

spotlight

No. 378 – September 2, 2009

A DECADE OF DATA ON SMOG *Just the facts*

KEY FACTS: • In 2008 the EPA dramatically tightened its standards for defining a high ozone day.

• Even under EPA's more stringent new standard, North Carolina — both as a whole and within its major regions — has experienced significant reductions in the number of high ozone days.

• If the current trend continues, 2009 could experience the lowest number of high ozone days on record.

.....

during the hot summer months of June, July, and August, North Carolinians have gotten used to hearing about “ozone alert days” on their evening and morning radio and television newscasts. The purpose of these alerts is to warn citizens of a particular region that ground level ozone levels, often referred to as smog, may exceed certain federally determined standards. These standards relate to atmospheric concentrations of ozone that are considered more or less safe for certain groups to breathe, usually the elderly, children, and people with respiratory problems.

The U.S. Environmental Protection Agency, pursuant to the federal Clean Air Act, determines the threshold for those standards. The states and individual communities are responsible for developing plans for meeting the standards.

In 2008 the EPA put in place a new, more restrictive standard that defines a high ozone day, or in the parlance of the federal and state bureaucracy, an “exceedance day.” According to the new standard, an exceedance day occurs if an ozone monitor registers a concentration level of .076 or greater parts per million (ppm) in the atmosphere, sustained over an eight-hour period. There are currently 41 monitors across the state of North Carolina. The number of monitors has fluctuated over the years. Clearly, the more monitors a state has, the more likely it is that any one monitor will register an exceedance on any given day — ozone being a highly localized phenomena. Different states have different numbers of monitors. For that reason, comparisons among states that do not adjust for differing numbers of monitors are illegitimate and will always

200 W. Morgan, #200
Raleigh, NC 27601
phone: 919-828-3876
fax: 919-821-5117
www.johnlocke.org

The John Locke Foundation is a 501(c)(3) nonprofit, nonpartisan research institute dedicated to improving public policy debate in North Carolina. Viewpoints expressed by authors do not necessarily reflect those of the staff or board of the Locke Foundation.

be biased against states with higher-than-average numbers of monitoring sites, such as North Carolina.

Prior to 2008, the EPA standard was less stringent, although still quite restrictive. Between 1997 and 2008 the standard was .085 ppm or more over an eight-hour period. The purpose of this *Spotlight* is simply to make available some consistent data that avoids apples-and-oranges comparisons between time periods that could occur because of the two different standards. The graphs on the following pages show the number of high ozone days on an average, per monitor basis over a ten-year time period—1999-2008. All data have been put in terms of the new .076 ppm standard. The graphs show ozone information for the state as a whole, for the major metropolitan areas and the western mountains. These regions are defined by North Carolina Division of Air Quality. The maps of these regions with the location of each ozone monitor are also pictured. This information is presented on a per-monitor basis because, as noted, the number of monitors across the state as well as within regions have changed over time. In other words, the numbers shown on each graph give the average per monitor either in the state or in a particular region for the year shown.

Note that ozone levels are very localized even within metropolitan areas or regions. A monitor on one side of a county or region could register an exceedance while, at the same time, a monitor a few mile away may not. For that reason, the data presented here should not be read as an indication of how the air quality has varied in your particular neighborhood or local community. As the regional maps indicate, monitors tend to be located far apart. What can be gleaned from these data are trends and indications of better or worse years. What can easily be seen is that over the last six years there has been a dramatic improvement in ozone levels across North Carolina. Air quality, at least with respect to ozone, has been getting better, not worse.

