

# THE TAXABLE SURPLUS IN WATER RESOURCES

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*Taxes or rental charges for water use are bearable and legal and would spur water economy, but the following fallacies impede acceptance of these ideas: (i) water rights are real property, (ii) a charge on water would be passed on to consumers, (iii) the cost of water is just its development cost, (iv) markets solve most problems if property rights are firm, (v) only consumptive use is a social cost, and (vi) common rights must spell tragedy. This paper dispels these fallacies while advocating taxation and/or rental charges for water use.*

## I. INTRODUCTION

Imposing a package of severance<sup>1</sup> and other taxes on water withdrawals and power drops can ameliorate five major problems of water economy. Such taxation would (i) spur holders of surplus water to sell, (ii) foster conservation, (iii) convert water from a sink to a source of state funds, (iv) offset the concentrated possession of water, and (v) integrate the economies of ground and surface water. One can view a severance or net proceeds tax as a price charged by the owner of water (the state) for using its property. The rationale is the same as that for an effluent charge on polluters, which is a familiar proposal.

A virtue of properly tuned taxation is that it puts a uniform constraint on use of both ground and surface waters. Today, pumping is less constrained than surface withdrawals. While California rations and prices surface water, landowners in the San Joaquin Valley drill more wells and pump up unpriced water the State is re-

charging at high cost. During the 1976-1977 drought, San Joaquin Valley landowners drilled 10,000 new wells (Weatherford et al., 1982, p. 1031). This is a treadmill: subsidized water supply followed by overdraft followed by State rescue projects followed by new overdrafts, and so on.<sup>2</sup>

The purpose of this paper is to dispel several fallacies that impede appreciation of the tax approach.

## II. FIRST FALLACY: "WATER RIGHTS ARE REAL PROPERTY"

Water is public domain. Most state constitutions read that water belongs to the state in trust for the people. (The analysis here focuses solely on intrastate waters.) California Water Code Section 102 reads, "All water within the State is the property of the people of the State" (emphasis added). Private parties have possessory interests. A water license is a privilege, like that of an airline to occupy its time slots, of a cab to work the streets, of a

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1. Colorado applies such a tax along the S. Platte River. The tax has "operated for several years...with little problem or controversy" (Young et al., 1986, p. 790).

2. Palm Springs and the Coachella Valley get water from the Colorado River Aqueduct and store it in their aquifer. The water otherwise would go to Los Angeles and its environs, which then would need less from Northern California (Warren, 1991). No constraint on pumping exists, as evinced by the 82 golf courses that operate in the Coachella Valley, a Sonoran desert, and the 50 more that are planned.

broadcaster to use a frequency, or of a rancher to graze his herds on public lands. It is subject to conditions and invasion.<sup>3</sup>

Water licenses are not recorded with title deeds to real property. Only rarely do they appear on property tax rolls, and when they do, they usually are listed as personal property, although this situation is confused, ambiguous, and neglected (LaBahn, 1971). Owners' lawyers often call permits "real property," but not when the subject is property taxation. (See Gaffney, 1962a, for discussion of the resulting "double-talk.") "Appurtenancy" is a supple legal term used to reconcile such contradictions favorably for owners. Water licenses "appurtenant" to specific lands enable owners (i) to reserve original water claims in proportion to landholdings, (ii) to bolster water claims under color of real property, (iii) to shelter water claims from taxation, and finally (iv) to separately cash out surplus water claims. "The appropriate 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). True, a water license may be taxed indirectly through the value of taxable land it serves. However, unused and misused water surpluses—the focus of the problem at hand—do not significantly raise the value of any land. Thus, they escape taxation in whole or part.

The upshot is that legislatures have great latent power. The public purpose of water licenses is to put water to the best use, not to serve as "property-for-its-own-sake." In Oregon, a leading decision reads that "water use in this country (never) rose above the dignity of a mere privilege over which the state had complete con-

trol" (In re Hood River, 1924, pp. 190–191). In *Ivanhoe v. McCracken* (1958) the U.S. Supreme Court stingingly rejected the doctrine that the U.S. Bureau of Reclamation holds water in trust only for landowners. The implied or constructive trust is founded on another principle: "The project was designed to benefit people, not land" (Ivanhoe, pp. 296–297). Law professors such as Harrison Dunning (1982) and Joseph Sax (1990) have helped lay citizens recognize their legislature's power to regulate and by implications to tax. Because water licenses are not real property, they would seem to be exempt from limits imposed by California Proposition 13, as are benefit assessments levied by irrigation and other water districts (American River case, 1982).

