

**THE CHANGING SCENE IN THE
AMERICAN WEST:
WATER POLICY IMPLICATIONS**

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**Western Water Policy Project
Discussion Series No. 8**

**NRLC Discussion Paper Series
Natural Resources Law Center
January 1990**

PREFACE

In 1988 the Natural Resources Law Center initiated the Western Water Policy Project with the support of a grant by the Ford Foundation. This project includes a broad-ranging review of the laws, policies, and institutions governing the allocation and use of water resources in the western United States. It is aimed at addressing the adequacy of western water policy to respond to the needs of the contemporary West.

A major objective of the Western Water Policy Project is to encourage discussion of water policy issues. To further this objective we are initiating this Discussion Paper series. The papers in this series are written in conjunction with periodic workshops primarily involving a water policy working group. The members of this group are F. Lee Brown, James E. Butcher, Michael Clinton, Harrison C. Dunning, John Echohawk, Kenneth Frederick, David H. Getches, Helen Ingram, Edwin H. Marston, Steven J. Shupe, John E. Thorson, Gilbert White, Charles F. Wilkinson, and Zach Willey.

We welcome comments and responses to these papers.

Larry MacDonnell

The Changing Scene in the American West: Water Policy Implications

Theodore M. Schad*

Fifty years ago this very month, in 1940, a young man left his home in Maryland, loaded his personal effects into his car, and set out on what to him was a great adventure. He was going "out West" to take a position as a junior engineer with the U.S. Bureau of Reclamation.

As a civil engineering student during the 1930s it had thrilled him to read of the construction of the big dams in the West: Hoover Dam on the Colorado, Grand Coulee on the Columbia, and Shasta on the Sacramento. Serving as research assistant to one of his professors at The Johns Hopkins University who had served as Chairman of the Water Resources Committee of the National Resources Commission, he had had the job of maintaining a library of reports produced by the so-called "alphabet agencies" of the depression years, finding time to read and marvel at the magnitude of the task of harnessing the waters of the West for the good of mankind. On his maps he had traced the route of the Central Valley Project in California, amazed to think of water being moved as far as from Baltimore to Boston. He was familiar with only one large body of water, the Chesapeake Bay, and one large river, the Susquehanna. He had traversed the 15 miles of the canal linking the Chesapeake with the Delaware, a seemingly endless distance that taxed the power of the "one-lunger" engine that powered his brother's sailboat. He had explored the reaches of the reservoirs of the Baltimore City water supply, Loch Raven and Prettyboy, which to a small boy had seemed immense. All puny indeed, compared to what was being done to control water in the West.

And now he was going to be a part of this great effort—a participant in the taming of the West. As he drove west, up the broad valley of the Platte River (at that time U.S. Route 30, the Lincoln Highway, was the only highway that was paved from coast to coast) a sense of history overwhelmed him. He was less than a hundred years behind the pioneers of the Oregon Trail. He could think of them circling the wagons as they camped for the night, to ward off potential attacks by bands of marauding Indians. He was heading for the Rocky Mountains, explored by the fur traders, the mountain men, the miners who had discovered gold. A

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sense of anticipation arose in him as he recalled the books he had read that made all of this seem so very real to him.

Driving up the long hill as the highway climbed up from the Platte Valley to the high plains west of Ogallala—a hill such as he had never seen before, he was filled with wonder at the immensity of the scene around him and he began to search the horizon to spot the crest of the Rockies when it first came into sight. Which it did while he was still over a hundred miles out on the plains. And as he thought of the exploits of Fremont, Long, and Pike, he felt he was following in their footsteps, helping to achieve the fruits of the Manifest Destiny that had led us to wrest this magnificent domain from the Indians as we expanded the country from the Atlantic to the Pacific in less than a century.

Upon reaching Denver, armed with this romantic view of the West but not really knowing much about the demographic and economic forces that were already shaping it, the young man reported for work at the Bureau of Reclamation offices, which were then located in the Custom House. He was eager to learn and welcomed the indoctrination program planned for new employees. But he was nonplussed when he was told by senior officials of the Bureau that, being from the East, he could never really understand the importance of water in the development of the West, and might never have been hired had it not been for the fact that young western engineers were being called up for military duty.

