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Damning the Dams and Ditches: A Review of D. Worster, Rivers of Empire: Water, Aridity, and the American West

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DAMNING THE DAMS AND DITCHES: A REVIEW OF D. WORSTER, RIVERS OF EMPIRE: WATER, ARIDITY AND THE AMERICAN WEST

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WATER POWER CORRUPTS ABSOLUTELY

Fertile land, freedom from religious oppression and mining opportunities fueled by the idea of manifest destiny initially drew settlers to the Far West.[1] The storage and distribution of water sustained western settlement after the mining booms ended, cattle empires collapsed and the settlers' discovered that eastern cropping and land distribution patterns could not be duplicated in arid or semi-arid regions. Two water uses gave the West a stable population in the late nineteenth-early twentieth centuries: (1) an irrigation economy took hold in varying degrees in all states, and (2) western cities grew as relatively affluent Midwesterners arrived and created political pressure to augment limited natural supplies of water.[2] Regional salvation was supported by two institutions, one legal and the other political, that allowed man to defy nature, at least in the short run.[3] California and Colorado's recognition of the miners' custom of first in time, first in right as the basis for mining and water rights transformed what had historically been an equally shared common property resource into a private resource allocated by relatively secure, exclusive rights. Prior appropriation allowed water to be severed from the watershed of origin and transported long distances for all productive uses.[4] Prior appropriation alone would have been insufficient to support the agricultural economy of the region after the failure of private and state irrigation efforts had not the federal government adopted the argument of the irrigation movement that it was in the national interest to promote western settlement by financing irrigation projects.[5]

Physical control of water was embraced by the conservation movement

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1. R.A. BILLINGTON, THE FAR WESTERN FRONTIER (1956).

2. G. NASH, THE AMERICAN WEST IN THE TWENTIETH CENTURY: A SHORT HISTORY OF AN URBAN OASIS 90-93 (1973). The major example is Los Angeles' decision to tap the Owens Valley to solve a perceived water "crisis." *See* W. KAHRL, WATER AND POWER: THE CONFLICT OVER LOS ANGELES' WATER SUPPLY IN THE OWENS VALLEY (1983).

3. Recent students of the West have cast doubt on the assumption that the present rearrangement of nature is perpetual. "[T]he existence of a final resolved state of Mastery and appreciation is simply illusory." P. LIMMERICK, DESERT PASSAGES—ENCOUNTERS WITH AMERICAN DESERTS 173 (1983).

4. The best history of the evolution of western water law is R. DUNBAR, FORGING NEW RIGHTS IN WESTERN WATERS (1983).

5. F. MERK, HISTORY OF THE WESTERN MOVEMENT 509 (1978).

between 1888–1908,[6] and during most of this century, massive federal, state, and private water development transformed the landscape and ecology of the West. Multiple-purpose development was taken as an article of faith by western federal and state politicians, farmers and most westerners generally and the resulting irrigation economy has been widely celebrated. Only a few dreamers and mavericks, economists and eastern politicians, initially argued that the bill was too high. For example, followers of John Muir objected to specific dams for philosophical and ecological reasons, but until the 1950s, they were not major players in water policy politics.[7]

All this has changed. Historic criticisms of the cost of irrigation development combined with the growing appreciation of the scientific and aesthetic values of non-development and river flow preservation have operated for the past three decades to curb federal funding for irrigation development, although huge projects, such as Central Arizona and Central Utah, are going forward. But, the irrigation era has now ended. It is unlikely that the federal government will subsidize the marginal irrigation projects they did in the past, and the future of western water seems to be in the reallocation of existing supplies through markets and conservation and in the increasing recognition of the environmental costs of irrigation and of the values of instream flow protection.[8] In short, having intervened in nature, we are now beginning to assess the consequences of this massive application of the western philosophical tradition that man is the master of nature.[9]

Most criticisms of physical resource conservation have been scientific rather than political and social, but a new generation of environmental historians is raising provocative questions about the social as well as the ecological consequences of our altered landscapes. Western water development is a natural candidate for this re-evaluation, and a new revisionist history of the role that the control of water has played in the development of the modern West presents an extremely unsympathetic view of what the West has become.

Rivers of Empire is an important book for lawyers, engineers, and economists because it challenges the historical and moral foundations on

6. *See* S. HAYS, CONSERVATION AND THE GOSPEL OF EFFICIENCY: THE PROGRESSIVE CONSERVATION MOVEMENT 1890-1920 (1959).