Ground water, too, is subject to legislative power. In coastal areas, pumping is limited and/or taxed to stop salt water intrusion and to pay for fresh-water recharge.<sup>4</sup> Pumping also is regulated to control movement of toxic plumes. Under the "correlative rights" doctrine, pumping is controlled so as to stop "export" of water from lands overlying an aquifer (*Katz v. Walkinshaw*, 1903). If that measure does not suffice, pumping is controlled to prorate water among surface owners and shorten pump lifts (*Pasadena-Alhambra* case, 1949). Pumping near streams is stopped to prevent indirect diversion of surface water (*Tulare-Lindsay* case, 1935). Arizona authorized a pump tax in 1980 (for later implementation) and set about retiring farmlands to reserve groundwater for higher uses (Dunning, 1982, pp. 41–43). Meanwhile, Arizona is relying on direct regulations to conserve groundwater (Brown and Ingram, pp. 23–24).

3. The leading 1928 Amendment to the California Constitution *limits* riparian water claims previously considered real property. "The [new] appropriator may take the surplus [of old claimants] without giving compensation" (Hutchins, 1956a, p. 18). These limits "apply to the use of *all water under whatever right*" (emphasis added) (Hutchins, 1956a, p. 19).

4. Dating from 1933, the Orange County Water District levies a public charge on pumping ground water in its 180,000 acres. Water Code Sections 60220 and 55335 permit water replenishment districts to exist anywhere (Birdleough and Wilkins, pp. 267–268; Weatherford, pp. 1035–1036).

An ancillary error is that the appropriative doctrine of water licensing ("first in time, first in right") originated with the 'Forty-niner miners, who used water with possessory placer mining claims. The 'Forty-niner fallacy subtly reinforces the fallacy that water rights are real property by intimating that extant appropriators are the real "people" for whom the Constitution reserves water. This is more romance than history. Placer mining claims were narrowly limited in space and time. They were just "ten feet square" in the good locations (Robinson, p. 137), making the mines ant-heaps. According to one former miner, "no one might...hold [gold-bearing land] for a longer time than he continued to use it" (George, 1879, p. 286). However, water flows on forever, and its scarcity value continues to rise. Perpetual ownership of water over thousands of acres per owner is not in the 'Forty-niner tradition.

Securing a good water license required being at the right place and time, free, and white. Some owners based their claims on shotguns, a matter of common boast today. Above all, one needed to own land whereto to make the water "appurtenant." Landownership in the southwest has been highly concentrated from an early time (Gates, 1978; Worster, 1985, pp. 98-111). It remains so today (Worster, 1985, pp. 243-247, 291-302; Villarejo, 1982; Fellmeth, 1973, pp. 3-25, 163-180; *U.S. Census of Agriculture*, 1987, pp. 16, 36, 84, 120). Major doctrines of water law (riparian, appropriative, and correlative rights) restrict control of water to those with prior landownership. One also needed front money to win the claim-staking race by appropriating water prematurely.

### III. SECOND FALLACY: "COST OF WATER IS SHIFTED TO CONSUMERS"

One who sells in a world, national, or competitive local market is a price-taker, regardless of cost. That is standard doctrine. In addition, water is an unusual

input—a nonreproducible resource whose higher price will raise production. When one pays more for water, one often switches to higher-valued crops. One substitutes capital and labor for water on the same land, raising monetary yields per acre and releasing surplus water to serve more lands. Conversely, the effect of cheap water was seen in the rural populations of Fresno, Kings and Tulare Counties. Having soared with dear water, 1940-50, these populations stagnated with cheap water, 1951-1977 (Ballard, p. 30).

With dearer water, one uses less by controlling it better, switching from furrow irrigation to drip. Some growers plant avocados on steep, formerly barren hillsides that yield more dollars of product for less water. These facts point to a portentous corollary: government can raise public revenue from water and stimulate, not parch out, farm production and employment.

### IV. THIRD FALLACY: "WATER IS WORTH WHAT IT COSTS TO DEVELOP"

Even a century ago, water supplied freely by nature at the source was worth shooting people for. Today, developing and distributing water through the Gage Canal from the Santa Ana River to Riverside, Southern California, where it is used to grow citrus, costs \$20 per acre foot (a.f.). Meanwhile, the State is wholesaling imported water just over the city line for twelve times as much, \$240/a.f. Because of hidden and cross subsidies, the true social cost of developing and delivering the water at the outer and upper margins of the system may run up to \$2,000/a.f., or 100 times the total price (fixed and variable) charged for Gage Canal water. (No one is able to figure the cost to the penny because the books are cooked. Alan Post, 1982, made a major effort; Gaffney, 1982, a minor one.)

