Geography

Physiography

The New River Valley falls within three distinct physiographic provinces: the Blue Ridge Province (Floyd County), the Valley and Ridge Province (Pulaski County, Montgomery County, most of Giles County, and the City of Radford), and the Appalachian Plateau (in a small part of Giles County).

The Blue Ridge Province is characterized by irregular topography and is generally classified as moderately-sloped (i.e., slopes ranging from 5-20%). The Valley and Ridge Province exhibits parallel-running ridges with accompanying valleys and is considered to be steep-sloped (slopes greater than 20%). The small portion of Giles County lying within the Appalachian Plateau Province is also steep-sloped. Overall, the land area in the New River Valley is classified as 47.9% moderately sloped, and about 7.5% as level.

Geology

Each province has very different geological characteristics. Giles, Pulaski, and Montgomery counties are mainly located in the Valley and Ridge Province, which is characterized by sedimentary rocks such as limestone, shale, and sandstone. Historically, limestone has been mined for agriculture and sandstone for building purposes. Floyd County is located in the Blue Ridge Province that is characterized by metamorphic rocks such as gneiss and schist. Metamorphic rocks are generally harder rocks and have been mined for use in constructing roads.

Soils

Soils range from limestone and shale to alluvial along the streams. Colluvial soils, formed from weathering of limestone with some shale and sandstone, are found in the foothills paralleling the Valley. Soils are generally moderately deep to very deep, with a depth of bedrock to ten feet however 100 foot depths have been noted. Figure 2 (page 7) provides an interpretation of soil data to indicate the intensities of development that can be economically supported in various areas.

Forestry

All counties in the New River Valley are quite similar with regards to type of land class. Figure 1 (page 6) shows the forested land in the region. Figure 3 (page 8) illustrates the lands owned by the U.S. Forest Service. The majority of land within the region is considered forested. This type of land class covers 68.3% of all land within the New River Valley. The only county in the region with a different forestry profile would be Giles where less than 19% of the total area is considered nonforest land. This percentage is much lower than the regional average of 31.7% nonforest land. This information is shown in Table 1 and Figure 4 (page 9).

Agriculture

Agriculture continues to be a major portion of the region's economy. As has been the trend, the number of farms reported continues to decline. In 2007, 83 fewer farms were reported in the region than in 2002 (Table 2). It should be noted that the number of farms reported in Floyd County increased by 35 farms. The acreage reported taken out of active farming was 25,005 acres. The reported average farm size was 160 acres. Utilizing this figure multiplied by the 83 farms reported as not continuing would equal 13,280 acres. The result is that the average farm leaving production was significantly larger than the average farm size. Table 3 provides a review of harvested acreage and illustrates that providing feed for the cattle and calf population is a major use of the land in farms.

Elevation and Drainage

The average elevation of the Valley is about 2,500 feet. Elevations range from 1,470 feet above mean sea level at Glen Lyn to 4,348 feet at Bald Knob on Salt Pond Mountain in Giles County. Mountain Lake, also located on Salt Pond Mountain, is one of only two natural lakes in Virginia and is reportedly the highest natural lake east of the Rocky Mountains.

The New River runs through the counties of Pulaski, Montgomery, and Giles, and the City of Radford, thus giving the region its name. Little River, Peak Creek, Big Walker Creek, and Dodd's Creek, tributaries of the New River, run through all localities in the region.