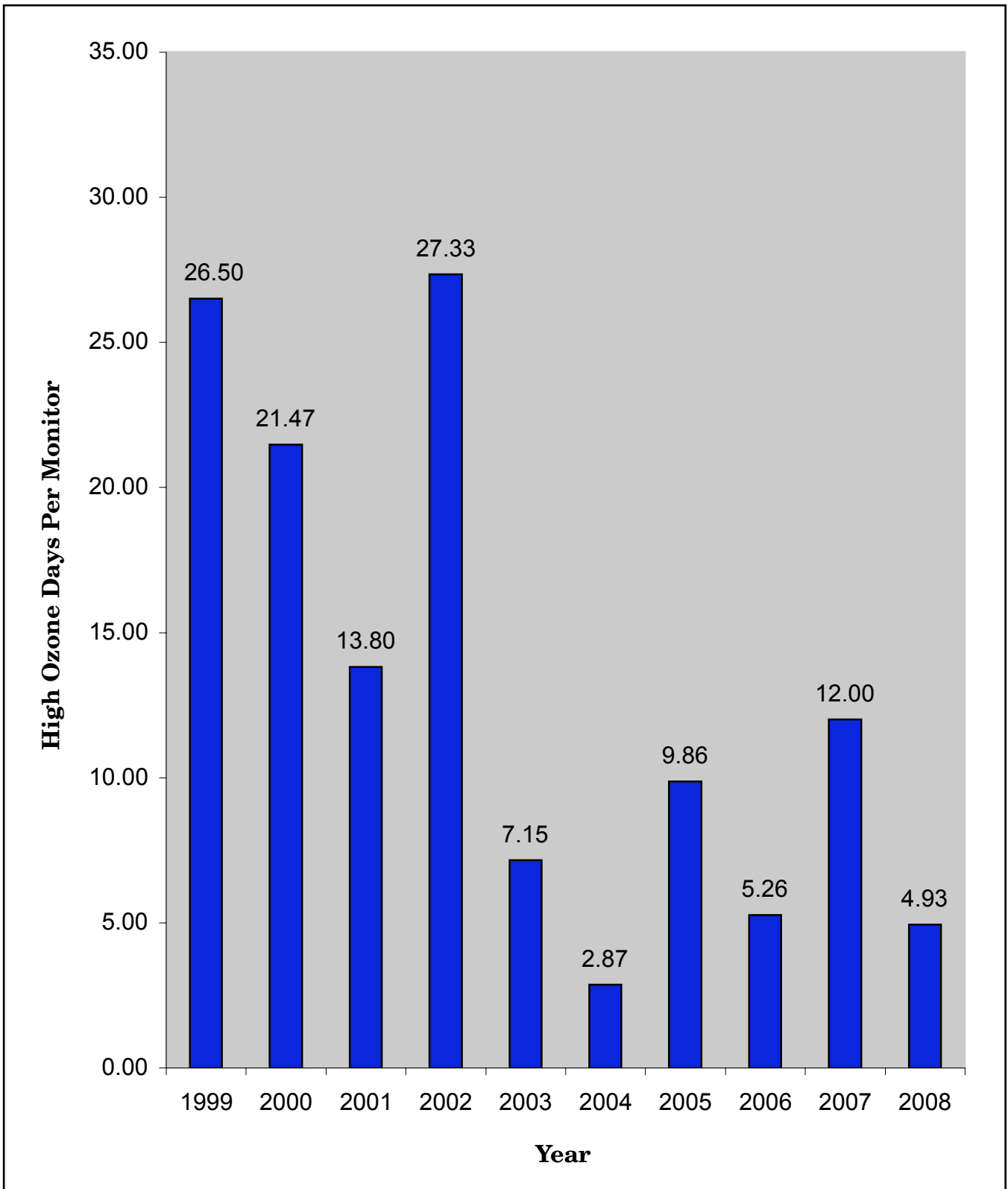
Also note that we are more than two-thirds of the way through the 2009 ozone season, which runs from April 1 through October. If current trends continue, 2009 could turn out to have the fewest number of high ozone days of any year on record. As of September 1, the entire state of North Carolina had reported only nine high ozone days registered on five different monitors over four days. This means that 36 of the 41 monitors across the state have not registered a single exceedance as of this date.

Dr. Roy Cordato is vice president for research and resident scholar at the John Locke Foundation.