The social cost of withdrawing water is the highest cost that preempting it imposes on those who fail to receive it. In

this case, the cost is \$2,000 rather than \$20. "Avoided cost" is the familiar regulatory concept; "opportunity cost" is the theoretical one. This third fallacy, reinforcing the second, conceals the central truth that water such as Santa Ana River water, which arises naturally where demand exceeds supply, bears rent. It should command the same price as water imported from 600 miles away. When so priced, users will economize it, and it will yield a taxable surplus.

V. FOURTH FALLACY: "FIRM UP PROPERTY; THE MARKET WILL PROVIDE"

The market solves *many* problems; here are four it cannot solve.<sup>5</sup>

A. *Some Human Rights Are Unalienable*

No one may pledge or sell a child. It follows that society cannot collectively alienate a child's birthrights. Water belongs to the states as trustees for all citizens. That ongoing obligation must apply to citizens yet unborn.

The birthright may be a right of access, where feasible. Often access must be limited so that the resources can be managed efficiently. Some seize on this necessity as the occasion to extinguish common rights, but this need not be the case. The state merely can replace the common right of access with a state duty to collect revenues to serve common needs and replace other taxes. A right of revenue means a state would charge licensees for withdrawing its water to use on private lands instead of subsidizing them to do it, as is the current practice. A right of revenue would turn financial sinkholes into sources and "Negabucks into Megabucks" for state treasuries and their trustors. At the same time, it would promote efficient water use.

5. The author has a long track record promoting water marketing (Gaffney 1962a, 1962b, 1977). Now that it is stylish, however, the uncritical dogmatism of zealots embarrasses him.

B. *Water Distribution Is A Natural Monopoly*

Most big water projects are multi-purpose and require centralized integration. Acknowledging and exploiting that fact, many appropriators have gained huge political rents by getting Congress to overpay for "non-reimbursable" features of multi-purpose river-basin projects. Strong economies of scale (to volume, not distance) mark even single-purpose water conveyance (Gaffney, 1961, 1962b, 1966, 1969), so no place exists for parallel, competing lines. Rights-of-way are acquired by eminent domain, imposing a public servitude on the owner. Accordingly, water supply, conveyance, and distribution are almost everywhere public, cooperative, or regulated.

Water markets will not work by faith. A central conveyance and integrating agency, regulated or administered in the public interest at a high level of economic and financial sophistication, must do what a market would do if a market would work. That possibility is not a dream: it is what regulatory commissions do for power, gas, and communications. Commissions will not work by faith, either. Keeping them honest and capable requires hard work, sound thinking, and dedication. The economics profession must accept that necessity and keep it a central concern.

C. *Markets Require Motivated Sellers*

Put pink-slips (a metaphor for alienable property rights) on water, declare a free market, and watch the magic work, the "new resource economists" write (Anderson, 1983; Moore, 1991).<sup>6</sup> California Assemblyman Richard Katz carried a statute in 1982 (AB 3491) to let public agencies

6. In 1961, the author saw great promise in ridding water of legal barriers to alienability and making it merchantable. Now he blushes as "new resource economists" make a panacea of the pink-slip.

help individuals sell water. The Environmental Defense Fund has become a water broker. In 1986, a new Katz bill (AB 2746) let water transferors use public agencies' conveyance facilities. Water marketing is all the rage.

The results are disappointing given the pent-up needs. Many deals are wanted; few are done. Something else obviously is wrong. A major obstacle to marketing is that *sellers are undermotivated*. Water flows are perpetual, and demand keeps growing. No cash drain and no hurry exist. The broker's delight—the motivated seller—is a family moving or anyone with surplus land subject to debt and property taxes. The broker's despair is farm water districts. Most water permits are free of debt (banks do not lend on them) and free of property tax. The real estate market works because hundreds of thousands of deeds are recorded every year. The water market has only dozens of transfers. To get this market working, some device must impose a cash drain on holders of surplus waters so they will actively seek out buyers.