Denver at that time had a population of a little over 300,000 and was making a very slow recovery from the Depression. It was more than a year prior to the attack on Pearl Harbor and the entry of the United States into World War II. The munitions industry boom had not yet started in Denver. There were only four major hotels in Denver at the time, and with the tourist season over, occupancy rates were so low that monthly room rental rates of as low as \$60 could be negotiated at the Brown Palace, even then a "world class" hotel, although the term had not yet been invented. The regular rate at the Shirley Savoy was \$1.50 per night, or \$2 with private bath. On a junior engineer's pay the hero of this narrative settled for a room with a fireplace in an old brownstone mansion on Sherman Street, two blocks from the Capitol, for \$5 a week. Compared to Baltimore, Denver seemed like a small town. Narrow gauge street cars provided local transportation along Broadway and Colfax Avenue. Carl Sandburg came to town and rhapsodized over the pawnshops and secondhand stores on Larimer Street. Interurban railways traversed the countryside toward Arvada and Golden. It was a short drive to the east to the beginning of the plains that stretched all the way to the Kansas border without interruption. A popular diversion on weekends was to drive out on the plains to watch the deepening colors on the mountains as the sun set in the clear, crisp air.

Water in motion being governed by the same physical laws in the West as in the East, the young engineer was placed in the Spillway Design section where he could make use of the experience gained in his work on flood control in the

Susquehanna River basin. The work consisted of making preliminary designs and cost estimates for small irrigation and hydroelectric power projects. Many of these were proposed for authorization under the Wheeler-Case Act which had as its aim the resettlement of unemployed workers from the cities to the land. Other projects were to provide supplemental water supplies for existing projects that had an inadequate supply to carry them through the long drought that was just ending. There was also work on fish hatcheries to mitigate losses to the fisheries on the Columbia and Sacramento rivers by re-establishing salmon runs on undammed tributaries.

It was less than 40 years after the enactment of the 1902 Reclamation Project legislation. Many, if not most, of the reclamation projects were in deep financial trouble. But the young engineer didn't know that. The office of the Chief Engineer of the Bureau of Reclamation seemed to be composed of a number of autonomous groups of engineers, each working on a narrow aspect of the problem of making use of the waters of the western rivers. In addition to the Spillway Design section, there was an Outlet Works section, a Concrete Dam section, an Earth Dam section, and a Drainage section. And of course, the Project Planning division, ruled over with an iron hand by Old Deb, as they called E.B. Debler, who also controlled the Hydrology section that provided the spillway design floods that had to be accommodated. There must have been an Economics section somewhere, but a young engineer was not expected to concern himself with such irrelevant subjects. His contacts were with Earth Dam and with Outlet Works so his designs could fit into the overall project, with the Hydrology section that provided flood hydrographs, and with the Hydraulics laboratory, then located in the basement of the Custom House, where models of his spillway designs were made and tested.

It was a heady experience for a young engineer, to design a spillway, and watch the construction and operation of a model one hundredth the size of the prototype; making adjustments in the gates and the stilling basin to smooth the water flow; checking the measured flow of the water against the calculations. An engineer could be happy spending a life-time working in the evolving field of spillway design, and many of the members of the staff were doing just that, specializing in one phase of technical design of dams and appurtenant works. But the young engineer wanted more than that. He wanted to know how the whole picture fit together, how the decisions were made, who was in charge.

He knew there was a Commissioner of Reclamation in Washington, from the reports he had read when he was in college. But nobody in the design sections in Denver seemed to know who he was or what he did. Old Deb in Project Planning seemed to have the best grasp of the overall program. He and his staff located the projects and found the dam sites. Randy Riter, as chief of the Hydrology section, provided the flood hydrographs, and Glen Sloan was even then driving up and down the Missouri River basin looking for projects to be included in an overall

plan for water resources in that basin, giving rise to the term "windshield survey."

When the United States entered World War II, the Bureau of Reclamation coined the slogan "Food for Victory" to epitomize its irrigation program, but no one really believed that the war would last long enough for new irrigation projects to be brought into production. There was a chance, however, for improvements to existing irrigation projects in order to increase the production of food and fiber needed for the war effort. The work of spillway design seemed irrelevant and the young engineer decided that this was the time to broaden his experience by transferring to the Project Planning division.