7. R. NASH, WILDERNESS AND THE AMERICAN MIND 199-237 (3d ed. 1982).

8. D. WORSTER, RIVERS OF EMPIRE: WATER, ARIDITY AND THE AMERICAN WEST 317-25. *See generally*, Z. WILLEY, ECONOMIC DEVELOPMENT AND ENVIRONMENTAL QUALITY IN CALIFORNIA'S WATER SYSTEM (1985).

9. J. PASSMORE, MAN'S RESPONSIBILITY FOR NATURE (1973) is an excellent account of the origins of this tradition. There is now a growing philosophical literature that posits and defends "stewardship" of our natural resources. *E.g.* W. GRAVBERG-MICHAELSON, A WORLDLY SPIRITUALITY, THE CALL TO TAKE CARE OF THE EARTH (1984), & J. HART, THE SPIRIT OF THE EARTH: A THEOLOGY OF THE LAND (1984).

which the water-based economy and law of this path-breaking region rests. Professor Worster's thesis, in brief, is that the management of nature through the manipulation of water has produced a region of "authority and restraint, of class and exploitation and ultimately of imperial power,"[10] and that this empire, like the Roman and Hapsburg empires, is entering a period of decline because its unanticipated social and ecological consequences[11] undermine its legitimacy.[12] This is a strong, provocative thesis, but in the end the book fails to produce sufficient evidence and analysis to carry it. Too often, there is more unjustified diatribe than reasoned argument. The case against what the author, borrowing from Wittfogel, calls "a modern hydraulic society" is both stronger and weaker than the argument of the book. The excesses of Western water development are a classic case study in the inevitable tendency of bureaucracies to over-produce in order to build, hold and enlarge narrow but powerful constituencies.[13] The totalitarian thesis is, however, silly. Still, this is a book that all western water players must take seriously because it is the most comprehensive history of water development and reclamation to date, and it will be justifiably cited to support some of the powerful economic and environmental arguments that there must be a fundamental shift in historic western water allocation patterns.

Worster's analysis builds on other western historians but his main thesis is an adaptation from one of the Frankfurt school scholars driven from Germany by the Nazis. Karl August Wittfogel originally set out to apply a Marxist analysis to the Orient. Initially, he corrected Marx's theory that man's liberation from nature was a positive step in the evolution toward a higher social order by the equally deterministic theory that the natural environment and technology influence the evolution of societies toward despotism. In 1957, after making the transition from the Marxism of Weimar Germany to staunch post-war conservatism,[14] Wittfogel produced his great work, *Oriental Despotism: A Comparative Study in Total Power*

10. WORSTER, *supra* note 8, at 4.

11. *Id.* at 261.

12. *Id.* at 285-86.

13. A straight-forward history of this country's inability to discipline public works spending is a sufficient indictment of the unanticipated costs of western water development. M. REISNER, CADILLAC DESERT: THE AMERICAN WEST AND ITS DISAPPEARING WATER (1986) is a fine, colorfully written old-fashioned muckraking history of the Bureau of Reclamation. Reisner has a good feel for western history and of the influence of the harsh conditions of the real West on the men who made the Bureau the most powerful government agency in the West. However, some of the author's undocumented speculation must be discounted.

14. Wittfogel's testimony before Senator McCarran's Internal Security Sub-Committee on communist influence in the emigre community is said to have hastened the flight of other emigres back to Europe. A. HEIBUT, EXILED IN PARADISE 379-80 (1983). John F. Fairbank attributes Wittfogel's testimony against fellow sinologists such as Owen Lattimore to his internment in Germany and his determination "to stay out of those he expected to begin operating here." J. FAIRBANK, CHINABOUND, A FIFTY-YEAR MEMOIR 339 (1982).

which argued that oriental societies, especially Han China, produced the despotism, being reproduced in Russia, in large part by the large-scale manipulation of water. *Oriental Despotism* attracted the attention of legal scholars such as Lon Fuller,[15] but, it was naively dismissed as inapplicable to the democratic or benevolent American experience with water distribution. Even Wittfogel seemed to agree with this conclusion. Worster rightly points out that Wittfogel failed to provide a causal theory of oriental despotism when he replaced Marxism with a multi-factor analysis, but *Rivers of Empire* nonetheless resurrects Wittfogel for raising the question, "How, in the remaking of nature, do we remake ourselves"[16] and for linking the social evils that can result from the centralization of power with the control of water, a problem that many assert was solved in the West. Worster also draws on the more penetrating relationship between the domination of nature and totalitarianism posited by other Frankfurt school emigre scholars.

