
CASE STUDY:

North Carolina Zoological Park

Location:	Asheboro, N.C. (Randolph County)
Industry:	Zoological Park
Pollution Prevention Application:	Water Use Reduction
Annual Savings:	More than 3.6 million gallons of water
Payback Period:	Not applicable
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Background

The N.C. Zoo has been a leader in water reduction. Through its ISO 14001 Environmental Management System (the only certified State agency), the zoo sets Objective and Targets for water and other significant environmental impacts that are tracked, reviewed and revised on an annual basis.

Water Use Reduction Activities

As part of its EMS, the zoo invested in an irrigation control system that irrigates eight major exhibits based on water needs and actual rainfall. Much of the irrigation utilizes nonpotable water from two lakes on site. In previous years, using water meters that measure the volume of water used in irrigation, 2,733,248 gallons were used in one growing season. With the new irrigation control system that has an evapotranspiration management system that measures rainfall, wind and other conditions and determines the amount of irrigation to meet established plant needs, 1,191,680 gallons were used during the growing season. This is a saving of 1,541,568 gallons or 56.4 percent.

The irrigation control system has a central control that manages all eight sites from one controller. Thus in addition to water, the zoo has saved gas from not having to travel to the eight irrigation sites which are spread over 500 acres and five miles of roads.

The zoo switched to an ozone water treatment system for the large pools. This change has resulted in a reduction in the number of times a year that the pool needs to be drained and refilled from six times per year to twice a year saving 250,000 gallons per drain and fill.

All three Rocky Coast exhibit pools are metered and indicated that the pools were leaking approximately 7,000 gallons a day. A consultant was hired and it was determined that in addition to the pool surface leaking, the biggest problem was the water leaking out around the skimmers. The skimmers were designed to be hidden from view by the rockwork but were placed too low. The pool in the Sea Lion area has been repaired saving 3,000 gallons per day. The Polar Bear pool is scheduled for repair.

The zoo also has standard operating procedures for all animal holding areas that minimizes the water (and chemicals) used to sanitize the holding areas.