After subjecting him to lectures on the duty of water and subjugation of the land, Old Deb agreed to send the young engineer out to the Pacific Northwest to investigate projects in the Crooked River basin in Oregon. A whole new chapter began there. This was the real West, with coyotes howling at night from the rim-rock above the canyon—sage brush desert country, cattle country—with the size of the ranches measured in sections, rather than acres. But there were not many people except on the irrigation projects and in the small towns that served them.

Walking over the ridge that separated the Ochoco Irrigation District from an unirrigated valley to the south, seeing the difference between the green farms of the irrigation project on one side of the ridge and the sage brush desert on the other side, it suddenly came to the young engineer that the fervor for irrigation was like a religion. People could *live* in a valley with irrigation; without it, just cattle, and only 32 head per section of land.

Irrigated farms with houses and barns and tractors and electric lights and children playing and all the things we think of as civilization, contrasted with the desert, a severe landscape, broiling hot in the daytime, cold and inhospitable at night. Yes, the fervor to make the desert bloom was a religion, with roots in the Bible itself. This was the vision of Brigham Young, as he said "This is the place" when he entered the great Salt Lake Valley. This was the motivating force that energized the Bureau of Reclamation. Hydroelectric power, municipal and industrial water supply—yes, they were important to the irrigationists, but only because they provided revenue that made irrigation possible.

By this time, 1942, the engineer was aware of the dubious economic justification for the potential irrigation projects he was investigating. The Ochoco Project itself, privately financed, had defaulted on its bonds. The storage dam leaked, leaving the project with an insufficient water supply. Lacking a full water supply, there was not enough income to finance the necessary repairs. Rehabilitation of the existing project as a Bureau of Reclamation project thus became the primary objective of the Crooked River basin survey.

But as the cost estimates were made, it became obvious that even with interest-free financing, the costs of the project could not be repaid within the 40-year period provided by the federal reclamation laws. And sadly to say, the situation in which the Ochoco Irrigation District found itself was repeated a hundred-fold, all over the West, even on most of the irrigation projects built by the Bureau of Reclamation.

The situation on the Bureau's projects had been recognized during the agricultural depression that followed World War I, and steps had been taken to alleviate the problem with the passage of the Fact Finders Act in 1926. This Act provided for lengthening the repayment period and forgiving the repayment of some of the costs. But this was not enough to carry the projects through the more protracted depression of the 1930s. And privately or state financed projects had fared even worse.

The Bureau of Reclamation by this time had turned its attention to the larger projects. Hoover Dam was built to firm up the water supply in the Colorado River so that the compact dividing the water supply between the upper and lower basin could be implemented, and incidentally to develop a large amount of hydroelectric power. The Grand Coulee Dam was built to eventually serve the million acre irrigation project in the great bend of the Columbia River, while incidentally becoming the largest hydroelectric power project in the world. As a depression era public works project the Bureau took over the construction of the Central Valley project from the state of California, constructing massive works to move water from the Sacramento River valley to the San Joaquin valley, again developing copious amounts of hydroelectric power. Without even a long-range plan, the Bureau had unwittingly become the largest generator of hydroelectric power in the United States.

All of this power was of vital importance to the prosecution of the World War II effort and encouraged the establishment of new industry in the West. Already the fastest growing region of the country, the population of the West grew another 40 percent between 1940 and 1950, three times the rate of growth of the country as a whole. Availability of this power started a major transition in the economy of the West. The incidental water and power supplies of the federal reclamation projects had become the driving force for the industrialization of the West. The increased population soon discovered the value of the reservoirs for recreation and the inherent value of the great open spaces of the West began to be recognized as an important economic asset.

By 1939, about 24 million acres of land had been developed for irrigation in the 17 western states, of which about 4 million acres were provided either a full or supplemental water supply by the Bureau of Reclamation. About half of the Bureau's annual appropriations, however, were expended on hydroelectric power facilities, although some of the power expenditures were allocated to irrigation pumping so as to gain the advantage of interest-free money. The Reclamation

Project Act of 1939 gave statutory recognition to the nonirrigation purposes of the program by re-emphasizing the municipal water aspects of the program which had been authorized in the Town Site Act in 1908. The 1939 Act also authorized nonreimbursable allocations for flood control and navigation benefits provided by federal reclamation projects. The Secretary of the Interior was authorized to make "findings of feasibility" under which he could authorize projects that were feasible from an engineering standpoint if the sum of the anticipated reimbursements and the nonreimbursable allocations exceeded the cost of the project.