Using Wittfogel, two of the major figures in Western history are quickly corrected. Frederick Jackson Turner's frontier thesis is limited to the disbursed settlements that his native, humid midwest supported and not to the last western frontier beyond the hundredth meridian. Walter Prescott Webb's grand interpretation of western settlement as an adaptation to the inability to impose humid practices on an arid or semi-arid environment[17] is acknowledged as a positive correction of Turner, but Webb's argument that the West was settled at the price of becoming an eastern colony is reversed: the West became not a colony but a hydraulic empire.

This deterministic analysis is counter-intuitive for most students of western water allocation because the settlement of the West as Worster stresses,[18] has been seen as a democratic conquest. Most historians have been sympathetic to western water development as a reward for those who endured the rigors of the harsh landscape from the Great Plains to the Great Basin; most political science students have accepted western water subsidies as legitimate if somewhat mal-distributed;[19] and most economists have only sought to discipline public water expenditures by the use of non-distorted benefit-cost analysis.[20] The value of the critical perspective in *Rivers of Empires* is to focus more clearly the forces that have driven western development and simultaneously the contingent nature of the great artificial garden that the West has become.[21]

15. Fuller, *Irrigation and Tyranny*, 17 STAN. L. REV. 1021 (1965).

16. WORSTER, *supra* note 8, at 30.

17. W. WEBB, THE GREAT PLAINS 385-98 (1931).

18. WORSTER, *supra* note 8, at 111-25.

19. *See, e.g.*, INGRAM, SCAFF AND SILLCO, REPLACING CONFUSION WITH EQUITY: ALTERNATIVES FOR WATER POLICY IN THE COLORADO RIVER BASIN, IN NEW COURSES FOR THE COLORADO RIVER 177 (G. Weatherford & F. Lee Brown eds. 1986).

20. *See, e.g.*, C. HOWE, BENEFIT-COST ANALYSIS FOR WATER SYSTEM PLANNING (1971).

21. LIMMERICK, *supra* note 3.

THE EDEN CORRUPTED: FROM "TRIBAL" IRRIGATION TO TYRANNY

The spread of irrigation and western water law from the Anasazi, the Spanish, to the Mormons and the Greeley and California irrigation colonies and ultimately to all seventeen western states is well known.[22] As noted earlier, the process is often seen as a beneficial, decentralized adaptation to the necessities of a hostile, water deficient climate. Worster faithfully recounts this history, but purports to present a consistent reinterpretation of the conventional understanding.

Mormon control of water distribution was not democratic or socialistic, but "served to exclude from power and prosperity all non-Mormon farmers and worked to maintain the power of the religious hierarchy."[23] The Greeley colony's contribution to the development of prior appropriation from a simple anti-violence custom to a more mature—if highly imperfect—property rights system is acknowledged but with a twist: western water law is not an adaptation to a harsh climate, but a conscious instrumental means to exploit nature from maximum economic gain.[24] Worster's characterization of water as a commodity is intended to undermine the moral foundations of the doctrine of prior appropriation, not just to explain its evolution. However, provocative as these reinterpretations are, *Rivers of Empire* does not carry the burden of defending them. All too often the reinterpretations are confused, unfair and sometimes just plain wrong because the author's deterministic rhetoric overwhelms the analysis by ignoring the subtleties of the western experience.

Although the book is minimally concerned with the mechanics of western water law, the doctrine of prior appropriation is central to its thesis. The root of the rotten empire is the conception of water as a commodity[25] which has made it possible to alter the landscape and to exploit those not directly benefited by water. If his argument is only that westerners have used available waters, the criticism is partially unfair. It is useful to explain the nineteenth century thinking that led to the idea that resources are for human use; it is unfair to hold those who settled the West to a late twentieth century re-evaluation of the morality of the idea of resource use. Moreover, the characterization of water as a commodity is also only a partially correct characterization of water rights. A water right is a form of private

22. DUNBAR, *supra* note 4.

23. WORSTER, *supra* note 8, at 79.

24. *Id.* at 94. Much of Worster's analysis is borrowed from a now much discredited study. M. HORWITZ, THE TRANSFORMATION OF AMERICAN LAW (1977). The implicit argument seems to be that agricultural irrigation could have taken place by sharing rather than modifying natural stream flows. This argument follows from recent environmental histories that show how well the Indians used available resources compared to how non-Indians property rights to turn commons into commodities. W. CRONIN, CHANGES IN THE LAND: INDIANS, COLONISTS, AND THE ECOLOGY OF NEW ENGLAND (1983).