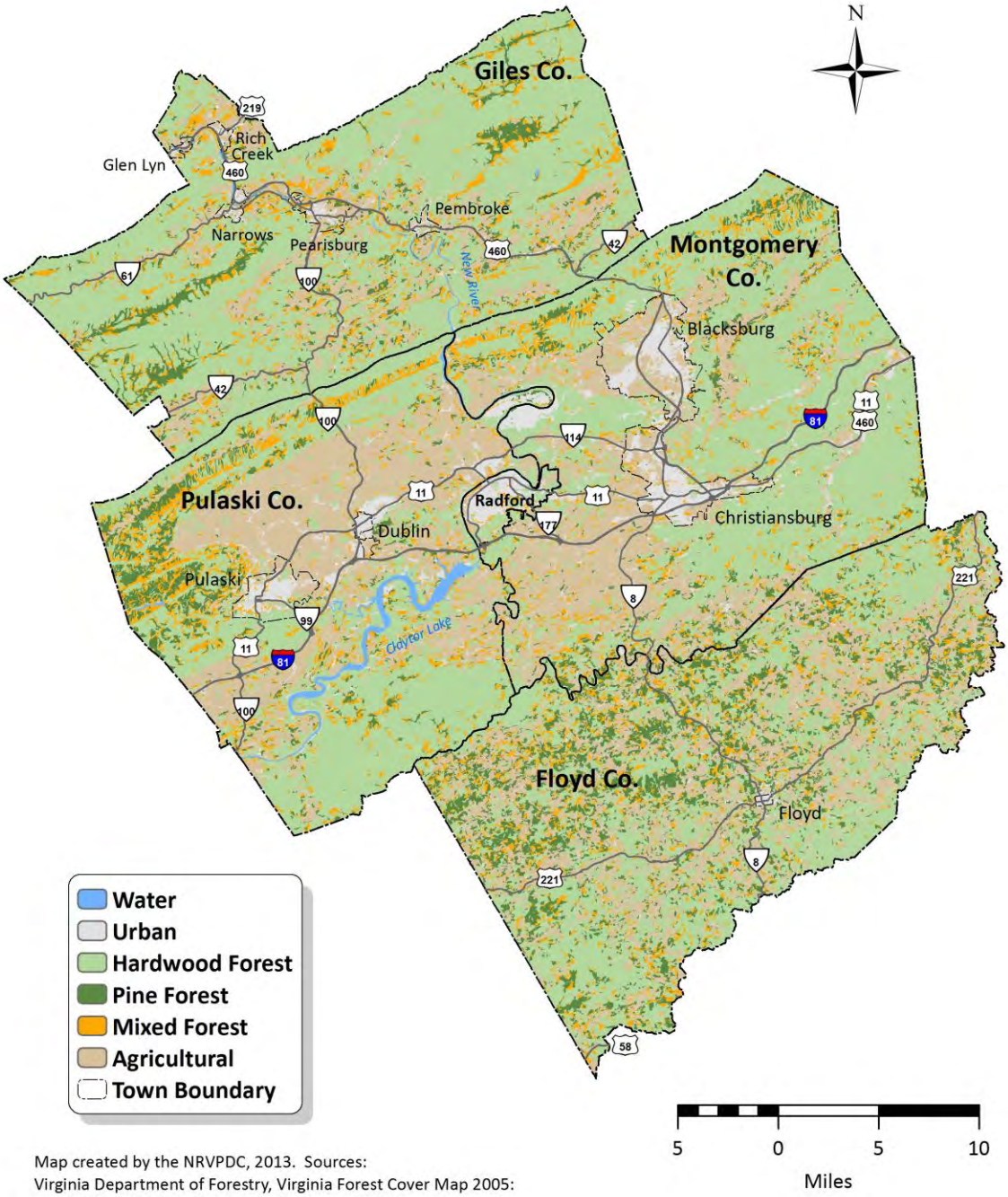
Climate

The climate of the New River Valley is classified as "moderate continental," characterized by moderately mild winters and warm summers. The average annual temperature is 54°F, with a high of 103°F and a low of -27°F. The mean annual precipitation is 39 inches. Snowfall in the Valley averages 17 inches annually, with a range of 15-20 inches. The prevailing winds are from the Southwest at an average of 10 miles an hour.

