

# North Carolina Water Fact Sheet



**B**enefiting from a humid climate and substantial underground water resources, North Carolina has historically been considered a water-rich state. In recent years, however, the state has faced water shortages due to a combination of rapid population growth, drought, and aquifer degradation. Experts predict that if present growth and water use trends continue, North Carolinians will find it increasingly difficult to satisfy their water needs in the coming decades.



North Carolina is one of the fastest-growing states in the nation, experiencing population growth of nearly 17 percent between 2000 and 2009. This growth shows no sign of slowing, and research indicates that by 2030 more than 12.2 million people will call North Carolina home.

North Carolina's population boom will not only increase demand for water, but will also result in new developments in currently undeveloped forest and wetland areas—environments crucial to ensuring the quantity and quality of the state's water supply.

## Record-Setting Drought

North Carolina made national headlines in 2007 when all of the state's 100 counties experienced moderate to exceptional drought conditions. This historic drought—the worst in state history—not only cost hundreds of millions of dollars but also caused concern about the future of the state's water supply.

Though rains in 2008 helped ease the drought in some parts of the state, continued water shortages compelled Governor Mike Easley to sign legislation granting him and future governors greater authority to restrict water use during future droughts. North Carolina's water troubles are not over yet—many reservoirs are still at low levels and may not reach full capacity anytime soon.

## Threats to Freshwater Resources

The ground water of the Coastal Plain aquifers is important to coastal North Carolinians, supplying the needs of more than half of the state's population. Today, unsustainable pumping rates threaten these aquifers. Historical records dating back to the early 1900s show that the aquifers' water levels have steadily dropped due to excessive pumping. As a result, nearby underground salt water can seep in to fill the voids—a process known as saltwater intrusion—making the

aquifers' water unusable unless it is treated by a costly desalinization process.

Lacking access to the Coastal Plain aquifers, residents in the central Piedmont and western Appalachian Mountain regions of the state require significant amounts of surface water to meet their needs. Like aquifers, surface water sources such as lakes and reservoirs are naturally replenished by rain—the lack of which has failed to meet this need. An extended drought between 1998 and 2000 caused river, reservoir, and ground water levels to drop to historic lows and became known as the worst long-term drought in the past 100 years, a record that has since been broken by the drought in 2007.

## Ensuring an Abundant Future

While North Carolina can extract some additional water from existing underground and surface supplies, these potential capacity increases alone will not address the water needs of the state's rapidly growing population. As such, improving water efficiency is becoming an important strategy for North Carolinians, and the state's universities and public institutions are helping lead the way.

Duke University, the largest water consumer in Durham County, plans to save an estimated 2 million gallons per year simply by installing waterless urinals in its new buildings. The University of North Carolina and North Carolina State University have used their athletic rivalry to fuel a water-use reduction competition, resulting in both water savings and heightened public awareness of water supply issues. Even the North Carolina Zoo helped to save water by installing a "smart" landscape irrigation system that in its first season of operation used less than 50 percent of the water used by the previous system.

While universities and other public institutions are making impressive advances in saving water, the future of North Carolina's water ultimately lies in the hands of its citizens. The foundation for water efficiency in the state has already been laid with the U.S. Environmental Protection Agency's (EPA's) WaterSense® labeled new

## Changing Climate, Turning Tides

In the long run, climate change is expected to raise North Carolina's temperature and rainfall levels. While this potential for increased rainfall may sound like good news, these changing weather patterns might not actually provide an overall benefit to the state. If future rainfall arrives in more forceful and frequent torrents—a scenario proposed by best-case climate models—the additional rain will tend to rush downstream toward the ocean before it can be captured by reservoirs or recharge groundwater supplies. Furthermore, the rising sea levels expected in future climate models will put the state's Coastal Plain aquifers at increased risk of saltwater intrusion as the ocean gradually moves inland.



homes, the first of which were built in North Carolina under a pilot program. A WaterSense labeled new home not only saves about 10,000 gallons of water annually, but also reduces energy used and saves the homeowner money on utility bills.

In existing homes, residents can save by retrofitting with WaterSense labeled products. If every North Carolinian household replaced its inefficient showerheads with WaterSense labeled models, for example, that would save about 21 million gallons of water every day. That's more than enough water to meet the daily needs of two-thirds of the households in Raleigh, the state capital.

To learn more about WaterSense labeled products and new homes or find water-efficiency tips, visit [www.epa.gov/watersense](http://www.epa.gov/watersense).