Audubon International

CaseStudy

Rain Gardens as a Wash Pad Alternative

Location: **Kennett Square Golf & Country Club, PA**
Type of property: **Private, 18-hole golf course**
Type of membership: **ACSP for Golf**

Concern over properly designed equipment wash areas is a problem that many golf course maintenance facilities are familiar with, and is critical to protecting the local watershed from pollution. When faced with this issue at Kennett Square Golf and Country Club, golf course superintendent Paul Stead decided to approach the issue with a unique solution. The old equipment wash area was located in the maintenance building parking lot. Wash water runoff was moving across the parking lot and eventually draining into the Red Clay River, located adjacent to the maintenance facility. This method also left grass and dirt in the parking lot, and was the first impression for visitors to the maintenance facility. Stead knew that a change was needed, but with the cost of commercial systems ranging anywhere from $30,000 to $100,000 and limited funds available, an alternate solution was necessary.

For more information on rain gardens, including suggested plants, see:

- Soak Up the Rain: Rain Gardens
- Water Sense Native Plant Lists

The solution that Stead and landscape manager Michael B. Loftus arrived at was the installation of a simple rain garden that doubled as filtration for the wash pad runoff. The first step in the project was to find an ideal location, away from Red Clay Creek and all other water bodies on the course. The wash pad, constructed out of concrete pavers, provided a spot for the equipment to be parked during washing. It was sized to fit two large pieces of equipment at a time. An eight-inch stone base and two inches of sand were laid beneath the pavers to ensure that no settling would occur from the presence of heavy equipment. The wash procedure was also changed to reduce water usage and to limit the amount of clippings in waste water. Blowers are now used to remove excess clippings and mud from equipment prior to washing. To ensure that the wash water is properly filtered, a rain garden was installed as a runoff collection point. It was designed to be slightly depressed from the wash area, and the soil was amended to achieve a minimum infiltration rate of one inch per hour. Plants were installed to help filter the water as it infiltrates into the ground. Criteria for choosing the plants included water tolerance, native status, providing food and shelter for song birds, hummingbirds and butterflies, and providing year-round interest (a variety of blooming seasons). A two-foot wide strip of rocks was placed between the wash pad and rain garden to collect and remaining grass not removed by blowers, and slow the flow of water entering the rain garden.

The total cost of the project was approximately $2,500. Results that Stead noticed include reduction in the amount of water used for equipment washing and fewer clippings in the runoff water. According to Stead, “the plants start growing in early spring, around the same time the seasonal maintenance crew is returning and the grass is beginning to grow. Throughout the season, when the majority of washing occurs, the garden is growing at a high rate, so it is able to filter the majority of water and absorb nutrients from equipment washdown. As the year draws to a close, the garden begins to die back for the winter, but the amount of equipment needing to be washed off is very low at this time as well. Since it is basically a living, growing sponge, the garden is able to accommodate us in our busiest season. “