Air Quality

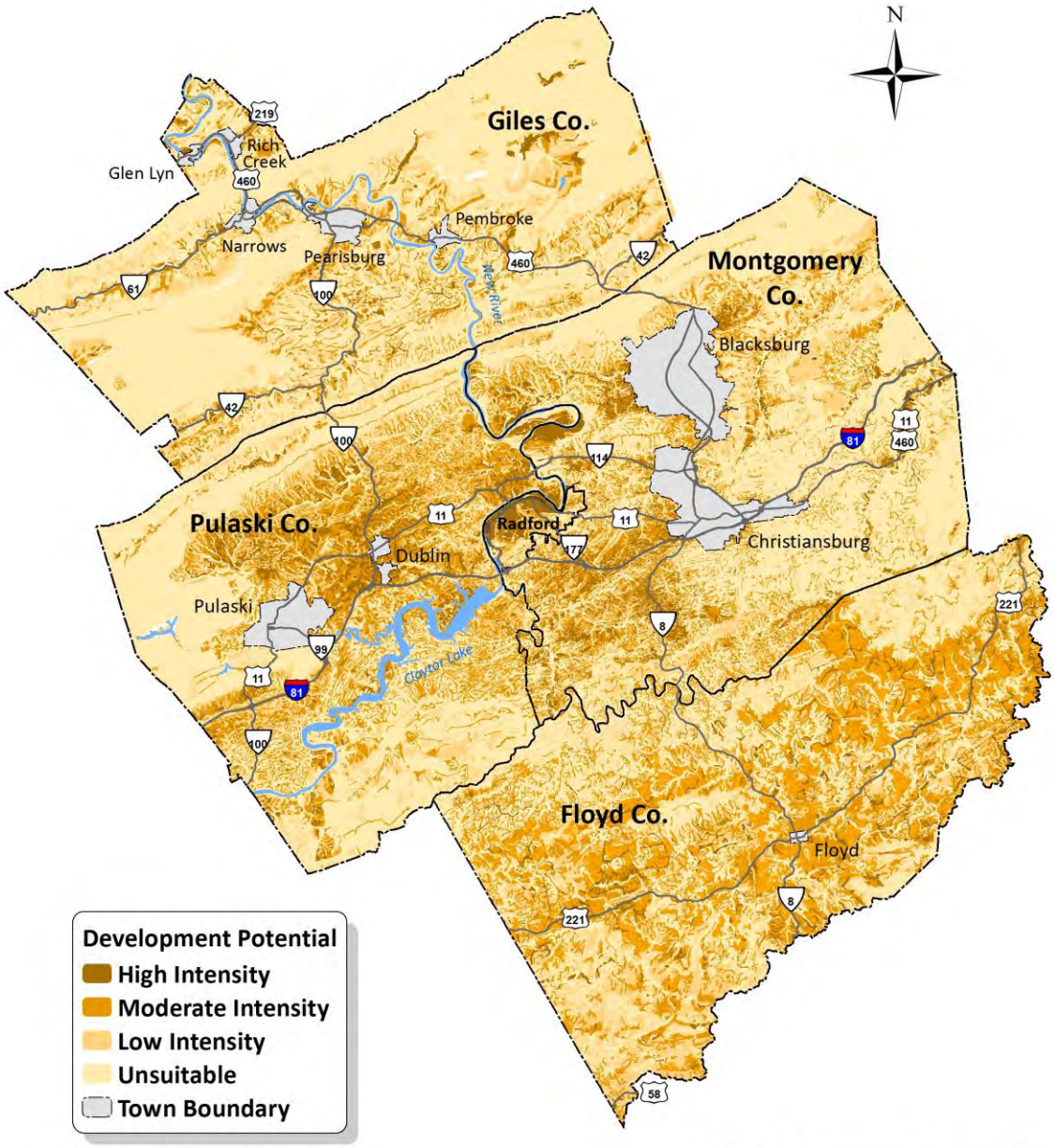
The Department of Environmental Quality operates air quality monitors throughout the State. The Air Quality Index (AQI) is an index for reporting daily air quality. It tells you how clean or polluted your outdoor air is, and what associated health effects might be a concern for you. The AQI focuses on health affects you may experience within a few hours or days after breathing polluted air. The Environmental Protection Agency (EPA) calculates the AQI for five major air pollutants regulated by the Clean Air Act: ground-level ozone, particle pollution (also known as particulate matter), carbon monoxide, sulfur dioxide, and nitrogen dioxide. For each of these pollutants, EPA has established national air quality standards to protect public health. As of May 2013, the air quality in the Roanoke Region of the State (which includes the New River Valley) is labeled as Good (21) with an AQI of 0 - 50. This means that the air quality is considered satisfactory, and air pollution poses little or no risk. The higher the AQI value the greater the level of air pollution and the greater the health concern (http://www.airnow.gov).

Figure 1
NRV Land Use Classes



Map created by the NRVPDC, 2013. Sources:
Virginia Department of Forestry, Virginia Forest Cover Map 2005:
Level 2 Classification, US Census Bureau and VGIN.