Through an ingenious opinion of the Solicitor of the Department of the Interior based on the provisions of the 1939 Act relating to the sale of hydroelectric power produced at reclamation projects, the interest component of the power revenues was credited to repayment of the irrigation allocation, thus making it possible to make findings of feasibility on projects where the irrigation water users could not even repay ten percent of the costs allocated to irrigation. This creative accounting scheme was roundly denounced by opponents of reclamation projects, the Bureau of the Budget, and the General Accounting Office, but was partially sanctioned by Congress when it authorized the Collbran Project in Colorado. The "Collbran formula" authorized crediting one-fifth of the interest component toward irrigation repayment. The so-called "Solicitor's Opinion" was subsequently rescinded.

Hydroelectric power produced at reclamation projects and at the Boneville Dam built by the Corps of Engineers on the Columbia River played an important role during World War II, permitting the establishment of an aluminum industry in the Pacific Northwest, as well as providing power needed at Hanford. Storage provided at Hoover Dam made it possible for the Metropolitan Water District to tap the Colorado River to provide water to support the burgeoning defense industries in southern California. At the end of the war, however, the Bureau of Reclamation shifted its propaganda apparatus toward extolling the goal of providing homesteading opportunities for returning servicemen.

In 1944 a number of projects in the Missouri River basin had been authorized in one fell swoop, when the projects that evolved from Glen Sloan's "windshield survey" of the Missouri basin were put together with the Corp of Engineers' main stem dams as the initial phase of the Pick-Sloan Plan. Later, after some of the projects were built, it was found that the land was not irrigable, and in at least one instance the homesteaders had to be resettled on new land, at considerable cost to the government. In no instance were irrigators required to pay more than their repayment ability as determined by farm budgets, so the power revenues from the Corps' hydroelectric plants were an essential part of the repayment analysis of the irrigation projects.

Reclamation law did not require computation of a benefit-cost ratio to determine the justification of projects. When Bureau officials saw the efficacy of the

language in the 1936 Flood Control Act in getting projects authorized for the Corps of Engineers when the benefits "to whomsoever they may accrue" exceeded the costs, they ordered such ratios to be included in reclamation project reports. At first the Bureau used the gross crop revenues as a surrogate for the benefits, but after being shot down by the Subcommittee on Benefits and Costs of the Federal Inter-Agency River Basin Committee, the Bureau evolved an elaborate theory of secondary and even tertiary benefits which was even less satisfactory to critics.

Authorization of the vast number of flood control and navigation projects on western rivers in the Flood Control Act of 1944 and the Rivers and Harbors Act of 1945 was perceived as a threat to future irrigation in the West. Protection for irrigation was provided by the Milliken-O'Mahoney amendment which subordinated the use of water for navigation in states west of the 98th meridian to beneficial consumptive uses. However, other legislation enacted in war-time and immediate post war years sowed the seeds for what may be an even greater threat to the "sacred cow" status of irrigation than the Corps' flood control and navigation projects.

Although never fully implemented by the Corps of Engineers, Section 4 of the Flood Control Act of 1944 made recreation at Corps of Engineers water projects a full-fledged purpose of federal water resources projects. Then, in 1946, the Fish and Wildlife Coordination Act required that consideration be given to measures for the preservation and propagation of fish and wildlife in connection with any federal water resources development.

While the Corps of Engineers was somewhat hesitant about accepting the legislative mandate to incorporate recreation into its project plans, the Bureau of Reclamation seized the opportunity, not because of its interest in recreation, but because of the possibility of nonreimbursable allocations to recreation. Project reports completed during the late 1940s and early 1950s were replete with proposed nonreimbursable allocations for recreation and for fish and wildlife conservation. Repayment ability of irrigators having fallen far behind construction costs, and the solicitor's opinion on the interest component having fallen into disrepute, it was the only way that the Bureau could show feasibility of many projects. The first report on the Colorado River Storage Project included such allocations, and even included a large component of costs for construction of recreational facilities at the Dinosaur National Monument, intended, no doubt, as a bribe to the National Park Service for giving up the canyons to the then proposed Echo Park and Split Mountain dams. Nonreimbursable allocations for these so-called non-vendible purposes ran into a solid wall of opposition in the federal Bureau of the Budget, however, and few of the Bureau's reports reached Congress.

