

Water for Golf Course Use: The Next 20 Years and Beyond

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CALIFORNIA depends upon moving large amounts of snow melt water from the Sierra-Nevada Mountains and the Colorado River Basin to its cities and towns. Most of the Southwest, and southern California particularly, is semi-desert, yet its farmers grow abundant food. Turf and landscape managers provide magnificent landscapes, and conservationists manage many new recreational areas for the rapidly growing urban society.

In southern California, water coming from local wells averages about 15 percent to 40 percent of the total need. The Metropolitan Water District, a large wholesale contractor, moves water hun-



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dreds of miles, importing 60 percent to 85 percent of local water needs. As the wholesale contractor, MWD delivers to 12 member water agencies, which in turn deliver to hundreds of retail agencies, who universally meter water to the 13 million people in the seven-county area.

California will use about 40 million acre feet of water in 1989, or about 13 trillion gallons, which includes water for agriculture, municipal needs, industry, wildlands, and recreation. Since less than 25 million acre feet are stored each year, runoff is captured during the growing season, and wells are used to compensate for the growing needs.

This scene is becoming increasingly common on golf courses throughout the country.





Severe water restrictions placed on golf courses can have dire consequences for their appearance and playability.

As a part of the California State Water Resources Control Boards, the Delta Water Hearings Board proposed reductions in municipal water usage in December of 1988. The trial paper proposed an across-the-board 20 percent reduction in domestic usage by 2010, and an immediate 40 percent reduction on all new landscape and recreational areas. Essentially, this proposal would turn the clock back to 1985.

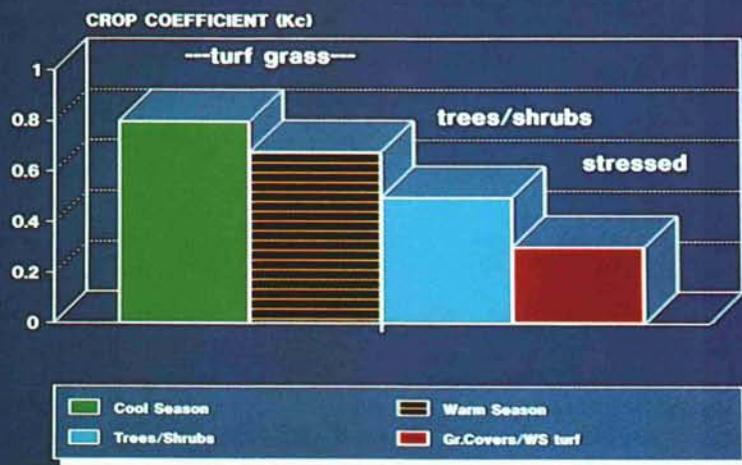
A number of studies by engineering firms and data from MWD indicate that by 1985, per capita water usage in southern California had been reduced to about 193 gallons per day. Nearly 50 percent of the water per capita, however, is used outdoors, indicating Westerners like to live outdoors and have outdoor recreational facilities.

Accompanying graphs are taken from a paper by Dr. Michael Haneman, an economist of the University of California at Berkeley, titled "Reasonable Municipal and Industrial Water Use in 2010." They represent southern California's water use patterns in the decade of the 1980s, and project water use to 2010.

Dr. Haneman notes the retail price of water has risen 35 percent from 1979 to 1986, but indications are that water pricing has not materially affected usage because Westerners live outdoors. Although the State Water Board rescinded its 20 percent reduction order, in February, 1989, further public hearings will be held with a final resolution of urban water use to be implemented in 1992.

Landscape water usage can be reduced, however, by using alternative species, a reduction in turfgrass areas, the introduction of improved cultivars, and improved irrigation system designs. Planting warm-season grasses instead of cool-season species could save a significant amount of water. Soil moisture monitoring devices and weather-generated data bases will also play an important role as southern California looks to reduce per capita water use without being forced to significantly curtail its outdoor recreational activities.

PLANT WATER USE



Part of any water conservation effort must come from the use of plant materials that require less water.

The population in southern California was estimated at 13.2 million persons in 1985, and it will grow to 18.3 million by the year 2010. Municipal water usage in the Metropolitan Water District is presently 2.9 million acre feet per year (nearly 1 trillion gallons) and is projected to grow to 4 million acre feet (1.3 trillion gallons) by 2010.

The decades ahead are sure to bring greater water problems for southern California and other parts of the South-

west. Among the factors that will force municipal and state agencies to further restrict water use are a significantly increasing population, a growing number of single-family homes, and limited water resources and an accompanying lack of water storage facilities. Another important concern is the average Westerner's attitude toward his landscape and his outdoor recreational facilities, making it just that much more difficult to develop water conserving measures.