable. But interestingly, it is our remote successors, not the next and following generations, that are most in peril. The growing perils of the "greenhouse" effect, and the migration of chlorofluorocarbons (CFCs) toward the ozone layer in the upper atmosphere, present a similar case.

The point of this recitation should be clear: Events enacted or contemplated within the lifetime of the present generation may, through "time-lag effects," produce benefits for this generation and, perhaps, a generation or two beyond, at the eventual cost of bringing devastation upon those who will be born a century or more hence. Moreover, informed persons now alive recognize these possibilities, and scientific techniques now available might provide even more exact assessments of the long-term impact of our technology, and suggest policies that we might adopt to mitigate these consequences.

The moral implications are apparent: If, indeed, due to their long-term "time-lag" effects, our activities and policies reach across generations to cause significant changes in the life-conditions of posterity, and if, furthermore, we know this and can choose alternative policies, can we continue to pretend that we have no *duties* to this posterity? If it is within our knowledge and power to cause or prevent grave harm to future generations, can we still maintain that future generations have no *rights* to be spared such injury? Can we, in short, acknowledge our foresight, capacity and choices to significantly affect the life conditions of future generations, and, at the same time, disclaim moral responsibility across the same time span? I think not. Recall our analysis of the concept of *moral responsibility*. This would indicate that our power to affect the lives of posterity, and our scientific foresight of the results thereof, require us to extend our moral responsibility to the limits of this anticipation, capacity, and choice.

Perhaps one reason why the notions of "duty to" and "rights of" posterity might seem strange is that we have not become accustomed to the moral implications of recent scientific and technological developments. Consider again the technological impacts cited above. Scarcely sixty years ago, atomic energy was merely being contemplated in a few physics laboratories, and artificial disruption of the chemistry and physics of the earth's atmosphere seemed preposterous. When my forbearers settled the West, scarcely a century ago, their "wastes" were primarily organic, and nature had a way of cleansing itself. The near neighbor, five miles upstream, posed no serious threat to one's water supply. Today, though environmental scientists know better, the logic of ordinary discourse has yet to reflect these profound changes in the human biotic and moral condition. Only a generation or so ago, within the memory of many of us, one could innocently believe that the effect of his generation upon its successors was totally beyond human predictability and agency and thus not within its moral competency. No longer. With the contemporary extension of foresight and power has come a corresponding extension of moral responsibility.

Time-span, of itself, cannot be construed as an argument against the moral bonds of duties and rights. Quite the contrary, these moral relationships are inextricably bound through durations of time. Contractual obligations, and their correlative rights, endure from the time of the agreement to the time of its consummation. The duty to forbear from injuring others, and *its* corresponding rights, lasts as long as the agent is capable of deliberately causing or permitting preventable injury, which is to say, usually throughout one's lifetime. And, if a person is duty-bound not to cause deliberate harm during his lifetime, is he any less duty-bound to prevent such injuries that may occur after his death due to neglect *during* his lifetime? If one is both aware of the harm he might cause and capable of preventing it, does it matter if the calamity takes place five years after his death? Five hundred years? Five hundred *thousand* years? I suggest that foresight, capacity, and choice, not time (however long) are the morally relevant factors here.

To summarize: If we have a general duty not to cause avoidable pain, this means the pain, *any time*, of *any being* which is a member of the ongoing entity called "mankind." *Time* does not diminish the *prima facie* force of duty, albeit it may be conjoined with a diminished certainty or efficacy of one's attempts to fulfill his duty.⁵ In such cases the factors of *probability*, *efficacy*, and deliberate *choice*, as such, not time, are morally relevant. And with recent advances in scientific knowledge and technological power, we are losing our ability to hide behind the excuses of ignorance and impotence.

III

The "No-Claims" Argument. Another common objection to the claim that future generations have rights, is that posterity, being "merely potential," is incapable of claiming these alleged rights. And without *claims* it is argued, there can be no *rights*. The Philosopher Bertram Bandman expresses this position quite directly:

Future generations can only correctly be said to have the rights to [have clean water] if there is provision for them to claim that right. And there are various conditions that may undercut such a right, such as the end of life on earth, acute scarcity, absence of clean [water], low priority placed on clean [water] in relation to other more urgent human goals.⁶

A common and forceful response to the "no-claims argument" is that individuals incapable of claiming their rights may have these rights defended by others acting in their behalf. Thus, the rights of animals can be legally represented by private agencies such as the ASPCA, and the rights of infants can be claimed and defended by appointed counsel or by public agencies. Of particular interest to us is the explicit legal protection of the rights of the future persons. Thus, for instance, a person can stipulate in his will that certain funds be held in trust for the education of yet-unborn grandchildren, who can properly be said to have a legal *right* to these funds, even though they do not, as yet, exist. Still more to the point, the National Park Act of 1916 specifies that the National Park Service shall protect and keep the land in its charge "unimpaired for the enjoyment of future generations." The Service, in other words, is the legally-appointed guardian of posterity's *rights*, a point that must be constantly reiterated by the Sierra Club, among others.

The critic might reply that these are examples of rights *protected by law*; that is to say, the claims made by, or in behalf of, the rights-holders are legally recognized. However, most of posterity's alleged rights, although they might be argued on moral ground, lack legal standing. These rights cannot be legally claimed by, or in behalf of, posterity, and thus there are no so-called "back-up rights" -- i.e., no institutional sanctions against, or remedies for, violations of these rights.

But *legal* means are not the *only* means to "claim" a right. In the words of Joel Feinberg, a person can be said to have a moral right "when he has a claim, the recognition of which is called for-- not (necessarily) by legal rules -- but by moral principles, or the principles of an enlightened conscience."⁷ The right of future generations to enjoy designated areas of unspoiled natural beauty, and the duty of the living to protect these areas, were proclaimed by such men as Thoreau and Muir before this right, and duty, were enacted by the National Park Act of 1916. To be sure, the laws often determine whether or not a right can effectively be *claimed*. But it is equally the case that laws are often enacted in response to the public consciousness of a pre-existing right -- a right the claim to which morally *should* be sustained and protected by the force of law. In other words, defenders of the "positive law tradition" who insist that the possession of rights entails effective legal claims and remedies, beg the essential moral issue. For only if the *moral* case has merit *should* legal means be enacted to insure the protection of the alleged rights.

This all may be well and good, but the essential problem remains: If, as must be granted, posterity is *itself* incapable now of claiming or appointing a surrogate to claim its rights, who, then, is authorized to *represent* posterity? The answer, quite directly, is *anyone* who is able and willing to defend posterity's rights on the grounds of rational and general moral principles. In such debate, it is the *principles*, and the validity thereof, that count, not who the advocates might be. In an ideal world, the rights of future generations would be protected by the laws and by the legitimately appointed and elected representatives of the community. In the less-than-ideal actual world, the advocates of the interests of posterity (many of them self-appointed) must often present the case for posterity's legally unrecognized rights in the arena of moral debate, in the hope and expectation that the public conscience will come to demand that the laws of the living be extended to protect the rights and interests of posterity.

IV

The Non-Actuality Argument claims that since posterity does not exist *now*, it makes no sense to speak of posterity having rights *now*. Thus Ruth Macklin states:

The ascription of rights is properly to be made to actual persons -- not possible persons. Since future generations can only be viewed as consisting of possible persons, from any vantage point at which the description "future generations" is applicable, it would follow . . . that rights cannot properly be ascribed to future generations."⁸

Accordingly, writes Richard de George, "Future generations...should correctly be said to have a right only to what is available when they come into existence, and hence when their possible future rights become actual and present." He continues:

Prehistoric cave men had no right to electric lights or artificial lungs since they were not available in their times, and we have no right to enjoy the sight of extinct animals. To claim a right to what is not available and cannot be made available is to speak vacuously. Some future people, therefore, will have no right to the use of gas, or oil, or coal, if, when they come into existence, such goods no longer exist. If the goods in question are not available, *they* could not be produced with a right to them.⁹

But surely the distinction between our "right to enjoy the sight" of *some* extinct animals (say, dinosaurs), and posterity's right to clean water is, from a moral point of view, quite essential! We have no right to "enjoy" dinosaurs because it was, *at all times*, impossible for us to "have" them. No rational, morally responsible beings deprived us of the dinosaurs; they vanished millions of years before any creature evolved to a state of moral accountability (the "Flintstones; and "Alley Oop" to the contrary, notwithstanding). The same cannot be said concerning the availability to us of passenger pigeons or, much more to the point, the availability to future generations of clean water and energy sources. It is, to some degree, within the knowledge and power, and thus the moral purview, of contemporary persons to determine whether future generations shall have clean water and energy sources.

But surely it seems paradoxical to claim that persons *in the future* can have rights *in the present*. I will grant that it *seems so*, but I will insist that the claim is intelligible. So that we might unravel this subtle point, I suggest that we shift our time perspective to the past and consider the case of the cedars of Lebanon. In ancient times, the Phoenicians cut the fabled trees from the mountains and thus brought devastating floods and silt down to the valleys below. Can we not say that the Phoenicians, but this policy, defaulted in their duties to the present inhabitants of Lebanon? Furthermore, weren't these contemporary persons correspondingly deprived, *in the past*, of their rights to a beautiful environment and pristine watersheds? It would seem that the duty to protect the right of the present Lebanese to have the cedars applied to those who were in a position to protect this right: e.g., the ancient Phoenicians. This follows from the rule that rights and duties apply to *possible* circumstances -- i.e., to circumstances that fall between the limits of impossibility and inevitability. The savages who lived in the region before the dawn of history, and who were presumably incapable of causing lasting damage to the forests and watersheds, had no duty to forebear from what was, to them, the impossible. The Romans and Saracens who followed the Phoenicians found barren hills, and thus had no duty to protect the non-existent trees. All this bears some strange implications for the perspective of time-present. Thus, for example, the present-day Lebanese *had*(!) no rights-claims upon the savages or upon the Romans and Saracens. Neither do the Lebanese *have* rights today to trees that can not be had. (For the sake of argument, I am assuming that the damage was irreversible and thus that the cedar forests, once destroyed, could not have been restored at any subsequent time). The "rights" of the present generation to the cedars of Lebanon belong to the past tense. These rights could only entail duties applicable, first, to the predecessors of the Phoenicians who were capable of destroying the trees, but who fulfilled their duties by protecting the cedars, and finally to those who violated these duties by destroying the cedars. Thereafter, there were no more rights or duties, for the trees were (I assume) forever gone.

But does it not seem strange to speak of rights, long past, of present persons? I grant that it does, and suggest that this strangeness may be sufficient reason to prefer "duty-talk" to "rights-talk" in such cases. But the very application of duties and rights across generations constitutes an unusual use of these concepts, which are usually applied among contemporaries. The strangeness of this use of "rights" is compounded by the fact that "rights" are not commonly referred from the contingent present back to the immutable past. We are not encouraged to cry over spilt milk, or accustomed to lament over long-lost forests. Such issues are no longer "live." Indeed, we may be little aware of what we have lost. However, the same situation seems far less odd when viewed from the perspective of the predecessor generation; when, for example, we speak of the rights-claims of future generations falling upon the *present* generation. Accordingly, while it may seem odd to speak of the right of the present Lebanese to the lost cedars and streams, we would have little difficulty making sense of the recorded complaint, by some ancient Phoenician environmentalist, that the cedars should be carefully managed in deference to the rights of future generations.

V

The final objection to the notion of the rights of posterity might be called the "indeterminacy" argument. Ruth Macklin presents it quite forthrightly:

While it is appropriate to ascribe rights to a class of persons, in general, such ascription is inappropriate when the class in question has no identifiable members. Now the class describable as "future generations" does not have any identifiable members -- no existing person or persons on whose behalf the specific right can be claimed to exist.¹⁰

Of all the objections so far, I find this one to be the most curious in that, while it appears time and again, it seems to be among the easiest to answer. Indeed, we need not look to posterity to find examples of duties to, or rights of, "unidentifiable persons." Such "persons" exist among our contemporaries. For example, Joel Feinberg offers the example of "the duty of care that every citizen is said to owe to any and every person in a position to be injured by his negligence. I have this duty to some degree even to the uninvited trespasser on my land."¹¹ Notice that the duty of the landowner is owed not to identifiable persons, or even to probable persons, but only to (indefinite) possible persons in the (undetermined) future, whosoever they might be. And what of duties of "the indefinite?" Here, too, examples are easy to imagine. For instance, my right not to be physically assaulted entails the duty of *any* (indefinite) persons who might, at *any time* in the (undetermined) future have occasion or opportunity to do so. Does Macklin wish to deny that these are rights and duties properly so-called? And if they are, and surely common usage so indicates, then in what sense are "future generations" less "definite" than the person, now alive, who might be injured eight years hence, due, say, to my failure *now*, to cover an abandoned mineshaft on my mountain property. Does such a person have any more right not to be injured than his now-unborn (thus "indeterminate") child who will be six years old on that date?

It might be countered that if, due to my negligence, someone will in the future be injured, the victim's identity at that time will be made quite "definite" to me (presumably by his lawyer), which is not the case with injuries to posterity. But the objection misses the point. My duty not to be negligent is a duty to *anyone* who might be injured, and if my duty is fulfilled there will, *ipso facto*, be no "definite" victim and, moreover, the rights of unidentified multitudes will thereby be respected.

Now all this may appear to be well and good when applied to our contemporaries. But will duties to, and rights of, the indefinite still be morally valid if the "indefinite" are not yet alive; if they are *possible* future persons?¹² I believe that these moral requirements might be meaningfully applied to such cases. To illustrate this point, consider Galen Pletcher's very apt "paradigm of the campsite":

If I have been camping at a site for several days, it is common to say that I have an obligation to clean up the site -- to leave it at least as clean as I found it -- for the next person who camps there. We assume, of course, that the person who will use it next does exist somewhere; but it is not necessary to assume this, just as it is not necessary to know who he or she is, or when he or she will use the site. We have an obligation which might be called an "obligation-function," because it is to some as yet unspecified person or persons. There is a preliminary "right function" in this case, which can be stated: "for any x, if x is a person who wants to camp at this site, then x has a right to a clean campsite."¹³

Significantly, the morally operative consideration here is not the *time* of the next use, nor the *identity* of the next camper. It is that the area *might* be used by an unknown and indeterminate individual with an interest in having a clean campsite.

But does this example have bearing upon the posterity question? Clearly it does. Pletcher continues:

If, happily, I have discovered a campsite so removed from the beaten track that the next person to discover it is someone who wasn't even alive when I last camped there, it still is true of that lucky person that he has a right to a clean campsite, and I had an obligation to secure to him that state of affairs. My conclusion can thus be stated: If any moral obligations or rights can properly be stated in terms of "obligation - or right-functions," then these apply also to future generations.¹⁴

The next camper has a "right" to a clean campsite, not because of *who* he is (as an identifiable person), or *when* he is, but for what he is -- a sentient, rational person (thus of our moral community) who might have an interest in enjoying the use thereof. That he may, at this moment, be *non-existent* is, morally speaking, *non-relevant*. The argument is all the more urgent when we speak not of a campsite where a camper might possibly visit but of the air and the water and the land of a planet upon which another generation, and then another, must *dwell*.

To the best of my knowledge, these four challenges to the responsibility of the living toward their remote posterity -- *time-span, no-claims, non-actuality, and indeterminacy* -- are the best that the opposition has to offer. Throughout my rebuttal to these challenges, the criteria of moral responsibility have been reiterated, indicating that the expanding the scope of our scientific knowledge and technological power have entailed a parallel expansion of responsibility toward future generations. If these rebuttals have succeeded, and no additional argument against our responsibility to the future is forthcoming, we are left with the burden, and some might say the opportunity and adventure, of meeting that responsibility toward the future.

VI

In these remarks, I have defended what might seem a rather stark, stringent, and unrewarding moral regimen -- a sort of drill sergeant approach to moral duty. If so, then a closure at this time would convey an incomplete sketch of the moral landscape of our duty to posterity. The missing part concerns the consequences of either our provision or our neglect, not upon posterity, but upon ourselves.

For if we squander the earth and its resources in a generational binge, giving no thought or legacy for the morrow, we impoverish our own lives, as well as the lives of our successors. By lavishing attention and concern upon the brief span of our personal lives and generation, we drain our institutions and our projects of lasting significance. By caring not a whit for our legacy, or for the welfare of those who follow, we regard the ever-approaching end of our personal lives with the fear, trembling, and nausea -- the "sickness unto death" -- of which the existentialists write so vividly. By confining significance to the scope of our own lives, we lose significance even in that. Thus might posterity, even before it's own turn of existence, punish us for our callous indifference to it's eventual fate.

Thus are we moral hostages to our future, with the quality of our personal lives inextricably tied to quality of life that we vouchsafe for our successors. For, as I have argued and concluded elsewhere, flourishing human individuals and communities have a basic psychological need to identify themselves as parts of larger, ongoing, and enduring processes, projects, institutions, and ideals. And if they are deceived into believing that they can live in and for themselves alone, they will suffer for this conceit both individually and communally. But there is a brighter side to this condition, wherein we might find our answer to the cynic's taunt, "What has posterity ever done for me?" Strange as it may seem, posterity may extend profound favors to the living. For posterity exists as an *idea*, a *potentiality*, and a valid object of transpersonal devotion, concern, purpose, and commitment, without which our lives would be confined, empty, bleak, pointless, and morally impoverished. In our attempts to preserve and bestow upon the future, the arts, sciences, literature, institutions, moral ideals and the ecosystems and landscapes that we cherish, we gain generational self-respect and the satisfaction that we might participate in bringing about future individuals that we might admire, and that might admire us. The endurance beyond our brief lives of that which we cherish, bestows upon us a small but precious measure of immortality.

Thus, in acting for posterity's good, we act for our own as well. Paradoxically, we owe it to ourselves to be duty-bound to future generations, in a manner that genuinely focuses upon future needs rather than our own. By fulfilling our just responsibilities to future generations, we may now earn and enjoy, in our self-fulfillment, the favors of those successors whose lives we will not share.¹⁵

SEE FOOTNOTES IN ADDENDA TO PART ONE, PAGE 134.

Respondent

**Representative Karla Wilson
Member, Joint Select Committee
on Water Resource Policy (1989)
Washington State Legislature**

I regret to tell you that I probably won't be able to give you a lot of new information. You've gotten lots of information and I suspect that there are a number of you who know a great deal more about water than I do. What I can do is talk to you a little bit about the practicalities and complexities of water resource ethics as the Legislature sees it and perhaps give you some insight into the deliberations of the Washington State Legislature's Joint Select Committee on Water Resource Policy. In response to Dr. Partridge, I am tempted to say a lot of things, particularly with regard to my own claim to immortality, **but** I better stick to something that I know a little more about; that is, what the Legislature is doing.

I'm not sure that the Legislature itself would wholly agree with Dr. Partridge's views about the rights of future generations. In fact, I am sure that certain legislators believe that the future has no claim on him and certainly not on his water rights. But the State **does** act in the interest of future citizens and it always has. As early as our State's Constitution was written, we made provision for state trust lands to provide for the construction of schools for the education of our future citizens.

The Department of Natural Resources was given the trust of holding those resources that we deemed especially valuable such as timber and tidelands. Later the Department of Ecology was given the charge to make sure that those were kept in good condition. Recent legislative acts include the creation of the Puget Sound Water Quality Authority, Hazardous Waste Clean-up Plans, Environmental Protection Act and, germane to our argument today--the Water Resources Act of 1969 and 1971.

The Water Resources Act declared we must maintain instream flows to sustain habitat and other instream values; that the allocation of water is subject to the maximum benefits test; and that we may not let water levels in streams drop below minimum flows except in the case of "overriding public interests."

You may have caught that a few of those terms are a little vague. It's twenty years later and we are getting around to figuring out how we can maintain instream flows to sustain habitat. There are a few staff members who might be willing to talk about what maximum net benefits are and how we can define those. But when it comes to overriding public interest, I don't think anybody has yet been able to tackle that definition with regard to water resources.

Practically, the Legislature debates diverse interests and values all the time, including the rights of future generations. We consider the needs of future citizens as well as property rights, aesthetics, economic development, moral issues, legal points of view, and even family problems, as we try to balance all those concerns that come to us. Some examples of how difficult it sometimes is can be seen in some simple questions.

Take public education. We believe that it's necessary to provide public education so that future citizens are well equipped to deal with problems, but that involves giving up some of our rights now. We tax ourselves in order to do that and we give up some freedom of choice about whether or not children will go to school.

Zoning laws and forest practice regulations also put restrictions upon what we can do with our own property in order to preserve certain values for the future. Of course, not too many years ago, we balanced the need for clean water against some public taxation and decided we'd tax cigarettes. We could do at least that much to provide funds for cleaning up Puget Sound. So balancing diverse interests does become complex. And Legislatures seldom look very far into the future.

The Joint Select committee was actually born because we do not have agreement on what we should do in the future or even right now with regard to instream vs out-of-stream uses of water. We don't agree always on what is right. The general public is well aware of problems that the Legislature faces with regard to clean water and clean air but they are not yet aware of how difficult it is to make decisions regarding the future allocations of water.

If I were going to talk to one of my friends about the complexities, I might want to say to them that it's a little like discussing property lines with your neighbor. It's fairly simple to talk about the land that is yours, and the line that divides that land from his, and what can happen on your land and what can happen on his. But if you talk about a stream running through that property and then try to decide who makes decisions about what can happen with the water in that stream, you'll find that there are more complex problems to be solved. Thinking of a stream helps us visualize the ethical problems because the water flows across space here at the present time, and also flows through time as well. It's like a matrix of problems; we not only have the space span, but the time span here.

Among other complexities, the first one is that western water law is based on the proposition of first in time, first in right. This focuses on present use of water and that's a doctrine that is not particularly sensitive to future needs. The second problem is the discussion of the time span brought up by Dr. Partridge earlier. Dr. Partridge discussed the problem of early payoffs versus delayed payoffs. Legislators often consider the immediate effects of legislation first, although they may be aware of later benefits.

For example, there was a wetlands protection bill introduced last session. No doubt that it would benefit water quality in the future but it is viewed by property owners as devaluing land now. The bill didn't pass. Legislators may *understand* the needs of future citizens, but they are *reelected* by the citizens who are living today.

The third complexity that I wanted to mention is that the immediate resolution of questions also involves the question of individual rights versus the rights of a group. Even within families, it's hard for one person to give up what he wants in order for the rest of the family to have something that they want. The Legislature is like that. It takes a great legislator to give up what he sees as his own constituency's needs for the greater good of the State's needs and especially for the greater good of future citizens of the state.

So, if we were going to resolve the questions of individual rights versus the rights of the group we could look at monetary payments, and perhaps Professor Gaffney could work out some ways to do that. He could decide how many dollars each foot-acre of water is worth. I would not want to do that, although it has been done in courts to pay Indians for the loss of fish habitat, for instance. I believe there are some things we simply could not do without! Fish and wildlife habitat, in my opinion at least, cannot be mitigated with cash. The greater society has a right to habitat being preserved. That need cannot be mitigated with dollars.

There are already conflicts regarding the different uses of water -- municipal needs, agricultural needs, and environmental needs, and already we have shortages of water. Junior water rights holders go without water certain times of the year. Water utility districts in larger urban areas like Tacoma or Seattle are planning which rivers they will tap next to provide for the needs of their growing populations.

The Joint Select Committee is exploring a lot of issues, but not prioritizing. We know that the demands for water increase yearly and that they increase also daily. The committee itself would solidly agree on the wisdom of conservation and efficiency of use. That's one area where we can reach agreement (although we have spent several hours discussing which is conservation and which is efficiency). We can also generally agree that the first priority use of water is for human drinking. But when it comes to fish, wildlife, irrigation, economic development, it's not yet clear what our priorities are. We've had some discussion about changing lifestyles so that we could use less water and we've had some discussion about the need to limit growth or put restrictions on land development. But we haven't gotten far yet. In fact, with regard to growth strategy, it seems to me this is a good time to decide growth strategy, because the citizens of Seattle have decided recently to put a cap on the height of buildings in their city. Snohomish County put a moratorium on building because of transportation needs along the Bothell Highway. I don't see any reason why we can't also begin to look at restrictions on growth based upon whether or not there is water available.

Although the Joint Select Committee has not yet categorized any immediate short term and long term solutions, I thought I'd like to mention for you some of the things that we have discussed. Some of them are very simple and some of them very complex and controversial, and we haven't even talked about such things as Indian Nations'

rights. Those are going to be decided in the courts at the Federal level and the State Legislature has enough trouble just trying to figure out some of the simpler ones.

Within the next couple of years, it's perfectly possible that we will again put moratoriums on new water rights and reservations as some of these things are being resolved. We did that for a year and those moratoriums are off now, but it could happen again. We will be very shortly deciding, at least determining, processes for determining, how much is an appropriate instream requirement, and we will be developing mechanism to resolve conflicts where streams are already overallocated.

With regard to the next five or ten years, we'll be relying a lot on conservation. We've talked about developing programs to encourage voluntary conservation. Everything from using water restrictors on faucets and water saving toilets to developing programs to encourage people to change their landscaping to plans that will require less water and still maintain a traditional appearance. We've talked about the possibility of allowing the state to purchase back water rights when the individual holder is agreeable to that purchase. The most controversial possibility that we've discussed at length has to do with increasing storage. There are different kinds of storage that could be considered--offstream as well as instream storage, or private storage, and when we talk about those, there will certainly need to be due consideration of environmental concerns.

We've even talked about the possibility of artificially recharging aquifers. But with regard to future generations we need to remember that these are still very short term. If we began to think about the next thirty to one hundred years, we're going to have to look at technological solutions and population control.

I was appalled the other day to learn that between 1980 and 1988 the population of the world increased by 700 million persons. That's nearly the population of India. If the population has increased that much in the last eight years, what is going to happen in the next 30? It seems to me that it's conceivable that soon there will be so many people on the earth that we will use the entire natural water supply for drinking in a day. Something is going to have to change, and of course the technology will have to keep up. One of the duties we have to the future is to begin to provide for conversations that include other possibilities for alternative delivery systems of water and alternative lifestyles.

In conclusion, I agree, and I'm sure that most of the Joint Select Water Committee would agree, that the ethics of water policy with regard to future generations is quite clear to us. We have a responsibility to preserve all the clean water that we can. However, practically, the ethical questions are--how much are we willing to change our lifestyles? How much will those who now hold water rights be willing to share in order to benefit others? How much of the natural habitat, including free-flowing rivers, will we save for future generations. And the question that bugs me the most is--how much of our Northwest quality of life will we lose before we resolve the questions?

Respondent

**Professor Robert M. Benton,
Institute for Environmental Studies,
University of Washington; and
Central Washington University**

At an environmental studies conference in Olympia this Spring, a Chinese environmental historian—a title I would guess is a new one in China—reported that 82% of China's rivers and lakes are polluted. He attributed the cause of this and other environmental problems in China to key beliefs lying deep in Chinese history and philosophy. He said those key beliefs are that man can conquer nature, that man is the most important of all things, and the historical tradition of veneration of the leader, a concept which he affirmed negated the right and responsibility of people to think for themselves. Clearly, Professor Partridge should take the paper we just heard to China.

Let me first review very quickly what I heard. Professor Partridge suggests that environmentally we have fused a number of time bombs which will affect our remote successors. He then poses the basic question, "Are we morally responsible for future generations?" He proposes that moral responsibility "consists of four essential elements," elements which he analyzes on the basis of contemporary attitudes which are held by those who wish to disclaim responsibility to future generations. Acknowledging how our actions will affect future generations and analyzing the four arguments against our moral responsibility, he concludes that we cannot "disclaim moral responsibility across the same time span."

I believe that is true, and, given his self-imposed parameters governing the concept of moral responsibility, he certainly has drawn a logical conclusion. My problem is that it does not clean up the recent Alaska oil spill when I affirm that Exxon was morally responsible. It may be possible that Exxon did not have full knowledge of the consequences of such a spill, but Professor Partridge says that willful ignorance is no excuse. There seems to be little evidence that any of this made the slightest difference. I don't see any of the responsible parties or their representatives accepting moral responsibility for future generations.

In Professor Partridge's analysis of "the indeterminacy argument," the argument that rights cannot be ascribed to a class of persons with, as yet, no identifiable members, and therefore present generations cannot be responsible to future generations, I find the most significant insights. The duty not to be negligent is persuasive especially when one accepts Professor Partridge's conclusion that the more we know the wider is our responsibility. I am particularly moved by the argument that this duty, the responsibility to the future, is derived from humans' "basic psychological need to identify themselves as parts of larger, ongoing, and enduring processes, institutions and ideals."