Notes and References

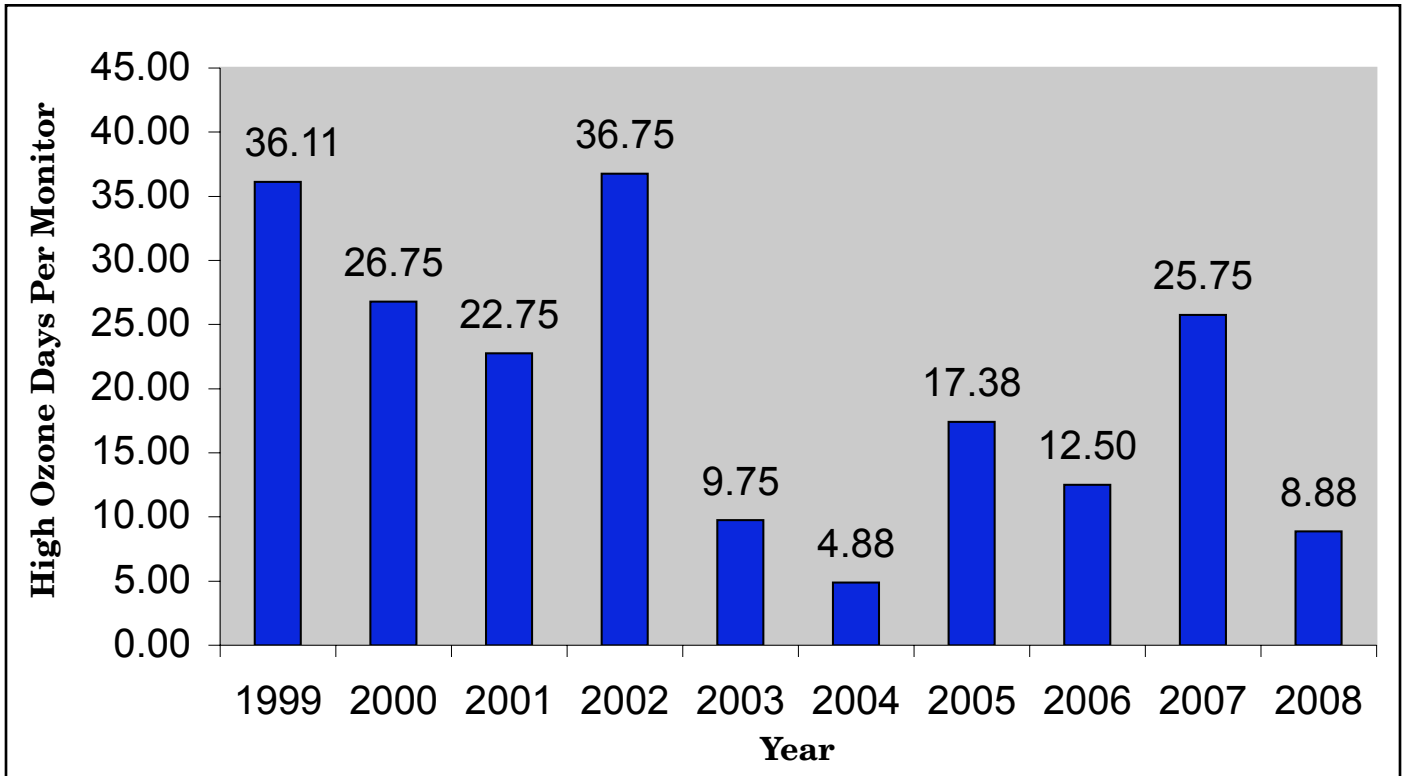
- All data in this paper were obtained from the North Carolina Division of Air Quality web site, <http://daq.state.nc.us/monitor/data>. The maps showing monitor locations can be found at <http://daq.state.nc.us/airaware/ozone/monitors>.
- For more information on this topic, see Joel Schwartz, "Where the Bodies Are Buried: How experts for N.C.'s Attorney General mislead the public about TVA air pollution risks" John Locke Foundation *Policy Report*, June 2008, http://www.johnlocke.org/policy_reports/display_story.html?id=171, and Joel Schwartz, "The Health Effects of Air Pollution: Separating Science and Propaganda," John Locke Foundation *Policy Report*, May 2006, http://www.johnlocke.org/policy_reports/display_story.html?id=70.

Figure 1. Statewide High Ozone Days Per Monitor, 1999-2008



more >>

Figure 2. Mooresville Region: High Ozone Days Per Monitor



The Mooresville region, according to the Division of Air Quality of the N.C. Dept. of Environment and Natural Resources. Ozone monitors are indicated on the graph.

