

• the state of Georgia's
environment
2009



ENVIRONMENTAL PROTECTION DIVISION

GEORGIA DEPARTMENT *of* NATURAL RESOURCES

From the Director

April 2009

Greetings:

As we celebrate the 40th observation of Earth Day I hope this report, *The State of Georgia's Environment 2009*, provides Georgians with an understanding of both the progress made and challenges remaining in the protection of our natural resources. Think of it as a report card on how we are doing in protecting human health and sustaining healthy ecosystems and the natural resources on which our economy relies.



As one famous Georgian, Pogo*, declared during the 1970 Earth Day, "We have met the enemy and he is us." In other words, what each of us does individually matters to the quality of Georgia's environment and the sustainability of our planet. Pogo's message to us on that first Earth Day is still true today as Georgia's population has grown to more than 10 million people. In this report you will read that many of our challenges result from the cumulative impact of the choices each of us make every day that affect, for example, the amount of waste we throw away, the emission of air pollutants, and how we care for our land and water resources.

In compiling the report, we drew on the best available information from state and federal agencies. In addition to data available at the Environmental Protection Division (EPD), information was provided by the Wildlife Resources Division and the Coastal Resources Division of the Georgia Department of Natural Resources. We also want to thank and acknowledge the Georgia Environmental Facilities Authority, the Public Health Division of the Georgia Department of Human Resources, the University of Georgia, the U.S. Environmental Protection Agency and the U.S. Geological Survey for providing information. The contributions from the individuals listed at the end of the report also are appreciated.

Please note that *The State of Georgia's Environment 2009* is also available for viewing, download and printing from EPD's Web site at <http://www.georgiaepd.org/Documents/soe2009.html>.

For more information on what you can do to help protect, preserve and restore Georgia's environment, please visit the Conserve Georgia Web site at <http://www.conservegeorgia.org>.

Sincerely,

A handwritten signature in black ink that reads "Carol Couch". The signature is written in a cursive, flowing style.

Carol A. Couch
Director
Environmental Protection Division

* Cartoonist Walt Kelly's creation, Pogo is a wise-cracking resident of the Okefenokee Swamp. Mr. Kelly's comic strip ran from 1949 until 1975.

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About this report

An update and expansion of 2003's *Georgia's Environment*, this report is a resource for the citizens of Georgia. It highlights what we know and don't know about the condition of Georgia's environment, and illustrates progress and challenges that are fundamental to the state's strategic goals and EPD's mission.

What are the state's strategic goals?

- A growing Georgia
- A safe Georgia
- A healthy Georgia
- An educated Georgia
- The best managed state in the U.S.

What is EPD's mission?

The Environmental Protection Division protects and restores Georgia's environment. We take the lead in ensuring clean air, water and land. With our partners, we pursue a sustainable environment that provides a foundation for a vibrant economy and healthy communities.

What is EPD's vision?

Georgia's environment is healthy and sustainable. Natural resources are protected and managed to meet the needs of current and future generations. All Georgians understand the importance of a healthy and sustainable environment and act to protect and restore it. EPD is responsive, effective and efficient. Associates are valued and empowered to use their expertise and creativity as leaders in protecting Georgia's environment.

On the Web:

<http://www.opb.state.ga.us/strategic-planning/strategic-planning.aspx>

<http://www.gaepd.org/Documents/mission.html>

Introduction

Georgia is rich in natural resources and beauty. From the wilds of the Okefenokee Swamp to the grandeur of the Blue Ridge Mountains, many of us have been touched by this beauty. And, we all rely on the state's natural resources to support the quality of life we enjoy.

As the state's population approaches 10 million, however, much of Georgia's environment has been changed from its native condition. The state's 14 percent growth between 2000 and 2006 was more than twice the national average, making Georgia the third fastest growing state in the U.S. A growing population means that decisions regarding how growth is accommodated become increasingly important to the state's environmental quality.

The state's economic growth has kept pace with its population growth and both trends are expected to continue over the coming decades. This growth brings many opportunities — opportunities that only can be achieved if supported by effective management of environmental and natural resources. As Georgia grows, environmental progress will be necessary to sustain economic progress.

The Environmental Protection Division's (EPD) job is to protect and restore the state's environment, by taking the lead in ensuring clean air, water, and land to provide a foundation for a vibrant economy and healthy communities. EPD envisions Georgia's environment as healthy and sustainable, with its natural resources protected and managed to meet the needs of the current generation and those to come.

