

## Chapter 6.1 STATE BACKGROUND INFORMATION

### Population

The Commonwealth of Virginia covers 42,774 square miles and ranks 35th among the states in size. This area is divided into seven Department of Environmental Quality (DEQ) regional offices with two satellite offices. According to the most recent census (2006), the population of the Commonwealth was estimated to be 7,642,884 or 2.5% of the total United States population. It has grown approximately 14.4% between 1990 and 2000, ranking 12th nationally, and continues to grow. Approximately 72% of all Virginians live in eight metropolitan areas: Northern Virginia, Norfolk-Virginia Beach-Newport News, Richmond-Petersburg, Roanoke, Lynchburg, Charlottesville, Danville and Johnson City-Kingsport-Bristol. Approximately 9% of the population lives in seven smaller urban areas and 19% live in rural areas.

### Geography

Virginia is over 400 miles in length along its southern boundary, reaching from the Atlantic Ocean in the east, crossing the eastern continental divide into the Mississippi Basin to the west. Along the way, Virginia crosses five physiographic provinces. The southwestern edge of the state touches upon the margin of the Cumberland Plateau, rugged terrain with formations of sandstone and shale. Virginia's coal mining industry is concentrated in this area. The Valley and Ridge province encompasses the long, parallel ridges of the Appalachian Mountain chain in western Virginia. Erosion resistant quartzites and sandstones form the ridgetops, while streams have carved valleys into the softer limestones and shales. The narrow Blue Ridge Mountain province is made up of hard greenstone, quartzites, and granites, igneous and metamorphic rocks that originated as ancient lava flows. These mountains are among the oldest on earth. East of the Blue Ridge Mountains lies the rolling Piedmont district of central Virginia. A complex layer of igneous and metamorphic rocks underlies this area. The Triassic Basins, ancient down-faulted basins filled with sedimentary rocks and igneous intrusions are major sub-units of this province. A distinctive fall line, marked by waterfalls and rapids across the major rivers, divides the Piedmont from the Coastal Plain. Virginia's flat Tidewater area consists of deep, unconsolidated deposits of sand, gravel, fossil shells, and clay. The basement formation of granite, exposed at the fall line, is buried under 2,900 feet of sediment at the Atlantic Coast.

### Water Resources

A summary of Virginia's water resources is provided in Table 6.1-1. Virginia has an estimated 51,021 miles of streams and rivers divided into nine major river basins. This estimate represents mileage determined by EPA's National Hydrography Dataset (NHD). Annual rainfall averages almost 43 inches. Total combined flow of all freshwater streams in the state is estimated at about 25 billion gallons per day. The 248 publicly owned lakes in the Commonwealth have a combined area of 130,344 acres. Of these lakes, 122 are considered "significant lakes" for monitoring purposes, totaling approximately 114,884 acres. Many hundreds of other smaller, privately owned lakes, reservoirs and ponds, some of significant size, dot the landscape.

Other significant water features of Virginia include approximately 236,900 acres of tidal and coastal wetlands, 808,000 acres of freshwater wetlands, 120 miles of Atlantic Ocean coastline, and approximately 2,308 square miles of estuaries. Virginia's highly indented shoreline, including the Chesapeake Bay and its sub-estuaries, is conservatively estimated to be 3,315 miles long.

**Table 6.1-1 Virginia Water Resources Atlas**

State Population (2000 census) – 7,078,515 (2006 census) – 7,642,884
State Surface Area – 42,774 square miles
Major River Basins
Potomac/Shenandoah James York Roanoke Chowan/Dismal Swamp
Tennessee/Big Sandy Chesapeake Bay/Small Coastal Rappahannock New
Total Non-Tidal River/Stream Miles - 51,021
Miles of Border River (Potomac) - 180
Publicly-Owned Significant Lakes and Reservoirs - 122
Significant Lake/Reservoir Acres - 114,884
Total Acres of Palustrine Wetlands - 1,075,443
Total Acres of Riverine Wetlands - 380
Total Acres of Lacustrine Wetlands - 193
Total Acres of Estuarine Wetlands - 190,996
Total Acres of Isolated Wetlands - ≈ 250,000
Estuary Square Miles - 2,308
Atlantic Ocean Coastal Miles – 120
Total Coastal Shoreline Miles Including Chesapeake Bay and Tidal Tributaries to a Width of 110 Feet - 3,315
Statewide Average Annual Rainfall - 42.8 inches
Average Freshwater Discharge of All Rivers – Approximately 25 billion gallons per day

Land Use

Virginia's landscape is dominated by forests, which cover approximately 55.6% of its total area (Table 6.1-2). However, according to the Virginia Department of Forestry, a loss of commercial forest and cropland has contributed to an increase in urban land from 10.4% to 14.8% from 1991 to 1995.

The second most prevalent land use in Virginia is agriculture, covering 25.9% of the State's total land area. Cropland accounts for 2,903 square miles, about 7.1 percent of the State's total area while pasture and hay production account for 6,845.3 square miles, or about 16.8% of the State's land. The remaining 6,029 square miles of land area, approximately 14.8%, includes urban areas. Inland waters account for the remaining 3.7%.

**Table 6.1-2 Virginia Statewide Land Use Summary**

Commercial Forest	20,058.6 mi <sup>2</sup>	49.2%
National Forests	2,550.0 mi <sup>2</sup>	6.4%
<b>Total Forested Land</b>	<b>22,608.6 mi<sup>2</sup></b>	<b>55.6%</b>
Cropland	2,903.4 mi <sup>2</sup>	7.1%
Pasture/Hay	6,845.3 mi <sup>2</sup>	16.8%
Other	828.1 mi <sup>2</sup>	2.0%
<b>Total Agricultural Land</b>	<b>10,576.8 mi<sup>2</sup></b>	<b>25.9%</b>
<b>Other (Including Urban)</b>	<b>6,029.1 mi<sup>2</sup></b>	<b>14.8%</b>
Total Land Area	39,214.5 mi <sup>2</sup>	96.3%
Inland Waters	1,526.4 mi <sup>2</sup>	3.7%
<b>Total Area</b>	<b>40,740.9 mi<sup>2</sup></b>	<b>100.0%</b>