Source: <http://daq.state.nc.us/ambient/monitors/Mooresville.shtml>

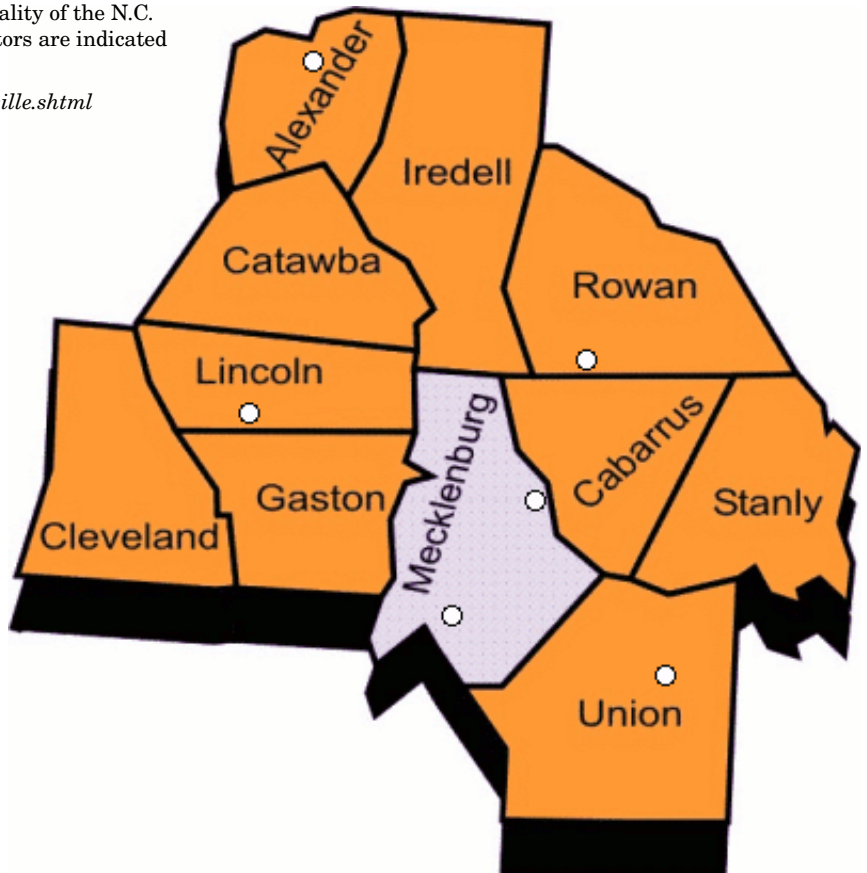
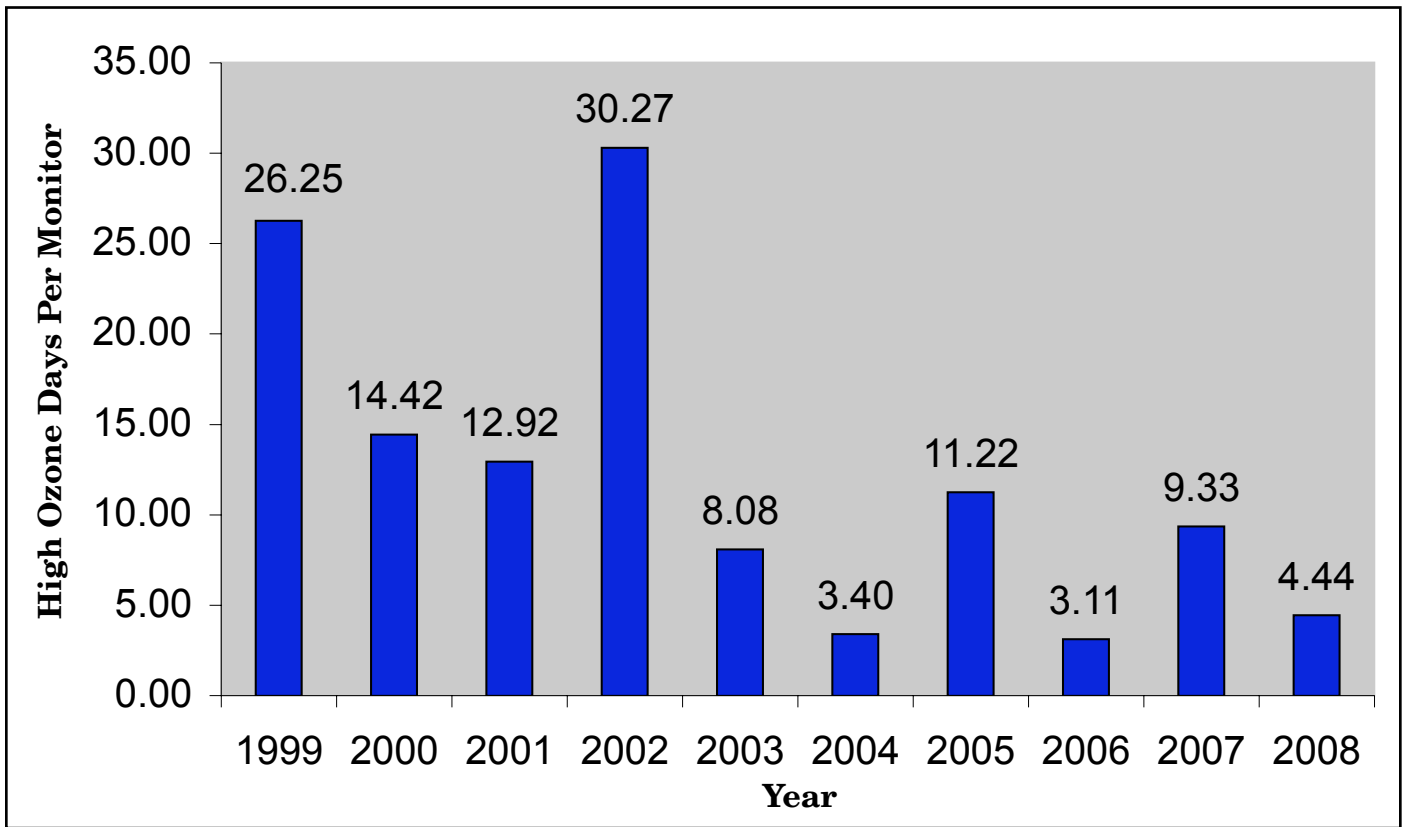


