

# Human Population Distribution in the Albemarle-Pamlico Basin, 1990-2010

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## Why is Population Important?

Indicator results presented here report geographical patterns of total human population amounts and change summarized at the basin and sub-basin levels for 1990-2010. Human populations alter the environment in myriad ways. Selected impacts associated with human population and their behaviors include: loss of natural land covers (e.g. wetlands and forests), natural habitat fragmentation, increased impervious surface, point and non-point source water pollution, water withdrawal, air pollution, greenhouse gas emissions, and reduced health of terrestrial and aquatic species populations. Historical evolution of settlement patterns is driven by multiple factors such as demographic processes (i.e. human fertility, mortality, and migration), geographical accessibility, land economics, natural landscape environmental opportunities and constraints, and institutional land policies governing where settlement may occur. The spatially varying nature of these factors causes an uneven distribution of human population such that it is important to report human population patterns at multiple geographical scales of increasing spatial resolution that range from the entire Albemarle-Pamlico basin to individual sub-basins.

## What Does This Indicator Report?

1. Population size: Total human population summarized by state, basin, and sub-basin for the years 1990, 2000, and 2010.
2. Population change: Total and percent human population change summarized by state, basin, and sub-basin for the periods 1990-2000, 2000-2010, and 1990-2010.

## Total Population and Change

What do the data show?

Table 1. Human population by state.

Region	1990	2000	2010
Albemarle-Pamlico	2,762,409	3,267,706	3,756,019
NC portion	1,868,298	2,267,795	2,715,169
VA total	894,111	999,911	1,040,850

Table 2. Human population change by state.

Region	Change 1990-2000	Change 2000-2010	Change 1990-2010
Albemarle-Pamlico	505,297	488,313	993,610
NC portion	399,497	447,374	846,871
VA total	105,800	40,939	146,739

Table 3. Percent human population change by state.

Region	% Change 1990-2000	% Change 2000-2010	% Change 1990-2010
Albemarle-Pamlico	18.3	14.9	36.0
NC portion	21.4	19.7	45.3
VA total	11.8	4.1	16.4