This vision is consistent with the state's strategic goals (see sidebar). Within the state strategic plan, two specific goals are directly related to EPD's mission:

- Improve overall environmental quality and conservation practices
- Provide a safe environment where Georgians live, work and play

Drawing on these goals, EPD has identified three primary objectives for environmental management:

- Protecting human health
- Sustaining healthy ecosystems
- Ensuring resources to support a growing economy



This report provides a starting point to evaluate the state's progress toward meeting these objectives. It presents indicators that track the condition of Georgia's environment and human activities that can alter environmental conditions. With this information, EPD and its partners in the public and private sectors can help the state plan for growth and better manage its outcomes.

What are environmental indicators?

Environmental indicators are measures of environmental conditions and the human activities that can alter them. They are based on readily available data from different sources and, to the extent possible, are numerical. Indicators may show trends over time or they may address only one point in time as a starting point for future measurements. They are chosen and evaluated to answer specific questions about the condition of Georgia's environment. Some indicators can provide only partial answers because of limited data or information.

What are the best indicators to help evaluate progress in meeting environmental objectives? In certain cases, the answer is easy. Under federal or state laws, standards have been established to assess the condition of certain natural resources. Currently, there are standards for air quality; drinking water quality; the quality of water in rivers, streams, lakes and coastal waters; and for land contaminated with hazardous substances. These standards define indicators that can be used to measure progress.

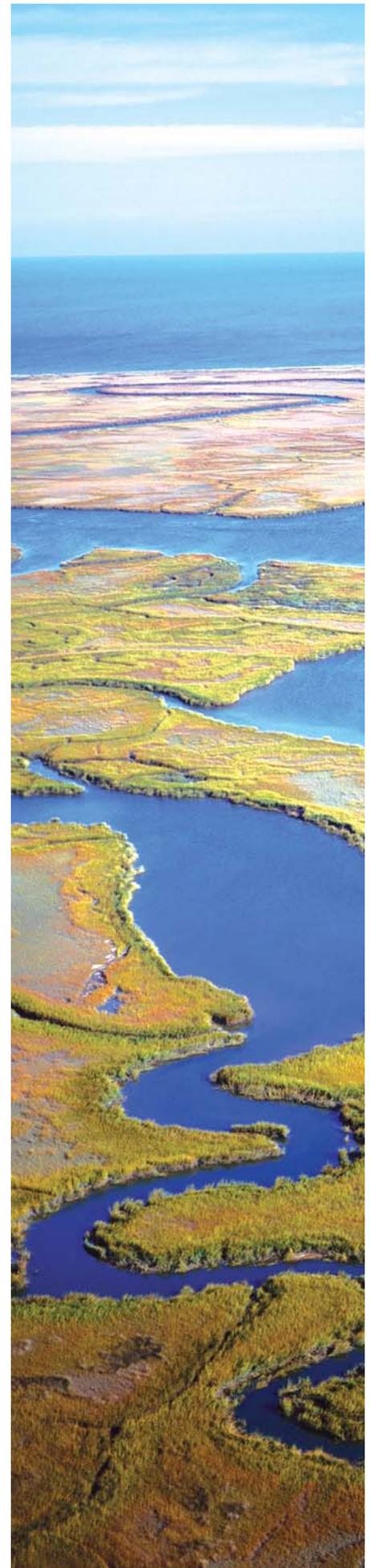
For many other environmental conditions, however, standards do not exist. In these cases, other indicators of environmental quality were selected to compare patterns or trends. For example, the amount of Georgia's land in forest and wetlands is important to the quality of the state's waters. However, simply looking at the number of acres

for the current year does not indicate whether or not Georgia's environment is healthy; but comparing the numbers from several years will show a trend — either positive or negative — that can be used to evaluate progress.

This report uses a variety of indicators that track the condition of Georgia's air, water and land resources. Indicators related to human activities that alter those conditions — for better or for worse — also were selected. Examples include the release of pollutants, alteration of wildlife habitat, withdrawal of water for water supply and land conservation efforts.

The indicators in this report were chosen based on their relevance to the three environmental objectives, the time period and geographic area they address and the quality of available data.

Overall, indicators were chosen to describe the status of Georgia's major natural resources, to highlight the critical issues that have been evident for some time, and to introduce emerging issues that will require attention in the near future.





The changing face of Georgia

Population and economic conditions set the context for the discussion of environmental indicators and the changing condition of Georgia's environment. Recent trends in population and economic conditions, and the energy use associated with these changes, are highlighted below. These trends highlight the opportunities and challenges associated with Georgia's growth, and provide a starting point for evaluating the state of Georgia's environment.

Population

- The state's population doubled between 1960 and 2000. Today, more than 9 million people call Georgia home.