In a fuller analysis of the concepts he has presented today, which I received from Professor Partridge, he suggests that we strive to live a "Self Transcendent" life. Such a life incorporates what he calls "the Paradox of Morality"—the concept that one lives best for oneself when one lives for the sake of others. Accordingly, that basic need of humans to identify themselves as part of "larger, ongoing, and enduring processes" strikes a chord. This is, I believe, the basic message we have recently been hearing from many quarters.

The message is most forcefully transmitted through the principles of ecology. This is a field which has been labeled "a subversive science," for it precludes humans visualizing themselves as being superior, independent animals, and it demands that humans see themselves as just one more entity dependent on the rest of the life continuum.

In my own field, American literature, no one has expressed this concept more effectively than John Steinbeck writing about his and biologist Ed Ricketts' interest in their trip to the Gulf of California, then the Sea of Cortez:

Our own interest lay in relationships of animal to animal. If one observes in this relational sense, it seems apparent that species are only commas in a sentence, that each species is at once the point and the base of a pyramid, that all life is relational to the point where an Einsteinian relativity

seems to emerge. . . .And it is a strange thing that most of the feeling we call religious, most of the mystical outcry which is one of the most prized and used and desired reactions of our species, is really the understanding and the attempt to say that man is related to the whole thing, related inextricably to all reality, known and unknowable. (The Log From the Sea of Cortez, 216-7)

If we can accept ourselves as being a part of a continuum, then we may be able to act as a society that acknowledges its responsibility for future generations. To do so we will have to rid ourselves of some of the baggage which makes duty to future generations so difficult. One first step might be to question that concept of "vested water rights." And that may be happening. I was amazed to see that a year ago at the annual meeting of the Western State Engineers it was actually suggested that perhaps we should let the water remain in the stream or river.

The point is that we are talking about a change in our entire value system. In a book titled The Last Extinction which chronicles the vanishing species and the ultimate threat to *homo sapiens*, the authors say that "to halt man's extinctions we need to achieve two commonalities: a common pride in assuming our place beside, not above the rest of nature, and a common ecological vision to guide us in our forced role as global heads-of-households." And they affirm that "If people can learn to conserve water and energy, they can learn to conserve biological diversity."

We are, then, brought back to Professor Partridge's admonition that "Thus, in acting for posterity's good, we act for our own as well. . . . By fulfilling our just responsibilities to future generations, we may now earn and enjoy, in our self-fulfillment, the favors of those successors whose lives we will not share."

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 - 4. Today navigability is a fiction with respect to the commerce power — federal power is as broad as the commerce power, including purposes in addition to or in opposition to navigation.
 - E. Commerce power as basis of federal jurisdiction.
 - 1. Clean Water Act of 1972 — navigable waters defined as "the Waters of the United States, including the territorial seas." — all surface waters.
 - 2. Beyond the waters edge – wetlands — Section 404 of Clean Water Act.
 - F. Non-commerce clause bases of federal jurisdiction.
 - 1. Property clause — Article 4. Section 3(2) — reclamation and disposal of arid public lands. Kansas v. Colorado [206 U.S. 46 (1907)].
 - 2. War power — Article I, Section 8 (11) — TVA — Ashwander v. TVA [297 U.S. 288 (1936)].
 - 3. General welfare or taxing and spending power — Article I. Section 8(1) — general reclamation — U.S. v. Gerlach Live Stock [339 U.S. 725 (1950)].
- III. Navigation servitude
 - A. Power to protect navigability of waters — riparian rights subject thereto — Rivers and Harbors Act of 1899.
 - B. A no compensation rule because no private right exists Lewis Blue Point Oyster Co. v. Briggs [229 U.S. 82 (1913)].
 - C. Servitude extends up to high-water mark of navigable-in-fact waters — U.S. v. Chicago, M., St. P. & P. R. Co. [312 U.S. 592 (1941)].
 - D. May be limited by Kaiser Aetna v. U.S. [444 U.S. 16 (1979)].

- E. No compensation rule was extended to fast lands taken for water related uses — United States v. Rands [389 U.S. 121 (1967)] — but Congress overruled in Section III of Rivers and Harbors and Flood Control Act. of 1970.
- IV. Federal preemption of state law — seldom exercised full extent of powers.
- V. Deference to state law.
- A. Reclamation Act of 1902 — express deference in § 8.
 - 1. Federal Government must comply with state law — Nebraska v. Wyoming [325 U.S. 589 (1945)].
 - 2. State law could control neither acquisition of water rights nor operation of project — Ivanhoe Irrigation District v. McCracken [357 U.S. 275 (1958)].
 - 3. State law controls operation of federal project unless inconsistent with project objectives — a double veto — California v. United States [438 U.S. 645 (1978)].
 - B. Federal Water Act of 1920 — express deference in § 27(b) — similar to double veto of § 8.
- VI. Federal regulatory water rights.
- A. De facto water rights created by regulatory programs.
 - 1. No priority date but may supersede appropriative or riparian water rights.
 - 2. May result in a taking requiring compensation.
 - B. Section 404 of Clean Water Act — with agricultural exemptions.
 - C. Federal Power Act.
 - D. Endangered Species Act.
 - E. Northwest Power Planning and Conservation Act.
- VII. Federal reserved water rights.
- A. Congress left proprietary interest in waters on public lands to the states, first by default, and later by statute —
 - B. Affirmed by Supreme Court in 1935 — California Power Co. v. Beaver Portland Cement [295 U.S. 142 (1935)].
 - C. Federal reserved rights rooted in dicta in United States v. Rio Grand Dam & Irrigation Co. [174 U.S. 690 (1899)], and analogy to the theory of Indian reserved water rights — Winters v. United States [207 U.S. 564 (1908)].
 - D. Federal Power Commission v. Oregon [349 U.S. 435 (1955)] Deschutes River dam project on public lands — federal ownership of waters could result from withdrawal of lands.
 - E. Federal reserved rights based on withdrawal of public domain lands — Arizona v. California [378 U.S. 456 (1963)] — theory is implied intent.
 - F. Applied to groundwater — Cappaert v. United States [426 U.S. 128 (1976)].
 - G. Date of rights is date of withdrawal, but quantity is uncertain until adjudicated — Montana has set up a process, but great uncertainty in most states.
- VIII. Interstate allocation
- A. Equitable apportionment by Supreme Court pursuant to its original jurisdiction — Kansas v. Colorado [206 U.S. 46 (1907)].
 - B. Interstate compacts — Congress must consent.
 - C. Congressional apportionment — Arizona v. California [373 U.S. 546 (1963)].
 - D. Dormant commerce clause — limits states' ability to restrict interstate movement — Sporhase v. Nebraska [458 U.S. 941 (1982)].

Water Laws of Washington and Western States

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- I. Water Rights Law Development Within Federal System - State Law Primacy In Establishment of Water Rights.
 - A. Broad Powers Over Water Vested in Both State and Federal Government. See generally Trelease, *Federal-State Relations in Water Law* (1971).
 1. Federal Government — "Commerce clause" — and other clauses of Federal Constitution.
 2. States - U.S. Const., Amendment X; "The Police Power." Trelease, *supra*, ch. II.
 3. Assertions of power by United States (U.S.) and states based, from time to time, on "ownership" of water - the wrong inquiry. See Sporhase v. Nebraska, 458 U.S. 941 (1982)
 - B. Historic Federal Water Rights Policy.
 1. Federal deference to states for creation of rights (even as to water use by U.S. on federal lands including "reservations.") Policy Basis: Need for unitary water rights system - See:
 - a. California v. United States, 438 U.S. 645 (1978).
 - b. United States v New Mexico, 438 U.S. 696 (1978).
 - c. United States v. Anderson, F. 2d (9th Cir. (1984).
 - d. California-Oregon Power Co. v. Beaver Portland Cement Co., 295 U.S. 142 (1935).
 - C. State Primacy In Creation of Water Rights - (Responding to Federal Deference Policy). Two State Water Rights (allocation) Doctrines.
 1. Riparian. See Tyler v. Wilkinson, 4 Mason 397, 24 Fed.Case 472 (C.C.D.R.I. 1827).
 2. Prior appropriation. See Coffin v. Left Hand Ditch Co., 6 Colo. 443 (1882).
 3. "Dual" System - Pacific Coast States. See Lux v. Hagen, 69 Cal. 255, 4 Pac. 919 (1884).
- II. Riparian Doctrine - An Eastern U.S. Product. See generally Trelease, *supra*, 12.
 - A. Essential Feature - geographic based.
 - B. Establishment of Right - "Not created by use or lost by non-use."
 - C. Fundamental Notions
 1. Reasonable use among riparians.
 2. Equality of priority in times of shortage.
- III. Prior Appropriation - A Western U.S. Product. See generally Trelease, *supra*, 21.
 - A. Essential Feature - "First in time is first in right."
 - B. Establishment of Right - Three elements:
 1. Intent to put water to a beneficial use.
 2. Exercise intent with due diligence.
 3. Priority.
 - C. Fundamental Notion, see III A, *supra*.

IV. Loss of Water Rights - Old Ways and New

A. Old Ways

1. Abandonment. See Miller v. Wheeler, 54 Wash.429, 435, 103 Pac. 641 (1909).
2. Forfeiture. See, e.g. Sheep Mountain Cattle Co. v. Department of Ecology, 45 Wash. App. 427, 726 P. 2d 55 (1986).
3. Prescription. See Downie v. Renton, 167 Wash. 374, 9 P. 2d 372 (1932).
4. Modification of Common Law (riparian doctrine). See *In re Deadman Creek*, 102 Wn.2d 686, 694 P. 2d 1074 (1985). See generally Roe and Brooks, *Loss of Water Rights - Old Ways and New*, 35 Rocky Mt. Min. L. Institute, ch 23 (1989).

B. New Ways

1. "Water right claims registration" acts. See Department of Ecology v. Adsit, 100 Wn.2d 651, 657, 674 P. 2d 160 (1983).
2. Modification or enforcement of "beneficial use" concepts.
3. General adjudications - "sleeping at the switch."
4. Public Trust doctrine - "public has the right to go where the navigable waters go and that right cannot be impaired without the State's permission." See National Audubon Society v. Superior Court, 33 Cal. 3d 419, 658 P.2d 709 (1983).

V. "Changeability" of Water Rights

A. Possibility of Change or Purpose or Place of Use, or Point of Diversion. RCW 90.03.380.

B. Obstacles.

1. Interference with existing rights, junior or senior. RCW 90.03.380.
2. Consistent with "public interest" policies See RCW 90.54.030 and RCW 90.03.290.

VI. Washington's Water Rights Laws

A. Early History - Recognized both prior appropriations and riparian doctrines (the so-called California or "dual" system). Benton v. Johncox, 17 Wash. 277, 39 Pac. 495 (1897).

B. 1900 to 1960 - Water Law Developments

1. 1917 - Enactment of Surface Water Code
 - a. Established centralized, comprehensive state water management and regulation system. Chapter 90.03 RCW
 - b. Exclusive means for creating new water rights - the "permit system." RCW 90.03.250 et. seq.
2. 1945 - Enactment of Groundwater Code
 - a. Supplementary to surface water code. Chapter 90.44 RCW
 - b. Contains an exclusive "permit system" - with application to all but de minimus (i.e., 5,000 gallons per day or less) water use. RCW 90.44.050-.060.

C. Recent Important Water Law Developments

1. Legislative
 - a. 1967 - Forfeiture Act Enacted. RCW 90.14.130 et seq.
 - b. 1969 - "Water right claims registration act" enacted. RCW 90.14.031 et seq.
 - c. 1971 - a watershed year with the enactment of the "Water Resources Act of 1971," Chapter 90.54 RCW, which modified significantly Washington's Water rights law in both its planning and allocation respects.

- 1) Ten "fundamentals" of water policy, including as highlights:
 - (a) "Maximum net benefits" - The corner-stone of future allocation decisions. RCW 90.54.020().
 - (b) Base (i.e.minimum) flow retention, i.e. no further drying up of streams. RCW 90.54.020(3)(a).
- 2) New planning process emphasizing regional planning and the obtaining of local and national views. RCW 90.54.040 and .060.
- 3) Emphasis on increased knowledge of facts about water. RCW 90.54.030.
- 4) New water allocation decisions process designed to provide for fully informed well reasoned decisions taking into account on coordinated basis:
 - (a) Amplified public interest considerations (i.e."fundamentals"). See D.1.C.(1).
 - (b) Planning. See D.1.C.(2).
 - (c) Full factual knowledge. See D.1.C.(3).

2. Judicial

- a. Vested riparian rights - amplification on exerciseability of long dormant, never exercised riparian rights. *In re Deadman Creek, supra*.
- b. Water "duty" and conveyancing - Application of "reasonable efficiency" test to the exercise of historic water conveyance and use practices. See Marshall Lake and Creek, Pend Oreille County No. 83-2-00030-7.
- c. State Water Rights Law Application Within Indian Reservations
 - 1) General Rule - "State, not tribe, has the authority to regulate the use of excess waters located by non-Indians on non-tribal lands within an Indian reservation. United States v. Anderson, 736 F. 2d 1358 (9th Cir.1984). Exception, state law has no applicability where stream is reservation-restricted (rises and terminates entirely within reservation) and (2) "within a drainage in which the state's interests are minimal or non-existent." Crowder v. Riniker, D.C.E.D. Wash. No. C-85-650-RJM (Decided July 6, 1989.) citing Colville Confederated Tribes v. Walton, 647 F. 2d 42 (9th Cir.1981).
 - 2) State has authority to regulate "reserved rights," exercised as to lands located on non-tribal lands within an Indian reservation, owned by non-tribal landowners. Crowder v. Riniker, supra.
 - 3) Tribe has no power to adopt "comprehensive water code" applicable to excess waters on non-Indian lands within an Indian reservation. Holly v. Totus, 655 F. Supp. 557 (D.C.E.D. Wash.1986), affirmed Holly v. Totus, Memorandum Decision (9th Cir.Oct. 22, 1984).
 - 4) "Excess waters," as used above, are defined as "waters of a water body, located within an Indian reservation,,that are not being used to satisfy the exercise of federal reserved rights held by tribal members of the Tribe." Crowder, supra, 8.

FOOTNOTES TO PROVOCATIVE QUESTION NO. III:

CAN WESTERN WATER LAWS ROOTED IN THE 19TH CENTURY SERVE THE PUBLIC IN THE 21ST CENTURY?

WATER POLLUTION AND THE PUBLIC TRUST DOCTRINE

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1 Nonpoint sources of water pollution are all sources that are not point sources. See 2 W. RODGERS, JR. ENVIRONMENTAL LAW 146 (3d. ed. 1986). A point source is defined in the Clean Water Act as "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged." 33 U.S.C.A. § 1362(14) (West Supp. 1988). Return flows from irrigated agriculture and agricultural storm water discharges are specifically excluded. *Id.* Irrigated agriculture, highways, subdivisions, and logging all cause nonpoint pollution. In other words, there is no specific end-of-the-pipe or other point source that discharges waste. Instead, pollutants seep down through the soil into groundwater aquifers, or gravitate into rivers with return flows from irrigation or forestry practices.

2 2 W. RODGERS, JR., *supra* note 1, at 124-25.

3 *Id.* at 125.

4 *Id.*

5 *Id.* at 139; see also 2 J. BATTLE, ENVIRONMENTAL LAW 213 (1986).

6 2 W. RODGERS, JR., *supra* note 1, at 139.

7 E. NIELSEN & L. LEE, THE MAGNITUDE AND COSTS OF GROUNDWATER CONTAMINATION FROM AGRICULTURAL CHEMICALS vi (1987).

8 *Id.* at 1.

9 *Id.* at 2.

10 *Id.* at 1; FRESHWATER FOUNDATION, AGRICULTURAL CHEMICALS AND GROUNDWATER PROTECTION: SUGGESTED DIRECTIONS FOR CONSIDERATION AND ACTION 1 (1987).

11 Over the past 15 years, in half the states, over 100 reported cases involving the public trust doctrine have had a major impact on natural resources protection. Only a few of these cases, however, deal directly with nonpoint pollution. Lazarus, *Changing Conceptions of Property and Sovereignty in Natural Resources: Questioning the Public Trust Doctrine*, 71 IOWA L. REV. 631, 643-44 (1986).

12 Sources generally supporting the public trust doctrine include H. Dunning, *Instream Flows, the Public Trust, and the Future of the West*, presented at Instream Flow Protection in the Western United States: A Practical Symposium, Natural Resources Law Center, University of Colorado (Mar. 31-Apr. 1, 1988) (conference proceedings available from the Natural Resources Law Center, University of Colorado) [hereinafter H. Dunning, *Instream Flows*]; Dunning, *The Public Trust Doctrine and Western Water Law: Discord or Harmony?*, 30 ROCKY MTN. MIN. L. INST. 17-1 (1984) [hereinafter Dunning, *Discord or Harmony?*]; Johnson, *The Emerging Recognition of a Public Interest in Water: Water Quality Control by the Public Trust Doctrine* in WATER AND THE AMERICAN WEST 127 (D. Getches ed. 1988); Johnson, *Public Trust Protection for Steam Flows and Lake Levels*, 14 U.C. DAVIS L. REV. 233 (1980) [hereinafter Johnson, *Public Trust Protection*]; Sax, *The Public Trust Doctrine in Natural Resources Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471 (1970); Wilkinson, *The Public Trust Doctrine in Public Land Law*, 14 U.C. DAVIS L. REV. 269 (1980).

A recent study by the Western States Water Council expressed an opposing view: "[T]he majority view, indeed what many would call the settled law in the West, is that because vested water rights are constitutionally protected property interests they are not subject to modification unless expressly conditioned." WESTERN STATES WATER COUNCIL, *THE DOCTRINE OF PRIOR APPROPRIATION AND THE CHANGING WEST* 24 (1987).

Authors generally critical of the public trust doctrine, often on the ground that it thwarts legitimate investment-backed expectations, include: Ausness, *Water Rights, The Public Trust Doctrine, and the Protection of Instream Uses*, 1986 U. ILL. REVIEW 407 (1986); Huffman, *Trusting the Public Interest to Judges: A Comment on the Public Trust Writings of Professors Sax, Wilkinson, Dunning, and Johnson*, 63 DEN. U.L. REV. 565 (1986); Lazarus, *supra* note 11 (an especially comprehensive and well researched article); Walston, *The Public Trust Doctrine in the Water Rights Context: The Wrong Environmental Remedy*, 22 SANTA CLARA L. REV. 63 (1982). For an excellent transcribed oral discussion of the pros and cons of the issues, see comments by Adolph Moskowitz, Harrison Dunning, and Clifford Lee in PUBLIC

POLICY PROGRAM, DEP'T. OF HUMANITIES & SOCIAL SCIENCE, U.C.L.A. EXTENSION, MONO LAKE: BEYOND THE PUBLIC TRUST DOCTRINE 77-96 (March 30-31, 1984, conference proceedings).

13 See, e.g., National Audubon Soc'y v. Superior Court (*Mono Lake*), 33 Cal. 3rd 419, 658 P.2d 709, 189 Cal. Rptr. 346, cert. denied, 464 U.S. 977 (1983).

14 1 W. RODGERS, JR., *supra* note 1, at 141-42. One water law authority asserts that "because water rights are usufructuary rights in a resource that belongs to the public, it can be argued that no Fifth Amendment taking is involved when the state decides to reassert its interest or to redefine the nature of private interests in the use of the resource." D. Getches, *Western Water: Flood of Conflicts; Drought of Solutions* 10 (paper presented to Judicial Conference of the 10th Circuit, Jackson Lake Lodge, Wyoming, July 8, 1988).

15 See C. MEYERS, A. TARLOCK, J. CORBRIDGE, Jr. & D. Getches, *WATER RESOURCE MANAGEMENT* 319 (3d ed. 1988) [hereinafter C. MEYERS] (examples of "application of . . . the appropriation doctrine to protect water quality have been rare.").

16 Numerous western states provide for public interest review before issuance of new prior appropriation permits. See, e.g., ARIZ. REV. STAT. ANN. §§ 45-152, -153 (1987); CAL. WATER CODE §§ 1225, 2155 (West 1971 & Supp. 1989); NEB. REV. Stat. §§ 46-233, -234, -235 (1984); S.D. CODIFIED LAWS ANN. §§ 46-1-15, -2A-9, -5-10, -6-3 (1987); WASH. REV. CODE ANN. §§ 90.03.250, .03.290, .44.060 (1962 & Supp. 1988).

17 Getches discusses this notion in a recent article where he says that "[t]he prior appropriation doctrine was considered sufficient to allocate and reallocate water resources with little guidance." Getches, *Water Planning in the West: Untapped Opportunity for the Western States*, 9 J. ENERGY L & POL'Y 1, 25 (1988).

18 The respected Justice Mathew W. Hill of the Washington Supreme Court expressed this general view in *In re Clinton Water Dist.*, 36 Wash. 2d 284, 218 P.2d 309 (1950). He argued that the appropriation code made swimming, fishing, and boating secondary to rights of appropriators. He did not contend that riparians had to apply for permits under the code to exercise such rights, but rather that the state became the owner of public waters by the appropriations code, that appropriators were given a priority status under the act, and that swimming, fishing, and boating were privileges allowed only by consent of the state and were subject to loss when in conflict with appropriative rights. *Id.* at 294-301, 218 P.2d at 315-19 (Hill, J., dissenting).

19 "Nonpoint source pollution is primarily responsible for the wholesale violation of water quality standards found in virtually all states. . . . It is an accurate supposition that nonpoint sources are exempted from the regulatory reach of the Clean Water Act." 2 W. RODGERS, JR. *supra* note 1, at 125. "[T]here has been no uniform regulatory control over nonpoint sources. . . . Many of the 208 plans that were prepared emphasized a period of further study. . . . [T]he reassessment time arrived without significant comprehensive state plans being put into effect and little progress having been made toward general abatement of nonpoint source pollution, particularly from agriculture. . . ." 3 R. BECK & C. GOPLERUD, *WATER AND WATER RIGHTS* 282-83. (3d ed. 1988).

20 33 U.S.C. §§ 1251-1376 (West 1982 & Supp. 1988). In 1977, the Act was substantially amended and the name of the act was changed to the Clean Water Act. Pub.L. No. 95-217, 91 Stat. 1567 (1977).

21 "[L]ittle progress [has] been made [under the 1972 Act] toward general abatement of nonpoint source pollution, particularly from agriculture and forestry." R. BECK & C. GOPLERUD, *supra* 19, at 283. The regulatory attention which has been given to point sources of pollution over the past near decade and a half—with a substantial degree of success—has not focused nearly so sharply on nonpoint sources. . . . [Agriculture, silviculture, and other nonpoint sources] have one thing in common: they are not amenable to the usual end-of-the-pipe control strategies. All too often, therefore, they have gone without adequate regulation." 2 J. BATTLE, *supra* note 5, at 213.

22 Only point sources are regulated by the Clean Water Act. The definition of point sources has been narrowed to exclude from regulation agricultural storm water discharges and return flows from irrigated agriculture. 33 U.S.C.A. § 1362(14) (West Supp. 1988); see C. MEYERS, *supra* note 15, at 320.

23 33 U.S.C.A. § 1329 (West Supp. 1988).

24 See E. NIELSON & L. LEE, *supra* note 7, at 2. California farmers, the largest users of pesticides in the United States, apply 480 million pounds of insecticides, fungicides, and herbicides each year. Olsenius, *Soil Erosion, Agrichemicals and Water Quality: A Need for a New Conservation Ethic?* in *WATER QUALITY CONTROL INTEGRATING BENEFICIAL USE AND ENVIRONMENTAL PROTECTION* 11 (June 1-3, 1988, conference proceedings) (available from the University of Colorado School of Law, Natural Resources Center). Between 1966 and 1981, Iowa, Nebraska, and Minnesota increased herbicide use alone by 175 percent. *Id.* In the United States as a whole, agriculture uses about 1.1 billion pounds of pesticides yearly. *Id.* Agricultural nonpoint source pollution has been reported as a moderate to severe problem in 36 states. *Id.* at 10. "The most telling example of uncontrolled pollution is the so-called 'non-point source.' . . . Indeed, non-point sources are the most pervasive source of pollution nationwide." C. MEYERS, *supra* note 15, at 320.

25 On the history of the public trust doctrine, see Cohen, *The Constitution, the Public Trust Doctrine, and the Environment*, 1970 UTAH L. REV. 388; Dunning, *Discord or Harmony?* *supra* note 12; Sax, *supra* note 12; Selvin, *The Public Trust Doctrine in American Law and Economic Policy, 1789-1920*, 1980 WIS. L. REV. 1403; Stevens, *The Public Trust: A Sovereign's Ancient Prerogative Becomes the People's Environmental Rights*, 14 U.C. DAVIS L. REV. 195 (1980).

26 J. INST. 2.1.1. The *Institutes* of Justinian, a general textbook of Roman law, was issued around 533 A.D. AN ENCYCLOPEDIA OF WORLD HISTORY 172 (W. Langer rev. ed. 1952).

27 Sax, *supra* note 12, at 475 (quoting W. HUNTER, INTRODUCTION TO ROMAN LAW, 311 (4th ed. 1903)).
 28 6 N.J.L. 1 (1821).
 29 41 U.S. (16 Pet.) 367 (1842).
 30 146 U.S. 387 (1892).
 31 6 N.J.L. at 76-77 (emphasis added).
 32 41 U.S. (16 Pet.) at 413.
 33 146 U.S. at 452. In 1869, the Illinois Legislature conveyed the bed of Lake Michigan in the Chicago harbor
 to the Illinois Central Railroad. Four years later the legislature repealed the grant. The Supreme Court held
 the legislative repeal valid under the public trust doctrine.
 34 The Daniel Ball, 77 U.S. (10 Wall.) 557, 563 (1870).
 35 See People *ex rel.* Younger v. County of El Dorado, 96 Cal. App. 3d 403, 157 Cal. Rptr. 815 (1979);
 Hitchings v. Del Rio Woods Recreation & Park Dist., 55 Cal. App. 3d 560, 127 Cal. Rptr. 830 (1976); People
 v. Mack, 19 Cal. App. 3d 1040, 97 Cal. Rptr. 448 (1971); Montana Coalition for Stream Access v. Hildreth,
 684 P.2d 1088 (Mont. 1984); Montana Coalition for Stream Access v. Curran, 682 P.2d 163 (Mont. 1984);
 Day v. Armstrong, 362 P.2d 137 (Wyo. 1961). For an earlier case, see Diana Shooting Club v. Husting, 156
 Wis. 257, 145 N.W. 816 (1914). For a case that required comprehensive planning before new appropriation
 permits were issued, even on nonnavigable-for-title waters, see United Plainsmen Ass'n v. North Dakota State
 Water Conservation Comm'n, 247 N.W. 2d 457 (N.D. 1976). In 1987, the Oregon Legislature enacted two
 statutes that apply the public trust doctrine to all waters of the state. OR. REV. STAT. §§ 537.336, 460 (1987).
 See also Johnson, *Public Trust Protection*, *supra* note 12, where the author argues that if the public trust
 doctrine is viewed in a functional sense, the doctrine supports decisions protecting riparian rights to lake and
 stream levels against extractors, navigational servitude cases, and cases upholding the public right to use the
 surface of nonnavigable-for-title water bodies.
 36 33 Cal. 3d 419, 436, 658 P.2d 709, 720, 189 Cal. Rptr. 346, 357, *cert. denied*, 464 U.S. 977 (1983). Under
 the equal footing doctrine, each new state entering the Union automatically acquired title to the beds of
 waters that were then navigable under the federal test. The title to the beds of waters that were nonnavigable
 remained in federal ownership under this doctrine and ordinarily passed later to homesteaders.
 37 In Golden Feather Community Ass'n v. Thermalito Irrigation Dist., 199 Cal. App. 3d 402, 405, 244 Cal. Rptr.
 830, 833 (1988), the California Court of Appeals held that the public trust doctrine in California applied only
 to navigable waters and their tributaries, and did not apply to a reservoir.
 38 See, e.g., City of Los Angeles v. Aitken, 10 Cal. App.2d 460, 52 P.2d 585 (1953); *In re* Martha Lake Water
 Co., 152 Wash. 53, 277 P. 382 (1929).
 39 Shokal v. Dunn, 109 Idaho 330, 707 P.2d 441 (1985). The court said, "The state holds all waters in trust for
 the benefit of the public, and 'does not have the power to abdicate its role as trustee in favor of private
 parties.'" *Id.* at 336 n.2, 707 P.2d at 447 n.2 (quoting Kootenai Envtl. Alliance v. Panhandle Yacht Club, 105
 Idaho 622, 625, 671 P.2d 1085, 1088 (1983)). The public trust, the court said, protects the public interest in
 "property values, 'navigation, fish and wildlife habitat, aquatic life, recreation, aesthetic beauty and water
 quality.'" *Id.* at 337 n.2, 707 P.2d at 448 n.2 (quoting *Kootenai*, 105 Idaho at 632, 671 P.2d at 1095). This
 holding has been codified at IDAHO CODE § 36-1601 (1977).
 Clyde Martz says, of the Colorado Constitution,
 The state should assume and exercise the trust responsibility placed on it under article
 XVI, section 5 of the [Colorado] constitution to administer the allocations of available
 water among those entitled to it with maximum efficiency, maximum protection of vested
 rights and minimum costs imposed on the public. No clearer public trust language can be
 found than that in section 5 of the Colorado constitution, dedicating the water of every
 natural stream to the use of the people of the state.
 C. Martz, *The Groundwater Resource*, in WATER AND THE AMERICAN WEST 95 (D. Getches ed. 1988).
 Nevertheless, in *In re* Application for Water Rights of the City of Aurora, No. 86-CW-37, slip op. at 2(Colo.
 Dist. Ct., Water Div. 4, May 5, 1988), Judge Robert A. Brown denied that "public trust" interests, or "public
 interests" (which he concluded were the same) could be considered by a Colorado court when the court is
 evaluating the respective applications for conditional water rights. Judge Brown mistakenly believed that the
 public trust doctrine applies only in states recognizing the riparian rights doctrine. *Id.*
 40 OR. REV. STAT. §§ 537.332, .455 (1987)
 41 Robinson v. Ariyoshi, 65 Haw. 641, 673-77, 658 P.2d 287, 310-12 (1982).
 42 Galt v. Montana Dep't. of Fish, Wildlife & Parks, 731 P.2d 912, 915 (Mont. 1987).
 43 Mayor & Mun. Council of Clifton v. Passaic Valley Water Comm'n, 224 N.J. Super. 53, 539 A.2d 760
 (1987). The court held that the public trust doctrine applied to the control of drinking water because
 "adequate supplies of wholesome water are essential to the health, welfare, commerce and prosperity of the
 people of the state." *Id.* at 64, 539 A.2d at 765 (quoting N.J. STAT. ANN. § 53:22-2(a) (West 1982)).
 44 Neptune City v. Avon-by-the-Sea, 61 N.J. 296, 309, 294 A.2d 47, 54 (1972).
 45 Montana Coalition for Stream Access v. Hildreth, 684 P.2d 1088 (Mont. 1984); Montana Coalition for
 Stream Access v. Curran, 682 P.2d 163 (Mont. 1984).
 46 Robbins v. Department of Public Works, 355 Mass. 328, 244 N.E.2d 577 (1969).
 47 Wilkinson, *The Public Trust Doctrine in Public Land Law*, 14 U.C. DAVIS L. REV. 269 (1980).