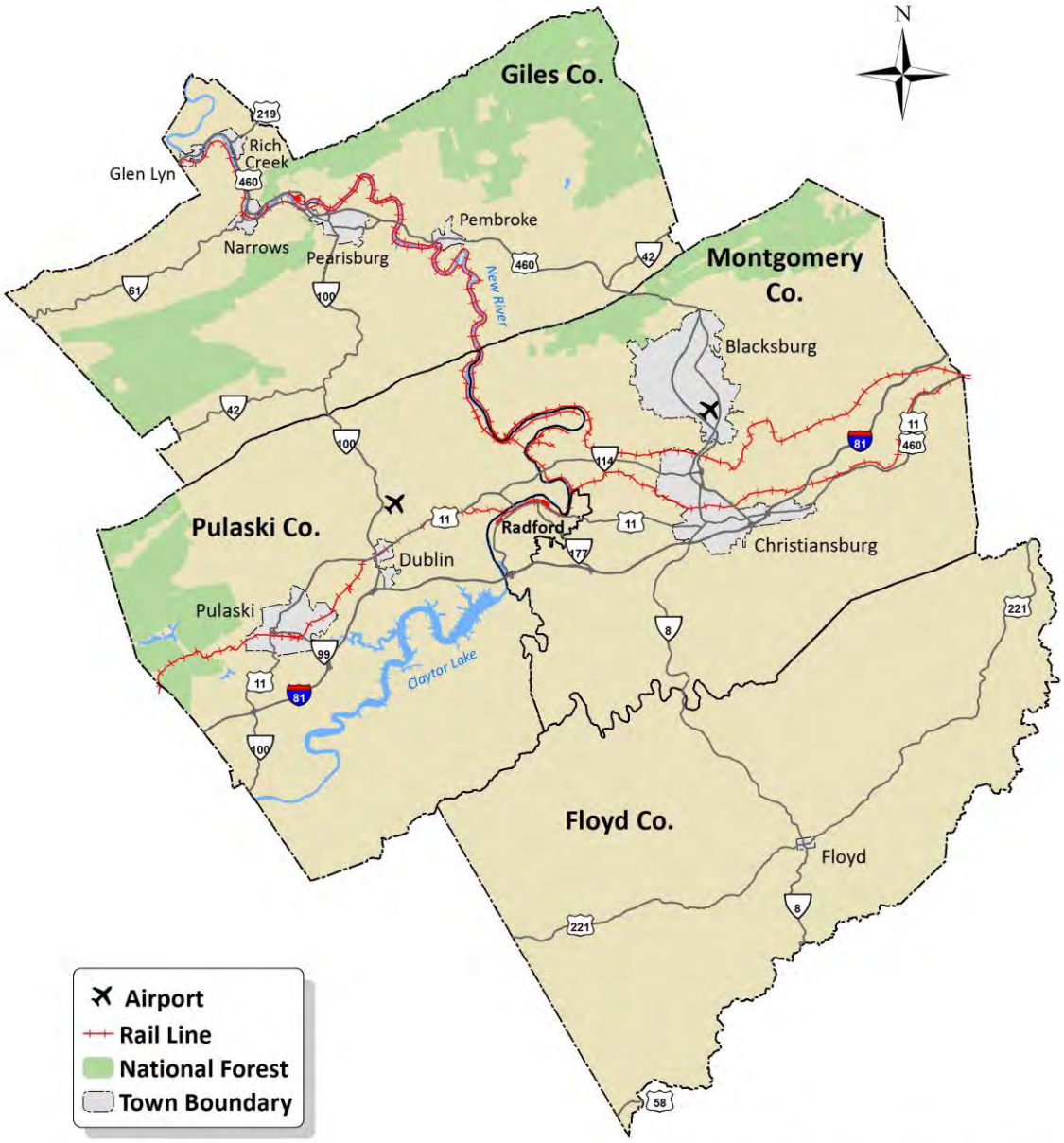
Figure 2
Development Potential



Map created by the NRVPDC, 2013. Sources:
Soil Survey Staff, Natural Resources Conservation Service,
USDA. Soil Survey Geographic (SSURGO) Database for Virginia.
VA Department of Conservation and Recreation, Division of
Natural Heritage, U.S. Fish and Wildlife Service, National Wetlands Inventory.

5 0 5 10
Miles

Figure 3
National Forest Lands and Major Transportation Routes



Map created by the NRVPDC, 2013. Sources:
VA DCR - Division of Natural Heritage, US Census Bureau and VGIN.