In December 1950 President Truman's Water Resources Policy Commission gave thoughtful consideration to outdoor recreation and to the preservation and enhancement of fish and wildlife resources as important objectives of federal wa-

ter resources development and recommended that these purposes be given full consideration in all comprehensive basin programs. The Commission stopped short of recommending federal programs, but recommended that cooperative arrangements should be worked out with states and local governments for planning, developing and maintaining recreation areas at government water projects, subject to the observance of specified standards to provide conditions that were in harmony with the natural environment. It was one of the first official government reports to suggest that equal weight be given to environmental harmony in federal water resources programs; previous reports dealing with national water policy, back to the conservation movement of the early years of the twentieth century, having stressed the economic benefits of water development.

The federal Bureau of the Budget put a quick road block in front of the water agencies' hopes that the Commission's ideas could be used as the basis for nonreimbursable allocations. Budget Circular A-47, issued in December 1952 in the waning days of the Truman administration, set up principles that required substantial nonfederal contributions toward projects which provided recreational and fish and wildlife benefits. Although Budget Circular A-47 was promptly repudiated by officials of the Eisenhower Administration, it continued to be applied by the staff of the Bureau of the Budget, which at that time exercised the function of review of proposed projects for the President under the provisions of Executive Order No. 9384.

As so often happens, however, the American people were forging ahead of the government agencies in appreciation of the importance of protecting the environment from encroachment by water development. As a result the Bureau of Reclamation's Colorado River Storage Project, designed to permit implementation of the provisions of the Upper Colorado River Basin Compact by the construction of 10 dams, three of which were in national parks and monuments, was stopped dead in its tracks by the environmental movement. The project was not resurrected until the Bureau withdrew its proposals for those dams that impinged on national parks and monuments, reducing the size of the project by over 50 percent. It was the first time for the Bureau of Reclamation that a proposal to build dams in areas that had been reserved for reclamation purposes was rejected. Undoubtedly it was an important step in the transition of the West by recognition that the value of scenic resources might be greater than developmental benefits. It should also be recognized that the Bureau's own figures showed that construction of all ten of the dams originally proposed would have resulted in a net decrease in water availability in the Colorado River basin, because the evaporation losses from the reservoirs carried the project past the point of diminishing returns.

Whether this favorable result was due to the superior intelligence of the leaders of the environmental movement or was a serendipitous benefit of the movement's single-minded attack on the projects is open to question, but the fact remains that a groundswell of public interest built up during the 1950s in favor of giving recognition to nonmonetary aspects of water resources development.

Toward the end of the decade an Outdoor Recreation Resources Review Commission was established in the executive branch, and a Select Committee on National Water Resources was created in the legislative branch. Reports from both groups gave recognition to the importance of recreation in connection with water project development. Furthermore, the Senate Select Committee's analysis showed that the most economic way of meeting projected future demands on the nation's water resources required a balance between water quality and water quantity programs that was 4 to 1 in favor of the former. Stopping short of recommending specific programs to meet these demands, the Senate Committee came out strongly in favor of joint federal-state river basin planning and a coordinated research program.

The Bureau of the Budget continued to apply the brakes to federal water programs by requiring strict adherence to economic benefit-cost analysis in evaluating proposed projects. However, a panel of consultants commissioned by the Bureau of the Budget to study the procedures for formulating and evaluating federal water resources development called attention to the broader aspects of development, suggesting that objectives other than increasing national income, including recreation, preservation of the environment, and social values should be considered. Subsequently a committee of members of the concerned federal agencies prepared a report on policies, standards, and procedures for use in the formulation, evaluation, and review of plans for water resources development. This was transmitted to Congress by President Kennedy and published as Senate Report No. 97 of the 87th Congress, 2nd Session, in 1962. While lacking the status of law, it was influential in standardizing procedures used by the federal agencies and gave further recognition to the need for change in emphasis of the federal water programs.

Guided by all these reports, and pushed on by the ground swell of the environmental movement, a substantial body of environmental related legislation was enacted during the 1960s that had an impact on western water policy. To the Wilderness Act, which had been enacted earlier, were added the Land and Water Conservation Fund Act, the Wild and Scenic Rivers Act, the Endangered Species Act, and the Federal Water Projects Reservation Act. In addition, the Fish and Wildlife Coordination Act and the Federal Water Pollution Control Act were strengthened. This legislation, as well as a number of court decisions favoring federal claims for reserved rights to the use of water on federal lands, and the more militant stance taken by the Indians in claiming tribal water rights led to insistent questioning of the western premise that irrigation was the *sine qua non* of economic development. It was already becoming evident that, aside from some few areas of very high value crops such as winter vegetables, fruit, and nuts, water resources had a greater value as a part of the natural environment in the West to encourage tourism than when diverted into an irrigation ditch to produce alfalfa and other low value crops that are cultivated on more than 80 percent of the land in federal reclamation projects.

