

Integrated Management of Water

public districts provide a form of organization for integrating the management of surface and ground water

Stephen C. Smith

The following article is the first of two articles on the function of the public district in the integrated management of ground and surface water.

California's doctrine of correlative water rights—granting a coequal right to overlying land owners to use ground water—has resulted in the uncoordinated development of ground-water reservoirs, while permitting each user to relate his use of ground water to his other sources of water, with minimum legal restriction.

Problems have followed this uncoordinated development, as increasing depth to water, salt water intrusion, compaction, and excessively high water tables. As a result, the economic value of the water right has tended to be decreased. Solutions to these problems have not been found in terms of legal privileges and remedies. But some of these problems have been met by public districts organizing a program of integrated management of ground and surface water.

In northern Santa Clara Valley—an area classified by the State Department of Water Resources as a reservoir with secular overdraft—the average water table dropped 109' from 1915-16 to 1933-34; and from 1933-34 to 1942-43, the water table rose 85'. In the following period, from 1942-43 to 1950-51, the water table lowered 110'; and rose 21' from 1950-51 to 1954-55. The depth to water fluctuated in a cyclical manner but the depth in the second cycle was greater than the first.

The ground-water users in the area were troubled with a physical uncertainty due to the cyclical nature of the rainfall supplying the ground-water reservoir and with secular overdraft. During the dry portion of the cycle, the depth to water increased—with added water costs—and with no knowledge of how much nor for how long the depth to water would increase. In such a situation, the correlative rights doctrine spreads the uncertainty equally among reservoir users and does not limit draft through a state agency.

Secular overdraft is prevalent in many parts of California with overdraft continuing through one rainfall cycle to the next. In this situation the correlative rights doctrine—with the court reference procedure—has been used to define the individual water rights and to restrict

the draft permitted under the right. These rights are determined upon a historical base, and restriction of draft is defined as a percentage of the approved base. The court, as the administrative agency, may vary the volume of draft by changing the percentage thus achieving partial, not complete, integration.

Against uncertainties of this type, the public district may be used to organize an economically important element of security which is not provided in the correlative rights doctrine. In this way the district's actions are used to protect the economic value of the ground-water right and yet maintain the correlative rights doctrine.

One role of the public district in the integrated management of ground and surface water is to provide the organizational structure which will represent the interests internal to the management plan. These internal interests are associated with the various parts of the plan, however, they do not necessarily agree. In fact, conflicts of interest generally exist, and a principal role of the public district is to provide an internal organizational structure in reaching a common interest among the conflicting interests.

Through the electoral procedure the physical—as well as the economic—necessity of control over a manageable portion of a basin may be achieved without requiring unanimity of interest. Generally, the benefited area is considered to be all of the overlying land irrespective of ground-water use. In addition, individuals with an economic interest in reservoir management—as urban ground-water users but not the holders of a water right—may have representation in district affairs. Representation may be accomplished by designating who may possess the voting privilege.

A step toward integrated management is achieved if all relevant interests have an opportunity to be heard. For this to be effective, the issues must be presented to the voters so that a decision can be reached with respect to the problems of interrelating ground and surface water rather than considering them as separable, independent resources. In this way the district can play an important role in determining voter preferences on questions of integrated management.

In northern Santa Clara County—as

an example—internal representation within one organization has not existed for all interests, but certain interests have been represented by their own organization.

The oldest—since 1929—governmentally organized interest is associated with water conservation for purposes of artificial recharge; the second oldest—1952—is the flood control and stormwater drainage interest and the youngest—1955—is the recreational interest. Each of these interests is represented by a public agency organized to carry on activities of little or no concern to the other organizations as well as closely related activities.

A problem in the integrated management of ground and surface water is exemplified in the use of conservation dams for downstream flood protection. The activities of two public agencies—the Santa Clara Valley Water Conservation District and the Santa Clara County Flood Control and Water Conservation District—are complementary in such operations as capturing flood water in the forepart of the rainy season and at other times when reservoir levels are low. The general policy of the Conservation District is to drop these levels as soon as percolation conditions are favorable.

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CALIFORNIA AGRICULTURE

Progress Reports of Agricultural Research, published monthly by the University of California Division of Agricultural Sciences.

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