## Human Population and the Albemarle-Pamlico Landscape

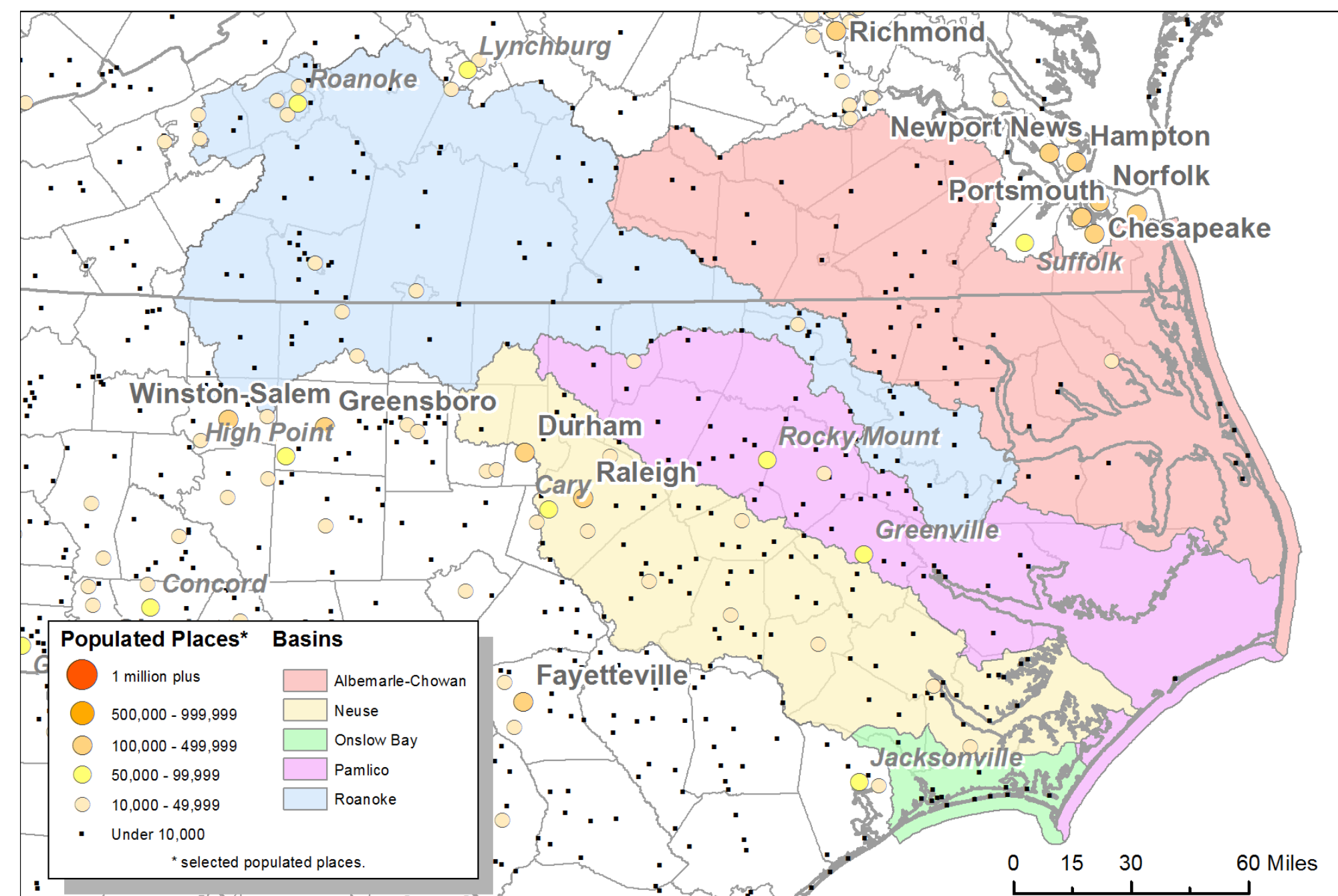


Figure 1. Basins and selected populated places.