48 Illinois Cent. R.R. v. Illinois, 146 U.S. 387 (1892).
49 Arizona v. California, 373 U.S. 546, 597 (1963); Pollard's Lessee v. Hagan, 44 U.S. (3 How.) 212 (1845).
50 1 WATERS AND WATER RIGHTS 207 & n.25 (R. Clark ed. 1967) (citing, among 17 United States Supreme
Court cases, Shively v. Bowlby, 152 U.S. 1 (1894); *Illinois Central*, 146 U.S. 387; Barney v. Keokuk, 94
51 U.S. 324 (1876)).
Illinois Central, 146 U.S. 387; Manchester v. Massachusetts, 139 U.S. 240 (1891); Martin v. Waddell, 41
52 U.S. (16 Pet.) 367 (1842).
6 N.J.L. 1 (1821).
53 *Id.* at 12.
54 6 Cal 3d 251, 491 P.2d 374, 98 Cal. Rptr. 790 (1971).
55 *Id.* at 259-60, 491 P.2d at 380, 98 Cal. Rptr. at 796 (citations omitted) *quoted in* Audubon Soc'y v. Superior
Court (*Mono Lake*), 33 Cal. 3d 419, 434, 658 P.2d 709, 719, 189 Cal. Rptr. 346, 356, *cert. denied*, 464 U.S.
977 (1983).
56 107 Wash. 2d 662, 732 P.2d 989 (1987), *cert. denied*, 108 S. Ct. 703 (1988).
57 This language originally appeared in Wilbour v. Gallagher, 77 Wash. 2d 306, 316, 462 P.2d 232 (1969), *cert.*
denied, 400 U.S. 878 (1970). In Orion Corp. v. Washington, 109 Wash. 2d 621, 747 P.2d 1062 (1987), *cert.*
denied, 108 S. Ct. 1996 (1988), the Washington Supreme Court noted that another court had held that the
"public trust protects ecological values and [the] right to preserve tidelands in [their] natural state." *Id.* at 641
n.10, 747 P.2d at 1073 n.10 (citing Marks v. Whitney, 6 Cal. 3d 251, 491 P. 2d 374, 98 Cal. Rptr. 790
(1971)). The court pointed out that this extension of the public trust doctrine allowed a state to "claim
damages for killing of waterfowl by oil spill." *Id.* at 641 n.10, 747 P.2d at 1073 n.10 (citing *In re Steuart*
Transp. Co. 495 F. Supp. 38 (E.D. Va. 1980)). An oil spill, of course, is a form of pollution. The *Orion* court
added that "[r]esolution of this case does not require us to decide the total scope of the doctrine." *Id.*
58 105 Idaho 622, 671 P.2d 1085 (1983).
59 *Id.* at 632, 671 P.2d at 1095; *see also* Shokal v. Dunn, 109 Idaho 330, 707 P.2d 441 (1985) (considering the
statutory public interest factors.)
60 OR. REV. STAT. §§ 537.336, 460 (1987).
61 *Id.* § 537.460.
62 33 Cal. 3d 419, 430, 658 P.2d. 709, 715, 189 Cal. Rptr. 346, 352, *cert. denied*, 464 U.S. 977 (1983).
63 33 Cal. 3d at 435, 658 P.2d at 719, 189 Cal. Rptr. at 356.
64 182 Cal. App. 3d 82, 227 Cal. Rptr. 161 (1986).
65 *Id.* at 150, 227 Cal. Rptr. at 201.
66 *Id.* at 173, 227 Cal Rptr. at 108; *see* 33 U.S.C. §§ 1311, 1342, 1362(19) (West 1982 & Supp. 1988).
67 In *Illinois Central*, the Supreme Court stated that grants of land burdened by the public trust would be
justified if occupation did "not substantially impair the public interests in the lands and waters remaining," or
if the public interest in navigation and commerce is improved. *Illinois Cent. R.R. v. Illinois*, 146 U.S. 387,
453 (1892).
68 In *City of Berkeley v. Superior Court*, 26 Cal. 3d 515, 606 P.2d 362, 162 Cal. Rptr. 327, *cert. denied*, 449
U.S. 840 (1980) and *Robbins v. Department of Public Works*, 355 Mass. 328, 244 N.E.2d 577 (1969),
California and Massachusetts courts said that public trust interests could be destroyed, but only by express
legislative action—action by the legislature that indicated that it realized exactly what it was doing with these
resources. In *Mono Lake*, the California Supreme Court referred to *Berkeley* and stated, "[W]e held that the
grantees' title was subject to the trust, both because the Legislature had not made clear its intention to
authorize a conveyance free of the trust and because the 1870 act and the conveyances under it were not
intended to further trust purposes." 33 Cal. 3d at 439, 658 P.2d at 723, 189 Cal. Rptr. at 360. The *Berkeley*
court also stated that "[s]tatutes purporting to abandon the public trust are to be strictly construed; the intent
to abandon must be clearly expressed or necessarily implied; and if any interpretation of the statute is
reasonably possible which would retain the public's interest in tidelands, the court must give the statute such
an interpretation." 26 Cal.3d at 528, 606 P.2d at 369, 162 Cal. Rptr. at 334; *see also* *Amigos de Bolsa Chica*
v. Signal Properties, 190 Cal. Rptr. 798, 808 (1983).
One respected author points out that in California, because extinction of public trust interests cannot
occur even by way of explicit legislative mandate unless certain conditions are met, the doctrine takes on the
dimensions of an implied constitutional limitation upon legislative power. H. Dunning, *Instream Flows*,
supra note 12. Dunning relies on language from *Mono Lake* to the effect that the state may surrender public
trust protection "only in rare cases when the abandonment of that right is consistent with the purposes of the
trust." 33 Cal. 3d at 441, 658 P.2d at 724, 189 Cal. Rptr. at 361. Dunning also cites *People ex rel. Scott v.*
Chicago Park Dist., 66 Ill. 2d 65, 360 N.E. 2d 773 (1976); *see also* *Amigos de Bolsa Chica*, 190 Cal. Rptr. at
808 *Priewe v. Wisconsin State Land & Improvement Co.*, 93 Wis. 534, 67 N.W. 918 (1896), *aff'd*, 103 Wis.
537, 79 N.W. 780 (1899).
Professor Harrison C. Dunning continues to write well-reasoned, carefully documented updates on the
public trust doctrine in California. Dunning, *Discord or Harmony?* *supra* note 12; Dunning, *Instream Flows*,
supra note 12; *The Mono Lake Decision: Protecting a Common Heritage Resource from Death by Diversion*,
13 *Envtl. L. Rep.* (Envt. L. Inst.) 10,144 (1983).
69 Water Commission Act of 1913, 1913 Cal. Stat. ch. 592.

70 33 Cal. 3d at 447-48, 658 P.2d at 729, 189 Cal. Rptr. at 365-66.
71 *Id.* at 428, 658 P.2d at 714, 189 Cal. Rptr. at 351.
72 *Id.* at 426, 658 P.2d at 712, 189 Cal. Rptr. at 349. The *Mono Lake* court went even further in dicta. "The state accordingly has the power to reconsider allocation decisions even though those decisions were made after due consideration of their effect on the public trust." *Id.* at 447, 658 P.2d at 728, 189 Cal Rptr at 365. See also Golden Feather Community Ass'n v. Thermalito Irrigation Dist., 199 Cal. 3d 402, 244 Cal. Rptr. 830 (1988).

73 33 Cal. 3d at 447 658 P.2d at 728, 189 Cal. Rptr. at 365. Alaska and Idaho courts recently cited the *Mono Lake* decision with approval. See CWC Fisheries, Inc. v. Bunker, 755 P.2d 1115 (Alaska 1988); Kootenai Env'tl. Alliance v. Panhandle Yacht Club, 105 Idaho 622, 671 P.2d 1085 (1983)

74 The California Supreme Court sent *Mono Lake* back to the trial court for allocation of the waters of the tributaries to Mono Lake, consistent with the court's opinion.

In 1984, the United States Supreme Court held that the California public trust doctrine did not apply to property that originally came from Mexican land grants where the owner's title had been confirmed in federal patent proceedings without any mention of the public trust doctrine, and where, by federal statute, the validity of the titles was to be decided according to Mexican law. *Summa Corp. v. California ex rel. State Lands Comm'n*, 466 U.S. 198 (1984).

75 The definition of beneficial use has generally been left to the courts. As a common-law concept, it is subject to redefinition as society's needs change.

76 33 Cal. 3d at 436-37, 658 P.2d at 720, 189 Cal. Rptr. at 357 (emphasis in the original) (quoting Johnson, *Public Trust Protection*, *supra* note 12, at 256-57).

77 247 N.W.2d 457 (N.D. 1976).

78 *Id.* at 463.

79 See 3 W. HUTCHINS, WATER RIGHTS LAWS IN THE NINETEEN WESTERN STATES (1977)

80 WASH. REV. CODE ANN. § 90.03.010 (1962) (emphasis added).

81 Act approved Mar. 19, 1945, ch. 263, 1945 Wash. Laws 826 (codified as amended at WASH. REV. CODE ANN. § 90.44.010-.900 (1962 & Supp. 1988)).

82 Act approved Mar. 16, 1945, ch. 216, 1945 Wash. Laws 608 (codified as amended at WASH. REV. CODE ANN. § 90.48.010-.910 (1962 & Supp. 1988)).

83 See *In re Clinton Water Dist.*, 36 Wash. 2d 284, 218 P.2d 309 (1950); *Martha Lake Water Co. v. Nelson*, 152 Wash. 53, 277 P. 382 (1929).

84 *Martha Lake Water Co.*, 152 Wash. 53, 277 P. 382; see also *In re Clinton Water Dist.*, 36 Wash. 2d 284, 218 P.2d 309; *Litka v. Anacortes*, 167 Wash. 259, 9 P.2d 88 (1932).

85 Several pollution control codes were enacted in the post-war era. See, e.g., Act of Mar. 16, 1967, ch.106, 1967 Ariz. Sess. Laws 534; Dickey Water Pollution Control Act, ch. 1549, 1949 Cal. Stat. 2782; Colorado Water Pollution Control Act of 1966, ch. 44, 1966 Colo. Sess. Laws 199; Act of Feb. 28, 1967, ch. 197, §§ 121-139, 1967 Mont. Laws 466, 500-07; Water Quality Act, ch. 190, 1967, N.M. Laws 1109; Act of Dec. 1, 1938, ch. 3, 1939 Or. Laws 9.

86 See generally 3 W. HUTCHINS, *supra* note 79.

87 See Johnson & Austin, *Recreational Rights and Titles to Beds on Western Lakes and Streams*, 7 NAT. RESOURCES J. 1 (1967).

88 See, e.g., CAL. WATER CODE, § 1243 (West 1971 & Supp. 1989) (enacted 1959); WASH. REV. CODE ANN. §§ 90.22, .54 (Supp. 1988) (enacted 1969 and 1971). See generally Tarlock, *Appropriation for Instream Flow Maintenance: A Progress Report on the 'New' Public Western Water Rights*, 1978 UTAH L. REV. 211.

89 See 2 W. RODGERS, JR. *supra* note 1, at 620-23; R. BECK & C. GOPLERUD, *supra* note 19.

90 See, e.g., *United States v. Ashland Oil & Transp. Co.*, 504 F.2d 1317, 1325-29 (6th Cir. 1974).

91 The defect in the vested rights view is that it looks at only one side of a two-sided coin; it looks strictly at water quantity and neglects the water quality side.

92 Even if one argues that appropriators have a right to extract water that is not subject to police power regulation, they would still have no right to cause return flows that create pollution.

93 For a description of this problem, see *United States v. State Water Resources Control Bd.*, 182 Cal. App. 3d 82, 227 Cal. Rptr. 161 (1986).

94 See Norton, *The Spiral of Life*, WILDERNESS, Spring 1987, at 17, 32-33; Reffalt, *Wetlands in Extremis*, WILDERNESS, Winter 1985, at 28-29; Comment, *Tragedy at Kesterson Reservoir: Death of a Wildlife Refuge Illustrates Failings of Water Law*, 15 ENVTL. L. REP. (Env'tl. L. Inst.) 10,386 (1985).

95 Friedkin, *The International Problem With Mexico Over the Salinity of the Lower Colorado River*, in WATER AND THE AMERICAN WEST 31 (D. Getches ed. 1988) Holburt, *International Problems of the Colorado River*, 15 NAT. RESOURCES J. 11 (1975); Johnson, *Our Salty Rivers: Legal and Institutional Approaches to Salinity Management*, 13 LAND & WATER L. REV. 441 (1978).

96 See S. Rep. No. 282, 98th Cong., 1st Sess. 7 (1983).

97 For a more detailed analysis of this issue, and a somewhat different perspective, see Laitos, *Constitutional Limits on Police Power Regulations Affecting the Exercise of Water Rights*, 16 COLO. LAW. 1626 (1987).

98 See *Nollan v. California Coastal Comm'n*, 483 U.S. 825 (1987); *Keystone Bituminous Coal Ass'n v. DeBenedictis*, 480 U.S. 470 (1987); *Penn Central Transp. Co. v. New York City*, 438 U.S. 104 (1978);

Goldblatt v. Town of Hempstead, 369 U.S. 590 (1962); Pennsylvania Coal Co. v. Mahon, 260 U.S. 393 (1922); Hadacheck v. Sebastian, 239 U.S. 394 (1915); Mugler v. Kansas, 123 U.S. 623 (1887).

Some of the leading articles on the subject are Michelman, *Property, Utility, and Fairness: Comments on the Ethical Foundations of 'Just Compensation' Law*, 80 HARV. L. REV. 1165 (1967); Sax, *Takings and the Police Power*, 74 YALE L. J. 36 (1964); Stoebuck, *Police Power, Takings and Due Process*, 37 WASH. & LEE L. REV. 1057 (1980); Van Alstyne, *Taking or Damaging by Police Power: The Search for Inverse Condemnation Criteria*, 44 S.CAL. L. REV. 1 (1970); see also F. BOSSELMAN, D. CALLIES & J. BANTA, THE TAKING ISSUE (1973).

- 99 260 U.S. 393 (1922).
100 *Id.* at 415.
101 480 U.S. 470 (1987)
102 *Id.* at 485 (quoting *Agins v. City of Tiburon*, 447 U.S. 255, 260 (1980)); see also *Penn Cent. Transp.*, 438 U.S. 104.
103 480 U.S. at 485 (citations omitted) (quoting *Hodel v. Virginia Surface Mining and Reclamation Ass'n*, 452 U.S. 264, 295-96 (1981); see also *Agins v. City of Tiburon*, 447 U.S. at 260; *Penn Cent. Transp.*, 438 U.S. 104.
104 480 U.S. at 499
105 See *Developments in the Law—Zoning*, 91 HARV. L. REV. 1427, 1480 (1978).
106 362 Mass. 221, 284 N.E.2d 891 (1972), *cert. denied*, 409 U.S. 1108 (1973); see also *United States v. State Water Resources Control Bd.*, 182 Cal. App. 3d 82, 227 Cal. Rptr. 161 (1986); Comment, *Balancing Private Loss Against Public Gain to Test for a Violation of Due Process or a Taking Without Just Compensation*, 54 WASH. L. REV. 315 (1979).
107 182 Cal. App. 3d 82, 146-47, 227 Cal. Rptr. 161, 199 (1986) (quoting *Mobil Oil Corp. v. Rossi*, 138 Cal. App. 3d 256, 263, 187 Cal. Rptr. 845, 849 (1982)).
108 MD. NAT. RES. CODE ANN §§ 8-1801 to -1816 (Supp. 1988).
109 In 1985 and 1986, the Maryland Environmental Trust negotiated conservation easements on 2470 acres (eight miles of shoreline) and reduced the permissive population density on these easements from one dwelling unit per five acres to one unit per 55 acres. Plans were drawn up to preserve forest land in the critical area. CHESAPEAKE EXECUTIVE COUNCIL, SECOND ANNUAL PROGRESS REPORT UNDER THE CHESAPEAKE BAY AGREEMENT 25 (1987).
110 For more extensive treatment of this issue, see Sax, *supra* note 12.
111 An excellent example of this can be seen in the State of Washington. Bills were introduced in several legislative sessions in Washington to zone and control development on tidewater and freshwater shorelines in the state. None passed because of strong opposition by developers and local governments. As Geoffrey Crooks notes, the ultimate impetus for passage of the Shoreline Management Act can be traced to the Washington Supreme Court's decision, *Wilbour v. Gallagher*, 77 Wash. 2d 306, 462 P.2d 232 (1969). Crooks, *The Washington Shoreline Management Act of 1971*, 49 WASH. L. REV. 423, 432-25 (1974). That decision cast doubt on the right of developers to do much of anything on tidewater and freshwater shorelines without specific authority from a local or state government. *Id.* No such permission was possible without enactment of a shoreline management act. Suddenly, both developers and the public wanted a shoreline management act, albeit not the same one. *Id.* Such an act was passed shortly thereafter.

FOOTNOTES TO PROVOCATIVE QUESTION NO. IV:

HOW SHOULD ECONOMIC CONSIDERATIONS AFFECT ALLOCATION DECISIONS?
CAN THE PRICING OF WATER AT "TRUE COSTS" IMPROVE THE ALLOCATION OF WATER?
HOW CAN VALUES THAT CANNOT BE REDUCED TO DOLLARS BE PROTECTED?

WHOSE WATER? OURS: CLEARING FALLACIES ABOUT IMPLEMENTING COMMON RIGHTS

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- 1 His offense was proposing a national sales tax. Like his fellow-retiree, Oregon's Congressman Al Ullman, he learned too late the voters disagree.
- 2 There are issues among states, and between states and the United States. Here we confine our attention to one state.
- 3 There are exceptions, too trivial to pursue here. The legal ambiguity is betrayed when some licenses are taxed as personal, others as real property.
- 4 The legal concept of "appurtenancy" is used to this end. Water rights are said to be "appurtenant" to the lands they serve, meaning they disappear into the land and are not listed separately for taxation. However when the owner wants to sell water separately from land, appurtenancy is no problem (Hutchins, 1956). Appurtenancy is a supple term that is used a) To give landowners preferential claims on water; b) To bolster the standing of water claims under color of real property; c) To protect water claims from taxation; d) and finally to let surplus water claims be moved around and cashed out.
- 5 Wells Hutchins, given to equivocation, published a pamphlet on water law for California farmers in which boldface headings read "Water Rights are Real Estate," but the following text says no such thing (Hutchins, 1956b). His full-dress book of the same year even allows (after heavy digging) that the 1928 Amendment to the California Constitution limits water claims previously considered property, and these limits "apply to the use of all water under whatever right ..." (Hutchins, 1956a, p.19). "... the appropriator may take the surplus without giving compensation" (*op. cit.*, p.18). Those are not attributes of property.
- 6 The peroration of Sax's scholarly, documented treatise is quite stirring, as though inspired by Moses, Tolstoy and Henry George.
- 7 "No man can ever buy land here, for no one has any land to sell. But every man shall have his land measured out to him, which he must cultivate in order to keep it. Besides, there shall be no private ownership of the streams that come out of the canyons, nor the timber that grows on the hills. These belong to the people: all the people." Brigham Young, cited in Roy Huffman, p.42.
- 8 The Declaration is not part of the Federal Constitution, of course, but its main ideas were put in the California Constitution in 1879. We are dealing here with intrastate issues.
- 9 This is a shift from the dream of "Water, Wealth, Contentment and Health" that was promised and delivered to the people of Modesto from 1887 to 1950 or so, when they were struggling and paying to develop their waters. Modesto today is fat and secure - and a third member of the ten highest-welfare cities. Modesto has delivered water without variable charge from an early date. However, in its earlier days it levied steep land assessments to pay for ambitious dams and canal systems. It was these that kept the landowners hopping. Now the bonds are retired, land yields a surplus that attracts absentee buyers with a lesser propensity to husband land intensively.
- 10 Dean's Committee, 1968, p.48.
- 11 Such common sense is pretty well obscured by the clumsy, affected apparatus of "production possibility curves" and "frontiers" that micro-economists stylize and imprison their thinking with today; ditto for "Cobb-Douglas functions." Wearing those blinders, economists generally presume that higher input prices must lead to lower output. However, it is a three-factor world. The "product" of cheap water to many farmers is not the increase of yields, but the drop of costs other than water.

12 In 1959 already the Orange County Water District, covering 180,000 acres, had been for years levying a "replenishment assessment" or charge on the production of ground water, empowered by State enabling legislation which had been challenged in court, and upheld. The District's enabling legislation dates from 1933. The rate in 1959 was \$3.90 per acre-foot; this was its major source of revenue, closely followed by a charge on land. In 1968-69 its pump tax rate was up to \$13.30 per acre-foot for urban use. More generally, Water Code Sections 60220 and 55335 enable water replenishment districts anywhere (Crooke; Birdleough and Wilkins, p.267-68; Weatherford, pp. 1035-36). SB 1391 (1980) authorizes multi-county groundwater management districts that can levy pump taxes and cooperate with Nevada entities (Weatherford, 1038-39).

13 Such a tax has been proposed by White, p.5; Boulding, p. 91; Brewer, pp. 240-42; Young and Martin; Young, Daubert, and Morel-Seytoux; Billings; Gaffney 1969, 1973, 1977, 1988; and, indirectly, by van Schilfgaarde, p. 114. It is possible it was also proposed by Rand Corporation, cit. Dennis, p.79, but I have not yet confirmed the citation. Possibly there was division among the many Rand people putting out studies. Phelps et al., p.17, seem negative, because the "tax would heavily redistribute wealth away from current water users ... and so "is likely to meet heavy political opposition ...". That is an oddly non-efficiency reason to bear weight in a study otherwise exclusively concerned with and entitled Efficient Water Use, but it serves them to dismiss the matter.

14 Colorado applies such a tax along the S. Platte River, calling it an "augmentation charge." The approach "has operated for several years, ... with little problem or controversy" Young, Daubert and Morel-Seytoux, p.790).

15 "I weep for you," the Walrus said; "I deeply sympathize." With sobs and tears he sorted out those of the largest size, holding his pocket handkerchief before his streaming eyes.

16 The Carter Administration sought to avoid a repeat of the treadmill effect in Arizona. It required Arizona to control farm overdraft, as the price of getting the subsidized Central Arizona Project. In result, Arizona water is being urbanized much faster than California water (Peterson, 1986). Earlier, pioneer water economists Robert Young and William Martin had been called bad names at The University of Arizona for recommending the same thing, without Federal billions behind them (Martin and Young, 1967).

17 The authors, disguising their work as technical economic analysis, actually base their findings on the political premise that no pump tax should be considered unless the result is to raise overlying farm land rents and prices. Their model is tailored to the west side of Kern County, California, province of a few giant landowners whose political power, and militant opposition to metering water use, are legendary. Co-author Henry J. Vaux Jr. was later made Director of the U.C. Water Resources Center, controlling tax-derived research funds: who gets research money, and for what purpose.

18 The small charges cover expenses of the Gage Canal Co., which delivers in the cheapest old-fashioned way, by gravity, in rotation with other users. The Canal Co. pays nothing at the source for water as such.

19 Apologies to etymological purists for combining a Greek with a Latin root: I just like the sound of it.

20 Palm Springs and environs, the Coachella Valley, get water from the Colorado River Aqueduct and store it in their aquifer. The water would otherwise go to Los Angeles and environs, which would then need less from northern California (Warren, 1991).

21 The author is a personal friend, whom I decline to name.

22 The good instinct behind the writer's point was that access to fisheries needs to be limited or otherwise better managed. That much of his work is valid; too bad it took a wrong turn.

23 In Ivanhoe the USSC rejected the doctrine that the state holds water in trust specifically for excess landowners, opining instead that "The project was designed to benefit people, not land" (357 U.S. 296). In Sporhase it rejected the use of trust doctrine to stop interstate transfers. I do not presume to enter the technical side of the law of trusts, but neither decision seems to have inhibited the flowering in the 1980s of the public trust doctrine to protect instream uses. In all three instances, the courts seem to be sorting things out as well as I could ask.

24 The genii in question may have been Orris Herfindahl and Allen Kneese. They certainly make the point clearly in Herfindahl and Kneese, 1965, rpt. 1974, p.287.

25 Comprehensive Environmental Response, Compensation and Liability Act.

26 For those who require impenetrable Greek scriptures, Michael Hanemann (1991) has tried valiantly to torture "received theory" into fitting both the facts and the standards of opaque pedantry now required for publication in the AER. One can only admire his refusal to follow Carson/Mitchell, who sweep unwanted facts out with the trash. I doubt, however, if received theory warrants the respect and close attention he gives it. Rather, he

unintentionally demonstrates how clumsy and stilted this theory is as compared to the simple common sense which has somehow survived in him in spite of his training.

27 In the 1981 work they find the difference is only 1%. They cite this approvingly, 1989, pp. 32-33.

28 For a flagrant example of the genre see Wahl, p.130. Economists today are trained to toss this off without thinking, and even come to believe it themselves.

29 Reviewer Fischhoff continued, "they still fall far short of the standards acceptable to research professionals."

30 Mitchell and Carson are turbid, Protean, and digressive, all three: a challenge to decipher! You have to put together their thesis by splicing together different passages. It comes down to this, however. High-valued answers to WTA questions are an "artifact," and not "meaningful." "WTP and WTA should be within 5% of each other ..." pp. 22-23 (emphasis supplied). To say "I want an extremely large ... amount of compensation for agreeing to this" is a "protest answer." 50% or more of all answers are often "protest" answers. These answers are "outliers." p.34. "Outliers" may be removed, either outright or by using statistical gimmicks that have the effect of discounting them. p.226.

31 The case is something like that of NASA's Goddard Space Flight Center and why they missed detecting the ozone hole before Farman found it in 1985. "Their instruments had recorded the losses (of ozone), but the computer interpreting the results had been programmed to ignore readings that deviated so far from normal" (BW, 22 July 91, p.10).

