Coping with a Water Shortage

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Maintenance practices on golf courses and other large turf areas may need to be altered during periods of water shortages and, in some circumstances, drastic changes may be necessary. If the facility depends for irrigation on municipal water and that supply is terminated or restricted, or if water available from other sources is severely limited, steps should be taken to:

- Reduce the need for moisture.
- Make certain all available moisture, including dew and rainfall, is utilized with maximum benefit and with maximum efficiency.
- Improve moisture retention of the soil.
- Find new sources of water, such as treated sewage effluent, brackish or other marginal quality water.

Here is an eight-point program that will help to conserve water and reduce the need for irrigation, while the search is made for alternate sources.

1. Establish watering priorities. Give the highest priority to the most intensively managed areas; for example, on a golf course, the greens, the most valuable part of the course, and where the most critical play takes place. The greens also are the most difficult to revive following periods of extreme moisture stress, especially if the stress causes dormancy or turf loss. On a golf course, give lesser importance, in descending order, to tees, fairways, clubhouse grounds, rough. If there are specimen plantings or trees or plants that have special significance, (e.g. those imported at high cost or a gift) give them the same special attention as the greens.

2. Alter irrigation practices. (This is much easier to do if the course has an automatic irrigation system.) Use only enough water to sustain life, not to stimulate growth. Irrigate when there is the best combination of little wind, low temperature and high humidity. In any 24-hour period, that combination most often exists just before dawn.

When there is dew on the ground, use a surfactant ("wetting agent"), or drag a hose across the grass to break the surface tension of the dew and send as much

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EMPLOYMENT REFERRAL SERVICE

Golf Course Superintendents Association of America
April 4, 1977

TEMPLE HILLS COUNTRY CLUB, Nashville, Tennessee

Title of Position:
Golf Course Superintendent

Duties:
Golf course maintenance, golf course budget, purchasing responsibility, clubhouse lawns and trees & shrubbery. The superintendent will be directly responsible to E. E. Johnson, President/Golf Director.

Annual Basic Salary Bracket:
$20,000

Fringe Benefits:
Club paid health, paid annual vacation, dues paid for membership in GCSAA, vehicle provided, and expense involved in attending education conferences.

Course Description:
Private membership, 27 hole, Penncross Bentgreens, 419 Bermuda tees and fairways, and automatic irrigation system.

Grounds Crew:
7 Regular, 5 part-time

Requirements:
High school education or more. Agronomy background. Must have experience as Superintendent and mechanical background. Must be strong working man.

Will pay travel expenses of applicants interviewed.

Send Resumes To:
E. E. Johnson, P.O. Box 50027, Nashville, TN 37205

Deadline Date For Applications:
May 1, 1977.

NOTE: Please refer to the GCSAA Code of Ethics before making application for this position.

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moisture as possible to the root systems. When watering trees and shrubs, use probes so the water will penetrate deeply.

3. Reduce, or avoid where possible, other causes of stress. Be alert to salt build-up, especially in arid or semi-arid regions. Make certain there is adequate drainage. On golf courses, alter locations of tees and flags, and restrict golf cart use to paths and trails, keeping them off turf areas.

4. Alter mowing and cultivation practices. Initially, test the soil to ensure adequate fertility, especially for phosphorus, which encourages root system growth--deeper roots, thus expanding the area from which the turfgrasses can draw nutrients and moisture. Use calcium if there is a deficiency, to bring pH to a range of 6.5 - 7.2. Maintain a constant and uniform supply of nitrogen at a low to medium level to avoid unnecessary leaf growth. Consider slow-release materials; otherwise apply soluble materials at low rates frequently, rather than at higher rates infrequently. The latter will stimulate excessive leaf growth.

Raise the height of cut for all areas. Although this enlarges the surface area through which moisture is transpired, and under normal moisture conditions may result in stepped-up activity for disease-producing organisms, the benefits gained--mainly root extension--are most important. Raising the height of cut on a golf course green as little as 1/32 of an inch can have a significant effect on the ability of the green to tolerate stress from lack of moisture.

Mow less frequently. The combination of reduced irrigation and fertilization, higher height of cut and less frequent mowing can induce "hardening" of the turfgrasses.

Increase frequency of spiking or cultivate--if temperatures are not extreme--to trap moisture and hold it longer in the vicinity of the root system.

5. Expand use of mulch. Apply heavy layers of mulch--any organic debris that's available--around the base of trees, shrubs and flower beds, to hold in moisture.

6. Erect wind barriers, especially where there are large expanses of open spaces.

Less than 3 percent of the water absorbed by a turfgrass plant is utilized by the plant. Most of it--the other 97 percent is lost into the atmosphere by transpiration. And the rate of transpiration will rise with an increase in wind speed, radiation or temperature and by reduction in humidity. (Some of the same practices used to trap snow in the northern regions can be applied to reduce wind velocity.)

7. Aggressively seek additional sources of water. Among the several possibilities are wells and ponds, collections of marginal water and--the most abundant and most often wasted supply--treated sewage effluent. There are many golf courses throughout the country successfully using recycled wastewater for irrigation.

8. Experiment with anti-transpirants. Although techniques for inhibiting transpiration have had mixed results, some reduction in moisture loss through transpiration might be accomplished with the use of chemicals, emulsions or films.

Water, as it does for all living things, performs many vital functions necessary to the life of turfgrass. It is the transport medium that carries nutrients to the plant. It plays an essential role in the photosynthetic process, metabolic process, in hydrolysis and in thatch decomposition. Seeds cannot germinate without it.

Denied water indefinitely turfgrass, trees--all vegetation--ultimately will die. But under sound management practices geared to water conservation, the life of plants on a golf course and other large turf areas can be

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Mid-Atlantic
Superintendent Pro Tournament

Tuesday, May 10, 1977

Hogs Neck Golf Course
Easton, Maryland

INCLUDES:

PRO PURSE: $350.00 for 8 places
SUPERINTENDENTS: Prizes of merchandise
GREENS FEES
CARTS
LUNCH: Cold Cut Sandwich Bar and Beer
DINNER: Tidewater Inn
Roast Top Sirloin
Hors d'oeuvres and Raw Bar

PRICES:

TEAM: $44.00
SINGLE: $22.00
DINNER ONLY: $12.00

CARDS WILL BE SENT OUT. PLEASE RETURN THEM OR CALL:
Ben Stagg
Shop (301) 822-7467; Home (301) 822-4479

Wayne's Place

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charge of all indoor and outdoor pesticide applications. He will also have responsibilities extending to the Golf Course and Greenhouses.

Jach Montecaluo is new to our area. He is the new Superintendent at the Woodholme Country Club in Baltimore. Jack comes to us from New Jersey and is currently applying for membership in our organization.

WAYNE EVANS

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extended, perhaps even sustained, until it rains, the water shortage subsides or water is delivered from alternate sources.

If turf must be replaced and it appears likely water will be in short supply indefinitely, replace with more drought-resistant turfgrasses. James Beard, in his book *Turfgrass Science and Culture*, gives the relative drought resistance of 22 turfgrasses. He rates Buffalograss, Bermudagrass, Zoysiagrass and Bahiagrass as "excellent" and crested wheatgrass, hard fescue, sheep fescue, tall fescue and red fescue as "good." Less frought resistant--in the poor-to-medium range--are the bluegrasses, ryegrasses and bentgrasses.