25. WORSTER, *supra* note 8, at 51.

property, but historically it has been subjected to limitation in the name of user equity that has imposed substantial barriers on those who want to make water a true commodity to promote the efficient allocation of resources.[26]

Worster's lack of understanding of the differences between western water law and water allocation in any irrigation communities has led him to undervalue substantially the non-commodity cooperative, redistributive aspects of water use. From a modern perspective, many western irrigation practices appear wasteful and inefficient. There are too many incentives to use too much, too soon.[27] But, this waste and inefficiency reflects a conscious decision to temper the commodity nature of water rights by constraining the exercise of rights to maximize available supplies for all members of the original irrigation area. In practice, prior appropriation is more riparian than one would think because there is a strong emphasis on equal sharing among the owners of lands along or near a stream.

The more basic flaw in the book's argument is that Worster rummages the West for examples to bolster his deterministic thesis rather than recognizing that the irrigation experience has had different social and economic consequences in different regions. All the West is unjustifiably lumped together to prove that control leads to the concentration of autocratic power, but some of his examples are distorted. Elwood Mead's efforts, first in Colorado and then in Wyoming, to bring order out of the problem of excessive claims through a state administration system is damned with the same fervor he later brings to the long standing power of corporate agriculture in California to set the water and general political agenda for the state:

> There remained, however, a dark question hovering over the Greeley achievement. At what point did the idea of association that Meeker and his successors fought for become a vehicle of repression? In different words, how far could the concentration of social power over individuals go before it became that Hobbesian monster, Leviathan? Did the marketplace first lead to a chaos of competitiveness, then require the draconian remedy of an elaborate state apparatus exercising rigid supervision over ditches and canals in the name of harmony and economic growth? Having just been through a stage of chaos, Mead could write admiringly of a system of "absolute control of all water in one strong central authority." "Absolute," however, had an ominous ring to it.[28]

26. C. MEYERS & R. POSNER, TRANSFERS OF WATER RIGHTS: TOWARD AN IMPROVED MARKET IN WATER RESOURCES, (National Water Commission, Legal Study No. 4, NTIS NO. NWC-L-71-009, 1971).

27. *See* Williams, *The Requirement of Reasonable Beneficial Use as a Cause of Waste in Water Resource Development*, 23 NAT. RESOURCES J. 7 (1983).

28. WORSTER, *supra* note 8, at 96.

Worster does not, however, go on to evaluate the Wyoming system to ask whether it in fact tyrannized those who were subjected to it. I do not think that administrative allocation of water has tyrannized the vast majority of western users. In most western states, the system seems to have functioned well to support wide spread access to water and the fair distribution of wealth. In New Mexico, prior appropriation is defended as a means to preserve the traditional culture of Northern New Mexico[29]—hardly an example of concentrated political power. Further, Wyoming's tradition of administrative control served the State well when its water supplies were stressed by proposals to construct coal slurry pipelines. It enabled the state—subject to possible commerce clause limitations—to assert the power to decide how much of its water would be sent out of state and with what mitigation measures for in-state users. Finally, there is no discussion of the relationship between the amount of power vested in state water administrators and the recent imposition of needed conservation regimes on groundwater or environmental conditions in existing use permits.