But the Bureau of Reclamation had not been idle as these threats to the dominance of western irrigation were materializing. During the 20 year period from 1950 to 1969 the Bureau added an average of 175,000 acres a year to the land served either a full or partial water supply by federal reclamation projects. Of the 34.8 million acres of land irrigated in the 17 western states in 1969, about 8.8 million acres, or 25 percent were served water from federal projects. From 16 percent of the total irrigated land in 1939, the federal share of western irrigation increased to 21 percent in 1949 and to 22 percent in 1969. In addition, projects were authorized to add almost 2 million acres to the area served by Bureau of Reclamation projects, but only about one-fourth would be new land added to the total irrigated acreage. The Central Arizona Project alone, for which the Bureau of Reclamation will furnish supplemental water, will add 1.2 million acres to the federal total, boosting the federal share to about 33 percent. This increase in the percentage served by the federal government suggests that irrigation without federal subsidy is less and less viable as a use of the limited water supplies of the West.

After exhaustive studies of western irrigation and of alternative possible futures for the Nation's agriculture, the National Water Commission, a seven-member statutory body, six of whom were residents of western states, concluded in 1973 that there was no further need for subsidizing irrigation projects. The Commission recommended that beneficiaries of new federal projects should pay in full the costs allocated to irrigation, and that existing projects should be allowed to lift the 160 acre per person acreage limitation by repaying the balance of the construction costs allocated to irrigation either in a lump sum, or with interest. The recommendation was not well received by Congress, but there have been very few reclamation projects authorized since 1973.

The seldom asked and never answered question, of course, is why should other portions of the country subsidize the fastest growing region. Bureau of Reclamation figures showed that from 1940 to 1960 the population of the 17 western states increased by 63 percent while the population of other states increased by only 29 percent. From 1940 to 1962 personal income in the western states increased by 645 percent and in the other states by only 415 percent. Even more significant is the increase of the value added in manufacturing where the rate of increase is over 50 percent greater in the western states than in the other states. The days of "prices 25 percent higher west of the Rocky Mountains" are long gone, as an ever larger portion of our manufactured goods are shipped from west to east. The impetus for this growth undoubtedly was fostered by the cheap power and low cost water provided by the federal projects, but there is no apparent need to continue these subsidies. In the more populous western states irrigated agriculture generally contributes a much smaller portion of the state economy than industry and tourism. Furthermore, there are millions of acres of idle agricultural land in more humid areas that are available to meet future needs at much lower cost than the cost of irrigation.

Water policies need to be changed to permit recognition of and accommodation to the demands of the new West. Many such changes have already been made through state legislation and court decrees and the pace of change is accelerating, particularly in the northern tier of states. Changes in federal policies are being forced by the growing federal deficit. When the present round of federal reclamation projects is completed there may not be any more. Policy makers in the Bureau of Reclamation have already announced their intention to change the Bureau from a construction agency to a water management agency. It is time for this change.

The western scene has evolved a great deal in the past 50 years. There is no question about it. The old West of the cowboy, the homesteader, and the miner is gone. Yes, there are still cowboys tending diminishing herds of beef cattle and increasing numbers of horses maintained so their owners can enjoy the pleasures of riding. There are still miners, but the old miner's pick and shovel have been replaced by huge power shovels and gigantic mining machines that chew up the landscape, leaving piles of mill tailings as large as the eastern mountains. The homesteaders' holdings have been amalgamated into huge corporate farms and ranches, the irrigation ditch is being replaced by underground pipes, and the landscape is being transformed by center-pivot irrigation systems tapping underground aquifers.

Gone, too, is the clear air, the hundred mile visibility of the old West, replaced by the smog of the cities that overflows the developed areas, rising ever higher up the mountain slopes. Truly, through our water development policies we have sown the wind of development in the fragile ecosystems of the West, and we are reaping the whirlwind of environmental degradation.