

Using Captured Rainfall For Golf Course Irrigation

Druids Glen Golf Course
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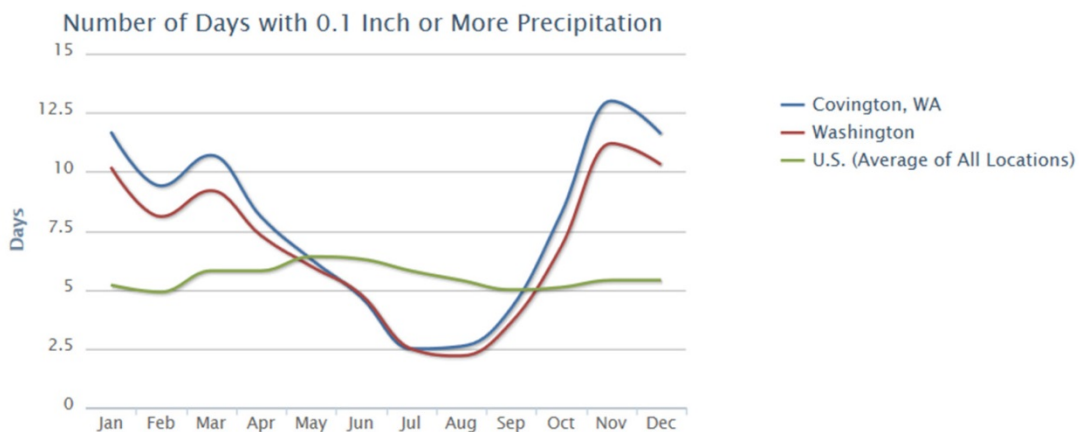
Issue

There is no question that water use is one of the most pressing issues facing the golf course industry. With many areas of the country dealing with drought conditions, using water to irrigate golf courses can be looked upon with concern. However, what if golf courses began capturing rainfall for their irrigation needs? Better yet, what if rainfall capture was designed to be the only source of irrigation water? This was the plan at a golf course in western Washington called Druids Glen.

Druids Glen is located on the “wet” side of Washington and receives an average of just over 38 inches of rainfall annually. However, most of the rainfall occurs between the months of October and May. The dry months of June through September are the critical time period when shallow-rooted *Poa annua* needs supplemental irrigation. Traditional water sources for the golf course were extremely limited, so Druids Glen needed an alternative.

Average Number of Days with 0.1 Inch or More Precipitation in a Year (this gives an indication of the number of days in a year that it is useful to have an umbrella)

| | |
|---------------|------------|
| Covington, WA | 92.96 days |
| Washington | 82.22 days |
| U.S. | 66.51 days |



Western Washington has a reputation for constant rainfall, but the reality is quite different. Rainfall occurs consistently during the fall, winter and spring months, but there is a significant dry period from June through September. This makes for great summer golf at Druids Glen and also necessitates careful water management.

Action

The golf course architect was charged with designing a course that captured every bit of rainfall possible during the wetter months and directed it to holding areas for use in the dry season. Six lakes were strategically located throughout the property and all of the drainage water was directed to them. The lakes are lined with an impermeable material that prevents water-loss into the soil. All of the golf course irrigation water comes from rainfall stored in these lakes.



The entire property at Druids Glen was designed to capture rainfall. Runoff from the golf course, cart paths, parking lots and rooftops is all directed into lined irrigation lakes for use during the dry summer months. (Photo Credit: Rob Perry)

While it is very common to see golf courses where drainage is directed into lakes, Druids Glen goes further than most by irrigating exclusively from captured rainfall and including the following into their water use and BMP program:

- **Runoff from hard surfaces throughout the property, including parking lots and cart paths, drains to the lakes.** This is a significant source of water because all rainfall landing on these impermeable surfaces can be captured as runoff.
- **Runoff from buildings drains to the lakes.** Again, any rainfall landing on these hard surfaces is captured and added to the irrigation lakes.
- **The roughs are not irrigated.** To minimize overall water use, the roughs at Druids Glen were seeded with drought-tolerant fescue or left natural with native vegetation. All irrigation is focused on play areas “down the middle” of the golf course; rough areas are left dry.
- **Native areas have been expanded.** Since the course opened, unmaintained and non-irrigated rough areas have been expanded to further reduce water usage.

Results

The rainfall capture system has been a successful irrigation source since the course opened in 1997. Water is used with the greatest care because there is a finite supply each season. If they irrigate too much early in the year, the course could run out of available water before the rainy season returns. This could result in severe stress or turf loss during the latter portions of the summer. Knowing that rainfall is their only water source, with no groundwater or potable source in reserve, makes Druids Glen uniquely aware of water use and one of Washington's leaders in water conservation.