Figure 3. Raleigh Region: High Ozone Days Per Monitor



The Raleigh region, according to the Division of Air Quality. Ozone monitors are indicated on the graph.

Source: <http://daq.state.nc.us/ambient/monitors/Raleigh.shtml>

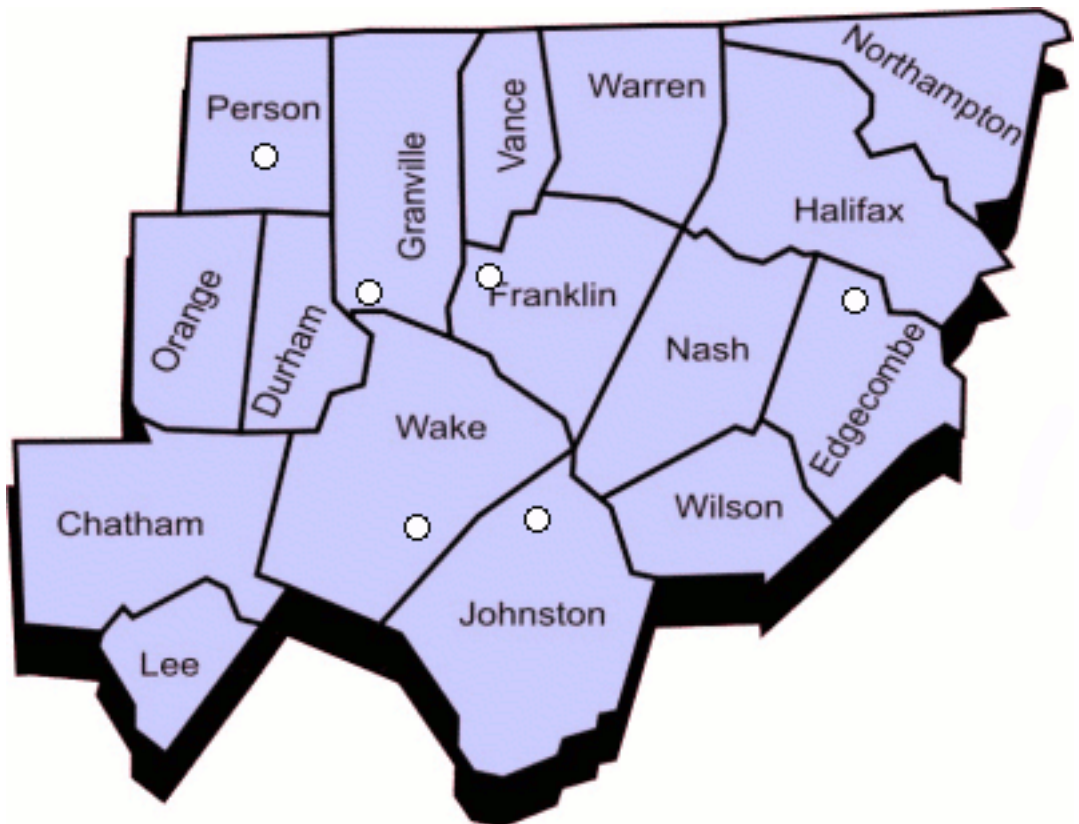
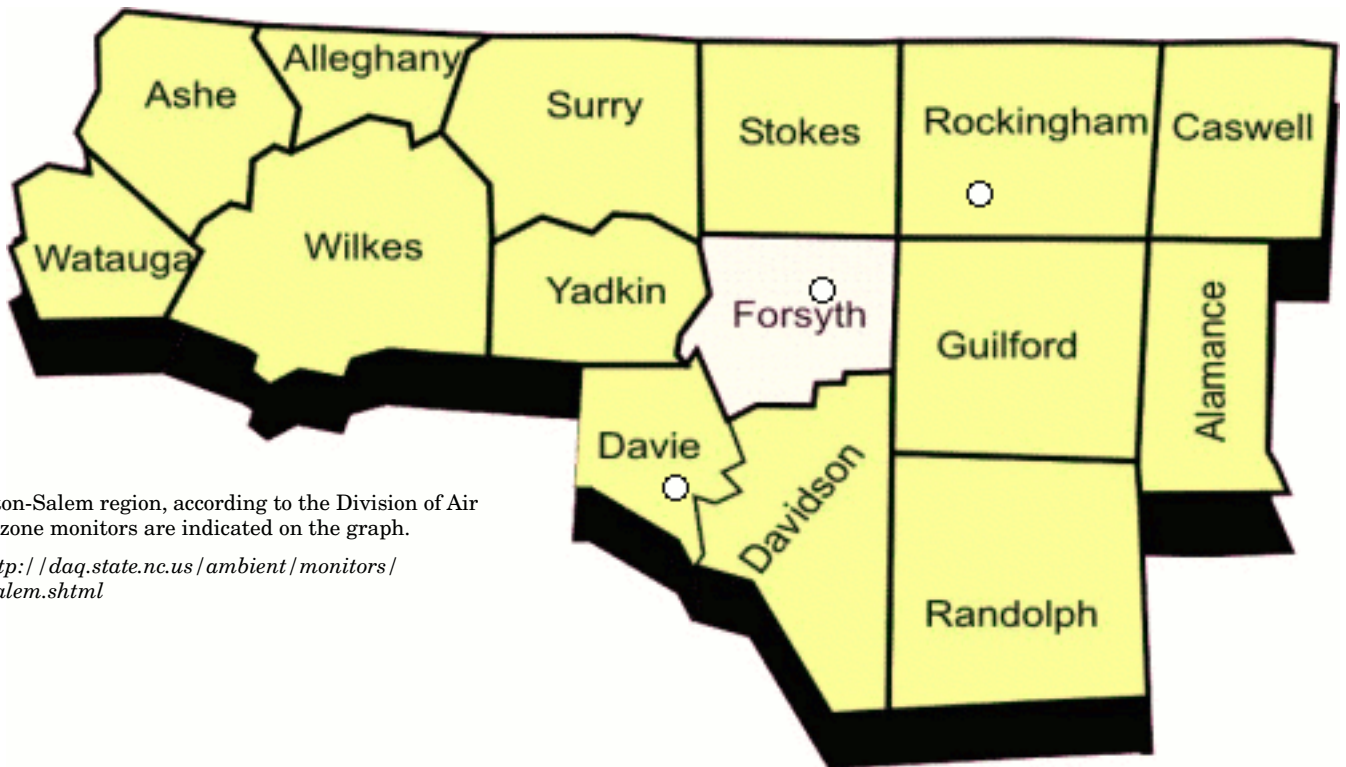
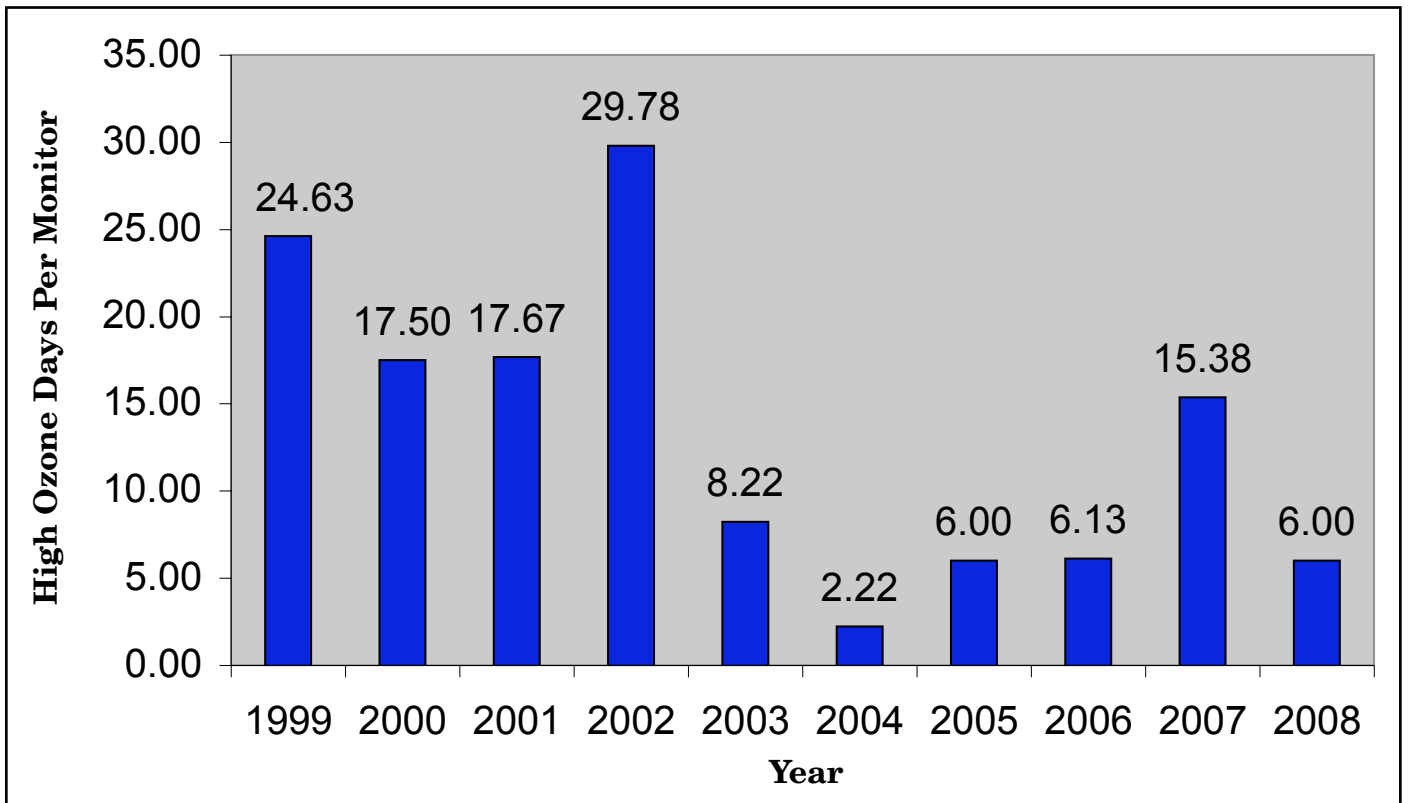