Table 1
Land Use Classes (Acres)
2005

JURISDICTION	WATER	URBAN	HARDWOOD FOREST	PINE FOREST	MIXED FOREST	AGRICULTURAL	TOTAL
Floyd County	45	7,076	103,320	40,680	21,909	70,944	243,974
Giles County	784	6,087	151,220	15,359	20,899	36,187	230,536
Montgomery County	556	20,827	132,181	10,788	18,896	65,960	249,208
Pulaski County	4,839	12,654	90,021	14,108	20,995	68,305	210,922
City of Radford	132	3,196	1,949	39	337	866	6,521
New River Valley	6,356	49,839	478,691	80,976	83,036	242,264	941,162

Source: Virginia Dept. of Forestry. Virginia Land Use. (2005). http://www.dof.virginia.gov/gis/datadownload

Figure 4
Land Use Class: Forest/Nonforest

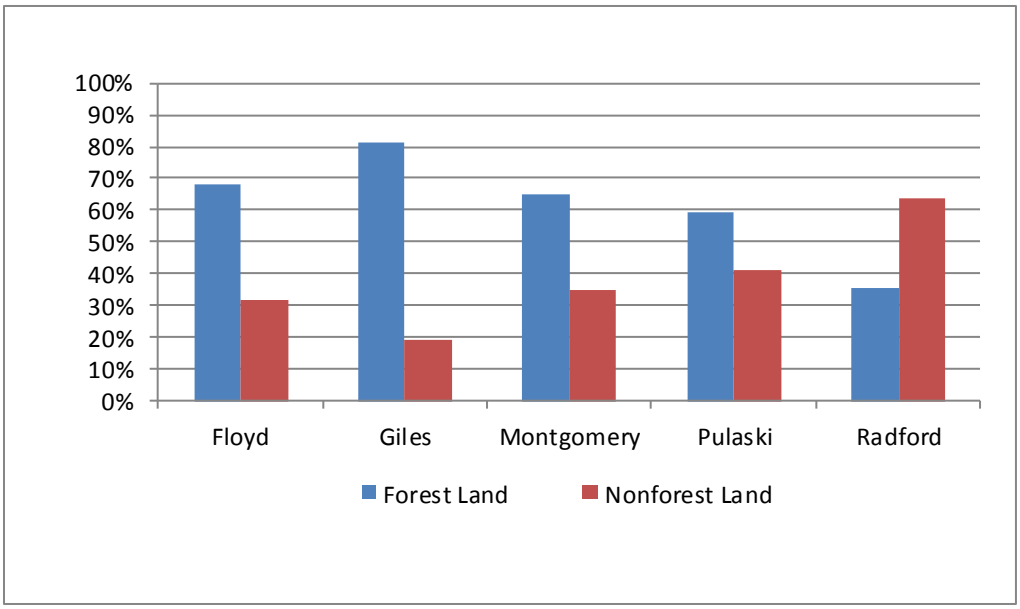


Table 2
Farms

JURISDICTION	FARMS (no.)		LAND IN FARMS (acres)		AVG. SIZE OF FARMS (acres)	
	2002	2007	2002	2007	2002	2007
Floyd County	829	864	135,311	128,872	163	149
Giles County	407	344	68,329	65,487	168	190
Montgomery County	650	628	99,670	89,411	153	142
Pulaski County	448	415	80,922	75,457	181	182
City of Radford	0	0	0	0	0	0
New River Valley	2,334	2,251	384,232	359,227	165	160
Virginia	47,606	47,383	8,624,829	8,103,925	181	171

Source: 2007 Census of Agriculture.

Table 3
2007 Selected Crops Harvested (acres)

Item	FLOYD COUNTY	GILES COUNTY	MONTGOMERY COUNTY	PULASKI COUNTY	CITY OF RADFORD	NRV	VIRGINIA
Harvested Cropland	33,971	9,521	22,154	17,606	0	83,252	2,544,997
Corn for grain	(D)	103	800	(D)	0	903	401,070
Corn for silage or greenchop	1,875	118	2,550	1,065	0	5,608	126,295
Forage-land used for all hay and haylage, grass silage, and greenchop	27,590	8,389	17,421	15,843	0	69,243	1,305,624

(D) Withheld to avoid disclosing data for individual farms.
Source: 2007 Census of Agriculture.