#### D. "Rent-seeking" Perverts the Market

The prior appropriation doctrine for establishing water claims ("first in time, first in right") is the *locus classicus* of "rent-seeking." It distorts present investment so as to secure future rents. The motive is to divert, develop, and half-use water before its economic time so as to lay claim to its future. Surface waters thus have been preempted and misallocated for over a century. In 1949, the California Supreme Court extended the system to groundwater and triggered a "race to the pump house" (Krieger and Banks, 62) when it proclaimed the doctrine of "mutual prescription" for groundwater basins (*Pasadena-Alhambra*, 1949). This ruling "encouraged defensive ground water overdrafting by pumpers in other basins who anticipated ground water adjudication" (Glea-

son, 709). Claims to water are constantly being made, expanded and firmed up. Any giveaway process violates the virtues of the market. The rule for prior appropriators and adverse possessors is "Waste today, want not tomorrow." The number of examples almost equals the number of licenses. For instance, in 1962 the Orange County Water District sued every upstream diverter on the Santa Ana River. In the 1969 judgment, "each water agency's allotment is based on historical use" (Patterson, 1991). Think about that incentive structure.

As we segue toward a market system, speculators are moving in to acquire permits from old local holders. The speculators visualize commercializing and moving the water and using political influence to modify the water permits. This new, sophisticated rent-seeking, blended with old-fashioned land speculation, raises great hostility and anxiety (Gottlieb, 1988, pp. 261–280) and causes many to oppose water marketing. A better way exists. A policy of taxing water withdrawals, based on the opportunity cost of water, would do the job without attracting alien buyers seeking unearned increments.

Popularizing Pareto, the fashion today is to boost water trades as "win-win" deals, but this is only a half-truth. Most water trades are "win-win-lose" deals. The loser is the general public. Every sale of licenses helps validate private seizure of public domain. Besides the common water, subsidies are attached. In December 1988, the U.S. Interior Department issued a water marketing policy that let recipients of subsidized water from its projects sell the water and keep the profit (Levin, 1988). The "innocent purchaser" now would seem to have secured a perpetual right to be subsidized. Richard Wahl (1989), Angelides and Bardach (1978), and the Environmental Defense Fund overtly promoted that conclusion.

Water marketing supposedly gets government out of the market. Wahl et al.

would deal government in forever. Under his proposal, every subsidy and giveaway engineered by pork-barrel politics becomes sacrosanct, perpetual property, and taxpayers forever incur ongoing costs of \$60/a.f. or more to deliver water for \$3.50/a.f. to landowners who can resell it for \$400/a.f.<sup>7</sup> This is the absurd, unjust *sequitur* of condoning private seizure of public domain.

Such thinking also sends a message to future rent-seekers. Once one receives a subsidy or giveaway, by whatever means, one has a right to keep receiving it forever and to call that right "property." Agitation for new subsidies would soar; the state would be bankrupted. This is hardly the condition that water marketing should achieve. Chanting "win-win" sounds constructive, but those who take public property in the name of the free market are not promoting the market. Rather, they are free-riding on and dragging down its good name for private gain. They are the market's worst enemies.

Taxation can transform water trades into "win-win-win" deals by making water permits transferable but also chargeable. Most economists acknowledge that contractors who get subsidized water from federal and state projects should pay the full cost of project services. Equally obvious should be that licensees taking rentable water from the public domain should pay its full value. The policy package could carefully balance and combine severance, net proceeds, property, transfer, and gains taxes.<sup>8</sup> Given the growing de-

mand for and scarcity of water, this is the weightier, more general issue.

An ancillary doctrine of zealous marketers is that "bureaucrats" always fear and fight markets. During the 1940s, however, the U.S. Bureau of Reclamation (USBR) tried to mobilize water along California's Friant-Kern Canal. Bureaucrats wrote of "pooling" and sending water "to whichever demand develops first" (Maass, 1952, p. 546; *Central Valley Basin*, 1949; Taylor, 1949). The contracting local districts could and did sell surplus contract waters outside their boundaries. The State granted USBR water filings 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 *Ivanhoe* (1958). Thanks to *Ivanhoe*, marketing federal water is possible today (Graham, 1961, pp. 172-190). Arguably, *Ivanhoe* also makes marketing state water possible. In the Burns-Porter Act of 1959, the State's answer to *Ivanhoe*, the State adopted utility-type contracts on the "9(e)" (federal) model (Graham, 1961, pp. 188-190).