THE RECLAMATION ACT OF 1902: EXPLOITATION RUN RAMPANT

Worster's account of the passage of the Reclamation Act of 1902 is a perfect example of the tendency of deterministic explanations to push an author to claim more than the evidence can sometimes support by explaining confused idealism as conspiracy. His thesis is that the Act cannot be explained as a simple product of the progressive conservation movement[30] because the movement was "not in fact very democratic." Instead, federal support for irrigation "was seen then to promote the accumulation of profit and power."[31] The major democratic argument for reclamation was that it would provide farms and homes for the masses and prevent land monopolies. Although Worster concedes that this argument was perhaps believed by sponsors of the Act, he dismisses these justifications as illusory because they conceal the real motives behind passage of the Act. Worster's deterministic account ultimately breaks down completely because he himself is confused about whom to blame for reclamation as it developed. At different times in the book, the proponents of the ideal, the existing farmers who benefited from projects, and the engineers who founded the Bureau of Reclamation are blamed. Reclamation is equally but inconsistently seen as the triumph of an idea pushed by proponents

29. NEW MEXICO WATER RESOURCES RESEARCH INSTITUTE AND UNIVERSITY OF NEW MEXICO LAW SCHOOL, STATE APPROPRIATION OF GROUNDWATER: A STRATEGY FOR INSURING NEW MEXICO A WATER FUTURE 26 (1986).

30. WORSTER, *supra* note 8, at 162-63.

31. *Id.* at 166.

of scientific conservation, who he characterizes as "irrigation centralizers," and as a classic case of agency capture by a powerful constituency.

The explanations for the triumph and subsequent failure of the promise of reclamation are both more complex and straightforward than Worster's account. He seems to adopt settlement of the West by Jeffersonian yeomen who would promptly repay the project costs as the standard against which reclamation should be measured. From this perspective, reclamation is an easy target because Congress and the Bureau have never been able to control the beneficiaries of the program. And, it has taken large federal subsidies to keep yeomen irrigating.

The problem with Worster's approach is that the Jeffersonian vision was always wrong for the West. The evidence that *Rivers of Empire* present suggests that the reclamation experiment had strikingly different consequences in different forms. The Bureau's initial successes came mainly in Arizona and California where they stabilized existing agricultural economies. Reclamation was a tragedy of good intentions in many of the areas of the inter-mountain West that the Bureau tried to settle, and a failure to heed the imperatives of environment in most parts of the mainstream Missouri basin. In 1950, for example, the Riverton, Wyoming project was opened to qualified veterans who drew lots for irrigation homesteads on expanded acreage. "Before the year was out, the veterans were complaining to their senators that the project was waterlogged."[32] A subsequent Bureau of Reclamation report confirmed the soils were not suitable for irrigation because of poor drainage and this problem was known in advance to the Bureau. Five years later many of the lottery "winners" had been resettled on farms in the Columbia basin, Idaho, Arizona, and California. More generally, as Henry Hart demonstrated in his classic study, *The Dark Missouri*, wide-scale reclamation is not suitable for most of the Missouri basin because of the poor drainage of the region's soils.[33]

CALIFORNIA: A CASE STUDY ON THE EVILS OF WATER MANAGEMENT

Most of Worster's wrath is reserved for "A Place Called Imperial" and California generally. He recounts again how land promoters formed the Colorado Development Company to develop the Imperial Valley into a combination vegetable, citrus, and cotton growing area, were bought out by the Southern Pacific Railroad, formed the Imperial Irrigation District to buy the irrigation works constructed by the railroad, and finally "sub-

32. *Id.* at 162.
33. H. HART, THE DARK MISSOURI 159 (1957).

mitted to a partnership with the long-resisted Reclamation Service."[34] The district ultimately mobilized the political support to get the federal government to build Boulder and other dams on the Colorado to stabilize the river's flow and to protect the district's priorities on the river. The story of the bailout of the Central Valley project is similar; a group of established farmers were forced to turn to the federal government because it was the only possible source of funding to water large acreage, and subsequently they dominated the Bureau.[35] Worster portrays the growth of the Bureau as an historical imperative, but this history can equally be explained as an accident. Only the Depression saved the Bureau from the erroneous logic of the initial assumption that the Reclamation program would be self-funding.

The social consequences of reclamation in California have not gone unnoticed, and Worster emphasizes the studies that have long documented the political and economic power of the large farmers in California. In both valleys, the enforcement of the acreage limitation of the Reclamation Act of 1902 has been a source of bitter controversy. Big farmers got cheap water for "excess" lands. Led by the economist Paul Taylor, the Bureau's refusal to enforce the 160-acre limitation in the Imperial and San Joaquin Valleys was vigorously challenged,[36] but Congress amended the Act to increase the acreage to 960 acres.[37] Although Worster would strenuously disagree, in my opinion the case for retention of the 160-acre limitation in California was always weak[38] and a non-issue in most of the other reclamation states. The Jeffersonian dream is the wrong standard for a region such as California, and issues such as the exploitation of migrant labor to harvest irrigated field crops, while important, are secondary.