- During the 1990s, Georgia grew 26 percent while the U.S. grew 13 percent. Migration from other states and countries accounts for more than half of Georgia's growth.
- Population growth varies across the state. One hundred counties have populations less than 35,000. Twenty-three counties are projected to lose population until 2015.
- Almost 75 percent of Georgia's population is concentrated in metropolitan areas. Most of the state's fastest growing counties are in or adjacent to metro Atlanta and along the coast.

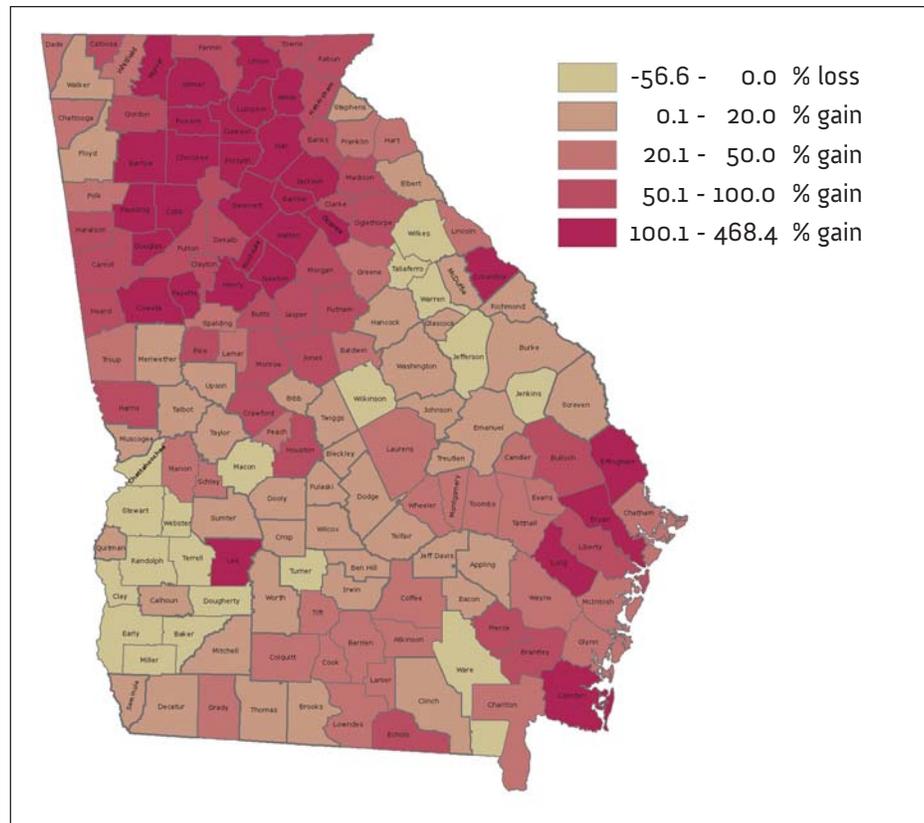


Figure 1 Population changes in Georgia by county, 1990 - 2000. (U.S. Census Bureau)

Sources of statistics

Georgia in Perspective 2007: A Statistical Profile of the State, Georgia Office of Planning and Budget; Georgia Energy Review 2005 (updated 2006), Georgia Environmental Facilities Authority; Georgia Statewide Comprehensive Outdoor Recreation Plan 2008-2013, Georgia Parks, Recreation and Historic Sites Division.