32 It is a sad note that Mitchell and Carson, writing for RFF, seem to be undercutting the public-minded approach pioneered at RFF by Herfindahl and Kneese, 1965, cited earlier. In 1965, RFF operated under an unrestricted Ford Foundation grant. Those were the days. This is now: "In 1989 RFF received increased support from the corporate sector for the third consecutive year. This growing support illustrates an appreciation ... for the role RFF plays in ... environmental policymaking." (RFF Annual Report, 1989, p.45.) The list of supporters includes most of the major oil and utility polluters that CERCLA is designed to control. RFF personnel have worked for EPRI, the major utility industry think tank.

33 This explains why conservative theorists feel threatened by survey findings that WTA>>WTP. Their criterion for acceptable policy changes is based on Pareto's clever notion that you mustn't deprive one rich landowner, even to help a thousand starving orphans, because you can't compare their subjective feelings. This originated as a bulwark of inherited property against redistribution, and has become standard with private-property economists. When, however, we acknowledge common birthrights to a clean environment, the shoe is on the other foot. Now you can't pollute anyone's air or water because the victims own it. They own Proppitty, and can be as unreasonable as John Jacob Astor. This explains the busy-ness of theorists seeking to plug the dike.

34 Another large group to consider are the rural Hispanics of the southwest, who put a high value on preserving their communities. A survey in Taos and Questa, N.M., found 80.6% were "Opposed and don't want to sell." Only 6.1% answered yes to "Would sell if price is right" (Brown and Ingram, p.79). We are talking here about very poor people and very expensive water.

35 Interestingly, Mitchell is a sociologist, and Carson a political scientist. Is this a case of converts becoming more Roman than the Romans?

36 It was 1974 when a survey first showed WTA>>WTP, "in contradiction to received theory (i.e. Coase)." This sent dozens of professors scurrying with torture implements to make the data confess otherwise and save Coase. Mitchell and Carson faithfully slog through a long literature survey, apparently impartially, but in the end find ways to stick with WTP after all (1989, pp. 37-38).

37 Some paranoia may be in order. According to Carson and Navarro (p. 830), Congress wanted measurements of WTA for CERCLA, but the U.S.D.I. overrode Congress and used WTP because of the "admitted difficulty by economists of measuring WTA ..." That seems to say that some economic consultants actually overrode the Congress of the United States by snowing them with technicalities!

38 Indeed, it cuts at the root of the Pareto concept that is used as a bulwark against challenges to concentrated private property. According to Pareto, nothing may be changed if anyone is injured, unless that person be compensated. Only win-win changes are allowed, beginning from the status quo. The influence of rent-takers has gradually worked this idea into the center of economic theory.

39 Young and Martin (1967) demonstrated this long ago in Arizona, showing the average product of water to be 60 times higher in industry than in sorghum. Professor Young, ahead of his times, shook the dust of Arizona from his feet. Arizona later had to accept his ideas under duress: it was the price of getting the Central Arizona Project built with Federal funds.

The California Department of Water Resources published even more extreme differences in 1980 (cit. Walker and Storper, 1982, 186).

40 As of August 20, 1991, all southern California reservoirs are brimming; water is being dumped for ground storage at bargain winter rates. MWD may even have to let some of its Colorado River entitlement pass by, from lack of storage! This is after 5 years of drought (Muir, 1991).

41 The notion that states hold water in trust just for landowners was stingingly rejected by the USSC in *Ivanhoe v. McCracken*, 357 U.S. 275, 1958.

42 Water recipients have long supported the multi-purpose concept when construction was active, using it to justify Federal subsidies for flood control and navigation. It is only now, when water management is superseding water development, the multi-purpose concept is being buried, and the conditions for perfect competition are said to prevail.

43 For brief histories see Taylor, 1949, pp. 228-37, and Kahrl, 1978, *passim*.

44 Again, these are good friends whom I'd rather not name.

45 Pink slip is California-speak for salable title to an automobile.

46 Nancy Moore of RAND Corporation is also partial to the pink-slip metaphor. She and her former co-author Charles Phelps, in recent telephone interviews, seem more modest and temperate in their claims, and open to dialogue. However, their basic monograph (Phelps, et al., 1978) seems based on a "hard-line" Chicago-Rochester doctrine. It certainly contains no distributive philosophy other than validating the status quo.

47 AB 3491. The statute lets water districts act as brokers for individuals, and mandates state agencies to encourage and provide technical help. The State Department of Water Resources has set up a Water Transfers Committee to monitor and help.

48 AB 2746. See Saliba and Bush, 1987, p.178.

48 For \$180/year one can keep current with Water Market Update, Santa Fe.

50 It now seems likely that Imperial Irrigation District will transfer a small part of its large surplus to MWD. This deal has been in the making for some 40 years, and should probably not be attributed to recent legislation, according to Myron Holburt, representing MWD. The "deal" was made in 1989, but no water is expected actually to be shifted until 1995, (and who knows what may yet glitch it up)(Warren, 1991a). The amount proposed for transfer, 100,000 a.f., is only about 3% of the nearly 4 m.a.f. taken by irrigators on the lower Colorado, California side - more than a token, but just barely.

51 I refer here to emergency or "spot market" water. As to permanent supplies, they themselves have avoided acquiring them, to stifle unwanted growth. In Santa Barbara in 1989 there was a six-year line-up for water for detached homes; twelve years for multiple units (Evans, p.2).

52 Water districts have prospered by serving compact blocks of land, thus minimizing conveyance costs (Gaffney, 1969). Forced inclusion of lands in the service perimeter is at the heart of Irrigation District history, economy and success.

Procedures for severing water from specific lands are still so clumsy and uncertain that MWD plans to rely mainly on buying lands outright and idling them, to get their waters (Warren, 1991). This extreme "meat-axe" procedure dates back to 1907: it is how Los Angeles got its Owens Valley waters (Kahrl, 1982; Ostrom). Coupled with Katz' latest bill, it could seriously inflate distribution costs in rural districts.

53 A common misuse of theory is the notion that people react to opportunity cost as alacritously as to cash costs, because that is what "rational" people "should" do. This belief is a severe case of doctrine overriding observation.

54 The same point was raised by Mason Gaffney, 1961, pp. 38-40, who called it the "heirloom attitude"; attacked in Trelease, 1961, who called the reasoning "subliminal"; and defended in Gaffney, 1962, who faulted the other's "threshold of perception" and "double-talk" - all in a genteel jousting spirit, of course, like an Oxford luncheon, except more conciliatory. The point is also observed independently by Phelps, et al., 1978, p.28.

55 A water license is not real property, but a privilege. Privileges are less protectable than property. Recall that Congress passed a corporation income tax in 1909 as a license fee for the privilege of doing business as a corporation. Congress did this at a time before the 16th Amendment when it could not (practically) tax the income from property. On such nice wordplay do mighty issues turn.

California's tax limit applies only to "real property." This raises the interesting possibility that a tax based on water licenses - privileges - would be exempt from California's tax limit. Where there's a will there's a legal way (Gaffney, 1988).

Another possibility is levying a special benefit assessment on lands with special access to waters. A California court has ruled that benefit assessments are not taxes, and therefore not limited by Proposition 13. (*American River Flood Control District v. Board of Supervisors, Sacramento County*, 130 Cal Ap. 3d 707, 1982.)

56 Vernon Smith wants to give away "water deeds" based on histories of pumping; Terry Anderson wants to give them away in proportion to land ownership (Terry Anderson, 1983b, pp. 101-02). The idea of firming up titles by actually charging for them seems banned by an invisible taboo.

57 "... farmers or cities first divert and use water by crude systems. Conservation measures often are delayed until the pinch is on." (Patterson, 1991) In 1962, The Orange County Water District sued every upstream diverter on the Santa Ana. In the 1969 judgement, "each water agency's allotment is based on historical use." (Patterson, 1991.) With that in mind, Riverside Mayor Davison boasted that "Riverside's water use doubled during my term of office" (1941-48). He deemed it an achievement. It minds one of the University Chancellor who boasted his greatest achievement was creating four new Vice-Chancellorships and several Associate Deanships.

58 This writer believes plain old-fashioned land speculation is a blight on the free market. Some others see it as a wholesome, functional, integral part of the market. The writer's position on this is in the following. "Tax Reform to Release Land." In Marion Clawson (ed.), Modernizing Urban Land Policy. Baltimore: Johns Hopkins Press, 1973, pp. 115-52. "Land and Rent in Welfare Economics." In Marion Clawson, Marshall Harriss and Joseph Ackerman (eds.) Land Economics Research. Baltimore: The Johns Hopkins University Press, 1962. Pp. 141-67. "The Unwieldy Time-dimension of Space." *AJES* 20(5):465-81. October 1961. "Land Rent, Taxation and Public Policy." Papers of the Regional Science Association Volume 23, 1970. Pp. 141-53. "Privatizing Land without Giveaway." Conference on Social Collection of Rent in the Soviet Union, August 1990, pp. 1-58. Conference papers to be published 1991, Nicolaus Tideman and Adele Wick (eds.) "Economic Aspects of Water Resource Policy." *AJES* 28(2):131-44 (April, 1969). "Ground Rent and the Allocation of Land among Firms." In Frank Miller (ed.) Rent Theory, Problems and Practices. North Central Regional Research Bulletin 139 (University of Missouri Research Bulletin 810). Pp. 30-49; 74-82.

59 In the Irvine Water District of Orange County, California, there were recently 50,000 registered voters of whom only four (4) could vote in Water District elections. That is because the Irvine Company owns all the land titles, just leasing land to residents.

A notable exception to this pattern is the "Wright Act" Irrigation District of California. All resident registered voters are eligible to vote in districts organized under this Act. This exception was once the rule. These were the original water districts of the State, a product of the Populist and Progressive eras. Since then the franchise has been progressively narrowed.

The Irvine arrangement was revised in 1979, after heavy citizen pressure and a suit, *O'Toole v. Irvine Ranch W.D.*, by a public action law firm, The Center for Law in the Public Interest. Until recently, however, the trend over decades had been toward lower levels of voter control.

60 Local boosters insist on the capital "S" in Southern California.

61 The concept of "avoided cost" harks back to Henry George. He wrote that the value of a thing is not the past labor that went into it, but the future labor avoided by owning it (Science of Political Economy, p.249).

62 No one ever could figure it out to the dollar, so cooked are the books. A major effort was made by Alan Post, 1982; a minor one by Mason Gaffney, 1982.

63 Power companies, of course, are the greatest consumers of elevation. The tax on water "withdrawals" proposed herein would include a tax on power drops (British Columbia has long raised revenues from such a tax). It has often been alleged that power companies used "pigmy dams" to preempt power drops while underutilizing them (Legislative Analyst, 1957, p.8). If so, the proposed tax, based on putative full development, would prompt such development.

64 Heaping irony upon manure, these fragrant piles in an urban area result from preferential low assessment of farmland, to enhance the environment.

65 Consolidated People's Ditch Co. v. Foothill Ditch Co., 1928, cit. Gaffney, 1961. Elevation of water has great value, even if not used to generate power, because it allows free wheeling by gravity.

66 It is to be feared that water researchers with the RAND Corporation may lean this way. (Phelps, Moore and Quinn, 1982; Moore and Quinn, 1984; Moore, 1991). Telephone interviews with Moore and Phelps, July 29-30 1991, indicate their position is not dogmatic, and they are sensitive to the distributive issues raised herein. How sensitive remains to be seen.

67 Wahl is silent on the standing of those who have been getting water for excess lands in violation of Federal law. His clear implication, however, is in their favor on all points. This is no small matter. For example, Southern Pacific Land Co. owns 81,200 acres in the Westlands Water District alone (Villarejo and Redmond, p.46). Boswell has 24,000 acres. Both these firms have larger holdings elsewhere getting more subsidized water.

68 Compounding the offense, Wahl wrote this at exactly the time that 40-year contracts on CVP waters were expiring and up for review. The whole point of those contracts, and the strife in 1948 on, and the Ivanhoe decision, was that subsidies were not to be perpetual. Congress has waffled since then, but there is no need to encourage them.

69 This is the main policy pushed in the otherwise scholarly and useful study of Wahl, 1989. He premises it on pp. 3,5, repeats the point several times, and concludes with it on p.295.

70 One may hope that the Rand Corporation will replicate the commendable consistency which I impute (I hope correctly) to Hirshleifer et al. Inauspiciously, Phelps et al. (p.38) show a propensity to vest the subsidies and carry on. However, I nurture a hope that these reasonable people will one day face the issue head on, and take a larger, "systems analysis" view.

71 U.S. Senator Bill Bradley was promoting a bill that would, as of May 31, 1991, include a gains tax of 25% on transfers. (Ellis, 1991.) What happens to the bill is another question.

72 For a long bibliography see Graham, p.172, n. 440.

73 Marshall was a former Colonel in the Engineer Corps who had retired to promote his dream as a private California citizen (Kahrl, 1978, p.51). For a less rosy view of Marshall, and discussion of Spreckels, see Angel, 1944, 60-67.

74 Later yet, in 1959 California revived utility-type contracts in the Burns-Porter Act and the State Water Plan (Graham, 184-88), coming full circle. The State's position has not been marked by a high degree of philosophical consistency.

75 In this the Feds were much less radical than the home-grown Marshall Plan, in which the Kings River was fully integrated in 1927 (Jopson and Giannelli, Plate 2). The State Water Code, Section 105, says "... the State shall determine in what way the water of the State, both surface and underground, should be developed for the greatest benefit" (*op. cit.*, p.1).

76 For a bibliography on 9(e) contracts see Graham, p.172, n.440.

77 They were invoking Section 8 of the Reclamation Act of 1902 which makes federally supplied water be "appurtenant to the lands irrigated." Big landowners sought to use this to establish permanent ownership in proportion to their holdings. Now they want to sell their surplus waters, that's different (Wahl, p.148). Ironically, the concept of appurtenancy originated with folk-hero John Wesley Powell (Terrell, pp. 198 ff.), whose aim was quite the reverse. Powell was assuming the land would be divided into small tracts, so to him appurtenancy was a way of assuring subdivision of water.

78 "My water is better than your water, and must be segregated," was the belief.

79 On the Kings' River, Pine Flat Dam developed new waters never usable before, called "overschedule water." The locals demanded it all (Maass, 1951, p.218). They also demanded full control of all storage space in the reservoir. They also demanded the power drops at Pine Flat and elsewhere (Kings River Water Association, 1950, p.11).

80 In 1982 they got the residency requirement repealed; in 1984 they were still working through Congress to force the Bureau to weaken enforcement of repayment provisions (Wahl, pp.149, 66).

81 A complete survey of political forces would include private power companies, who opposed independently generated and distributed power from public multi-purpose projects, and had spiked State water power development in 1922 and 1924 (Sinclair, 1933, p.43). Their position was clearly anti-competitive.

82 According to Morgan, the Corps next grabbed Maass, put him on the payroll and silenced him. I have no first-hand opinion on how fair that appraisal is, but Ballard (1980) later finds Maass indulgent toward the Corps and its clientele; Worster finds him "sympathetic toward agribusiness and its values" (Worster, p.255).

83 The myth and cliché among standard economists is we must choose between efficiency and equity, but with landowner subsidies like these they have it backwards. Given time and space one could headline and number this as another grand Fallacy.

84 John Wesley Powell's idea had been to induce subdivision of land by subdividing water. This idea had been incorporated in the Reclamation Act, 1902. It has never been repealed, although deeply subverted. George Chaffey in 1882 at Etiwanda and Ontario had developed another approach, subdividing land and water at the

same time through the device of the mutual water company (Alexander, pp.32-34), dominant in southern California. Mutuals, in spite of the name, are not true coops because voting is based on acreage.

85 I have discarded the vituperative pamphlets that used to flood the mails. Some of the rasping, grasping spirit is preserved in the following which I have saved. "The Kings River Story," and other headings, Western Water News, April, 1957; Chas. Kaupke, 1952, "Summary of Developments of the Pine Flat Project," Fresno: Kings River Water Association; Kings River Water Association, 1951, "The Kings River Primer"; "Contract Cases before the State Supreme Court," Western Water News, April 1958.

For a long bibliography of this "literary exchange of unpleasantries" see Graham, 196, n. 528. It begins: "Kaupke Denounces Reclamation Bureau as Communistic and Untrustworthy," and runs on at that level of discourse.

86 The Kings River Water Association, publisher of those unpleasantries, is organized much like the MWDSC (analyzed below). Power is insulated from the voters in tiers, with an appointed Board weighted to underrepresent populous, democratic irrigation districts (Fresno, Alta and Consolidated) (*op cit*, p.6), and give power to a few big downstream landowners through landowner fronts without any democratic franchise. There is an Executive Committee appointed by the appointed Board, and a powerful watermaster-spokesman at the apex.

87 Specifically, there was to be a Friant-Kings Canal, serving the lower Kings area from the San Joaquin; and a "Kings-Earlimart" Canal tapping Pine Flat and using the elevation thus conserved to carry water south (Jopson and Gianelli, Plate 2).

88 In Kern County this era may never end. Stuart Pyle, longtime Director of the Kern County Water Agency, once called me "communistic" - me, a Winnetka product who voted for Tom Dewey and his running mate Earl Warren to revive free enterprise! - because I suggested plugging leaks in the California Water Plan delivery system by controlling or taxing pumping.

89 Worster may be harsh. Clawson was outnumbered, and tried to salvage what he could in a compromise. It didn't work: the opposition refused to sign anyway (Acreage Limitation, 1944).

90 I saw him nearly daily from 1969-73. He did not warm to discussing this topic.

91 The AES has long sided with the big owners (Kirkendall, 1964, p. 201; Worster, p.251). The following from another state lays it right out: "...agricultural economists ... have a vested interest in continuing their present relationship with farmer clientele which could be jeopardized if the agricultural economists were viewed by farmers as opposing the interests of farmers" (Scott, Jr., and Chicoine, p.11).

92 It is tempting to see Downey as the Judas of Upton Sinclair, but that is perhaps too simple. Sinclair (1934) campaigned for California reform, explicitly opposing control from Washington. Downey, opposing a Federal agency, was in that limited sense true to Sinclair. Otherwise, Downey does seem to have turned against his earlier professions.

93 It calls to mind a sagebrush ballad of Clawson's youth, the one about the straight narrow path.

94 High-income farm corporations today are not sharply different from the 1930s, while princes and wise men come and go. Some top incomes in the 'thirties went to Limoneira, Corona Foothill, Irvine, Kern County Land, Sutter Basin, Miller and Lux, Calpack (Del Monte), J.G. Boswell, El Tejon, etc. ("California Agricultural Background," 1939, pp. 22851 ff.)

95 Cf. the limp apology of Angelides and Bardach, pp. 33-39, and Wahl pp. 181-85. To their credit, they at least felt some need to rationalize.

96 Paul Taylor deserved and got credit for anticipating and contributing to the Ivanhoe decision (Taylor 1955, 1957). I will always remember the sight of him hours after the decision, high-stepping along Piedmont Avenue in Berkeley, vindicated at last, bursting with triumph, levitating, as it seemed, above the sidewalk. If ever a man entered heaven on earth, Taylor did that day. Yet ironically his main passion, the 160-acre limitation, continues to be frustrated and subverted in implementation on Federal projects (Villarejo and Redmond, 1988). The State by-passed it completely, proceeding immediately with the westside California Water Project, in the Burns-Porter act of 1959. Edmund G. Brown, the Attorney General who had won Ivanhoe, as Governor Brown turned coat and engineered the CWP sans acreage limitation. What endured was the utility-type contract which the state adopted and uses (Graham, 188-90). Thus, Taylor's battle for acreage limitation ended up saving the legal basis for water marketing.

97 Graham was a lawyer, at times an adjunct Professor at Boalt. Phelps et al., p.38, do not see it his way. They apparently believe the trust theory still stands, outside the Federal CVP. They cite no legal opinion, however,

and lacking that I am staying with Graham, subject to the uncertainty always felt about future court opinions and decisions.

98 This does not stop the State contractors from pressing extravagant claims about their contract "rights" to waters never yet delivered, and perhaps never deliverable. Legislators routinely leave many loose ends for some future court to resolve.

99 Even the progressive Newlands Act of 1902 reads "no Mongolian labor" on work crews. As late as 1924, socially-minded Elwood Mead excluded non-whites from his land settlements at Durham and Delhi (Worster, p.183). Over Hilgard Hall at Berkeley is still inscribed, "To Preserve the Native Values of Rural Life"; an ag professor once told me pointedly what "Native" means to some of the people in the Giannini complex there. The Chinese Exclusion Act, inspired by California's Denis Kearney, was renewed decennially until 1943.

100 This is a concept and device to assure water is distributed to big landowners, and make a legal fiction of the "principle," often carelessly repeated, that appropriative rights are independent of landownership. Appurtenancy, having served its appropriative purpose, is let lapse when licensees want to cash out their surplus waters. Cf. note 4.

101 Bryce, II, p. 386; Gates, 1975, 1978; George, 1871; Large Landholdings, p.12 et passim; McWilliams, 1939; Taylor, 1979, passim; Worster, pp. 98-111; Robinson; Henley, 1969.

102 Acreage Limitation, pp. 12-13; Wilson and Clawson, 1945; Graham, pp. 109-21; Worster, pp. 243-47, 291-302; De Roos, 1948; Villarejo, 1982; Villarejo, 1986, p.106; Fellmeth, 1973, pp. 3-25, 163-80; Roberts, 1971; The U.S. Census of Agriculture; Landownership Survey, p.26; Goodall, 1991; Gottlieb and Wolt, pp. 500-509; Taylor, 1979, passim.

103 A water district owns little land itself, but holds water licenses in trust for landowners of the district. Thus water allocation inside the district is proportional to landownership (Dennis, 82, citing Rand Corporation).

104 To fortify the point, lawyers developed the ancillary doctrine of "relation back." This means water goes not to the rival who can divert it first, but the one who starts building his works first. Think about that incentive structure.

105 Modern scholarship is finding an older lineage (Anthony Scott, ms in progress; Sax, 1990).

106 *Irwin v. Phillips*, 5 Cal. 140, 146 (1855).

107 Most readers know that in Australia "squatter" means a large land monopolist.

108 This is done through the California Water District Act (Water Code Sections 34000 et seq.) The original water districts in California were "Wright Act" Irrigation Districts. Products of the populist-Georgist era, they were and are controlled by popular vote. Large landowners put through the later Water District Act to fend off popular control.

109 She was appointed in 1976 to replace her deceased husband, James Krieger. It is no disrespect to his memory (he is cited respectfully herein for an insightful law review article), or to her personally, to point up the impropriety of treating public office like family property. It says a lot, however, about the power and mindset of a tight circle who call themselves "Southern California's water community" (MWDSC Focus, May, 1990, p.7).

110 MWD has built up a surplus, or "rate stabilization fund," that it uses to avoid peak-load pricing. It also taps the fund for "interest-free" expansion capital (Krieger, 1991).

111 Curiously Scott Newhall, then editor of the San Francisco Chronicle, had opposed the 1960 California Water Plan, predecessor of the (aborted) Peripheral Canal, "criticizing the southern California penchant for population boosting." (Gottlieb, p.505) It seems probable that Scott Newhall, a respected pro in the ancient center of anti-southern power, had other priorities then. At that time Newhall lands were well outside the urban penumbra. Their traditional citrus empire enjoyed prior claims on the Santa Clara River of the south, and Federal aid building Mailija Dam on Sespe Creek to regulate it.

112 These Kern County and Tulare Lake Basin landowners are also organized in districts with the land-based franchise, one-dollar one-vote. They favor the "Water Storage District" form. Some of their names are Arvin Edison, Buena Vista, North Kern, Tulare Lake Basin, Rosedale-Rio Bravo, Semitropic, and Wheeler Ridge-Maricopa (Graham, 207-08, n.577). There is not much chance for local residents to assume democratic control of these districts and adopt policies favoring small farmers. The Kings River Water Association is organized in manner analogous to the MWDSC (Kings River Water Association, 1950; Taylor 1949, p. 249).

113 These interests are disclosed in MWDSC, April 10, 1981, "Answers to Commonly Used Arguments against the Peripheral Canal."

- 114 It would be reasonable to surmise that the Times' editorial position is driven mainly by an interest in boosting its circulation. However, Dean Misczynski has shown that a project furthered by the Times in 1984 would have had Southern California pay 61% of the cost to get 8% to 13% of the water (Staff Report, Avocado Grower, December, 1984, p.10). That seems a dubious way to boost local prosperity and circulation, leading one to imagine other motives like valorizing Kern County landholdings. There is ample precedent from the 1913 "Chinatown" case.
- 115 Upon losing, the Times showed its pride by running a Conrad cartoon of northern California, whose votes had beaten the project, as a giant male figure spitefully urinating south over the Tehachapis.
- 116 This freedom may not last forever. In recent years, public universities have begun depending on private donors. Faculty at one U.C. Campus have been admonished by a vice-Chancellor to placate prospective donors.
- 117 Thanks to Peter Yarrow, and to my daughter Ann who taught me this secular hymn.

FOOTNOTES TO PROVOCATIVE QUESTION NO. V:

WHAT ARE THE ETHICAL CONSIDERATIONS RELATED TO WATER AND PRESENT AND FUTURE GENERATIONS?

CLEAR WATER AND CLEAR RESPONSIBILITIES

Professor Ernest Partridge
California State University, Fullerton

- 1 I have presented and defended this analysis of the concept of *responsibility* in several of my writings; most notably in the "Introduction" to my Anthology, *Responsibilities to Future Generations*, (Buffalo, NY: Prometheus Books, 1981).
- 2 These points are examined at greater length and with greater rigor in my paper, "On the Rights of Future Generations," in *Upstream/Downstream: Essays in Environmental Ethics*, Temple University Press (1990).
- 3 Rawls, *A Theory of Justice*, 1971: Harvard, pp. 284-93.
- 4 William H. Millert and Albert J. Fritsch, *Nuclear Energy: The Morality of Our National Policy*. (CSPI Energy Series IV. Washington: Center for Science in the Public Interest, October 1974); pp. 41-7. Also, Harvey Wasserman and Norman Solomon, *Killing Our Own*, (New York: Delta Books, 1982), pp. 193-302. For an acknowledgment of this problem by a proponent of nuclear power, see Alvin Weinberg, "Social Institutions and Nuclear Energy," *Science*, 177 (7 July, 1972).
- 5 For a splendid statement of this point, see Derek Parfit's criticism of "The Social Discount Rate," Appendix F of his *Reasons and Persons*, (op. cit.). In actual fact, the efficacy of an action and the certainty of its results generally diminish with time; but this is a contingent, not a logically necessary, fact. There are conceivable, and probably actual, exceptions. Indeed, I have just cited three of them. The damages caused by nuclear wastes, ozone depletion, and contamination of deep aquifers are more likely to occur in the remote than in the immediate future.
- 6 Bertram Bandman, "Do Future Generations Have the Right to Breathe Clean Air?", *Political Theory*, 10:1 (February, 1982), pp 95-102. Bandman's arguments apply to "clean water" as well as to "clean air." In view of the topic of this symposium, I will make that substitution in the following.
- 7 Joel Feinberg, *Social Philosophy* (Prentice-Hall, 1973), p. 67.
- 8 Ruth Macklin, "Can Future Generations Correctly Be Said to Have Rights?" in Ernest Partridge, Ed. *Responsibilities to Future Generations*, Buffalo: Prometheus Books, 1981, pp. 151-2.
- 9 Richard T. DeGeorge, "The Environment, Rights, and Future Generations," in Partridge. *op. cit.*, p. 161.
- 10 Ruth Macklin, "Can Future Generations . . ." (*Op. Cit.*), p. 152.
- 11 Joel Feinberg, "Duties, Rights and Claims," *American Philosophical Quarterly* 3:2 (April, 1966), pp. 139-40.
- 12 It may be important to keep in mind a distinction here between those who are "indefinite" due to our limited knowledge ("epistemologically indefinite," including most persons at all times), and those who are "indefinite" in the sense that their eventual existence is contingent (call them "ontologically indefinite" -- a class comprised of future persons). Cf., in this regard, the final lines of the paragraph before the preceding ("Does Macklin mean to deny . . .").
- 13 Galen Pletcher, "The Rights of Future Generations," in Partridge, *Op. Cit.*, p. 168.
- 14 Ibid.
- 15 These final two paragraphs are adopted from the close of my paper, "Why Care About the Future," in Partridge (ed), *Responsibilities to Future Generations*, *loc. cit.*, p. 217-8. See also my paper, "The Moral Uses of Future Generations," presented to the Annual Meeting of the Oregon Chapter of the American Fisheries Society, Bend Oregon, February 8, 1989, and the Proceedings of that conference.

BIOGRAPHICAL SKETCHES (As of 1989)

Robert M. Benton, Professor of English and Coordinator of Central Washington University's Lynnwood Center, has been Visiting Professor of Environmental Studies at the University of Washington since 1981. He was one of the Directors of the Washington Environmental Council from 1970-1973 when the Shoreline Protection Bill was formulated. Following the passage of shoreline legislation, he served for 18 months as a member of the Kittitas County Shoreline Advisory Committee.