Private Property fought bureaucratic marketing and pooling. Speaking through U.S. Senator Sheridan Downey, landowners demanded "*that the land and water should be joined together, never to be cut asunder...in perpetuity [and that] neither should be sold separately*" (Downey, 1947, pp. 226-227, emphasis added). That demand did not leave much room for water marketing. Rather, it reminds one that the philosophical godparents of free markets—such as Quesnay, Turgot, Smith, Ricardo, and Mill—were heavily engaged in fighting landowners who wanted protected markets. Many bureaucrats today are fallen angels, but who pushed them? The bureaucrats who advocated marketing then were traduced and persecuted as communists (Kirkendall, 1964; Dinuba

7. Wahl wrote when 40-year contracts on CVP waters were starting to expire and come up for review. The whole point of those contracts and the strife they caused from 1948 on was that they were *not* to be perpetual. Wahl would give away what even Congress and a complaisant Commissioner of Reclamation had not given away when they were under heavy pressure to close contracts.

8. U.S. Senator Bill Bradley has promoted a bill that would, as of May 31, 1991, include a gains tax of 25 percent on transfers from federal projects (Ellis, 1991). It is feeble, but a start.

*Sentinel*, 1947; Kings River Water Association, 1950).

#### VI. FIFTH FALLACY: "ONLY NET CONSUMPTIVE USE IS A SOCIAL COST"

In water law and lore, "consumptive" use is primitively construed, without reference to "The Second Law" (entropy). Much diverted water returns to a river or aquifer for reuse and hence is not "consumed" in the sense of the antique First Law. This usage writes off the value of elevation, purity, and other elements of negative entropy. Elevation both generates power and moves water by gravity. British Columbia raises large revenues by taxing power drops; so might we.

To understand the meanings of "use" or "consume" in economics, one must think in terms of entropy. The water user takes in pure water at high elevation at a time and place of his choice. He returns some of it, but at lower elevation at other times and at scattered places that are inconvenient for those below. As for water quality, many return flows are worse than no return at all.

Many senior permits are downstream. Downstream seniors have enjoined upstream juniors from diverting water and are dissipating the elevation drop without using it (Consolidated Peoples' Ditch case, 1928, cited in Gaffney, 1961). The downstream seniors are consuming water's potential energy as if they were withdrawing and using it upstream (e.g., for low-head hydro or gravity conveyance to better lands). A tax or charge based on best alternative use would include a surcharge for the loss of elevation.

#### VII. SIXTH FALLACY: "COMMON RIGHTS SPELL ECONOMIC TRAGEDY"

"Tragedy of the Commons" has become part of the culture, but analytically and economically, it does not hit the nail on the head. All agree that overdrafting aquifers is a tragedy. However, aquifers are not a

commons. Their use is restricted to overlying landowners on overlying lands. An observer with a different bias would ascribe overdraft to landowners' assertion of private property rights. Overuse *per se* is the tragedy; blaming it on common rights gives it a certain spin.

Asserting common rights need not imply open access and unrestricted use. Often the opposite is the case. Here are five examples of how the act of restricting use asserts common rights: (i) constraining water use by taxing withdrawals, (ii) constraining hunters and fishers by imposing bag limits, (iii) constraining pollution of common waters by imposing effluent charges, (iv) protecting watersheds by regulating timber harvest practices, and (v) protecting swimmers and small boaters by limiting size and power of boats. Economists like to believe they are "value-free." If so, they will replace the "tragedy of the commons" with "the tragedy of overuse" and often will ascribe overuse to *suppressing* common rights, not upholding them (Bromley, 1990; Wantrup and Bishop, 1975).

#### VIII. CONCLUSION

Water is public domain. A package of water taxes (severance, net proceeds, property, and gains) and/or rental charges would improve incentives and the water economy. When one pays for water, one often shifts to higher-valued crops, substituting capital and labor for water and raising yields. Government can tax water withdrawals while improving the water economy.

We must control pumping to prevent overdraft if any system of surface control is to work. A tax is an economic price charged by the owner of water—the state—for the use of its property. We must charge both for net water withdrawals and for raising water entropy.

Common rights may be asserted as open access where such access is feasible

or rights of revenue where closed-access is more efficient. The tax-price will promote efficient use and also will be progressive, with water distribution being highly skewed. It also will raise money for state treasuries and their trustors, the people.

Water in good locations is highly rentable. Water markets work badly because no cash drain motivates sellers and because selling prices rise indefinitely. To overcome this resistance, policymakers must subject water licenses to severance and/or property taxes or other public charges that are based on their opportunity cost values. Property taxes on land, which drain cash from holders of surpluses, make the land market work as well as it does. Taxes on water would abort rent-seeking and allow water markets to work without granting unearned increments to speculators in water rights.

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