The exclusion of migrant workers from economic and political power has been a major problem in California from the publication of the *Grapes of Wrath* to the present. Reclamation created some of the demand for cheap labor, but both irrigated and non-irrigated crops require migrant labor. Worster's real target is scientific agriculture generally, and his attacks on reclamation are somewhat misdirected. He is upset that as migrant workers claimed more power, pressure mounted to displace them with mechanization. This development and the relocation of many field

34. WORSTER, *supra* note 8, at 208.

35. *Id.* at 233-56.

36. Professor Taylor's writings are collected in P. TAYLOR, ESSAYS ON LAND, WATER, AND THE LAW IN CALIFORNIA (1979).

37. The orginal provision is Bureau Reclamation Act of 1902, ch. 1903 § 5, 32 Stat. 389, (current version at 43 U.S.C. § 390ee (1982).

38. NATIONAL WATER COMMISSION, FINAL REPORT TO THE PRESIDENT AND TO THE CONGRESS OF THE UNITED STATES, WATER POLICIES FOR THE FUTURE 148 (1973).

crops to Mexico have reduced the power of migrant labor. Worster may be correct, but a full analysis of this issue must confront the internal politics of Mexican economic development and the United States's role in this process.

Rivers of Empire consistently inadequately addresses the hard issue of how much blame can be placed on irrigation for the political problems produced by inevitable disparities in the distribution of wealth. The hint of a Bureau conspiracy, "[t]he . . . imperative of dominion,"[39] is not terribly helpful because it overestimates the power of the Bureau and deflects attention on how to make the power that does come from the control of water more responsible. The Bureau, for example, initially tried to dominate the Owens Valley, but Los Angeles was quickly able to undermine efforts to build an irrigation society there.[40] The Bureau has been successful as an empire builder, primarily where large-scale agriculture was already rationally established, and thus a potential constituency was available.

The real problem with the Bureau is not that it failed to establish a Jeffersonian irrigation society everywhere in the West. It is that our political system has not historically made the large beneficiaries of water and power pay enough for reclamation water and power. Worster seems trapped by his Marxist bias that condemns any private accumulation of wealth beyond some modest subsistence level. For example, Worster criticizes the Bureau's successful implementation of the Columbia Basin project which limited farmers to 88 acres because it allowed farmers to make a little money. His criticism boils down to the argument that people should have stayed in the East or Midwest:

> Dust-bowlers and tenement dwellers were, it must said, only a small fraction of the intended beneficiaries of the remade Columbia River, not important enough in themselves to justify the effort and expense, particularly in light of the parallel development going on to the east of the Rockies, which aimed at keeping many of them at home. No, the principal goal in the Northwest was something else, something not so very different from what it was in the southern latitudes, in California, Arizona, and Texas: to repeat from the Bureau's own mouth, total use for greater wealth. According to that agency, "we have not yet produced enough . . . to sustain a desirable and reasonable standard of living, even if goods were equitably distributed; and . . . there is no limit to the human appetite for the products of industry." By that thinking the overriding goal of western water development was simple and unambiguous—the goal of making more—

39. WORSTER, *supra* note 8, at 239.
40. KARHL, *supra* note 2.

> and yet it was an elusive goal, impossible to define or achieve, for what was "desirable" and "reasonable" was confessed at the outset to be an idea without shape or limit or the means of satisfaction.[41]

In a totalitarian state, this might be a rational population distribution policy, but it is not one that this country has ever followed. North Dakota is not our Siberia.

The evolution of the Reclamation Act of 1902 shows the insidious tendency of subsidies targeted at a deserving group to gravitate more and more toward the less deserving. I do not think that it is a fair criticism of the Bureau to damn them, as Worster does, for failing to be a righteous instrument of wealth distribution.[42] The culprit is less the Bureau than those Congresses that failed to discipline project spending and allowed double subsidies for water and crops.[43] In many areas of the West, small, marginal farmers are the beneficiaries of project water, but for projects such as the Central Utah Project; the price for keeping these farms small and marginal is staggering. Still, if a state such as Utah decides to bear a substantial part of the cost—as they have—of such a project, I find this a responsible exercise of political power. The subsidized benefits conferred on large corporate farmers by Bureau projects is outrageous but not, as Worster argues, because of the denial of access to these lands by would-be smaller buyers. Subsidy, for example, is the real scandal of the Westlands project in the northern San Joaquin.[44]

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41. WORSTER, *supra* note 8, at 272.