Donald L. Bond, an Attorney at Law in Yakima for the past thirty-four years, practices at all levels before Washington State Courts, the U.S. District Court, U.S. Court of Appeals, U.S. Supreme Court, and the U.S. Tax Court. His legal expertise is in water rights and water rights law, Indian law, and he was legal counsel for twelve years in the pending general adjudication of the surface waters of the Yakima River Basin. He is author of "Crops," the Real Property Desk Book of the Washington State Bar Association; he served on WSBA's Board of Governors from 1983 to 1986. Bond's community activities include: President of the Board of Directors for Valley Memorial Hospital in Sunnyside, Washington, Founder and President of the Yakima Valley Hearing and Speech Center, and Chairman of the Yakima Valley Chapter of the Red Cross. He received his BA, Economics, from Washington State College, where he was elected to Phi Beta Kappa and Phi Kappa Phi, academic honor societies. A graduate of the University of Washington School of Law, where he was awarded Order of the Coif.

Kaleen Cottingham is Senior Executive Policy Analyst on the staff of the Governor of Washington, advising on natural resource issues and tribal issues, with primary emphasis on water, fisheries, wildlife, and agriculture. Her previous positions, mostly relating to natural resource programs, included Senior Counsel for the Washington State Senate's committees on Natural Resources and Agriculture, a Legal Intern for the Attorney General's Office, first with the Division of Fisheries and Game, then with the Division of Natural Resources. Prior to entering law school, Ms. Cottingham was Supervisor of Land Planning for Burlington Northern's Timber and Land Department, and a Land Use Planning Forester with the Oregon State Department of Forestry. She holds a B.S. in Forest Resources from the University of Washington and earned her J.S. (cum laude) from the University of Puget Sound Law School, where she was the recipient of the Dean's Award for Academic Achievement. Effective January 1993, Ms.

Cottingham was appointed as Supervisor in the Washington Department of Natural Resources.

Richard A. Du Bey is an attorney whose principal areas of practice include environmental and administrative law, water quality management, land use, hazardous waste, and Native American natural resource law. He is also a visiting associate professor at the University of Washington's Institute for Environmental Studies, where he has developed and taught courses since 1978 in environmental law and the administrative hearing process for nonlaw students. After graduating from the New England School of Law in 1975 and receiving his masters in law and marine affairs from the University of Washington School of Law in 1976, Mr. Du Bey served as Assistant Regional Counsel with the Region Ten Office of the Environmental Protection Agency. He entered private practice in 1980, and represents Indian Tribal governments and Tribal organizations in Montana, New York, Arizona, Colorado, Maine, Alaska, and Washington.

Merrill, H. English was raised in a rural environment in Arkansas and Missouri. He attended the University of Missouri, and earned his B.S. in Agriculture at the University of Arkansas. He continued post graduate work at the University of Washington. He spent five years as an educator in the bush country of Alaska, then was in the investment business, as a stockbroker, in the Seattle Area until 1980. He is presently semi-retired on an alfalfa ranch in Eastern Washington, which has a free-flowing river.

William H. Funk has been Director of the Washington Water Research Center since 1982, a consortium of the public universities in Washington State. He is also a Professor in Environmental Engineering (limnologist) at Washington State University, appointed in 1966. At WSU he has served as Chair of the Environmental Science and Regional Planning Program, the Environmental Research Center, and Director, of the Institute for Resource Management. He was a member of the State of Washington Centennial Water Committee, the High-Level Nuclear Waste Board, and the Governor's Committee for Environment of Water and Natural Resources for the 2010 program. He continues his many years of service as a Reviewer for the National Science Foundation, the U.S. Environmental Protection Agency's Proposals and Grants, and U.S. Department of Interior. In addition, he is Publications Reviewer for Water Research, the

International Journal of Water Pollution Research, Freshwater Ecology, and Northwest Science. He has served as President or Chairman of the PNW Pollution Control Association, North American Lake Management Society (NALMS) National Association of Water Institute Directors, V.P. of the American Water Resources Association - Washington, and on the Boards of the Universities Council on Water Resources and the Water Pollution Control Federation (WPCF). Among his many honors are the Arthur Sidney Bedell Award from the WPCF, and the Secchi Disk Award for Individual Achievement from NALMS. Funk holds his B.S. (Biology), M.S. (Zoology and Botany), and Ph.D. (Limnology and Microbiology) from the University of Utah, Salt Lake City.

Mason Gaffney is Professor of Economics at the University of California, Riverside. His water-related activities included four years on the Utilities Commission for the City of Riverside, Executive Director of the British Columbia Institute for Economic Policy Analyses for three years, and a Senior Research Associate with Resources for the Future in Washington, D.C. He is author of a number of papers, including "Diseconomies Inherent in Western Water Law" in the Western Journal of Agriculture Economics (1960), followed by a subsequent Debate with Frank Trelease of the University of Wyoming in the Journal of Farm Economics. Gaffney holds a B.A. in Economics from Reed College and earned his Ph.D. in Economics from the University of California at Berkeley.

James L. Huffman, Professor of Law, Northwestern School of Law, Lewis and Clark Law School and Director of the Natural Resources Law Institute in Portland, Oregon, serving in those positions since 1978 and 1974, respectively. Among other academic responsibilities, he was a Fulbright Professor at the University of Athens, Greece, and Visiting Professor at the University of Oregon Law School in 1988. He was a Fellow at the Institute for Humane Studies in California in 1981 and Visiting Professor 1980-81 at the University of Auckland in New Zealand. Prior to joining academia, Professor Huffman was with the Montana Department of Planning and Economic Development and a research economist in the private sector in Montana. He has served as Chairman of the Oregon State Advisory Committee for the U.S. Commission on Civil Rights, a member of the Board of the Rocky Mountain Mineral Law Foundation, and the Association for Canadian Studies in the United States. His many past activities included membership on the Committee on Public Interest

Determination for the Oregon Water Resources Commission (1986-87), and the National Academy of Sciences Committee on Socioeconomic Effects of Earthquake Prediction. Of his numerous publications, he is the author of the book, "Government Liability and Disaster Mitigation: A Comparative Study" (University Press of America, 1986). He holds a B.A. from Montana State University, M.A., Fletcher School of Law and Diplomacy at Tufts University, and a J.D. from the University of Chicago Law School, and was a Post-Doctoral Fellow (Raymond Fellow) there upon graduation.

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Professor Ralph W. Johnson, University of Washington School of Law, is an Adjunct Professor in the School of Marine Affairs and Institute for Environmental Studies. He has been teaching since 1955 and specializes in water law, coastal zone law, and American Indian law. He has served as Chief Consultant to the United States Senate Committee on

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James W. Miller, is General Manager of Federal Way Water and Sewer (FWWS), the largest water/sewer district in the State, providing service for about 80,000 people in the Federal Way area. Mr. Miller was Director of Water Management and Engineering for the Seattle Water Department for seven years prior to joining FWWS. After receiving training and certification in Municipal Public Works Administration, Miller has developed and/or implemented several new organizational structures including a matrix project management organization, several water district mergers, and a merged water and sewer district. He holds a BS, Civil Engineering, from Seattle University and an MS in Water Resource Management from the University of Washington. His Master's Thesis was on "The Effects of Minimum and Peak Stream Flows on Fish Production and Water Supply". In 1992 Mr. Miller joined Parametrix, Inc.

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argued in two cases, *Antoine v. Washington* (1975) and *Washington v. Fishing Vessel Association* (1979) (the "Boldt" decision). Active in civic affairs, he served as Mayor of the Town of Clyde Hill, WA, and is Chairman of the Town Board of Adjustment, hearing zoning and land use variance matters. He received his B.S. from Lewis & Clark College; M.A. in Political Science, University of Washington, and J.D. from the University of California, at Berkeley.

Representative Dick Nelson was first elected to the Washington State House of Representatives in 1976. He is a self-employed technical consultant. In addition to serving on the House Local Government and Transportation Committees, Dick chaired the House Energy and Utilities Committee. He has participated in legislative efforts to establish a water resource policy for the state and introduced a plan to protect Washington streams from hydroelectric development that would adversely impact environmental values. He has been a member of the State Nuclear Waste Board, and the National Conference of State Legislature's Energy Committee. A Seattle native, Dick graduated from Ballard High School, received a degree in engineering from the University of Washington, and earned a Doctor of Science from the Massachusetts Institute of Technology.

Sandra Nelson, Executive Director, Northwest Rivers Council, previously served for nine years as a community organizer and legislative liaison for Environmental Action in Washington, D.C. , traveling nationwide working with citizen groups in the environmental movement. She has been an active volunteer with Friends of the River in California and with American Rivers, based in Washington, D.C. Her activities include public speaking, editing, and production, as well as administration and fundraising.

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published in 1981 by Prometheus Books. In 1983, he received an Interdisciplinary Incentive Award from the National Science Foundation and the National Endowment for the Humanities. Dr. Partridge is now with the Department of Environmental Sciences, University of California, Riverside, California.

Charles B. Roe, Jr. was Senior Assistant Attorney General, State of Washington retiring in 1990, and has joined the firm of Perkins Coie. He is a graduate of the University of Puget Sound (B.A. 1953) and the University of Washington (J.D. 1960). He joined the Washington State Attorney General's Office in 1960, became division chief of that office's Water Resources Division from 1963 to 1970 and then chief of the Environmental Protection Division from 1970 to 1985. He served as assistant director of the Washington State Department of Water Resources from 1967 to 1969. Roe also served as a counsel to Governor Daniel J. Evans on natural resource-environmental protection matters from 1969 to 1977. Roe is former chairman of the Environmental Law Section of the Washington State Bar Association and the Water Resource Committee of the Natural Resources Section of the American Bar Association. He was an Adjunct Professor at Gonzaga University School of Law from 1973 to 1977 and at the University of Puget Sound School of Law starting in 1986. In 1971 to 1972 he was a contractor for the National Water Commission..

Audrey Simmons is a founder and President of WaterWatch, a nonprofit, public interest, membership, tax exempt organization incorporated in the State of Oregon, "in recognition of the need for a long-term commitment on the critical issue of changing water management to address the needs and concerns of the latter part of the 20th Century and the beginning of the 21st Century." Ms. Simmons chaired conferences in 1988 and 1991 on public trust and water held at the Northwestern School of Law, Lewis & Clark College. She is active in the League of Women Voters of Oregon, a member and chair of its Land Use and Water Resource committee. In 1979 she was a founder and vice president of the Columbia River Citizens Compact.

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Don Tahkeal, a member of the Confederated Tribes of the Yakima Indian Nation, served on the Tribal

Council. In addition he has been responsible for a number of Natural Resource programs, including Chairman of the Timber and Grazing Overall Economic Development Committee, the Radioactive Hazardous Waste Committee, the Timber, Fish, and Wildlife Committee; and served as Secretary to the Roads, Irrigation, and Land Committee. Mr. Tahkeal has participated on several conference/symposium planning committees for the Continuing Environmental Education Program of the Institute for Environmental Studies.

Ed Whitelaw is the president and founder of ECO Northwest, an economic and financial consulting firm in Eugene, Oregon, and EPI Northwest, a non-profit research institute. His consulting, research, and teaching focus on state and local economics, resource and environmental economics, and the economic role and performance of small businesses. His current and past positions include membership in Governor Goldschmidt's Economic Development Commission, the Statistical and Scientific Advisory Committee to the Northwest Power Planning Council, Governor Atiyeh's Council of Economic Advisors, and the Advisory Committee on Cities to President Carter's Domestic Council.

Karla Wilson was Representative in the Washington State Legislature from District 39 for three terms. She was vice-chair of the Natural Resources Committee; and served on the Joint Select Committee on Water Resource Policy. A special education teacher at Lake Stevens High School, she has worked at a variety of jobs from ad clerk at the Everett Herald to Engineering Assistant at General Telephone. She returned to college to complete her bachelor's degree at the University of Washington in 1972, and her Master's in Special Education in 1976. She has been a Church School Superintendent and Vice-President of Snohomish County United Church Women, worked on the Lake Stevens Planning Commission, and has been President of, and Chief Negotiator for, the Lake Stevens Education Association. She was a charter member of the Snohomish County DWI Task Force and served on the board of the Human Services Council of Snohomish County. In 1988 she was chosen as one of 100 women nationally to participate in a 3-part symposium, "Leadership America".

Part II

The Chelan Agreement

Developing a Water Resource Planning Process
Kaleen Cottingham

Chelan Agreement

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Memorandum of Understanding Between
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Centennial Accord Between the Federally Recognized
Indian Tribes in Washington State and the State of Washington

Five-Year Water Resource Data Management Plan

DEVELOPING A WATER RESOURCE PLANNING PROCESS

Kaleen Cottingham
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Office of the Governor of Washington

Editor's Note: The following excerpts are from the document prepared during the fall of 1990 by Kaleen Cottingham "to provide background on the conflict, both political and legal, over water rights and water resource management in Washington State so that reviewers can understand the need for developing a water resource planning process."

I. OVERVIEW

1. HISTORY OF WATER RESOURCE DEVELOPMENT IN WASHINGTON

The first human occupants of this land that is now Washington State were Indians. The rivers and marine waters of this land provided abundant sustenance. The Indians' subsistence utilization of water and related resources was essentially harmonious with nature, and resulted in little alteration of natural processes and ecosystems. Coastal and Columbia River Indians relied very heavily upon fish. Because salmon and steelhead are funneled into rivers and streams in large numbers and are vulnerable to capture, they provided a mainstay in the diet of tribes, and formed a basis of unique cultural, economic, and religious practices of native peoples. Rivers and marine waterways also provided convenient transportation avenues.

Euro-American exploration of the northwest also depended upon rivers for transportation. The Lewis and Clark expedition traveled up the Missouri and down the Snake and Columbia Rivers to reach the Pacific Ocean. Trappers in search of beaver pelts followed the waterways west. Euro-American settlement of what is now Washington State began in earnest in the middle part of the 19th century. Settlements that would become Seattle, Tacoma, Olympia, Port Townsend, Walla Walla, and Spokane, and others all were located on or near water. Water was necessary for transportation, domestic supply, and power.

The earliest irrigation in Washington is believed to have occurred prior to 1820 in present day Walla Walla. Irrigation development of the Yakima basin began in the 1850's. A major federal irrigation project in the Yakima basin involving construction of five storage reservoirs was initiated in 1905.

The early settlers of the Olympia area developed a mill at Tumwater Falls on the Deschutes River. As lumber mills and shipping facilities sprang up along Puget Sound, rivers were used to transport logs downstream to the mills.

Hydroelectric power plants began to appear about the turn of the century. The growing cities of Seattle and Tacoma initiated development of large municipal water supply projects on the nearby Cedar and Green rivers in the early 1900's.

Rapid population growth during the two World Wars resulted in increased development of water resources for power, agriculture, industry, and municipal supply. Construction of Rock Island Dam on the Columbia River was begun in 1930. Bonneville Dam, a federal project, was initiated in 1933. The massive Grand Coulee Dam project began in 1933. Eleven massive dams now span the Columbia River in Washington, and four dams impound the Snake River in Washington, altering the character of these rivers.

Today, an estimated one and one-half million acres of land are under irrigation in Washington. Large municipal diversions exist on many streams, and hydropower projects exist on many others. Flood control dams and levees have added to the alterations. The historical and continuing utilization of water resources is a cornerstone of Washington's economic development.

This has come at no small environmental price. Few of Washington's major rivers remain in pristine condition. On many streams, including the Columbia River, large natural populations of anadromous fish have been dramatically reduced, in many cases as a direct consequence of the utilization of the state's water resources. [Ed. Note: In 1991 a sockeye salmon, native to the Snake-Columbia Rivers was listed as endangered.] Wildlife, water quality, recreation, aesthetics, and environmental values have also been altered by this development.

Only a few decades ago, the planning and allocation of water resources in western states consisted of little more than granting and administering water permits in response to private appropriations. Today, however, changing societal values, an increased knowledge of water science, and an explosion of competition over limited supplies have increased the complexity of water decisions. Today, decision-makers must consider minimum streamflows to protect aquatic habitat; federal reserved water rights; sole source aquifer protection; hydraulic continuity between wells and surface water; pressures to conserve resources; and many other forces which currently influence and complicate water management throughout the West.

In Washington, these challenges are overlaid by additional complexities. For example, the 1985 U.S./Canada Pacific Salmon treaty obligations may alter water allocation decisions in the state. Federal treaties with Indian tribes in Washington contain implications for water use on-reservation and for fisheries habitat protection. Washington's water policies may be further influenced by decisions of the Northwest Power Planning Council, created by Congress in 1980 to assess power, fish, and wildlife needs in the region.

Water resource planning and allocation is at a critical stage in Washington. New factors are forcing the state to adjust its policies to accommodate change while protecting existing water rights created in an earlier era.

2. REVIEW OF WATER LAW IN WASHINGTON STATE

[Ed. Note: Also see outline by Charles B. Roe, Jr. in the Addenda to Part I.]

The first Washington territorial law over water, enacted in 1863, provided for use of the English common law riparian doctrine of water rights. Under this doctrine, owners of land abutting a stream or lake possessed correlative rights to make reasonable use of the waters of the stream or lake.

However, the dry nature of most of the West called for the use of a new doctrine of water law which came to be known as the prior appropriation doctrine. The central tenets of this doctrine are "first in time is first in right" and that water must be put to beneficial use. Under this doctrine, it is permissible to remove water from the channel and transport it to nonriparian land for use. Conflicts among users are resolved on the basis of whose use was established first.

Washington became a state in 1889. In 1891, to support the prior appropriation doctrine, the legislature passed a water right law requiring that prospective water appropriators post a notice at the proposed point of diversion and file a copy in the county records office.

Not until 1917 did the state become responsible for water rights with passage of the State Water Code. The code established appropriation as the exclusive means of establishing new rights to surface water. In 1945

the State Ground Water Code was passed, extending the appropriation system to ground water. These codes are still in effect, though they have been amended many times.

Very little regard was given to the needs of fish, wildlife, or other resources for instream water flow needs until the 1940's. In 1949, the legislature declared it to be the policy of the state ". . . that a flow of water sufficient to support game fish and food fish populations be maintained at all times in the streams of this state." This legislation, still in effect, provides that the director of Ecology "may refuse to issue any permit to divert water. . . if in the opinion of the director of Fisheries or the director of Wildlife, such permit might result in lowering the flow of water in any stream below the flow necessary to adequately support food and game fish populations in the stream." As an alternative to denial of the permit, Ecology has issued numerous permits conditioned with low flow provisions recommended by Wildlife and Fisheries. Under this authority, approximately 250 streams (nearly all very small) have been closed to further appropriation, and low flow provisions have been applied to individual permits on approximately 250 other streams.

The Minimum Water Flows and Levels Act was enacted in 1967 to provide a more formal process to protect instream flows. Under this act, the Department of Ecology shall, when requested by the departments of Fisheries or Wildlife, establish minimum stream flows and lake levels to protect fish, game, birds, or other wildlife resources, or recreational or aesthetic values, or to preserve water quality. The Act sets forth public hearing procedures for the establishment of minimum flows and lake levels, but does not define criteria for the determination of these flows or levels, nor that the Department of Ecology follow the recommendations of the Departments of Fisheries or Wildlife. Ecology used this authority in 1971 to adopt minimum flows for the Cedar River, a major source of water supply for the Seattle metropolitan area.

Additional water allocation authority is provided by the 1967 law establishing the Department of Water Resources, which was later incorporated into the Department of Ecology. This Act requires the department "To develop and maintain a coordinated and comprehensive state water and water resources related development plan, and adopt such policies as are necessary to insure that the waters of the state are used, conserved and preserved for the best interest of the state." The act also requires inclusion in the plan of a description of development objectives and recommended means of accomplishment, and allows the department to include in the plan the plans, programs, reports, research, and studies of other state agencies.

The 1967 Act requires assembly and correlation of information on water supply, power development, irrigation, watersheds, water use, future possibilities of water use, and prospective demands for all purposes, and assembly and correlation of state, local, and federal laws, regulations, plans, programs, and policies affecting water, natural resources, and development and uses thereof. It also requires cooperation with federal, state, regional, interstate, and local public and private agencies in planning for drainage, flood control, use, conservation, allocation, and distribution of existing water supplies and development of new projects.

The Water Resources Act of 1971 provides that "Perennial rivers and streams of the state shall be retained with base flows necessary to provide for the preservation of wildlife, fish, scenic, aesthetic and other environmental values, and navigational values." The Act also provides that "Lakes and ponds shall be retained substantially in their natural condition. Withdrawals of water which would conflict (with these flows or levels) shall be authorized only in those situations where it is clear that overriding considerations of the public interest will be served."

The Water Resources Act of 1971 sets forth "fundamentals of state water resource policy... to ensure that waters of the state are protected and fully utilized for the greatest benefit to the people." In addition, it declares a broad range of out-of-stream and instream water uses to be beneficial, requires that the allocation of water among potential uses and users be based generally on the securing of maximum net benefits to the

people of the state, and requires that adequate and safe supplies of water be preserved and protected in potable condition to satisfy human domestic needs.

The Act directs Ecology to develop and implement a state water resources program. It requires rule-making to reserve and set aside waters for future beneficial use, and allows Ecology to withdraw waters from appropriation while information is being collected. The Act requires that Ecology fully inform and involve the public and other agencies, periodically report to the legislature, and to vigorously represent the state's interests before federal and interstate agencies. In addition, it requires compliance with its provisions by all state agencies, local governments, and municipal corporations.

Ecology adopted the Water Resources Management Program regulation in 1976 to provide guidelines for the instream flow and water allocation activities authorized by the Water Resources Act of 1971. This regulation establishes sixty-two Water Resource Inventory Areas (WRIAs) as planning units, lists possible basin plan elements, and defines terms.

Ecology is vested with exclusive authority under state law to establish instream flows and levels on state waters. In establishing such flows, Ecology is required to consult with and carefully consider the recommendations of the departments of Fisheries, Wildlife, and Agriculture, the State Energy Office, and affected Indian tribes. These and other state agencies are not precluded from presenting views on instream flow needs at public hearings or from participating in proceedings of other agencies (federal or state) to present views on stream flow needs. (The Federal Energy Regulatory Commission sets operational minimum flows for many hydropower projects it licenses.)

The establishment by administrative rule of reservations of water for out-of-stream use or instream flows for instream use constitute appropriations of water with priority dates as of the effective date of adoption.

3. TRIBAL TREATY RIGHTS

While Washington State water law was evolving, tribal treaty rights were being defined by courts. The U.S. Supreme Court first affirmed Indian treaty fishing rights in 1905 in U.S. v. Winans and in 1974 determined that the treaty Indian tribes were entitled to the opportunity to take up to half the harvestable salmon and steelhead in Washington State. In 1908, the Supreme Court established the so-called Winters Doctrine which recognized the reserved water rights of Indian Tribes. The supremacy clause of the U.S. Constitution creates the binding relationship between these treaties and state action.

These two legal theories upon which the tribes base their rights to water resources are distinct. "Winters" rights in waters are based on the federal government impliedly reserving necessary waters to fulfill the purposes of the land retained by the tribes when they ceded the balance of their territory to the United States. "Winters" rights have a priority date relating to the time the treaties were signed. Treaty reserved rights to fish may also carry an implied right to water necessary to protect the fishery resource. Unlike "Winters" rights, implied rights to the water necessary to protect the fishery resource have a priority date of time immemorial.

This latter right is currently an issue in Phase II of United States v. Washington. In 1982 Federal District Court Judge Orrick ruled in favor of the tribes that the treaties implicitly incorporate the right to have the fishery habitat protected from environmental degradation. The court found that continued degradation of the fishery habitat would render the treaty fishing clause meaningless. Accordingly, it found that the treaty fishing clause imposes on the State (along with the United States and third parties) the duty "to refrain from degrading fish habitat to an extent that would deprive the tribes of their moderate living needs." This case was vacated on procedural grounds by the Ninth Circuit Court of Appeals and remanded to Federal District Court, where it is still before the court.

Little litigation activity has taken place in Phase II since the environmental issue was remanded to the district court. Rather, the parties agreed to see if there can be negotiated solutions to environmental problems involving fish habitat. As a first initiative, the tribes, the State, representatives of the timber industry, and representatives of environmental groups developed the Timber-Fish-Wildlife (TFW) Agreement. TFW is an attempt to change timber practices on state and private lands so that fish habitat can be protected while still allowing for timber harvest.

Although the Ninth Circuit Court of Appeals avoided deciding Phase II, at least one Ninth Circuit decision dealt with the implied environmental right in a specific circumstance. In Kittitas Reclamation District v. Sunnyside Valley Irrigation District, the Ninth Circuit affirmed a district court order requiring emergency measures to protect chinook salmon, including increased water flows in the Yakima River.

On the water issue in general, the Tribes assert that: (1) state water law and administrative process does not adequately protect instream resources nor the water for reservation purposes; (2) state water law and administrative procedures fail to recognize the prior and paramount water rights of the Indians that relates back to time immemorial; and (3) that these rights are not subordinate to state law, including state water laws.

The productivity of fish habitat has declined over the years. Tribes, along with others, seek to correct that decline. Reserved water rights and treaty fishing rights may provide the legal mechanisms by which the tribes can achieve their goals of improving the fishery through habitat protection, enhancement, and restoration.

4. HISTORY OF PLANNING FOR WATER RESOURCES

Conflicts and uncertainty over the future of Washington state's water resources have been the norm in the last several years. These conflicts have been played out in courtrooms, administrative agencies, and the legislature, with no clear winner or end in sight. Continued conflict and uncertainty frustrate planning for the future.

The most recent water resource controversy was brought to the attention of the legislature in 1985 when the Department of Ecology attempted to set instream flow requirements for streams along the western shore of Hood Canal, the "Skokomish-Dosewallips water resource inventory area." While some interests thought the flow too restrictive of other uses, the state Ecological Commission overturned the flow-setting regulation as not protective enough of instream values. The Department of Ecology subsequently reviewed its entire program, drafted a programmatic environmental impact statement on alternatives for an instream flow and water allocation program, and chose a preferred alternative. The contentious debate over the preferred alternative spurred the legislature to step in.

In 1988, the legislature passed a moratorium on the implementation of the preferred alternative and created the Joint Select Committee on Water Resources. The Joint Select Committee's mission was to recommend to the full legislature procedures for allocating water resources of the state. The Joint Select Committee provided a report to the legislature in January of 1989.

An independent fact finder used by the Joint Select Committee concluded that the laws and policies regarding water resources are inconsistent and not sufficiently clear to guide administrative programs. The fact finder concluded that clear, concise laws are needed to interpret the policies and set priorities among competing goals. Otherwise, confusion and inconsistencies typically result as administrative officials--who represent various agencies and who change over the years--struggle to interpret and implement the policies. Finally, water statutes enacted in past decades have tended to simply overlay existing laws without sufficient attention to amending inconsistent provisions. This problem is compounded because many of the

important terms have been left undefined that are needed to provide clear legislative guidance to administrative water programs.

The Joint Select Committee, after studying the report of the independent fact finder, identified instream resource protection and water resource planning as the two issues of highest priority for legislative action. The committee formed public and technical advisory groups to assist in reviewing these issues. At the same time, the Governor organized a subcabinet on Water Policy. In early 1990, the Subcabinet met with Tribal leaders and Legislative members to discuss the potential of developing a cooperative planning process for water resources. Based on that meeting, the Joint Select Committee drafted legislation which was enacted during the 1990 legislative session calling for a cooperative approach to water resources planning among interest groups, local governments, tribes, and water users. This legislation also stated that planning should be done on a regional basis with regional boundaries to be drawn and two pilot basins chosen by January 1, 1991. Ecology was also directed to form a data management task force to evaluate data management needs and advise the Joint Select Committee in developing an information management plan. [Editor's Note: See Briefing Paper in Addenda to Part II]

One of the critical elements leading to the emphasis on cooperative planning was the interest of the state and the Indian tribes in cooperatively resolving environmental issues, including water resource issues, relating to their treaty right to harvest fish.

The two state government efforts, executive and legislative, were combined and the state, together with the tribes, formed a common effort to hold a water resources planning retreat. Over 160 participants from a broad range of interests met in May 1990 at Rosario [on Orcas Island] to collectively decide whether cooperative water resource planning might be an acceptable and effective way to deal with the complex issues surrounding our decisions on water. The broad range of participants formed seven caucuses, representing the following interests and organizations: state government (including both executive and legislative branches); local government (including both general and special purpose governments); tribal governments; environmentalists; the business community; the agricultural community; and commercial and sports fishing interests, including recreational boaters. The substance of this document is the result of those caucuses working together as an "Interim Team" to develop alternative water resource planning processes for presentation at a follow-up retreat in the fall of 1990.