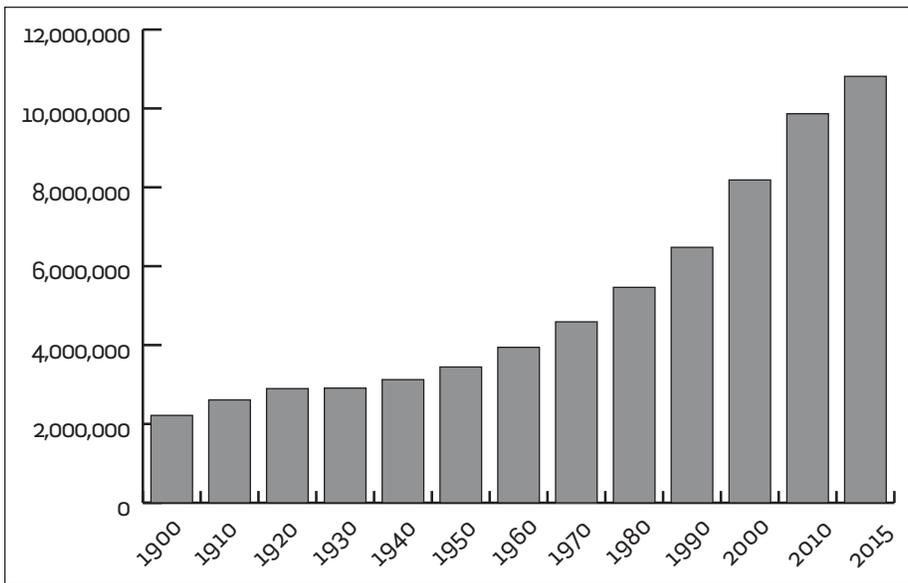


Figure 2 Georgia's population, 1900 - 2015. (1900 - 2000 from the U.S. Census Bureau; projections for 2010 and 2015 from the Georgia Office of Planning and Budget)

Economy

- Georgia's gross domestic product (GDP) nearly quadrupled between 1984 and 2004 — from \$88.6 billion to \$343.1 billion. The state's per capita GDP has consistently exceeded that of the southeastern region.
- Georgia's per capita income increased 43.5 percent between 1995 and 2005.
- The state's median household income of \$44,140 in 2005 was second highest among southeastern states.
- Economic conditions vary across the state. Most of the state's southern counties have median household incomes less than \$30,000.

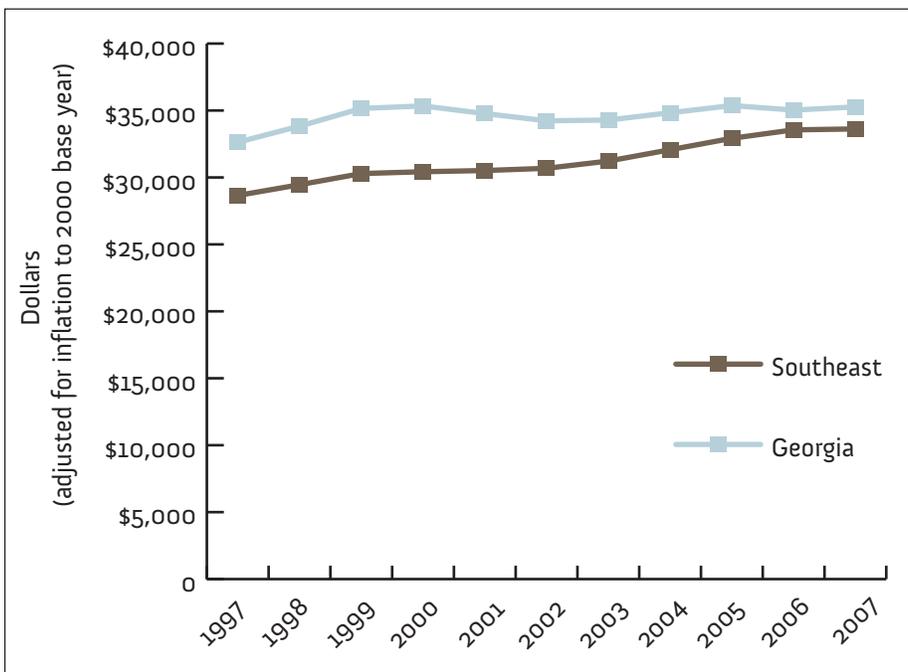
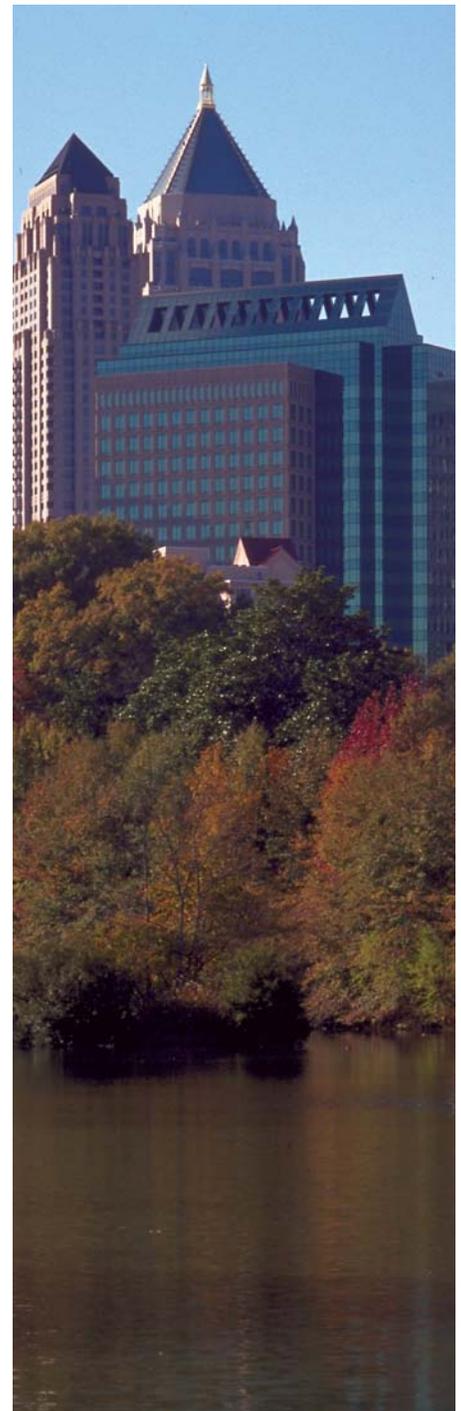


