

CASE STUDY

Palm Beach, Florida: Water Use, Conservation, and Reuse

The southeastern United States experienced one of the worst droughts on record from 2006–2008. Although March of 2008 brought significant rainfall to south Florida, it was not sufficient to end the shortage that has built up over several years. Hurricane Fran brought another 15–30 cm (6–12 inches) to south Florida in August of 2008, relieving drought conditions. Water shortages during the drought in Palm Beach led to water restrictions and water rules, such as that lawns may be watered and cars washed only once a week on a Saturday or Sunday depending upon whether your address is odd or even. Even with the rules, there may be water use problems, as people use very different amounts of water.

Palm Beach has some large estates that use a tremendous amount of water. It is reported that one estate of about 14 acres (6 hectares) during one year of the ongoing drought used on average 57,000 gallons per day. That much water is comparable to the amount of water used by a small, single-family residence in Palm Beach for an entire year. Some landowners are using very large amounts of water

during the drought while others have chosen to let their lawns go brown and are doing what they can to conserve water.¹

Given current water shortages and projected greater shortages, what can be done to increase supply? To help solve this problem Florida has turned to water conservation projects, including using water reclaimed from wastewater treatment plants. Florida has several hundred water recycling projects, making it a national leader in water reuse, and Palm Beach is a leader in south Florida. Water conservation methods include a variety of measures from low flow showers and toilets in homes, businesses, and public buildings, to limiting watering lawns and washing automobiles, to promoting landscaping that uses less water. With respect to reclaimed water, the county has reclaimed approximately 9 million gallons per day of water that is distributed to parks, golf courses, and homes by way of separate water pipes painted purple (the color for reclaimed water). In addition, about one million gallons a day of highly treated wastewater is sent to Wakodahatchee Wetlands (see opening photograph), which are constructed (human made) wetlands of approximately 250 hectares. Wetlands function as giant filters where wetland plants and soil use and reduce the concentration of nitrogen and phosphorous in the water and thus further treat the water. Two more constructed wetlands are being built near Palm Beach to handle an additional two million gallons per day of treated wastewater destined to become water added to the freshwater resource base of south Florida.

The major benefits of using reclaimed water are: (1) people who use it for private lawns or golf courses save money because the reclaimed water is less expensive; (2) reclaimed water that is used on lawns and golf courses and parks has traces of nitrogen and phosphorus, which are types of fertilizer; (3) the use of the reclaimed water increases the amount of fresh drinking water that is available to the rest of the community; and (4) created wetlands that accept treated wastewater help the natural environment by creating wildlife habitat as well as providing green space in which people can walk, bird watch, and generally enjoy a more natural setting (see Figure 21.1).²



Figure 21.1 ■ Boardwalk for viewing the Wakodahatchee Wetlands near Palm Beach, Florida.