5. WHY A COOPERATIVE PLANNING PROCESS IS NEEDED

Water resource planning and allocation is at a critical stage in Washington. New factors are forcing the state to adjust its policies to accommodate change while recognizing existing water rights created in an earlier era.

Washington state's economy and population is growing rapidly as many people and businesses locate here. The forces that created the state's high quality of life are also changing it. Rapid growth increases demands on many of our precious natural resources, including water for homes and businesses and for support of fisheries, wildlife, recreation, and aesthetics.

As demands for instream and out-of-stream water have increased, so has the complexity of the issues affecting water management decisions. Many feel that the current means to plan for future uses of water resources has been outpaced by the issues. Some feel that designing a new, dynamic planning process can help resolve conflicts between instream and out-of-stream uses of our limited water resource.

II. GOALS OF THE PLANNING PROCESS

[Ed. Note: See Water Resources Forum Caucuses' Goals following Chelan Agreement]

III. SCOPE OF THE PLANNING PROCESS

Water resources touch a broad array of issues. The Interim Team was faced with whether to develop 1) a planning process that directly addresses all related issues or 2) a planning process which has a narrower focus on water resources but recognizes and respects rights, relationships, and linkages with other issues and/or processes but does not directly address them. The Interim Team decided to pursue the latter course as the one which is sufficiently focused to be manageable and in order to maximize the likelihood of successfully developing a planning process. This section of the report addresses both these types of issues--primary focus and linkages.

A. PRIMARY FOCUS

1. **The Interim Team recommends that the process should address instream uses and needs.** State law recognizes a wide variety of instream water uses as beneficial including fish and wildlife, recreational, and preservation of environmental and aesthetic values, and all other uses compatible with the enjoyment of the public waters. Among the uses and values for which instream flows are to be protected are food and game fish, game, birds, other wildlife resources, recreational, aesthetic, scenic, environmental, navigational, and water quality.

Because of the importance of treaty protection, anadromous fish have been highlighted in this section.

In addition to adequate instream flows, anadromous fish must have specific environmental conditions: 1) access to and from the sea; 2) an adequate supply of good quality water; 3) a sufficient amount of suitable gravel for spawning and egg incubation; 4) an ample supply of food; and 5) sufficient shelter. Alteration of one or more of these essential, finely balanced requirements will affect fish production potential. Alteration of these conditions as a result of out-of-stream withdrawals, impoundments, forestry or agricultural practices, or urbanization can degrade the quality of the fishery habitat. To address protection of the fish habitat, other factors which could affect the use or availability of the water should be included in the scope of a planning process.

Under current law, instream flows are a central focus of water resource planning. The 1967 Act requires the development and maintenance of a coordinated and comprehensive state water and water resources related development plan, and to adopt policies to ensure that the state's waters are used, conserved and preserved for the best interest of the state. The Minimum Water Flows and Levels Act, passed that same year, provided for the establishment of instream flows by administrative rule. The Water Resources Act of 1971 provides a more elaborate legal framework for water resource planning in the state. It declares various instream as well as offstream uses to be beneficial uses of water and requires that "base flows" be retained in streams to preserve a variety of instream water uses.

Water rights approved after adoption of an instream flow must be conditioned to the instream flow. Once adopted, instream flows constitute an appropriation with a priority date as of the effective date of adoption.

Instream flows and stream closures are among the elements that can make up a basin plan. From 1976 through 1979, Ecology adopted comprehensive water resource plans for eight Water Resource Inventory Areas (WRIAs).

From 1979 through 1985, Ecology adopted instream resource protection plans for ten WRIAs and the Columbia River which passes through 30 WRIAs. All of these plans include instream flows and/or stream closures. Generally these plans were viewed as the first phase in development of comprehensive basin plans. It was believed that once instream flows were adopted in all critical areas of the state, the department would then revisit those WRIAs to develop complete plans. This was in keeping with the department's

view that the state's water laws establish a use preference for instream flows relative to future offstream uses of water.

Since the end of 1985, development of new basin plans and instream flows has been on hold pending completion of the current legislative water resources policy review.

2. **The Interim Team recommends that the planning process should include out-of-stream uses.** State law recognizes a wide variety of out-of-stream water uses as beneficial uses including domestic, stock-watering, industrial, commercial, agricultural, irrigation, hydroelectric power production, and mining.

The 1967 and 1971 Acts require that comprehensive plans or programs be developed by Ecology to address the full range of potential water uses. In addition, the Water Resources Act authorizes Ecology to reserve water for future beneficial use.

The basin plans developed between 1976 and 1979 allocated water for future offstream uses. Because of limited staff resources and increasing concerns about depletion of stream flows, plans developed after 1979 generally established only instream flows and did not address the use of water for offstream purposes. It was the department's intention to revisit these basins at a future time to complete the establishment of comprehensive basin plans, including allocations for future use.

In 1976, Ecology adopted a rule outlining procedures of reserving future public water supplies. Ground water reservations were adopted for Thurston and Clark Counties in 1986. A number of additional reservations are expected to be requested in the next few years as local governments complete a number of ground water management area programs and coordinated water system plans.

3. **The Interim Team recommends that groundwater, to the extent it is connected to surface water, should be included in the planning process.** The Interim Team recommends that a linkage be developed with existing groundwater planning processes to assure adequate coordination between surface and groundwater plans and to avoid duplication of effort.

Under current state water law, the management of surface water and ground water is closely linked. The Ground Water Code, passed in 1945, recognizes the relationship of surface and ground water in protecting existing surface water rights from subsequent ground water appropriations. The Water Resources Act requires that full recognition be given to the natural interrelationships of surface and ground waters.

Although the law clearly requires an integrated approach, planning has often in practice been separated for surface and ground water. The basin plans developed from 1976 through 1985 primarily address the allocation of surface water (even though all of these programs require that ground water in direct and significant continuity with surface water be treated in the same manner as surface water.) As a result, a ground water right may be conditioned or denied because of a surface water instream flow.

The Ground Water Code authorizes the Department of Ecology to designate special management areas to address groundwater problems.

Ground water management area programs are locally developed with state oversight. The state provides grants for program development and reviews ground water management area plans that are submitted. The plans, if approved, are implemented through state regulations and local ordinances. Twenty programs are now in development.

B. LINKAGES

1. **The Interim Team recommends that water quality, both potability and environmental quality, when related to water use and availability should be included in the planning process.** The Interim Team recommends developing a linkage with existing water quality programs to assure that those efforts do not conflict with the water resource planning process, and vice versa.

A wide range of planning and management activities are directed at water quality protection under both federal and state law. The principal state law is the Water Pollution Control Act, although Puget Sound water quality is specifically addressed in a separate statute. Numerous federal mandates require the state to conduct permitting and planning activities. Among these mandates are portions of the federal Clean Water Act and the Safe Drinking Water Act.

Water quality and quantity are not clearly and consistently linked in state or federal law, even though the management objectives and activities of either can affect the other. For example, the availability of dilution water for waste discharges is reduced if out-of-stream withdrawals are increased. Approval of new diversions can result in the increased discharge of pollutants to water bodies from the new use. Approval of pollutant discharges may render a water body unsuitable for certain uses that demand a high level of purity. Establishment of instream flows can help maintain water quality within standards established under state and federal law.

The Water Resources Act does not explicitly state that the maintenance of water quality is a beneficial use of water. The Act does, however, provide that "preservation of environmental and aesthetic values" is a beneficial use. This language appears to be sufficiently inclusive to incorporate water quality maintenance.

Water quality is one of the listed values to be protected through establishment of instream flows. Water quality has been considered by Ecology in setting such flows, but water quality has infrequently been the most critical instream value. Ordinarily, levels of instream flows necessary to protect fish habitat exceeds flows for water quality protection. However, several instances have arisen, particularly for proposed hydropower projects on steep gradient streams in which water quality maintenance has been the key consideration.

For hydroelectric projects licensed by the Federal government, and other projects requiring federal approval, Ecology is delegated authority for "water quality certifications". In these determinations, Ecology assesses whether the project would violate state water quality standards. The certification may be denied or conditioned to avoid water quality standard violations. Ecology coordinates water quality certifications and modifications with the issuance of water rights for water diversion projects.

The Puget Sound Water Quality Authority is mandated to develop a plan prescribing needed actions for maintenance and enhancement of Puget Sound water quality. The Puget Sound Water Quality Authority is principally a planning body. Its recommendations are implemented by Ecology and local authorities.

A 1985 law provides for the establishment of ground water management area programs to address issues relating to both quantity and quality of ground water in the state. This program is a cooperative state/local government process. Approximately twenty areas are currently in the process of program development.

There are approximately 12,000 public water systems in Washington responsible for delivering safe drinking water. Lack of coordination between these systems played a key role in the enactment of this state's Public Water System Coordination Act. In addition, Congress enacted the Safe Drinking Water Act Amendments in 1986.

The Department of Health has primary responsibility under the federal Safe Drinking Water Act to require the testing of public water supplies and to assure compliance with drinking water quality standards. In coming years, many smaller water systems are likely to be in violation of one or more standards. These systems will have to be upgraded or combined with larger water systems to meet increasingly stringent federal standards. Ecology provides technical assistance to Health and is responsible for protection of underground sources of public drinking water. Ecology is responsible for the Underground Injection Control Program and the regulation of underground storage tanks.

2. **The Interim Team recommends that land use planning should incorporate water resource plans via the use of Section 63 of the Growth Management Act or related mechanisms which link development to water availability.** Growth management, or land use controls in general, have become an explosive political issue because the economic boom in Puget Sound counties has stretched existing infrastructure systems beyond their capacity. The speed and intensity of development have highlighted problems of environmental degradation and intensified conflicts over critical natural resources. The boom has confirmed the inadequacy of local and state planning and land use mechanisms.

The response to public concerns about growth has focused on creating a new structure for planning which requires local government to protect open space and environmental values and plan for growth in advance and ensure adequate infrastructure before new growth occurs. Key issues include: better phasing of growth; reducing urban sprawl by encouraging increased density, creating boundaries for urban services and discouraging leapfrog development; requiring that infrastructure be available when growth occurs; protecting sensitive areas; and promoting higher capacity transportation.

An adequate response to the impacts of rapid growth requires state and local government to do business differently in a number of areas. Growth creates problems of transportation, air quality, water quality and availability, housing affordability, protection of natural resources, land use and economic inequity. A single system to respond to all of these issues would be impossibly complex. While all of these issues are linked, they require distinctive solutions with consistent policies, goals, and guidelines.

From the standpoint of water there are two main tools that local governments can use to shape land use and manage growth: 1) Water resource availability, distribution, or efficiency can be tools to determine where growth will go; and/or 2) land use planning can be a tool to ensure water resource or other goals are met. The relationship between these tools and goals needs to be recognized.

At the local level, water availability has limited growth where water shortages exist, and where the local governments have refused to provide water service beyond set boundaries. However, such actions do not "manage" growth, but only constrain it by default. A better linkage needs to be developed which recognizes the relationship between water supply, land use, and the protection of natural resources.

3. **The Interim Team recommends a voluntary linkage between on-reservation and off-reservation water use and management.** There are twenty-six federally recognized Indian tribes with reservations within the boundaries of Washington State. Four are in rural settings east of the Cascade Mountains. Three of these, the Yakima, Colville, and Spokane Reservations, are of substantial size and include within their boundaries incorporated towns.

The twenty-two reservations west of the Cascade Mountains generally are of smaller size than those in eastern Washington, although they may also include incorporated towns. Several are located in or adjacent to metropolitan or suburban communities. Many are in rural areas.

The general principle that state law does not apply to Indians or Indian lands within Indian reservations without Congressional consent means that most state health, zoning, and environmental laws may not have force. State law does apply on Indian reservations in matters that do not affect Indians or their property.

On the other hand, a recent Supreme Court decision relating to the Yakima Reservation suggested the "evolution" of the reservation — that is, how much reservation land has transferred over time into non-Indian ownership — may be a significant factor in determining the level of tribal authority over non-Indian lands within the reservation, at least as to zoning.

Regarding protection of the environmental health on reservation, many federal statutes empower states to enforce national environmental standards. The National Clean Water Act and the Safe Drinking Water Act provide for such state *primacy*. While neither of these federal statutes specifically empower tribes to enforce their provisions on reservation, federal policy under the Environmental Protection Agency does not recognize state primacy or jurisdiction.

The patchwork pattern of land ownership on most reservations results in a mix of Indian and non-Indian uses of water. Despite several judicial rulings, it remains unclear who has the jurisdiction to regulate the use of water by non-Indians within the reservation.

The principle that state laws are not applicable to Indian activities on reservation means that, at least to the extent that tribal governments have jurisdiction over land use, health, or environmental activities, any state requirement for planning is not applicable on-reservation. Coordination of such on-reservation planning activities cannot be required absent Congressional mandate. As a consequence, the inclusion of on-reservation planning activities within the scope of a statewide water resource planning process would require the voluntary participation of tribal governments.

4. **The Interim Team recommends linkages with on-going federal and state programs which impact water resource use and availability be developed which focus on involving and educating federal officials about the water resource planning process.**

[See Chelan Agreement]

VI. PLANNING PROCESS

... the Interim Team describe[d] other planning processes which were used as models for developing a water resource planning process. Those models include:

- a. Puget Sound Water Quality Authority Watershed planning process
- b. Timber-Fish-Wildlife
- c. Shoreline Management Act, 1971
- d. Coordinated Water System Planning Process¹
- e. Groundwater management area planning process²
- f. Status Quo--Water Resources Basin Planning (Pre-1986)³
- g. Oregon's water process⁴
- h. Land use planning under HB 2929
- i. Land use planning under Initiative 547
- j. NW Power Planning Council
- k. Pacific Salmon Commission
- l. Pacific Fisheries Management Council

This alternative would maintain Ecology's current policies and programs which focus on the preservation of instream flows intended to protect at least 90 percent of the fish habitat available at the optimum flow for fish through instream flow provisions and stream closures, and to provide a sustaining flow for other instream values.

These programs would focus on the instream flow needs of fish (especially anadromous fish) as the primary criterion. Other instream uses would be considered secondarily. Some streams could be closed to further consumptive appropriation based on lack of available water, anticipated impact on existing rights or instream values, or to protect the public interest.

Non-fish instream values would be documented to the extent possible, but no attempt would be made to use objective methods (if any are available) to determine instream flow needs of these uses. Ecology would seek recommendations of experts on expected instream flow needs for recreation, aesthetics, water quality, wildlife, and navigation. Adjustments could be made to proposed fishery-based instream flows to accommodate these other needs. Existing water use might be estimated if this information would be useful for determining appropriate instream flow levels or stream closures. A limited effort would be made to improve flow conditions on a few selected heavily appropriated streams.

¹ Either the county or the state Department of Health can initiate the coordinated water system planning process. As of 1990 all existing (19) plans have been initiated locally. There was only one county for which the Department of Health considered initiating the process (Snohomish County). In that case, a group of water purveyors saw a need for initiating the process, but could not initially obtain support from the county. The county subsequently decided to initiate the process on their own.

The agency which initiates the coordination process develops a document known as a preliminary assessment. This is a brief research paper intended to document the extent of problems within the subject area. This document provides the basis for making the decision whether or not to proceed with the coordination process.

If the results of the preliminary assessment indicate that the coordination process is needed, the initiating agency formally declares an area as a "Critical Water Supply Service Area." A public hearing is held prior to making this declaration. The area may either be an entire county or a portion of a county. At this point in the process, the boundaries are tentative.

Representation on the Water Utility Coordinating Committee is specified by statute. It includes one representative from the Department of Health, the County Commission/Council, County Planning Department, local health departments/districts, and each water utility within the area with 50 or more services. Other groups can serve on the committee as ex-officio, non-voting members.

The first task of the committee is to further study the problems in the area to determine whether the boundaries are appropriate. After studying the problems and holding a public information meeting to solicit public input, the committee develops a report including recommendations for consideration by the county. The recommendations may be to accept the original boundaries or to modify the boundaries as appropriate.

After the county receives the recommendations from the committee, it holds a public hearing on the boundaries. It then renders a decision on the final external boundaries of the area. If the boundaries are changed, membership on the committee is modified accordingly.

The committee prepares a draft Coordinated Water System Plan. An outside consultant generally is hired to help. The committee is given broad latitude to develop the plan to meet local conditions, with the understanding that the plan must be consistent with existing land use plans and state statutes. The state provides continuous guidance to the committee to insure that the plan is consistent with state statutes and legislative intent.

The plan is a combination of an area-wide supplement, (the regional plan) and individual water system plans. Each expanding water system has one year following approval of the plan, to update its individual water system plan to be consistent with the regional supplement. The state has the power to refuse to approve individual water system plan updates which are inconsistent with the regional supplement.

The committee submits a draft plan to the county for consideration. After holding a public hearing, the county can accept, partially accept, or reject the draft plan. Assuming that the county accepts the plan, it must subsequently pass ordinances which are important in insuring that the provisions of the plan are implemented and effective. This is where local initiation and ownership of the planning process pays off.

After approval by the county, the Department of Health must approve the plan. Since the Department of Health actively participates throughout the process, final approval of the plan is generally no problem.

- 2 A 1985 law provides for the establishment of groundwater management area programs to address issues relating to both quantity and quality of ground water in the state.

The program is a cooperative state/local government process. The state establishes guidelines, procedures and criteria, designates the boundaries of a groundwater management area, provides matching grants for technical studies and plan development, approves scoping documents and plans, and adopts implementing regulations as appropriate following completion of the planning process.

A lead agency, generally a local governing body, is designated to coordinate the activities necessary for development of a program.

A lead agency, generally a local governing body, is designated to coordinate the activities necessary for development of a program.

An advisory committee consisting of local government, state, tribal, and interest group representatives assists the lead agency in carrying out or overseeing the necessary technical studies and the development of a plan to protect groundwater resources. The local government adopts ordinances and other regulations to implement appropriate portions of the groundwater protection strategies set out in the plan.

Ecology adopted rules in 1985 governing the program. Approximately twenty areas were in the process of program development, as of 1990.

- 3 The Water Resources Act of 1971 provided the statutory authority to the Department of Ecology to develop a state water resources management planning process, heavily oriented toward the state making determinations of future water allocations, with public involvement.

In 1976, Ecology adopted rules governing the conduct of planning and the content of basin plans. Beginning in 1976, Ecology proceeded to adopt basin management program regulations for selected water resource inventory areas (WRIAs).

In developing a basin plan, Ecology either appointed a basin advisory committee, or held public meetings at the outset. Following a period of data gathering, the department held advisory committee meetings or workshops to discuss planning alternatives. Ecology then would prepare a report and draft administrative rules which were subjected to public hearings. Following a public comment period, and review by the State Ecological Commission, Ecology would modify and adopt a final rule (i.e., basin plan).

Once adopted, the basin plans provided guidance on protection of instream flows and the allocation of available water to various uses.

In 1979, Ecology prepared a programmatic environmental impact statement on the basin planning program and reoriented the planning to address primarily the adoption of instream resources protection measures. The planning process followed was essentially the same as described above, but advisory committees were not used.

Appeal of basin planning rules is directed to the County Superior Court. Appeal of permit decisions of the department relating to the rules is directed to the Pollution Control Hearings Board.

- 4 The Oregon Water Resources Commission adopts rules implementing water resources, policies, and plans. The actual work in developing the policies and plans is carried out by the Oregon Department of Water Resources.

Three planning levels are addressed in Oregon. At the most general level, the Commission, the Department of Water Resources, and other agencies cooperatively develop a Water Resources Biennial Plan. This plan sets out a long range schedule for development of policies and basin plans.

Statewide policies are developed by the Department of Water Resources for approval by the Commission. These policies, based on statutory fundamentals but more specific, are adopted as administrative rules.

Basin plans are completed and reviewed in a cycle. Oregon has defined 18 major basins, defined by hydrologic boundaries, for which all have an existing plan. The basin plans are oriented toward specific important local issues in each basin, although each plan addresses the allocation of water. Basin plans focus on surface water, but may also address groundwater issues.

An attempt is made to involve all interested agencies at all levels and the public. Work groups are established to work on specific issues. In some cases a single advisory committee is used.

During planning for a basin, the Department of Water Resources produces a report consisting of a set of discussion papers and alternatives. From this report and public input, a plan of recommendation actions and implementation strategies is developed. Based on additional public input, the Department of Water Resources prepares administrative rules.

Proposed rules are sent to the Commission for review and approval. The Commission holds at least one public hearing before ordering the adoption or other action on the proposed rules.

Numerous instream flows and stream closures have been established by rule in Oregon since the 1950s. A 1987 law requires that instream flow rules be converted into water right certificates. This law also allows several state agencies to apply for new instream water rights through the normal appropriation process. The commission has also had authority to establish reservations for future use since 1987.

CHELAN AGREEMENT

I. PREAMBLE

The purpose of the Chelan Agreement is to establish procedures to cooperatively plan for the management of water resources in Washington State to best meet the goals and needs of all its citizens. In addition to forming the basis for state water resource planning, the Chelan Agreement serves as a process for implementation of the general objectives set forth in the Memorandum of Understanding on Environmental Protection.¹

II. GOALS AND PRINCIPLES

The Chelan Agreement recognizes that water is a finite resource. It further recognizes that the goals and principles of this Agreement include, in no particular order:

That water resource management decisions be by hydrologic unit or regional planning area as defined in the "boundary" section in this document

That future conflicts will be reduced if water use needs located in a hydrologic unit first be met from water resources within that unit

The recognition that actions will be guided by the tribes' objective to achieve an overall net gain of the productive capacity of fish and wildlife habitats and the state's related objective to accommodate growth in a manner which will protect the unique environment of the state as those goals have been identified in the Memorandum of Understanding on Environmental Protection.* The participants understand the achievement of an overall net gain of the productive capacity may, in addition to instream flows, include a variety of other means.

That the water resource planning process described in this Agreement shall in no way affect existing water rights without the consent of the water rights holder. Nor shall this planning process necessitate, require or limit any formal determination or resolution of any legal dispute about water rights under state or federal law or Indian treaty. This process is an alternative process, voluntarily designed by the affected parties to build on the existing system of water rights through a cooperative, flexible process to plan and manage the uses of Washington's water resources.

Develop and implement a program providing for conservation, efficiency, elimination of waste, water reuse, and restoration of riparian habitat areas for water retention, including the development of legislation and/or regulations where appropriate.

Assist the Department of Ecology in locating the resources for compliance, enforcement and administration of existing laws and regulations.

That the participants remain fully committed to the planning process described in this Agreement.

* See Addenda to Part II, Page 184.

Planning Guidance:

Planning guidance to local/regional planners is provided by the goals and principles of this agreement, and the fundamentals of state water resource policy as listed in the Water Resources Act of 1971, as set forth in RCW 90.54.020. The perspectives of each caucus on water resource management are attached.

Because this cooperative planning process stands in contrast to judicial determination of conflicting rights or claims to water, it will not result in the allocation of water among competing interests. This cooperative process will not "allocate" water in this sense.² However, implementation of plans developed through this cooperative process could result in the identification of quantities of water available for specific purposes. Because of its cooperative nature, the results of this planning process will maximize the net benefits to the citizens of the state.

III. WATER RESOURCES FORUM

The Chelan Agreement recommends the creation of the Water Resources Forum (Forum). The Forum will have the same number of representatives from each caucus as the Interim Team: 6 Tribal, 3 State, 3 Local Government, 3 Business, 2 Fisheries (1 sports and 1 commercial), 1 Recreational, 3 Environmental, and 3 Agriculture. Each caucus will select its own representation. Each caucus will assure its own internal communication. Each participant will have his/her own voice in decision making.

General Function:

The general function of the Forum will be to:

- Shape state policy
- Clarify existing terms and policies
- Recommend statutory changes as needed
- Provide policy guidance, if necessary, in addressing critical issues.

Generally, the Forum will perform the following functions and tasks in a prioritized order which recognizes that work related to specific regional planning processes shall be secondary to policy guidance:

1. Serve as a mechanism to review water resource planning and implementation.
2. Continue the cooperative nature of the Chelan process.
3. Provide creative solutions and options on issues of statewide significance, such as policies guiding the processing of pending water right applications or issues determining hydraulic continuity.
4. Develop criteria for selection of pilot projects.
5. Monitor, evaluate, report on and recommend changes to the pilot planning process.
6. Make interim modifications and amendments to the pilot planning process.

7. Reconvene a plenary body as represented at the Lake Chelan retreat, if significant changes are needed for the continued functioning of the planning process.
8. Assist in making the transition from pilot projects to systematic planning statewide.
9. Provide assistance and support to the regional planning process.

Decision-making:

The Forum shall make decisions by consensus. Consensus is defined as no negative votes, with abstentions allowed. If no consensus is reached, such will be noted and all the information generated during the process will be collected and made available to all participants.

The Forum will make recommendations to the state agencies. There is a commitment from the Department of Ecology and other relevant state agencies to give substantial weight to the consensus agreements reached. The Forum will have discretion in setting its own agenda. Items for consideration can come from:

1. The Forum's own initiative
2. Response to agencies' requests
3. Response to requests for specific policy guidance from other organizations (particularly regional planning groups).
4. The Forum's charge shall be on issues of statewide policy or guidance, NOT day-to-day management.

Review and Evaluation:

The Forum will review and evaluate the implementation of the Chelan Agreement, including the Guidelines developed for this process. (See Section XI.) Participants in regional planning processes and other water projects shall be provided the opportunity to participate in this review. The Forum will prepare a report for use in review by legislative bodies. The Forum will report on progress by December 31, 1992, and submit a final report at the completion of the pilot projects. (See Section IV.)

The Washington State Legislature shall review the pilot projects, the effectiveness of the Forum and the effectiveness of water resource planning and management in the State of Washington.

In conducting the review of the pilot projects, the Chelan participants recommend that the legislature use the following to measure success/failure:

- Were the goals of the pilot projects satisfied? How many? Which ones?
- How efficient and cost effective were the pilot projects?
- Was adequate funding provided for an effective planning process? If not, what was the impact?
- Do the plans satisfy the needs and interests of all of the caucuses?
- Did the plans meet the schedules and deadlines?
- Did the plans provide for broad-based participation?

Funding for the Forum is essential, but the level and mechanism is yet to be determined. Travel and per diem will be provided for Forum members (which will require a statutory authority). Staff for the Forum is essential so as not to deplete the time of State staff. If there are sub-groups of the Forum, they should also be funded. The Interim Team will serve as the Forum until such time as the Forum is convened.

IV. PILOT PLANNING PROCESS

To Initiate Water Resource Planning:

1. The water resources planning process may be triggered by either of the following methods:
 - a. Petition by an individual. Any state resident may petition a general purpose local government (city or county), tribe, or the state Department of Ecology to initiate planning. One of those levels of government must agree for the planning to begin.
 - b. Any of these governmental entities may convene preliminary discussions to begin the planning process.
2. The Forum will recommend criteria for selecting pilot projects. The Department of Ecology, in cooperation with the Forum, will select at least two projects for planning to be conducted over the next three years, to field test the planning process.

Regional Level Participation:

1. The petitioner may direct its request to initiate a planning process to a general purpose local government, tribe or the Department of Ecology.
2. The general purpose local government or tribe, in consultation with the Department of Ecology, or Ecology itself, will be called an initiating entity. The entity may at this stage consult with other governmental agencies, including affected special purpose local governments, to determine their willingness to participate in and pay for the planning process. The government entities may prepare an intergovernmental agreement addressing the proposed planning process. The governmental entities will also conduct the public process and outreach to inform other interested parties of the opportunity to participate in the regional planning process in order to facilitate the formation of caucuses. If mutually agreeable, the entity and the Forum may jointly conduct these activities.
3. An invitational meeting will be called, and at that meeting the caucuses and expected agencies will be identified, and a time line will be set for the scoping process.
4. During the Scoping Process, the boundaries, time frames, caucuses and representatives of those caucuses will be identified, and a coordinating entity will be chosen.
5. Participation in the Regional Planning Effort: Opportunity to participate in the regional planning effort must be extended to representatives of affected state and local governments and Indian tribes. It must also be extended to representatives of the following interests:

- Agricultural
- Environmental
- Fisheries, both sport and commercial
- Recreational
- Business

6. Additional caucuses may be added by consensus of the existing regional planning participants. If a group is not granted caucus status, it may petition the Department of Ecology for caucus status. The petition shall justify the need for the new caucus based on the existing caucuses' goals. In reaching its decision, the Department of Ecology may consult with the Water Resources Forum.
7. Representatives will be chosen by each caucus. Government and interest groups who have responded affirmatively shall determine whether the number of parties participating is enough to allow the planning effort to commence.
8. Coordinating Entity: For the purpose of regional planning processes, any participating government entity or combination of governmental entities chosen by a consensus of the participating caucuses may be the coordinating entity. The coordinating entity role is more appropriate for a general purpose government due to their broad perspective. However, some flexibility and collaboration is needed regionally since local governments may lack the capacity to conduct a water planning process.
9. The coordinating entity will be responsible for administering the process and entering into contracts agreed to by the planning group. The coordinating entity shall also be responsible for coordinating intergovernmental agreements among the participating entities, as necessary.
10. Those federal agencies that have an impact or would be impacted by regional planning should be invited to participate in whatever manner is dictated by that region.
11. In regional planning, all appropriate state agencies shall participate, including the Department of Ecology. Ecology's role in finalizing planning projects will be to approve or remand. (See State Review of Completed Plans.) The reasoning for this is that the final rule-making role of Ecology on approved plans is informed by intervening steps (i.e. State Environmental Policy Act and Administrative Procedures Act) and is therefore legally appropriate.

