USGA®
CASE STUDY

Best Management Practices
Resource Management

Dealing With Drought: Turf Removal And Increased Water Storage

Barona Creek Golf Club **Lakeside, Calif. 92040**
Sandy Clark, CGCS, superintendent

Issue

Barona Creek Golf Club is located in drought-prone Southern California, about 30 miles northeast of San Diego. Water quality is good at Barona Creek, but availability is a challenge. During multi-year droughts, the irrigation retention ponds sit empty due to lack of rainfall. After all the stored water is used; a limited supply of only 300,000 gallons of water per day is available for irrigation. As a result, there is often not enough water to irrigate the entire course. The major challenge faced by the maintenance staff is allocating their limited water resources in a way that keeps the golf course playable and open for business, even in dry years.

The maintained rough around several teeing grounds was converted to drought-tolerant plants that blend well with the existing landscape and require less water and maintenance.

Action

To combat chronic water shortages Barona Creek Golf Club constructed an on-site water reclamation facility, removed 12-15 acres of irrigated turf, developed a Drought-Emergency Plan, and implemented a deficit irrigation program that involves irrigating fairways to replace only 65 percent of the water lost through evapotranspiration. Course officials, with the help of the golf course architect, have implemented these additional strategies to save even more water:

- Eliminated perennial ryegrass overseeding
- Removed 2 acres of bermudagrass from an alternate fairway
- Removed 12 alternate teeing grounds
- Added waste areas
- Replaced maintained turf around teeing grounds with native plants

Results

Barona Creek Golf Club, past winner of Golf Digest's Green Star Award for Outstanding Environmental Practices, continues to lead the industry in water resource conservation. The course, with the help of timely rains in 2015, has reduced water use an astounding 55 percent compared to 2013. They use and reuse every drop of available water from two lakes, six ponds, four retention reservoirs and an on-property reclamation facility that includes catch basins to capture rainwater from building rooftops. Furthermore, the bermudagrass fairways have built up a tolerance for low-water inputs and have retained excellent playing quality. Should Barona Creek run out of stored water, their Drought-Emergency Plan would go into effect. Greens would get the highest watering priority, then tees and fairways, and finally frequently-played rough areas.

In a future phase of their water saving efforts, Barona Creek Golf Club hopes to save an additional 8-9 million gallons of water annually by turning off 150 sprinkler heads located along cart paths.

As demonstrated by Barona Creek, the driving range is an excellent location to reduce water use.