



Palm Beach Trade Winds



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There is a sad, dark cloud hovering over South Florida threatening all golf course superintendents. The most fearful aspect of this cloud is that the water reserves we once believed endless are being depleted at a rate far faster than we want to realize. All the myths of a dry future have come to an instant reality. We are all in the same boat; and if we are not careful, we will find ourselves high and dry.

During the past record dry winter and spring, almost all superintendents found themselves altering their management programs to cope with the drought. Thankfully, summer storm patterns have relieved the water situation for the present time. The South Florida Water Management District (S.F.W.M.D.) has lifted watering restrictions, since water reserves are adequate. Bruce Adams of the S.F.W.M.D. explains that a new method of evaluating the water crisis will be based on the Reserve Storage Volume Percentage (R.S.V.P.), measuring the amount of water contained within Lake Okeechobee and the Water Conservation Districts. This will be based on the 3.3 million acre feet of water that would be available.

As of the beginning of September, the R.S.V.P. was just over 50%. The percentage of the R.S.V.P. will be tabulated and released to the media at the beginning of each month. This will be a valuable tool for knowing a reserve potential during the dry season. Bruce Adams feels the R.S.V.P. can best be stated as "being similar to a bank account. We can estimate our monthly bills for the total year. If we have enough total yearly earnings from the wet season, we know we can make it through the dry season". If we do not have a good enough R.S.V.P., obviously, the S.F.W.M.D. will have to impose restrictions in order for South Florida to survive.

This past year almost everyone, from homeowners to golf course superintendents, were puzzled by the restrictions imposed by the S.F.W.M.D. Because of the variety of restrictions based on gallonage use or the variety from county to municipalities, it was often difficult to understand.

The system of restrictions will be better organized in 1982. The S.F.W.M.D. will be given legislative authority from Tallahassee next spring, if passed by the House of Representatives, the Senate and then signed by the Governor. This will allow the S.F.W.M.D. to examine the water levels of the R.S.V.P., and to carefully regulate restrictions to maintain our water reserves.

Lake Okeechobee's water level, fortunately, has been aided

by cloud seeding in the immediate area, which has provided much needed rain in the Kissimmee River Valley. The once feared Hurricane Dennis, ironically, proved to be a blessing for the Water Conservation Districts and Lake Okeechobee is not necessarily 11.4 feet above sea level. This is a point that must be understood. All water levels are recorded in relation to the height above sea level. The depth or water column in Lake Okeechobee is not necessarily 11.4 feet because most of the lake's bottom surface is actually above sea level. The profile of the lake's floor looks much like a saucer, as the edges are shallow and only the middle would be the deepest, only a few feet deep. The surrounding lake bank edges average 20 feet above sea level, meaning from the shore's edge, the lake is still several feet below normal. A desired water level of approximately 16 feet would translate to an adequate supply, but not necessarily a 16-foot deep lake.

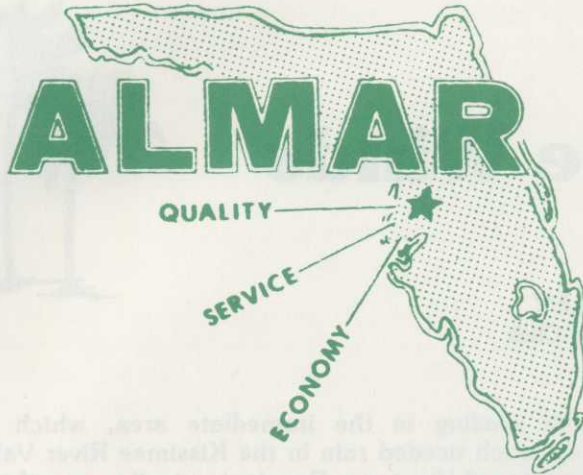
Since all elevation recordings are translated to above sea level, available soil moisture varies throughout Palm Beach county. The central areas of the county, near the perimeters of the Water Conservation Districts, are only a few feet above ground water level.

The western and central areas possess the water reserves for lower lying coastal regions. Because of the low sea level and low reserve capacity, localized coastal thunderstorms can result in flooding. Runoffs must overflow the locks and pour into the intracoastal. Possibilities of back pumping from east to western reserves must be evaluated. The possibility of droughts in the tropical rainy state of Florida can be comprehended if carefully studied.

Of all the golf courses in Palm Beach county, Seminole Golf Club had the most maintenance difficulties to overcome. Certified Golf Course Superintendent, Bill Whitaker, has endured many hardships, but still manages to provide one of the most superlative championship golf courses.

Whitaker's water source is from wells. However, by order of the S.F.W.M.D., the water usage is limited to 5.3 million gallons of water per month, which translates to approximately 181,000 gallons/night. The pumping system is monitored by a totalizer, which meters the number of gallons pumped into the golf course system. Since every gallon is measured, his extremely efficient procedure is one we must all eventually examine for the future. Whitaker's theory of irrigation practices is best stated as "you must grease the squeakiest wheel first, which translates to the

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greens." Irrigation of the green tops is the highest priority, with tees appropriately needing second priority. Irrigation of the fairways is reduced to only the landing areas, and quite often the rough is totally eliminated.

Whitaker is irrigating with a low volume of water on terrain possessing elevations up to 28 feet above sea level and a water table of one and a half feet above sea level. The evapotranspiration rate is high enough to cause nightmares for any horticulturist. Dr. Bruce Augustine, of the Ft. Lauderdale Extension of the University of Florida, states ".3 of an inch of water can be lost through the evapotranspiration rate per day that would need to be replenished under the worst of conditions on very sandy soil along the coastal regions of Palm Beach County". To replenish this E.T. Rate would take 8,000 gallons of water/acre. It is important to note that to irrigate one acre foot of water takes 43,560 feet/acre x 7.5 gal/cubic foot of 326,700 gallons. Even to irrigate one inch of acre water would take 27,225 gallons, 1/12 of that amount.

Whitaker finds the coastal region does not receive as much rainfall as many other inland regions. He has been keeping records of coastal rainfall for the past nine years from either Lost Tree Village Country Club or Seminole Golf Club. In comparison to the U.S. Weather Bureau reporting center at the Palm Beach International Airport, Whitaker's readings have been consistently 10 to 15 inches less.

Whitaker finds his cultural practices to be rather harsh in comparison to most courses. Because of the fact that he does not have the availability to irrigate excessively, his course has extremely healthy turf, although to a layman the turf does not possess a rich green color. Whitaker maintains that an excessively succulent turfgrass plant with a shallow root system will wilt much faster than a turfgrass plant that has been hardened off. "Just turn off the water and you will see just how healthy your turf really is".

Golf course superintendents are supposed to be able to cope with almost any problem that arises on the job. One of our biggest problems of the future will be the inevitable water crises. We will have to learn to do the very best with whatever water we are given. The highest priority for irrigation will be areas with the highest intensity of play — greens, tees and landing areas. Reduced irrigation of fairways will be necessary and irrigation in the rough may have to be eliminated completely. Wall to wall irrigation could become only a fond memory. Conservation could be achieved by rotating the two speed heads to irrigate faster on the slopes and slower on the greens with the clock time turned down to only replenish the E.T. Rate.

Culturally, we can raise the mowing height to cope for stress, fertilize with less nitrogen and apply equal or higher amounts of potassium to initiate deeper, healthier roots with a greater storage of reserve carbohydrates. The use of lower salt index fertilizers can increase the efficiency of nutrient uptake. Culturally, the theories and practices are endless.

In the future, superintendents may find golf courses to actually have the appearance of lesser quality, not because of management practices, but because of the deficiency of the most primary element for life — water. ■