Dispute Resolution:

Policy disputes will be resolved, where possible, through mediation. The Water Resources Forum may also provide assistance to resolve disputes at the regional planning level.

Technical disputes may be resolved through the use of a technical advisory team or by retention of an agreed upon outside technical expert.

Boundaries:

Boundaries will be selected during the original scoping process and submitted to Ecology for review and approval. The planning region will be one or more Water Resource Inventory Areas (WRIA's), unless there is a specific need for a smaller area within a WRIA which is a specific hydrologic area. Larger planning units/regions will be one or more contiguous WRIA's or other contiguous hydrologically justifiable units. If there is no need for coordination among more than one WRIA, one WRIA can constitute a "region."

Other than planning by an Indian tribe within its reservation, any water resource planning activities within the exterior boundary of a reservation can only be done by mutual agreement of the affected tribe and the state.

For the purposes of the pilot regional planning processes, the Department of Ecology will select the regions, based on the recommendations of the Forum.

All planning boundaries will be determined by using resource- and user-based factors. A checklist incorporating the following factors should be developed by the Forum to ensure their consideration in determining boundaries:

Resource Based Factors:

1. Hydrology: Planning boundaries should primarily reflect hydrological, rather than political boundaries. This may include groupings of watersheds which have several characteristics in common such as geological conditions, gradient, precipitation pattern, etc.
2. Fisheries Management: Areas containing stocks which are managed under similar fisheries allocation and enhancement goals should be grouped together. Major watersheds have specific enhancement goals and often have fisheries rebuilding strategies which would be affected by water resource planning. Some regions are already grouped for harvest management purposes; for example, Hood Canal is considered a "region of origin." It should be noted that watersheds can have extended areas management. For example, the depleted coho runs of the Skagit system impact management in all intercepting fisheries including the Strait of Juan de Fuca and Ocean.

User Based Factors:

1. Similar Out-of-Stream Uses: Watersheds exhibiting similar types of uses can be planned collectively more easily than diverse uses. Also, the broader geographical planning base gives planners greater flexibility of methods to achieve their goals. Examples of dissimilar uses would include municipal, industrial and agricultural, since these uses have different seasonal patterns and distribution systems. An area containing several similar uses should probably constitute a single planning unit.
2. Similar Land Use Patterns: Characteristics would include rural/urban, agricultural, forest based, industrial, municipal, growth pattern and rate.
3. Water Supply Linkages: Watersheds which involve out-of- basin transfers need to be linked for planning purposes. For example, Dungeness River water is transferred to the Sequim watershed, even though the two areas are in different WRIA's.
4. Manageability of the Process: Factors which may lead to grouping or splitting areas include the population base, size of area, availability of a key governmental and affected interest groups, and other public education efforts. Some areas which have been involved in water quality plans may already have formed active watershed management committees. Areas which cover wide geographic territories with sparse populations may need to group WRIA's since key jurisdictions would be required to participate in several forums.

Linkages:

Regional planning efforts need to recognize the existence of and relationships between a variety of other planning activities. In scoping and developing regional plans, participants should avoid duplication. In developing a water resource plan:

- * There is recognition that water withdrawals can impact water quality. Therefore water quality, both potability and environmental quality issues, when related to water use and availability, should be integrated into the planning process.
- * Local land use planning and permit decisions which will protect the water resource or create demands for water shall be compatible with water resource planning. Local governments shall provide for the protection of the water resource and shall link development and land use planning and zoning to water availability.

- * Consideration should be given to what, if any, linkages between on-reservation and off-reservation water use and management exist or should be incorporated into a water resource plan. Reservations are legally distinct units with a different body of applicable laws.
- * Other federal, state and local programs which impact water resource use and availability should be integrated with the water resource planning process.

The following are examples of such processes or programs:

- U.S./Canada Pacific Salmon Treaty
- Columbia River Systems Operation Review
- FERC licensing of hydropower facilities
- Forest Service Planning
- U.S./Canada Flow agreement on Columbia River
- Bureau of Reclamation Operations/Contracts
- Court Approved U.S. v. Oregon Columbia River Fishery Management Plan
- Northwest Power Planning Council's Fish and Wildlife Program
- Various Wild and Scenic River proposals and related planning processes
- Columbia Gorge National Scenic Area planning process
- Watershed planning process by the Department of Fisheries
- Watershed planning required by the Puget Sound Water Quality Authority
- Comprehensive Hydroelectric planning process
- Growth management process
- Coordinated water system planning process
- Game Fish 2000 plan by the Department of Wildlife
- State Scenic Rivers program
- Groundwater Management area program
- Priority Species and Habitat Project (WDW)
- U.S. v. Washington Fisheries Management Plans
- Water System Comprehensive Plans
- Land Use Plans
- Threatened and Endangered Species Act

Proposal/Scoping:

The regional planning group will complete the scoping process by determining the following:

1. Participation and workplan
 - a. List of participants to be included, name, affiliation, and alternates
 - b. Designated coordinating entity(ies)
 - c. Intergovernmental agreements necessary to implement planning process
 - d. Milestones and workplan
 - e. Public involvement and SEPA compliance
 - f. Public education elements
2. Identification of resources needed for planning process from state and regional participants
 - a. Staffing requirements
 - b. Technical expertise
 - c. Funding
 - d. Other commitments

3. The scoping process shall consider and determine at a minimum which of the following elements shall be addressed in the plan:
 - a. Groundwater
 - i. Water quality protection
 - ii. Conservation
 - iii. Recharge
 - iv. Inventory of current and exempted uses/data collection/methodologies
 - v. Out of area distribution
 - b. Surface Water
 - i. Water quality
 - ii. Conservation
 - iii. Minimum instream flows
 - iv. Priority of use
 - v. Inventory of current and exempted uses/data collection/methodologies
 - vi. Habitat
 - vii. Out of area distribution
 - viii. Peak flow management
 - c. Consumptive Needs
 - i. Domestic
 - ii. Agricultural
 - iii. Hatcheries
 - iv. Hydroelectric
 - v. Industrial
 - d. Non-Consumptive Needs
 - i. Instream Flows
 - ii. Recreational
 - iii. Aesthetics
 - iv. Ecosystem
 - v. Cultural
 - vi. Rivers assessed as eligible for designation as state scenic rivers
 - vii. Rivers assessed as eligible for designation as Federal wild and scenic rivers
 - viii. Fish and Wildlife
 - ix. Hydroelectric
 - e. Relationship between surface and groundwater
4. Description of relationship to other planning processes (see above).

The completed scoping document will be submitted to the Department of Ecology.

State Review/Approval of Scoping:

The Department of Ecology will review the scoping document for completeness and compliance with applicable state and federal laws and regulations, and water resource planning guidelines. In reaching this decision, the Department of Ecology shall have the responsibility of involving other state agencies where their participation is necessary to the success of the proposed planning effort. This will ensure the involvement of state agencies necessary to assist in the planning effort and to implement the plan. If found satisfactory, the regional planning process may begin. If not in compliance, Ecology will remand the scoping document to the regional planning group for modifications.

Plan Development and Decision-Making:

The regional planning group will construct a plan that addresses the elements identified through the approved scoping process. The plan must be consistent with applicable state and federal laws and guidelines. The plan development process will be integrated with the SEPA process.³ Throughout the plan development process, the regional planning group will receive public comments as required by state law and the plan document will be written as the SEPA document. In addition to the appeals processes detailed herein, plan development will be required to be integrated with the SEPA process.

Each caucus will have one voice in decision-making. The planning group will attempt to reach consensus whenever possible. In cases where consensus is not possible, decisions will be made by a consensus of the government caucuses and a majority of the interest group caucuses. Minority reports, if prepared, shall be included in the plan document.

Where consensus among the governments (tribal, state, and local governments) and/or a majority of the interests is not achievable, the Department of Ecology shall assume the lead role in assuring that the plan is completed for the pilot projects in a timely fashion, not to exceed twenty-four (24) months.

State Review of Completed Plans:

The Department of Ecology shall review the completed plans for compliance with applicable federal and state laws and regulations, including the state Administrative Procedures Act and SEPA, and conformance with Ecology's water resource planning guidelines developed under this process. (See Section XI.) In conducting such a review, Ecology shall give substantial weight to the regional plan in meeting the fundamentals of the Water Resources Policy Act of 1971 (RCW 90.54), Memorandum of Understanding, and the agreed-to goals. All plans shall recite "nothing herein authorizes the impairment of any treaty or other right of an Indian tribe or member under federal law."

The state shall approve or remand the plan within 90 days. Extension may be recommended by the Water Resource Forum. Public comment will be taken throughout the review of the plan. A petition for review on process grounds may also be made to the Department of Ecology when it reviews the final plans for consistency with state guidelines. The Department may approve the plan as written or it may remand the plan to the regional planning entity for revisions. The Department may not make changes to the plan.

Appeals Process:

There will be no appeal of the planning effort during the planning process. The appeals mechanisms available to challenge a completed regional water resources plan will be those currently available under existing law. Current rights and standing to appeal are not diminished in any way by the proposed planning process. Appeals of a plan can be made to the appropriate court. In addition, actions taken by the state or local governments to implement the plan, such as permits, regulations, or local ordinances can be appealed to the Pollution Control Hearings Board, or the appropriate appeals body.

Implementation:

Once a regional plan is completed, the Department of Ecology will prepare and adopt implementing regulations as required by law. Local governments will prepare and adopt any ordinance needed to implement the plan at the local level. Once adopted, the regulations and ordinances would be binding on the state and local jurisdictions in their related planning and permit activities. The Department of Ecology will be the state entity that reviews the regional plans for compliance with state law and state standards. The Department of Ecology, in cooperation with other state agencies, relevant federal agencies, tribal governments, and other interested local governments, will also perform the preliminary basin inventories that precede the regional planning processes.

Evaluation, Guidance, and Adaptation of Process:

The planning process described in this Agreement is intended to be applied to all regions of the state in need of water resource planning and will be implemented in at least two regions within the next three years. It is the intent of the Forum to evaluate the process periodically, identify improvements, and adapt the process accordingly for future applications.

While the interests and organizations who developed this planning process sought primarily to achieve a cooperative process for water resource planning, they recognized that the broad goals of this effort should also be integrated by the Department of Ecology into its ongoing water resource management activities. Further, local governments recognize that their ongoing land use or water resource activities also could be affected by the goals of this cooperative process.

Notwithstanding the commitment to cooperation, the interests and organizations supporting this Agreement recognize that disputes may arise in regions where a cooperatively developed plan has yet to be implemented. The cooperative nature of the planning process described in this Agreement is intended to encourage resolution of such disputes, where possible, through mediation or other assistance.

V. ORGANIZED RESPONSE TO CRITICAL SITUATIONS WHICH REQUIRE ACTION NOW

In watersheds other than those involved in the two pilot projects, there will need to exist a mechanism to address issues and disputes over water. This mechanism establishes the ability to deal with critical situations and lists some of the tools for resolving issues in these areas. It is intended to take advantage of existing laws and governmental structures and is explicitly intended to notify and inform the parties of actions which may have an impact on the resource. It is not intended to expand on existing law, or otherwise alter the rights and responsibilities of the governmental entities. An emergency regulation, followed by a permanent regulation, shall be enacted establishing the mechanism to deal with critical situations.

This mechanism will be used when one of the following actions occurs:

1. Any of the three governmental entities (State, Tribal, General Purpose Local Government) find that a need exists to apply the mechanism. Such a finding can include the need to facilitate communication and coordination on issues relating to water quantity and related water quality concerns.
2. Any of the governmental entities applies their respective permitting processes to a basin or WRIA which has been designated as "critical situations" on the basis of limitations as to water supply and related water quality concerns.
3. If a special purpose local government requests that the mechanism be initiated to deal with the critical situation, the general purpose local government, which includes a portion of the special purpose district service area, shall initiate the mechanism on their behalf.

The mechanism shall permit the affected governmental entities to evaluate existing conditions or proposed actions which might have an impact on the resource. Under this mechanism, a basin or WRIA could be classified by agreement of the governmental entities into one of two categories:

- A. Critical Resource Impact - designating the water resource as being over-appropriated or adversely impacted by water quality issues. Any action in such a basin or WRIA which will likely have an adverse impact on the

instream resources as expressed in the planning guidance of this Agreement would likely be delayed or denied if such action might further harm the resource.

- B. **Probable Resource Impact** - designating the water resource as being in need of further evaluation to determine the nature and extent of the impacts resulting from existing conditions or proposed actions. After full evaluation, the water resource shall be reclassified as having either a critical resource impact or no impact, depending upon the findings.

When a proposed action or existing condition requires further evaluation or data collection, a number of tools shall be applied as necessary to protect the resources. These include, but are not limited to, targeted conservation efficiency, re-use; compliance and enforcement; dispute resolution assistance; Memoranda of Understanding and other agreements; local government restrictions on permit issuance or moratoria; basin withdrawal by adoption of administrative regulations under RCW 90.54.050 or limited state permit issuance. The Forum shall review the need for guidelines to assist in the implementation of this section.

VI. WATER RESOURCES PLANNING AND GROWTH MANAGEMENT

Recognizing the need to integrate the planning process outlined in the Chelan Plan with other land and water resource planning processes, the Chelan Plan recommends:

1. Amending HB 2929 to include a water resource component. This component shall include, among other provisions:
 - a. Local planning efforts shall recognize water availability and quality as key factors in an area's "carrying capacity."
 - b. Wherever state, tribal, or federal authorities believe there to be problems with water availability or quality that will affect a local government's permitting process under Section 63, these cases will receive first access to funding for technical data analysis. Such technical data analysis shall be completed in a timely manner.
2. Amending HB 2929 to include specific provisions whereby a model intergovernmental agreement, similar to the "Centennial Accord," between local (including special districts) and tribal governments is developed and adopted.

The Chelan Plan also recognizes that water resource planning, as outlined in this document, will not take place on tribal reservations without the consent of the appropriate tribes.

VII. DATA MANAGEMENT

The Chelan Agreement recognizes the importance of data to water management. The Chelan Agreement supports the continuing efforts of the Data Management Task Force in the development of a data management plan and the collection of essential data necessary, among other things, to commence the pilot planning process. The Chelan Agreement also supports open access to any information collected and managed by all state agencies pursuant to state law. For efficiency, the collection, analysis, and management of water resource data will be done cooperatively with state, tribal, local and federal governments.

VIII. CONSERVATION

The Chelan Agreement recommends that a task force, composed of representatives appointed by the caucuses, be created to develop legislation for the 1991 legislative session. In developing the legislation, the task force should consider:

1. Removing impediments to conservation, including the effect on wetlands loss due to improved efficiencies.
2. Providing incentives to promote conservation, water use efficiency, and re-use of water.
3. Providing funding for incentives, particularly for problem areas.
4. Determining how this program fits within the Department of Ecology's compliance effort.
5. Determining the relationship of conservation to the waste of water.
6. Removing impediments such as taxation on water use efficiency improvements.
7. Restoration and enhancement of instream flows through, among other mechanisms, conservation and more efficient management of the water resources.

In developing the legislation, the task force should utilize prior studies, legislative committee work, and draft Department of Ecology legislation.

The task force will attempt to make consensus recommendations. When consensus recommendations cannot be reached, the task force will present the alternatives considered and propose additional work, if appropriate.

The task force will complete its effort by January 31, 1991. The task force should be prepared to provide a briefing before the January 31, 1991, deadline to appropriate legislative committees.

The public will be informed throughout the development of this legislation.

IX. PUBLIC INFORMATION AND EDUCATION

The Chelan Agreement supports building a framework for an on-going information process to build public support for cooperative water resource planning and management. The Chelan Agreement recommends development of an information strategy, to be reviewed and approved by the Water Resources Forum. The strategy shall identify and utilize existing information dissemination processes and integrate with and possibly delegate to, the Environmental Education Council established pursuant to the Environment 2010 Executive Order. The education strategy should emphasize cross-cultural training for all water resource planning participants.

X. FUNDING REQUIREMENTS AND STRATEGIES

[Editor's Note: The Washington State Legislature meeting in Special Session during June 1991, appropriated funds to begin implementation.]

XI. STATEWIDE GUIDANCE

The development of guidelines and principles is essential for the state to fulfill its stewardship role for resources. Guidelines should be developed as soon as possible. Guidelines will speak to the actual outcomes sought in plans. It is accepted that the 1971 Water Resources Act, and Memorandum of Understanding on Environmental Protection are the starting point for this planning process, but they need clarification.

These general guidelines must be developed before the pilot projects begin. The Interim Team should consider guidelines or pass the responsibility on to the Forum.

Guidelines will be in place during the duration of the pilots, but will be reviewed at the end of the projects. It is recognized that they will probably need refinement. The guidelines will be applicable to all water resource planning subject to state jurisdiction and control.

NOTES

¹ Tribal governments in 1970 brought suit in United States v. Washington, 384 F. Supp. 312 (W.D. Wash. 1974); aff'd in Washington v Passenger Fishing Vessel Ass'n, 443 U.S. 658 (1979) against the state seeking a declaration and enforcement of their treaty fishing rights. Litigation which ultimately could interpret or lead to the quantification of certain tribal claims to water currently is pending before the United States District Court in Phase II, U.S. v. Washington, 506 F. Supp. 187 (W.D. Wash. 1980), vac'd 759 F 2d. 1353 (9th Cir. 1985).

In Phase II, the tribes allege that the state agencies have been unsuccessful in properly protecting the habitat. Within the context of this litigation, the state has contested the nature and extent of the treaty environmental rights alleged by the tribes. The parties to U.S. v. Washington recognize the potential for litigation of the Phase II issues in either the general or specific sense and have developed a Memorandum of Understanding on Environmental Protection (attached) for the purpose of initiating a cooperative approach to protection, enhancement, and restoration of fisheries habitat. Neither this agreement or the Environmental Protection MOU is a settlement of Phase II, U.S. v. Washington, nor shall either be construed to limit the right of any party to act in any administrative, judicial or legislative forum to protect its rights.

² Any test currently found in any state law used to allocate, determine, or prioritize water rights (such as the "maximum net benefits" test) has no application to tribal governmental interests in this cooperative process, unless they determine otherwise. Neither the participation by all governments and other organizations and individuals nor their concurrence in generally applicable water resource guidelines, standards or criteria shall be deemed a waiver of any federal law obligations in regard to the rights of any of those parties or their members.

³ This agreement will not result in SEPA being made applicable to tribal water planning within Indian reservations nor will SEPA compliance necessarily satisfy federal law in regard to treaty and other reserved rights.

WATER RESOURCES FORUM CAUCUSES

- Agricultural Caucus
- Business Caucus
- Environmental Caucus
- Fisheries Caucus
- Local Government
- Recreation Caucus
- Tribal Caucus
- Washington State Government Caucus

WATER RESOURCES FORUM — CAUCUS PERSPECTIVES

AGRICULTURAL CAUCUS PERSPECTIVES

FIRST AND FOREMOST, MAINTAINING A HEALTHY AGRICULTURAL INDUSTRY IS A HIGH PUBLIC PRIORITY. AGRICULTURE SHOULD BE ASSURED OF A PLENTIFUL AND QUALITY WATER SUPPLY TO ACCOMMODATE FUTURE NEEDS. WITH THAT AS THE CENTRAL VISION, THE FOLLOWING GOALS AND OBJECTIVES ARE PRESENTED:

Accommodate future out-of-stream and instream needs.

(We believe that future water resource needs cannot be met without a comprehensive approach which utilizes new storage and water conservation. In many cases, we believe small local projects considered on a case-by-case basis have a better chance for success.)

Certainty.

(We recognize that any water resources planning process is not intended to formally determine or resolve any dispute about water rights under State, Federal or Indian Treaty Law. Water should be able to be transferred to other uses/users without jeopardizing existing water rights. We recognize that some wetlands are created by irrigation and other practices. Part of certainty is the assurance that incentives to assist conservation will be instituted and that penalties will not be assessed if conservation practices dry up artificially created wetlands.)

Address regional needs.

(Solutions to water resource needs will be different region by region. We recognize the need for each region to address its needs in a manner in which the involved parties will see as legitimate and workable. The Interim Team [n.b., predecessor to Water Resources Forum] should develop a checklist for each region to consider as they develop a water resource plan. In the creation of regions, boundaries should not dissect the water service area of any water purveyor without the approval of that entity.)

Resolve conflict through a cooperative process.

(Such a process should be accomplished within a reasonable time-frame to which the parties can agree.)

Provide full participation in decision making.

(The Interim Team [n.b., Water Resources Forum] which came out of Rosario was constructed based upon the needs of each major state-wide constituency. Each regional process, however, will and should be different and should primarily utilize the particular parties from within the region which are needed for success. Since there is agriculture production in every region, agriculture and the special purpose districts which serve it should be named in each regional planning process.)

BUSINESS CAUCUS PERSPECTIVES

- * A high level of certainty regarding future water supply would be implicit in the policy.
- * The policy would allow for a high level of predictability regarding long-term water supply.
- * The policy would provide for an adequate supply of water to sustain economic growth in the residential, commercial, and industrial sectors that is consistent with the state's economic development and growth policies.
- * The policy would have clarity and simplicity that provides a basis for regulation without leading to unnecessary litigation; dispute resolution would be clearly defined.
- * There would be a resource allocation balance that recognizes both instream and out-of-stream use; consumptive and non-consumptive utilization.
- * The policy would have State goals that provide flexibility for local jurisdictions to implement and regulate.
- * The policy would be coordinated with other plans on resource allocation—especially land use.
- * The policy would emphasize incentives rather than punitive measures for compliance, but clear accountability and enforcement provisions would be integral.

ENVIRONMENTAL CAUCUS PERSPECTIVES

1. Protect the needs of the water-dependent ecosystem.
2. Realize a net gain in water-dependent habitat over existing levels.
3. Restoration of instream flows in over-allocated streams.
4. Preserve water use options for future generations.
5. Implement conservation, efficiency, reuse, and enforcement measures prior to storage and other mitigation measures.
6. Assure that regional and basin water use planning conforms to statewide water policies and standards.
7. Maintain the present administrative link between water quality protection and water resource use.

FISHERIES CAUCUS PERSPECTIVES

GOALS:

To ensure that (1) water resource policies and management decisions promote the preservation, protection, enhancement, and restoration of anadromous and resident salmonids, wildlife, and their habitats; and (2) that due regard in all decision-making processes be afforded the recreational and aesthetic values of the State's rivers and streams.

OBJECTIVES:

1. Establish instream flows and maintain water quality consistent with the goals stated above.
2. Protect and permit no further net loss to wetlands.
3. Protect, enhance, and, where necessary, restore riparian corridors and ecosystems.
4. Install, where none exist, and enhance existing safe-passage capabilities for anadromous species through water flow rates, fish ladders, turbine and diversion screens, and other applicable facilities.
5. Promote, through incentives, conservation/recycling in the use of out-of-stream flows.
6. Promote public education programs aimed at water conservation, water quality, and wildlife habitat protection and encourage catch-and-release recreational fishing in selected quality waters.
7. Encourage increased (State) participation in the State Scenic Rivers program.
8. Improve enforcement capabilities in the protection of water quality and wildlife habitat.
9. Facilitate full participation in the decision-making process.

LOCAL GOVERNMENT CAUCUS PERSPECTIVES

THE PRIMARY GOAL OF THE LOCAL GOVERNMENT CAUCUS IS TO FULFILL OUR OBLIGATION TO PROVIDE FOR THE PRESENT AND FUTURE WATER NEEDS OF THE PEOPLE OF THE STATE AS PROJECTED BY ESTABLISHED PLANNING PROCESSES.

In so doing, **procedurally**, we seek to achieve a process:

1. With certainty and timeliness in decision-making and implementation.
2. Which responds to regional differences in water needs and hydrology.
3. Which is open, where participants are committed and participate in good faith in a cooperative approach to meet the various water needs.
4. Whereby planning and conflict resolution is conducted with recognition of the necessity of cooperation among governments (State, Tribal, Local).
5. Wherein technical studies are jointly conducted by participants.
6. Which would be coordinated with federal agencies.

In so doing, **substantively**, we seek to achieve:

1. **WATER SUPPLY PLANS MUST BE COMPATIBLE WITH LAND USE PLANS**
 - a. Growth management, land use, and water resource plans and policies should be compatible.
 - b. Long term human need for water should be anticipated and provided for.
2. **HABITAT PROTECTION RESPONSIBILITY MUST BE EQUITABLY SHARED**
 - a. We support reasonable habitat mitigation, restoration and enhancement and the use of best available techniques to achieve these objectives; provided that . . .
 - b. Current and future proponents of **all** projects affecting the aquatic habitat should bear the cost of habitat mitigation, and . . .
 - c. Redress of historic degradation should be through equitable cost sharing among all beneficiaries. (Current rate payers should not bear the triple cost burden of meeting their own needs, and habitat degradation from prior generations.)
 - d. Redress of historic degradation should recognize the potential for irretrievable loss of habitat and/or realistic achievability of restoration/enhancement.
 - e. Determination of "wild and scenic" status and other site specific constraints should be part of the water resource planning process (e.g., Northwest Power Planning Council's Fish & Wildlife Program and the Federal Columbia River System Operation Review).

3. CONSERVATION SHOULD BE ENCOURAGED

- a. Impediments to conservation should be removed and incentives for conservation should be provided. (Where the conserved water goes is currently an impediment and should be made an incentive to conserve.)
- b. To achieve significant, certain, and lasting conservation, conservation measures should be through best available technology, culturally acceptable, and of reasonable economic and non-economic cost (e.g., realistic vs. unrealistic retrofitting, wetland protection vs. loss).

NOTE: Historically, local government water suppliers have relied upon curtailment/conservation to meet need during drought. As we implement increased conservation during non-drought periods, it will reduce the magnitude of additional savings possible during drought periods. This loss of back-up reliability will need to be addressed in another manner in supply planning.

4. WATER SUPPLY MUST BE PROVIDED FOR HUMAN NEEDS

- a. The concept of water available to meet human needs should be acknowledged, including municipal, industrial, irrigation, and hydropower needs.
- b. All sources of water and classes and methodologies concerning water, including surface water, groundwater, conservation, water reuse, and water quality improvements, should be included in determining water available for all uses.
- c. Water resource planning must include meeting long term human needs for which the planning horizon should be at least 50 years.
- d. Groundwater sources should be available for water supply needs unless there is an overriding public need to do otherwise

5. COSTS FOR WATER RESOURCE PLANNING AND IMPLEMENTATION MUST BE EQUITABLE

- a. All consumptive users and beneficiaries should share equitably and reasonably in the costs, both economic and non-economic, of water resource planning and implementation.
- b. Water resource planning areas should be prioritized based on need and available resources, but local/regional water planning processes should be able to advance their timetable should they provide a greater portion of the resources necessary for conducting the process.
- c. Costs, both economic and non-economic, of implementation should be fair, equitable and reasonable, and seek to achieve the least overall burdensome plan of implementation.

6. WATER STORAGE WILL CONSERVE WATER FROM HIGH FLOWS FOR LOW FLOW PERIODS

- a. In order to conserve water from high flow periods for use during low flow periods, storage facilities should be utilized in a manner that would minimize environmental impacts.

7. LOCAL GOVERNMENTS SHALL PARTICIPATE IN SETTING INSTREAM FLOWS

RECREATION CAUCUS PERSPECTIVES

- * The rivers and streams of this State in their free-flowing state.
- * For rivers and streams and their ecosystems there be no net loss of habitat in the short term and restoration of habitat in the long term.
- * Conservation of water implemented as a top priority as state-wide policy. The enactment of building, landscaping, and irrigation codes to foster conservation. The recycling of industrial and gray water encouraged.
- * Recognition of instream values such as recreation, scenic attraction, aesthetics, and other related uses protected by the public trust doctrine.
- * Those rivers and streams that are presently dam-controlled be flow-regulated for recreation, compatible with fish habitat enhancement.
- * Instream flows on rivers and streams be set primarily for the ecology of the whole ecosystem, including fish habitat, and the enhancement of the recreational value of the river or stream.
- * Recognition of rivers designated in State Scenic Rivers Act and participation in that program.
- * Establishment of instream flows for maintenance of water quality for the protection of anadromous and resident wild fish.
- * Conflicts over water and water rights resolved in a reasonable time frame without resorting to litigation.
- * Full participation in decision-making process by all major state-wide constituencies.
- * Rivers and their flood plains be in public domain.