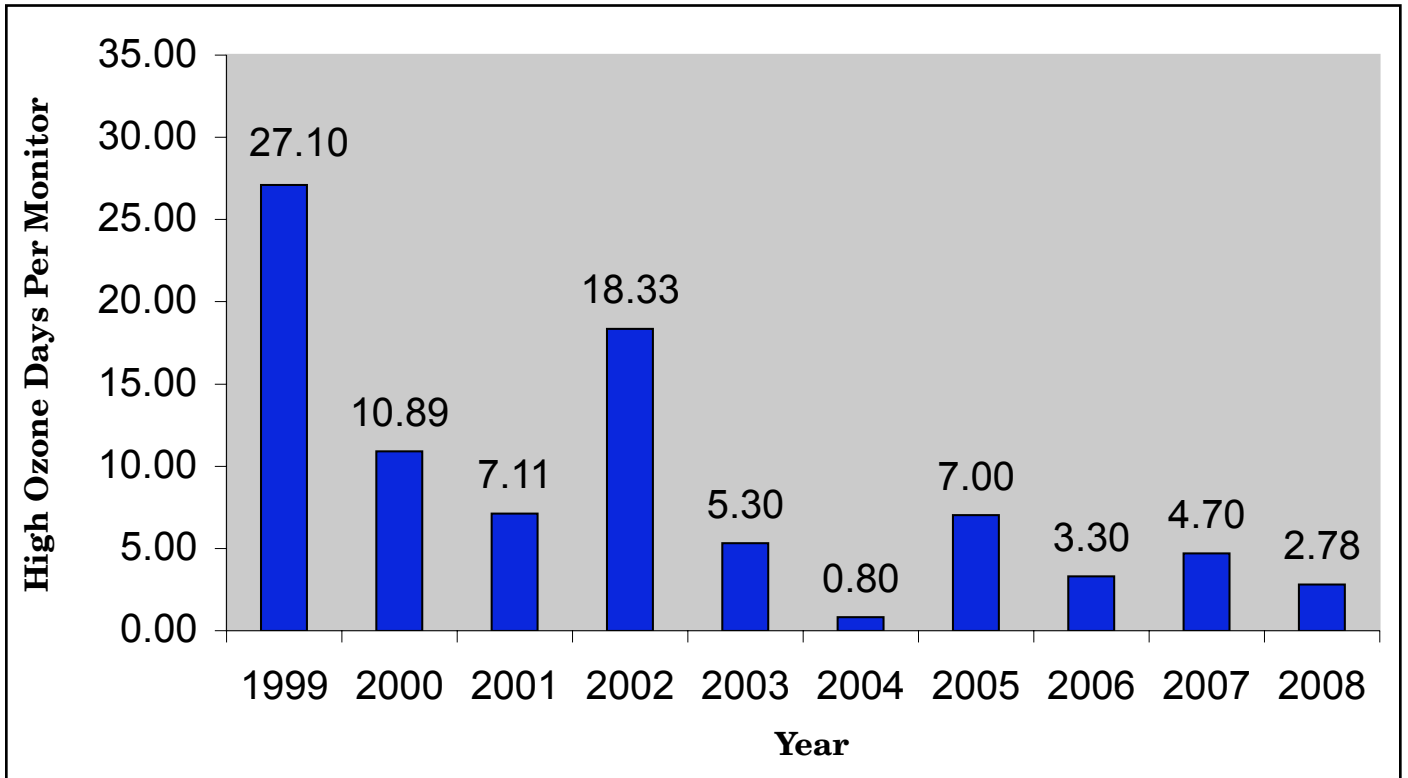
Figure 4. Winston-Salem Region: High Ozone Days Per Monitor



The Winston-Salem region, according to the Division of Air Quality. Ozone monitors are indicated on the graph.

Source: <http://daq.state.nc.us/ambient/monitors/WinstonSalem.shtml>

Figure 5. Asheville Region: High Ozone Days Per Monitor



The Asheville region, according to the Division of Air Quality. Ozone monitors are indicated on the graph.

Source: <http://daq.state.nc.us/ambient/monitors/Asheville.shtml>