Figure 3 Per capita gross domestic product, 1997-2007. This figure illustrates the trend in economic output compared to population. (Bureau of Economic Analysis, Regional Economic Accounts)





Energy use

- Georgia's total energy use in 2005 was 3,173 million Btu, which is 63 percent higher than in 1985. The state's population grew by 53 percent over the same time period.
- The average amount of energy each person in Georgia uses per year (energy use per capita), has been consistently higher than the national average. Georgia's energy use per capita increased by 7 percent from 1985 to 2005; nationally, energy use per capita increased by about 5 percent over the same time period.
- Energy use per capita in Georgia peaked in 1996 and has declined since, but per capita use is still higher than that in the mid-1980s.
- The ratio of energy use to the state's GDP indicates the total energy being used to support economic and social activity. From 1997 to 2005, the amount of energy consumed to create one dollar of GDP in Georgia decreased 24 percent.
- Recent decreases in Georgia's energy use per capita and per GDP may reflect increased use of energy efficient practices as well as changes in the mix of the state's industries and economic sectors.

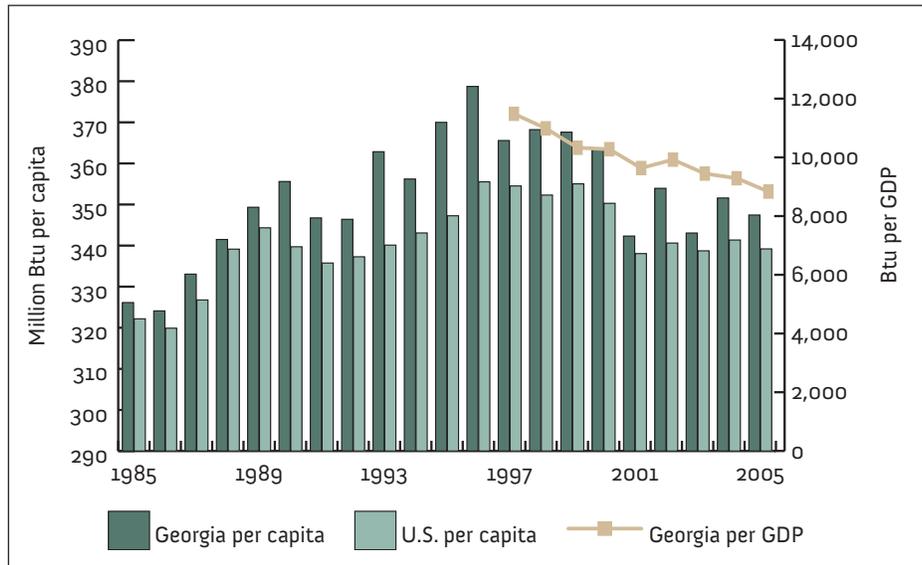


Figure 4 Energy use per capita and per Georgia gross domestic product (GDP), 1985 - 2005. (Georgia Environmental Facilities Authority) Note: Due to changes in the method of calculation, estimates of Georgia's GDP prior to 1997 are not included. A Btu is a common measurement of energy across different fuel types (1 Btu equals the quantity of heat required to raise the temperature of 1 pound of liquid water by 1 degree Fahrenheit).

A note about references

This report lists a number of Web sites as references for additional information. These links are current as of the date of publication, however, there is the chance that they may change over time.

Report organization

The report is organized by the three environmental objectives. Each chapter presents detailed information on the indicators related to each objective.

There are, of course, information gaps and limitations on the quality of the data available. In these cases, the report identifies the gaps and the steps needed

to fill them. Finally, the report also includes some sections that present background information on environmental management, highlight emerging issues or provide additional details on specific environmental management initiatives. It concludes with a glossary and appendix of data sources and references.