42. *Id.* at 254-56.

43. *See* R. LOVETT, THE NEW DEAL AND THE WEST (1981).

44. WORSTER, *supra* note 8, at 292-95. The original Westlands district was formed in 1952, but it was expanded in 1965 when the California legislature combined it with the adjacent Westplains Water District. A 1962 Department of Interior regional solicitor's opinion ruled that the entire original Westlands district could be served by the San Luis Canal, and in 1963 the Secretary of the Interior and President John F. Kennedy approved a water service contract for one million acre feet until 1979 and then for 900,000 acre feet at $7.50 per acre foot plus a 50-cent per acre foot drainage charge. That same year, the commissioner of Reclamation determined that the entire Westplains Water District could be served by the San Luis Unit, if no major modifications in the physical works were required. After the 1965 expansion of the district, negotiations for an additional water service and a second repayment contract began. A 1978 Solicitor's Opinion complicated matters because Solicitor Krulitz ruled that only the 500,000 acres of the original Westlands District described in a 1956 feasibility report to Congress could be served by the San Luis Act. Negotiations broke off in 1981, and the Department threatened to cut off water unless Westlands agreed to a new long-term water service and drainage contract; the District promptly sued to invalidate the Krulitz opinion, to confirm the 1963 contract, and to establish service for the entire post-1956 district.

Congress amended the Reclamation Act of 1902 in 1982 to increase the acreage eligible for project water, and the political trade-off for the increase was supposed to be a higher price for federal water. 42 U.S.C. § 390ee (1982). However, a 1986 proposed Department of the Interior settlement of Westland's suit has been attacked by environmentalists and in Congress as an unjustified continuation of a federal subsidy. The proposed settlement confirms the 1963 contract for the post-1979 900,000 acre feet of water, requires the district to pay the cost of service for deliveries over 900,000 acre feet (currently $16.40 per acre foot), and to pay the full cost of M & I water deliveries (about $42.00

Worster partially disputes this analysis, although he is willing to accept higher water and power prices to tame the Bureau. If I understand his argument, it is that the free-market solution advocated by the economic critics of the Bureau (or the alternative remedy of TVA) like river basin authorities concentrates too much power in individuals to dominate nature[45] at the expense of higher values.

The nature of these higher values is not fully specified, but Worster seems to contemplate a very sparsely populated West. Towards the end of the book he evokes a West on the verge of intensive settlement, as filled with vibrant rivers, wildlife and vegetation as Eden and concludes "[c]onceivably . . . nostalgia might serve as a basis for imagining an alternative future society quite different from the reigning imperial order.[46] His society is based on the westerners becoming "river-adaptive people" who use rivers without "violating [their] intrinsic qualities;"[47] who live in "more or less discrete self-contained watershed settlements."[48]

In the end, *Rivers of Empire* takes its place in the long line of Eastern arguments that the West should remain a scientific and pleasure reserve for the sensitive. The importance of easterners in identifying the values of preservation and the consequences of resource exploitation are considerable. Critics of western exploitation have performed an essential role in identifying a vital national interest in the West. But for this westerner, Worster's condescending dismissal of the western experience as illegitimate goes too far. Unless one accepts the moral imperatives of deep ecology, a settlement policy that requires some continuing manipulation of nature must be seen as legitimate. The legitimacy is enhanced by recent western efforts to assume more of the costs of water development. The recent decision of Utah voters to approve state financing for a greater share of the Central Utah Project is a case in point.

WHAT IS THE FUTURE OF WESTERN WATER?

Rivers of Empire envisions a low water using West "as a place of inspiration and training for a different kind of life"[49] based on a pessimistic view of the ability of large bureaucracies that control a technology to

per acre foot). The District waived its rights to the 1963-1979 interim water supply. The Department is limited to a 900,000 acre foot duty in the future, but it must make a good faith effort to construct the facilities necessary to supply more CVP water which will be provided at then water marketing rates. *See* REISNER, CADILLAC DESERT, *supra* note 13, at 202-09 for an account of the California rivalry between the Bureau of Reclamation and the Corps of Engineers and the Bureau's use of cheap water to gain a competitive advantage over the Corps. For some interesting speculation on the Carter Administration's willingness to agree to a cheap water contract with Westland, see *Id.* at 334-35.