TRIBAL CAUCUS PERSPECTIVES

Instream Resources

Establishment of instream flows for fish and wildlife habitat, cultural/religious practices, and navigation will be mandatory for all water resource plans.

Water resource plans should also address instream values such as recreation, scenic attraction, aesthetics, or any other similar or related use or use protected by the public trust doctrine.

Goal: The long-term instream water resource management goal is the achievement of an overall gain of the fish and wildlife habitats to their full productive capacity.

This goal is consistent with and necessary to comply with federal, judicial, and congressional laws.

Objectives:

Achievement of this goal shall occur through the acts of:

- Protection of the full productive capacity of habitats,
 - instream flows will be established in all watersheds of the state
 - develop procedures to ensure protection of instream flows that are consistent with tribal authority in co-management of the fisheries resource
 - utilize the best scientific methodologies that measure the relationship between habitat and instream flows
 - instream flows will be determined in agreement between relevant state managers (e.g., DOE, WDW, WDF*, others) and tribal natural resource managers and in consultation with other governmental agencies, governments, and the general public
 - identify instream flow standards
 - protect riparian ecosystems and wetlands
 - develop plans to ensure protection of instream resources when there are emergency provisions necessary to protect the public health and safety of the public
 - ensure that establishment of instream flows will be protected from other water resources uses (e.g., priority date for instream flows for fish and wildlife habitat is time immemorial and is paramount to all other uses of water)

* DOE = Washington Department of Ecology
WDW = Washington Department of Wildlife
WDF = Washington Department of Fisheries

- ensure proper mitigation techniques for any proposed project that may affect the water resources, fish, or wildlife
- develop an adequate monitoring and enforcement system to protect instream flows

- Restoration of damaged habitats

- consistent with the co-management of fisheries resource, restore the productive capacity of historically utilized anadromous fish habitat
- restore habitat in terms of flow and other limiting factors that affect the productive capacity of the habitat
- restoration of flows will occur through: efficient water resource management, adequate enforcement of current water needs, conservation, forfeiture and relinquishment, purchase, storage of existing facilities, or new storage
- identify potential financial resources and costs
- establish plans with time schedules and ensure adequate funding

- Enhancement of potentially productive habitats,

- develop enhancement plans that are consistent with other state, tribal and federal programs such as: watershed planning process, Pacific Salmon Treaty enhancement projects, the NWPPC Fish and Wildlife Plan, the Salmon and Steelhead Conservation and Enhancement Act, and future projects and those programs that may be developed by state, tribal, and federal resource managers and agencies

Definitions:

habitats: the place or type of natural site where a plant or animal normally lives and grows (e. g., stream habitat and associated wetlands and riparian ecosystems).

potentially productive habitats: are those areas that can be utilized by anadromous fish as identified by state, federal, or tribal resource managers and agencies' programs and projects and, those areas downstream of known impassable blockages and, where there is no confirmed blockage, all areas downstream of the point identified by state, federal, or tribal fisheries agencies and managers as the observed extent of anadromous fish migration. (e.g., NWPPC Protected Areas, Tribal-State Watershed Planning, Tribal/State restoration or enhancement projects).

anadromous fish: includes but is not limited to , all salmonid species of pacific salmon, steelhead and cutthroat trout, etc.

riparian ecosystems: is an interacting natural system including, and adjacent to, surface waters; including all organic and inorganic elements contained in an aquatic zone, riparian zone, and direct influence zone. A riparian ecosystem contains the total of all environmental elements that directly contribute to the structural and functional processes of a body of water.

aquatic zone: is the area below the mean annual high water mark of surface waters including the water, banks, beds, organic and inorganic constituents.

riparian zone: is the area bordering streams, lakes, tidewaters, and other bodies of water characterized by a high water table and may contain plants which require saturated soils during all or part of the year. Riparian zones are the transitional areas between aquatic and terrestrial environments.

direct influence zone: is the area outside but adjacent to a riparian zone which includes trees which shade a stream or directly contribute coarse or fine woody debris or terrestrial insects to a stream.

mitigation: means the reduction of adverse effects of a proposed project or activity by considering in order: (a) avoiding the impact altogether by not taking a certain action or parts of an action; (b) if in agreement with the natural resource managers, minimize the impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environments using only those techniques that are proven to fulfill their intended purpose, provide an adequate margin of error, and/or are completed prior to initiation of the project; (d) reducing or eliminating the impact over time by preservation and maintenance; and (e) adequately monitored to ensure mitigation plan fulfills primary objectives of the restoration effort.

watershed: means the entire land area drained by a stream or system of connected streams such that all stream flow originating in the areas is discharged through a single outlet.

Out-of-Stream and Land Use

Goal:

Withdrawals of water of the state shall not exceed or impact the productive capacity of the fish and wildlife resources, groundwater supplies, potable water, and watersheds' ecosystems.

Objectives:

- local plans will be developed to ensure growth will be managed to prevent excessive demand for the limited surface and groundwater, and will fully protect instream resources, riparian ecosystems, and wetlands
- adequate water supply will be demonstrated prior to development
- no water permits or certificates will be issued which may impose a risk to the fish populations or habitat
- zoning and other land use regulations must ensure that expansion of service areas does not adversely impact the fish and wildlife resources that are of concern to all affected Indian tribes
- extension of service areas or utilization of interties will only proceed if tribal interests are adequately protected
- issuance of water permits must be contingent upon the protection of tribal interests for the area where the water appropriation will service

Conservation/Re-Use

Goal:

Use of water without waste is required. Conservation will be the primary source of supply for restoration of instream flows and then for future out-of-stream uses. Re-use of "grey-waters" shall be preferred over the future of out-of-stream withdrawals. Emphasis shall be placed on areas of known over-appropriation of surface and ground water and of water quality problems.

Objectives:

- employ best available technology and scientific methodologies
- develop local (sub-basin) and regional (basin) coordinated and efficient water resource management plans directed under well-defined standards, guidelines, procedures, schedules, costs, and criteria
- develop efficiency standards and guidelines for municipal, industrial, and agriculture
- facilitate public advisory committees and public education
- develop and implement rate structures to promote conservation
- ensure adequate monitoring and enforcement

Groundwater

Groundwater withdrawals will not be permitted unless it can be demonstrated that the recharge rate of the aquifer is not exceeded, water quality is not impacted, and other surface water uses are not adversely affected.

Water Quality

Water quality shall be protected and restored to comply with state, federal, and tribal water quality standards and to ensure they are not in conflict with the fish and wildlife habitat goals. Water quality should be protected on a watershed/ecosystem based approach.

On-reservation management and ensure individual tribal sovereignty

The tribes have a right to participate and conduct water resource planning processes. If the tribes do elect to participate in the process, tribal reservation management and goals will be developed individually by each tribe to ensure the preservation of tribal homelands, of perpetuation of tribal traditions and beliefs essential to each tribe's self-identity and determination, provide for present and future economic development, and to sustain the ability of the tribes to endure as separate sovereign nations. There will be no water resource management decisions affecting tribal waters, homelands, or rights without express tribal consent.

The water resource planning process is not intended to quantify tribal water rights.

The water resource planning process is not intended to formally determine or resolve any dispute about water rights under state, federal, or Indian treaty law.

Nothing in this planning process shall limit, preclude, restrict, or in any way affect the right of the tribes to act in any administrative, judicial or legislative forum, or in any other place or way, to protect its rights or challenge the action of any other party.

Provide for full participation of the tribes in decision-making that can affect their governmental interests and rights.

- Decision-making on water resource issues will be consistent with the Government-to-Government process that includes and recognizes the tribes as separate sovereign nations.
- Adequate funding to all tribes for policy and technical participation is necessary.
- Adequate data and scientific analysis is necessary for cooperative planning of water resources and must be agreed upon by the affected tribes

WASHINGTON STATE GOVERNMENT CAUCUS

Goals and Objectives of a Planning Process:

1. Accommodate instream and future out-of-stream needs
2. Certainty (minimize litigation)
3. Address regional needs
4. Resolve conflict in a timely manner
5. Provide for full participation in decision making.

Addenda

to

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**MEMORANDUM OF UNDERSTANDING
BETWEEN
FEDERALLY RECOGNIZED TRIBES OF WASHINGTON STATE
AND
THE STATE OF WASHINGTON**

ENVIRONMENTAL PROTECTION

1.0 PREAMBLE

Fisheries and wildlife resources are of great value and importance to Washington citizens. Protection of these resources is a matter of high priority for Washington's Indian tribes and the agencies and departments of Washington state government.

The State and the Tribes are interested in making a major commitment to protecting the habitat and increasing production of the fisheries resource. Cooperative efforts between state agencies and Tribal governments will assure protection of habitat and full success of enhancement programs.

Each of the parties desires to restore, where appropriate, habitat that has been degraded through prior activities and to enhance potentially productive habitat. The parties agree that the development of a cooperative plan to protect, restore, and enhance habitat is an essential element of the discussions outlined in this Memorandum. The parties agree to use good faith efforts to jointly seek funding necessary to carry out the activities contemplated in this agreement.

2.0 SUMMARY OF UNITED STATES v. WASHINGTON

Tribal governments in 1970 brought suit in United States v. Washington against the State seeking a declaration and enforcement of their treaty fishing rights. There were two distinct segments in that lawsuit. Phase I involved the determination of the nature and extent of the fishery harvest rights. Those basic harvest rights were affirmed by the United States Supreme Court in 1979 and the federal court has retained jurisdiction to fully implement those fishing rights.

In Phase II, the Tribes allege that state agencies have been unsuccessful in properly protecting the habitat. The Tribes seek a declaration that the treaties guarantee habitat protection and have alleged first, that state agencies have an obligation to protect the supply of fish and second, that agency actions which damage, degrade, or destroy habitat or current levels of harvestable fish violate treaty rights.

The parties of United States v. Washington recognize the potential for litigation of the Phase II issues in either the general or specific sense. However, the parties have learned that the benefits of cooperative resolution of disputes may exceed those obtainable through litigation. The Tribes have expressed an interest in working cooperatively with the State in habitat and water protection matters, rather than pursue this expensive and time consuming litigation.

Further, the parties recognize that prior efforts of the state and the tribes to resolve issues of mutual concern have been enhanced by the active cooperation and participation of non-parties representing private interests. The parties recognize that the state will seek to cooperatively involve these private interests in achieving the objectives stated in the **PREAMBLE** to protect natural resources, improve where appropriate degraded habitat, and enhance potentially productive habitat.

Accordingly, the parties join in this Memorandum of Understanding for the purpose of initiating a cooperative approach to protection, enhancement, and restoration of fisheries habitat.

3.0 GENERAL PRINCIPLES

The state recognizes the tribes as sovereign entities under federal law with certain governmental authorities and responsibilities. Accordingly, discussions under this Memorandum will be conducted between the parties on a government-to-government basis. While the parties agree to pursue the cooperative approach outlined in this Memorandum, they recognize that the litigation was initiated for the purpose of establishing Tribal rights to habitat protection.

3.1 Tribal Concerns and Goals

The Tribes believe and contend that this right obligates the state to protect the supply of fish, and actions which damage, degrade, or destroy habitat, such that the rearing or production potential of the fish will be impaired or the size or quality of the run will be diminished, violates Tribal Treaty fishing rights.

The Tribes contend that the state does not give enough priority to protection of the fish habitat and therefore subordinates treaty-protected rights to other interests. The Tribes believe that the state's legal and fiscal authorities should be used to ensure that activities undertaken, managed, regulated, or permitted by the state shall result in a net gain to the productive capacity of the fish and wildlife habitats.

The Tribes' general long term policy objective of this Memorandum is the achievement of an overall net gain of the productive capacity of fish and wildlife habitats. Achievement of this objective shall occur through the acts of protection and conservation of the productive capacity of habitats, the restoration of damaged habitats, enhancement of potentially productive habitats, and, where appropriate, proper mitigation techniques.

3.2 State Concerns and Goals

Within the context of the litigation, the state has contested the nature and extent of the treaty environmental rights alleged by the tribes. The state however acknowledges the benefit of attempting to address and resolve the underlying problems in a non-litigative context.

The parties further recognize that, although they may have differing views of the legal theories, the state shares interest and concern about protecting the fishery habitat. Therefore, the state enters into this Memorandum committed to cooperatively resolving environmental concerns raised in the litigation and to further protecting fisheries resources.

Washington has unique physical characteristics which support a variety of interests. Washington benefits from a multi-faceted economy with diverse fishing, agriculture, and timber industries, as well as industrial, retail and commercial entities. Washington's natural features make the State a highly desirable place to live. Because of these characteristics, the parties anticipate increases in population and economic growth. The goal of the State is to accommodate growth in a manner which will protect the unique environment of the State.

Local governments exist under legal and fiscal authorities which create a government-to-government relationship between them and the state. The Tribes recognize the importance of relationships with local governments throughout the state. The parties recognize the state will afford an opportunity for local government to properly represent their authorities and responsibilities within discussions contemplated by this Memorandum of Understanding.

3.3 Habitat Protection and Water Use

The parties agree that they must increase their understanding of the laws, regulations, ordinances, and jurisdictional system currently used that affect Washington's habitat and regulated use of water within the State.

Additionally, the parties agree that the level of public education concerning these matters must be increased. The parties pledge to cooperatively undertake projects designed to carry out these agreements.

It is anticipated that the parties will review 1) information about the existing system of habitat protection and 2) proposed procedures for future protection in order to 3) determine the appropriate strategy to implement agreed measures to address the concerns of the parties and fulfill the goals of this Memorandum.

3.4 Habitat Restoration and Enhancement

The parties recognize that the magnitude of the opportunity to restore, where appropriate, degraded, damaged, or destroyed habitat, and to enhance potentially productive habitat presents issues of coordination, priority, funding and organization.

In recent years, various state agencies, the Tribes, federal officials, and/or members of the business community have engaged in discussions concerning habitat issues. Some of these discussions have focused on the effect on fisheries and wildlife resources by forest practices. Others have focused on what measures are necessary to provide the optimum production of fish on a watershed basis. Still others have focused on the steps necessary to improve and maintain the water quality in Puget Sound. These activities are positive, cooperative, and constructive steps towards addressing habitat restoration and enhancement.

The parties recognize that a process to deal with the breadth and complexity of habitat restoration and enhancement opportunities presented by Phase II must be developed. Successful restoration and enhancement efforts will require educational efforts involving constituencies of each of the parties, particularly so that full advantage can be taken of funding opportunities. The priorities, which may be regional, species, or conservation related must be developed within the government-to-government relationship envisioned in this Memorandum.

Accordingly, the parties agree to review current processes for resolution of habitat issues. The parties shall then determine whether those processes should be modified, or new processes created, in the spirit of this memorandum.

4.0 COOPERATIVE RESOLUTION

One of the principal purposes of this process is to resolve environmental issues so that litigation might be avoided. The parties continue to be involved in ongoing activities related to fisheries and wildlife habitat. Each party agrees that it will, to the best of its ability and authority, take actions which will cooperatively identify and attempt resolution of specific issues of concern which may arise from time-to-time in relation to the fish and wildlife habitat. However, nothing in this Memorandum shall limit, preclude, restrict, or in any way affect the right of any party to act in any administrative, judicial or legislative forum, or in any other place or way, to protect its rights or challenge the actions of any other party to this agreement.

The parties acknowledge that success of this process may be dependent upon informed consideration of the concerns of other governmental entities and private interests. The parties agree, therefore, of the need to keep interested entities informed of this process.

The parties are committed to complete the tasks outlined in this Memorandum by June 30, 1990. The parties recognize that their significant fisheries-related and other commitments during the term of this agreement also will be contributing to the restoration and management of the fishery resources. Throughout the term of this agreement, the parties shall communicate to each other their view about the progress of discussions and the fulfillment of responsibilities outlined in this Memorandum. Prior to June 30, 1990, the parties will confer to determine whether the progress to date and the activities under the Memorandum warrant an extension of its term.

The State of Washington



Proclamation

STATE/TRIBAL GOVERNMENTAL RELATIONS POLICY

WHEREAS, it is the intent of the Governor of the State of Washington to confirm its government-to-government relationship with Washington tribes; and

WHEREAS, the State of Washington recognizes that there are 26 separate and distinct federally recognized Indian tribal governments located within the boundaries of the state; and

WHEREAS, the State of Washington and the tribal governments recognize the state contains 39 counties and numerous other local governments with independent and often overlapping interests and legal authority; and

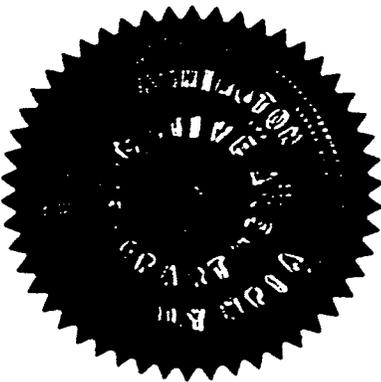
WHEREAS, the State and tribal governments acknowledge that tribes and the state have historical relationships and unique rights shaped by federal and state constitutions, statutes, and treaties with the United States government and executive orders of the President;

NOW, THEREFORE, I, Booth Gardner, Governor of the State of Washington do hereby proclaim that the State of Washington accepts the fundamental principle and integrity of the government-to-government relationship between the State and the Indian Tribes, and that this principle shall be the basis of the State's Indian Tribal Governmental Policy.

Signed, this 3rd day of January, 1989

A handwritten signature in black ink that reads "Booth Gardner".

Governor Booth Gardner



CENTENNIAL ACCORD
between the
FEDERALLY RECOGNIZED INDIAN TRIBES
in
WASHINGTON STATE
and the
STATE OF WASHINGTON

I. PREAMBLE AND GUIDING PRINCIPLES

This ACCORD dated August 4, 1989, is executed between the federally recognized Indian tribes of Washington signatory to this ACCORD and the State of Washington, through its governor, in order to better achieve mutual goals through an improved relationship between their sovereign governments. This ACCORD provides a framework for that government-to-government relationship and implementation procedures to assure execution of that relationship.

Each Party to this ACCORD respects the sovereignty of the other. The respective sovereignty of the state and each federally recognized tribe provide paramount authority for that party to exist and to govern. The parties share in their relationship particular respect for the values and culture represented by tribal governments. Further, the parties share a desire for a complete accord between the State of Washington and the federally recognized tribes in Washington reflecting a full government-to-government relationship and will work with all elements of state and tribal governments to achieve such an accord.

II. PARTIES

There are twenty-six federally recognized Indian tribes in the state of Washington. Each sovereign tribe has an independent relationship with each other and the state. This ACCORD, provides the framework for that relationship between the state of Washington, through its governor, and the signatory tribes.

The parties recognize that the state of Washington is governed in part by independent state officials. Therefore, although, this ACCORD has been initiated by the signatory tribes and the governor, it welcomes the participation of, inclusion in and execution by chief representatives of all elements of state government so that the government-to-government relationship described herein is completely and broadly implemented between the state and the tribes.

III. PURPOSES AND OBJECTIVES

This ACCORD illustrates the commitment by the parties to implementation of the government-to-government relationship, a relationship reaffirmed as state policy by gubernatorial proclamation January 3, 1989. This relationship respects the sovereign status of the parties, enhances and improves communications between them, and facilitates the resolution of issues.

This ACCORD is intended to build confidence among the parties in the government-to-government relationship by outlining the process for implementing the policy. Not only is this process intended to implement the relationship, but also it is intended to institutionalize it within the organizations represented by the parties. The parties will continue to strive for complete institutionalization of the government-to-government relationship by seeking an accord among all the tribes and all elements of state government.

This ACCORD also commits the parties to the initial tasks that will translate the government-to-government relationship into more-efficient, improved and beneficial services to Indian and non-Indian people. This ACCORD encourages and provides the foundation and framework for specific agreements among the parties outlining specific tasks to address or resolve specific issues.

The parties recognize that implementation of this ACCORD will require a comprehensive educational effort to promote understanding of the government-to-government relationship within their own governmental organizations and with the public.

IV. IMPLEMENTATION PROCESS AND RESPONSIBILITIES

While this ACCORD addresses the relationship between the parties, its ultimate purpose is to improve the services delivered to people by the parties. Immediately and periodically, the parties shall establish goals for improved services and identify the obstacles to the achievement of those goals. At an annual meeting, the parties will develop joint strategies and specific agreements to outline tasks, overcome obstacles and achieve specific goals.

The parties recognize that a key principle of their relationship is a requirement that individuals working to resolve issues of mutual concern are accountable to act in a manner consistent with this ACCORD.

The state of Washington is organized into a variety of large but separate departments under its governor, other independently elected officials and a variety of boards and commissions. Each tribe, on the other hand, is a unique government organization with different management and decision-making structures.

The chief of staff of the governor of the state of Washington is accountable to the governor for implementation of this ACCORD. State agency directors are accountable to the governor through the chief of staff for the related activities of their agencies. Each director will initiate a procedure within his/her agency by which the government-to-government policy will be implemented. Among other things, these procedures will require persons responsible for dealing with issues of mutual concern to respect the government-to-government relationship within which the issue must be addressed. Each agency will establish a documented plan of accountability and may establish more detailed implementation procedures in subsequent agreements between tribes and the particular agency.

The parties recognize that their relationship will successfully address issues of mutual concern when communication is clear, direct and between persons responsible for addressing the concern. The parties recognize that in state government, accountability is best achieved when this responsibility rests solely within each state agency. Therefore, it is the objective of the state that each particular agency be directly accountable for implementation of the government-to-government relationship in dealing with issues of concern to the parties. Each agency will facilitate this objective by identifying individuals directly responsible for issues of mutual concern.

Each tribe also recognizes that a system of accountability within its organization is critical to successful implementation of the relationship. Therefore, tribal officials will direct their staff to communicate within the spirit of this ACCORD with the particular agency which, under the organization of state government, has the authority and responsibility to deal with the particular issue of concern to the tribe.

In order to accomplish these objectives, each tribe must ensure that its current tribal organization, decision-making process and relevant tribal personnel is known to each state agency with which the tribe is addressing an issue of mutual concern. Further, each tribe may establish a more detailed organizational structure, decision-making process, system of accountability, and other procedures for implementing the government-to-government relationship in subsequent agreements with various state agencies. Finally, each tribe will establish a documented system of accountability.

As a component of this system of accountability within state and tribal governments, the parties will review and evaluate at the annual meeting the implementation of the government-to-government relationship. A management report will be issued summarizing this evaluation and will include joint strategies and specific agreements to outline tasks, overcome obstacles, and achieve specific goals.

The chief of staff also will use his/her organizational discretion to help implement the government-to-government relationship. The Office of Indian Affairs will assist the chief of staff in implementing the government-to-government relationship by providing state agency directors information with which to educate employees and constituent groups as defined in the accountability plan about the requirement of the government-to-government relationship. The Office of Indian Affairs shall also perform other duties as defined by the chief of staff.

V. SOVEREIGNTY and DISCLAIMERS

Each of the parties respects the sovereignty of each other party. In executing this ACCORD, no party waives any rights, including treaty rights, immunities, including sovereign immunities, or jurisdiction. Neither does this ACCORD diminish any rights or protections afforded other Indian persons or entities under state or federal law. Through this ACCORD parties strengthen their collective ability to successfully resolve issues of mutual concern.

While the relationship described by this ACCORD provides increased ability to solve problems, it likely will not result in a resolution of all issues. Therefore, inherent in their relationship is the right of each of the parties to elevate an issue of importance to any decision-making authority of another party, including, where appropriate, that party's executive office.

Signatory parties have executed this ACCORD on the date of August 4, 1989, and agreed to be duly bound by its commitments.

Five Year Water Resource Data Management Plan Briefing Paper



September, 1992

The diverse and complex nature of Washington's water resource is one of the distinguishing characteristics of this state. Water is critical to Washington's agricultural richness, recreational diversity, abundant fishery, manufacturing and trading, and role as international gateway for the Pacific Rim. The development of a Water Resource Data Management Program is necessary because of growing demands and conflicting needs for this finite resource. Local governments, for example, need access to consolidated water resource data to coordinate planning efforts in accord with state growth management objectives. Comprehensive, consolidated water resource data expedite planning and help mitigate water shortages during drought situations.

The Water Resource Data Management Task Force

The legislatively-mandated Water Resource Data Management Task force advises the Department of Ecology in the development of a new, comprehensive water resource data management program, improving data collection, storage, and access for use across the State. Linking data clients to decentralized data sources using a common data sharing infrastructure is the key strategy recommended by the Task Force.

Today, Washington's water resource data are scattered among different State and Federal agencies, tribal nations, local governments and other entities. No standard system exists for collecting, storing, or accessing data about water availability. A comprehensive Water Resource Data Management Program must be established to protect, preserve, allocate and efficiently use water in Washington.

In recognition of this, the Washington State Legislature enacted Chapter 295, Laws of 1990. The Act calls for the development of a comprehensive Water Resource Data Management Program to provide information necessary for effective statewide and regional planning and management of the

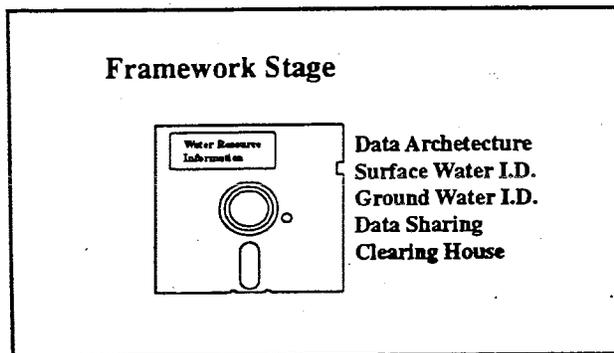
State's water resource. The Water Resource Data Management Task Force was also established and works under this mandate. The Task Force includes representatives of appropriate state agencies, Indian tribes, local governments, agricultural and environmental organizations, concerned businesses, and interested parties. The Water Resource Data Management Task Force coordinates with the Wa-

ter Resources Forum established by the November, 1990 Chelan Agreement. This coordination assures that appropriate data needed for water resource policy decisions will be available. The projects and activities for implementing the Water Resource Data Management Program are described in the *Five-Year Water Resource Data Management Plan*.

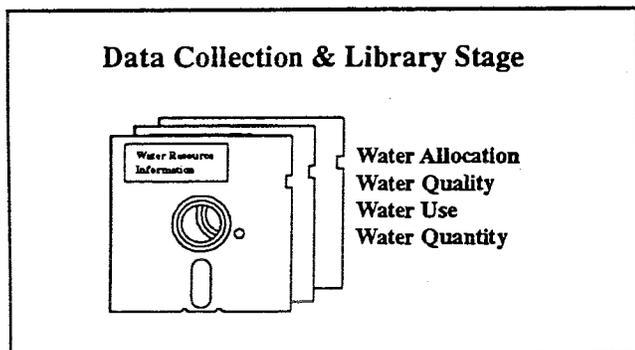
The Five-Year Water Resource Data Management Plan

The *Five-Year Plan* was developed by the Water Resource Data Management Task Force. The *Five-Year Plan* expands on the 15 recommendations from the September, 1990, report, *Preliminary Findings and Recommendations of the Water Resource Data Management Task Force*, and provides a vision and strategy for organizing and managing water resource data. This vision will be achieved in three stages (see figures).

- First, a Data Framework will be produced. A Water Resource Common Data Architecture will be developed that formally names and comprehensively defines data in a common context so they can be easily identified and shared. The Architecture, together with standard identification and location systems for surface and ground water, provide the Framework for integrating all data about the state's water resource. A Water Resource Studies Clearing House and the data sharing initiatives will facilitate the identification and sharing of data.



- Next, the Framework will be filled with data. The Water Resource Data Library includes water allocation data (water rights, water rights claims, etc.), water quality data, water use data, and water quantity data. The strategy is to identify critical data needed for proper water resource management, define baseline data for those critical needs, identify existing data to meet those needs, and acquire additional data that are not available. This strategy provides both short-term, incrementally cost effective benefits and long-term advantages.



- Finally, water resource relationships will be developed, such as those between streamflow and instream resources, surface water and ground water, and water quality and water quantity. This Stage can be implemented incrementally as data are compiled in critical areas. Priority for implementation will reflect need and funds available. These relationships are developed from data contained in the Water Resource Data Library and will be used to develop comprehensive water resource management models.