45. WORSTER, *supra* note 8, at 279-85.
46. *Id.* at 325.
47. *Id.* at 331.
48. *Id.* at 333.
49. *Id.* at 335.

change for the better. As Professors James E. Krier and Clayton P. Gillette conclude in their re-examination of the case for technological optimism "[t]he disservice of technological optimism is its implicit, unexamined claim that engineering can rise above politics."[50] Worster poses the question: is the hydraulic empire stagnant or can "people walk free of their history" of an instrumental view of nature?[51] His argument is powerful; there is something attractive about trying to realize the West that now only exists in many peoples' mind.

There is, however, an alternative vision that is based on the reality of an urbanized West and seeks to accommodate people with nature rather than to roll back western populations. The possibility exists that the forces at work to re-evaluate western water allocation patterns are more powerful than he anticipates and that they are powerful enough to curb the major excesses of the past. Contrary to *Rivers of Empire*, the modern Bureau of Reclamation's diadem is badly tarnished, and it is somewhat desperately searching for a new role in the West; one based more on river corridor management rather than on physical control of water. Economists, many environmentalists and other critics of western water allocation argue that if water is made a commodity subject to the discipline of the market, there will be a better (more efficient) and fairer distribution of the resource. If this argument is correct, many of Worster's musings about the inherent evil of any regulation of water use can be dismissed as melodramatic and unfounded.

There is a need to concentrate the use of western water in its highest valued uses, subject to equity constraints such as Indian uses, to use less water generally and to leave more water in the streams for environmental quality enhancement. This can be done through a combination of incentives to conserve and market water and regulation that trims vested rights. The ability to market "saved" water will create powerful incentives to conserve all uses of water, but especially excessive agricultural ones. Conservation in turn reduces the pressure for more dams and ditches. This strategy is supported by existing efforts to use the public trust doctrine to redefine existing waters in favor of public uses. The public trust has an unsettling effect on longstanding expectations, but it has a role to play in encouraging conservation.

There are many hopeful signs in the West that point to the ability of

50. Krier and Gillette, *The Un-Easy Case for Techological Optimism*, 84 MICH. L. REV. 405, 429 (1985).

51. WORSTER, *supra* note 8, at 329. Our greatest interpreter of the West, Wallace Stegner, has recently explored the decline of the West "as the geography of hope" due to the manipulation of water as well as the possibility for the reconstruction of a western culture "still close to the earth, intimate and interdependent in their shared community, shared optimism, and shared memory." 31 U. MICH. L. SCH., LAW QUADRANGLE NOTES, 2 WINTER 12-13 (1987) contains a summary of Stegner's William W. Cook Lectures, *A Semi-Desert with a Desert Heart: The American West as Living Space*.

the water allocation system to reorient itself. Arizona has made a conscious decision to retire irrigated agricultural land in favor of continued urbanization and is imposing stricter and stricter technology forcing conservation measures on urban and industrial water uses. California has applied the public trust doctrine to modify existing permits to require flow releases to protect the Sacramento—San Joaquin Delta from salt water intrusion.[52] Montana is increasingly basing water management plans on its instream flow reservation procedure and is exploring ways to have its reservations for all future beneficial uses count as a bona fide use of the Missouri River in order to break the historic race to divert the maximum that has prevailed on western rivers as a result of the law of equitable apportionment.[53] These developments represent a more modest vision of the new water using West than Worster would accept, but the continuation of these trends suggests the possibility of a better balance between the reality of an urban West and the moral and ecological vision of a natural West that continues to uplift the human soul. That would be a significant accomplishment.

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52. United States v. State Water Resources Control Bd., 227 CAL. RPTR.. 161 (Cal. App. 1986).

53. M. O'KEEFE, N. SLOCUM, D. SNOW, J. THORSON, & P. VANDERBERG, BOUNDARIES CARVED IN WATER: AN ANALYSIS OF RIVER AND WATER MANAGEMENT IN THE UPPER MISSOURI BASIN *26 Northern Lights Institute (1986).*