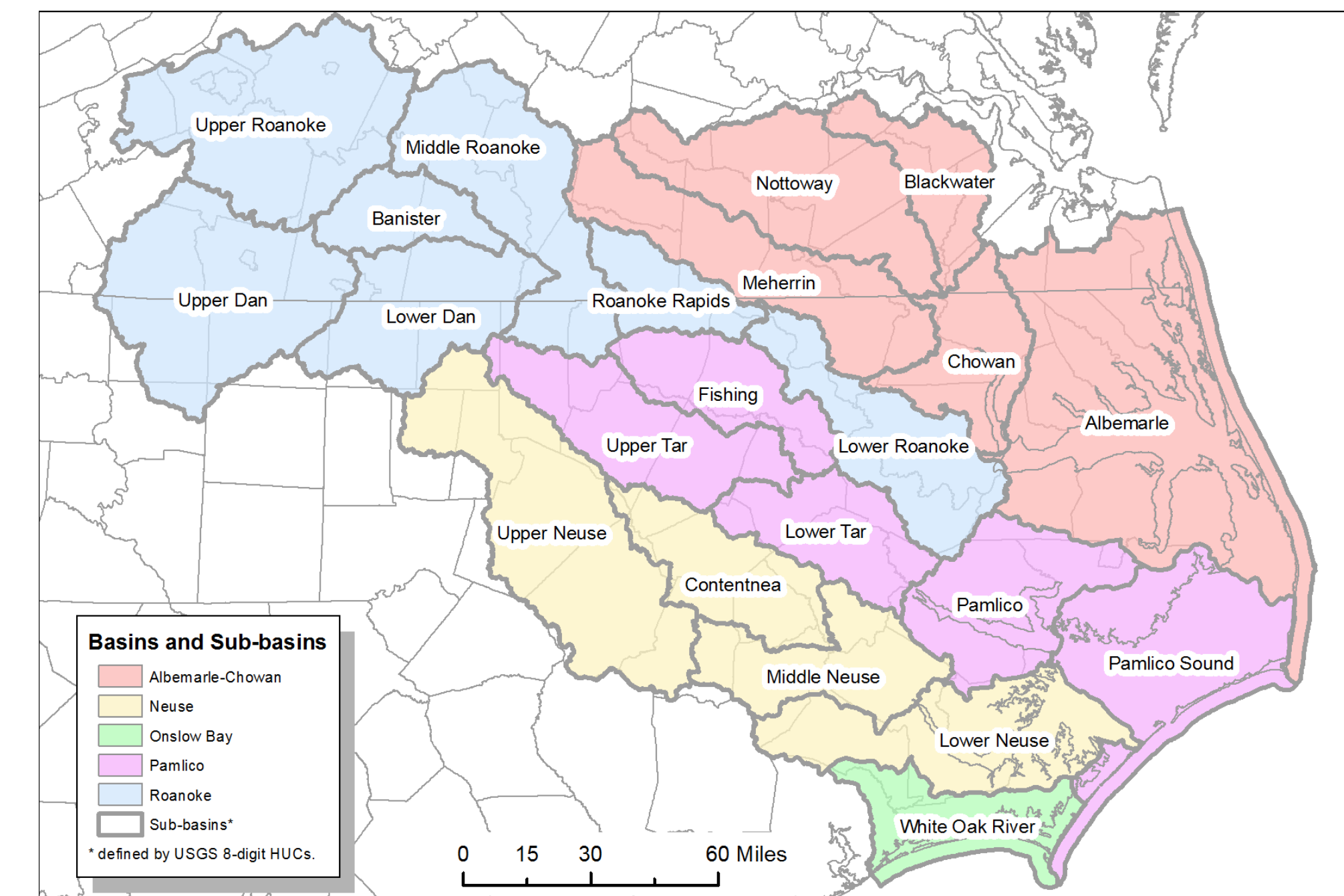


Figure 2. Basins and sub-basins.

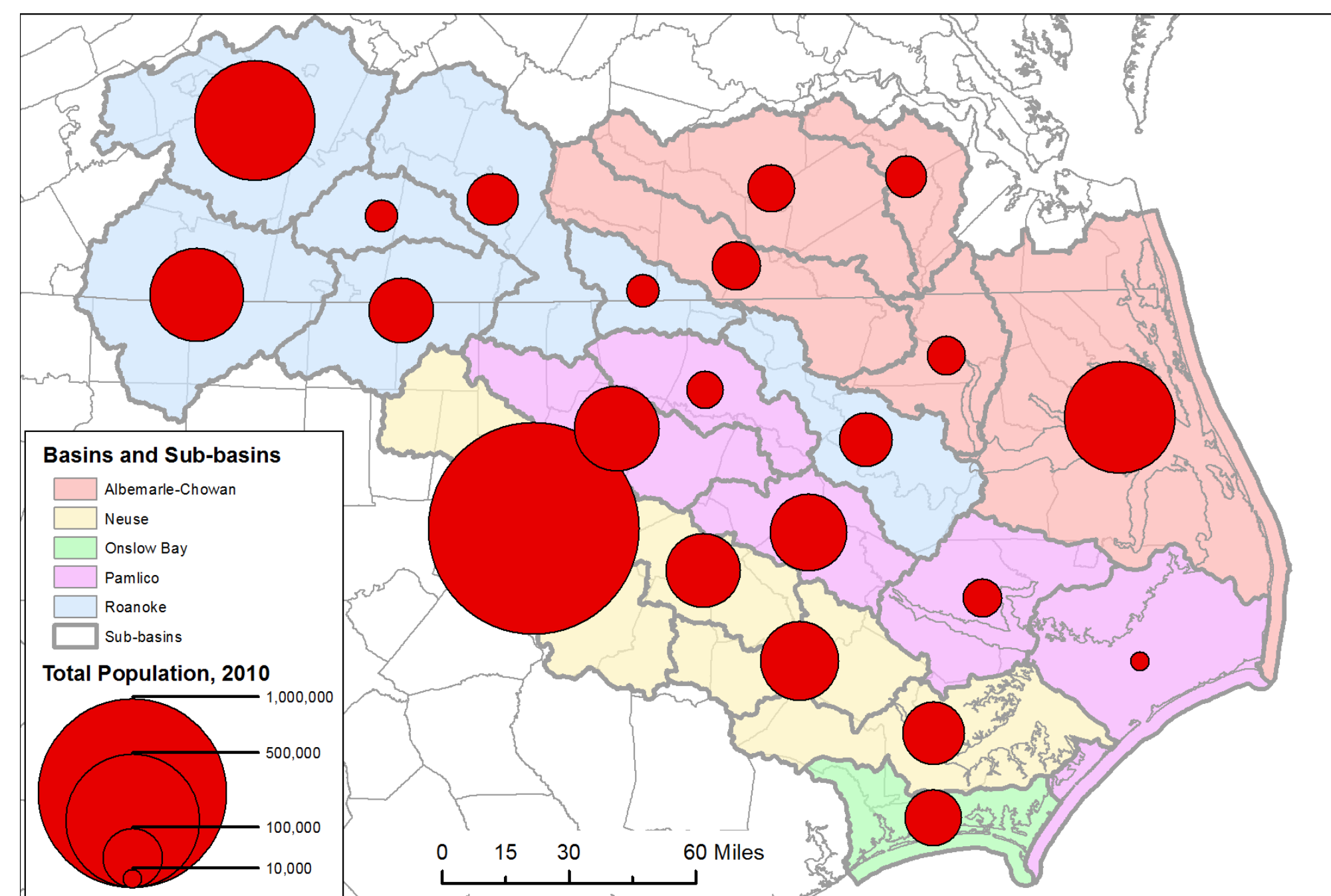


Figure 3. Total human population, 2010.

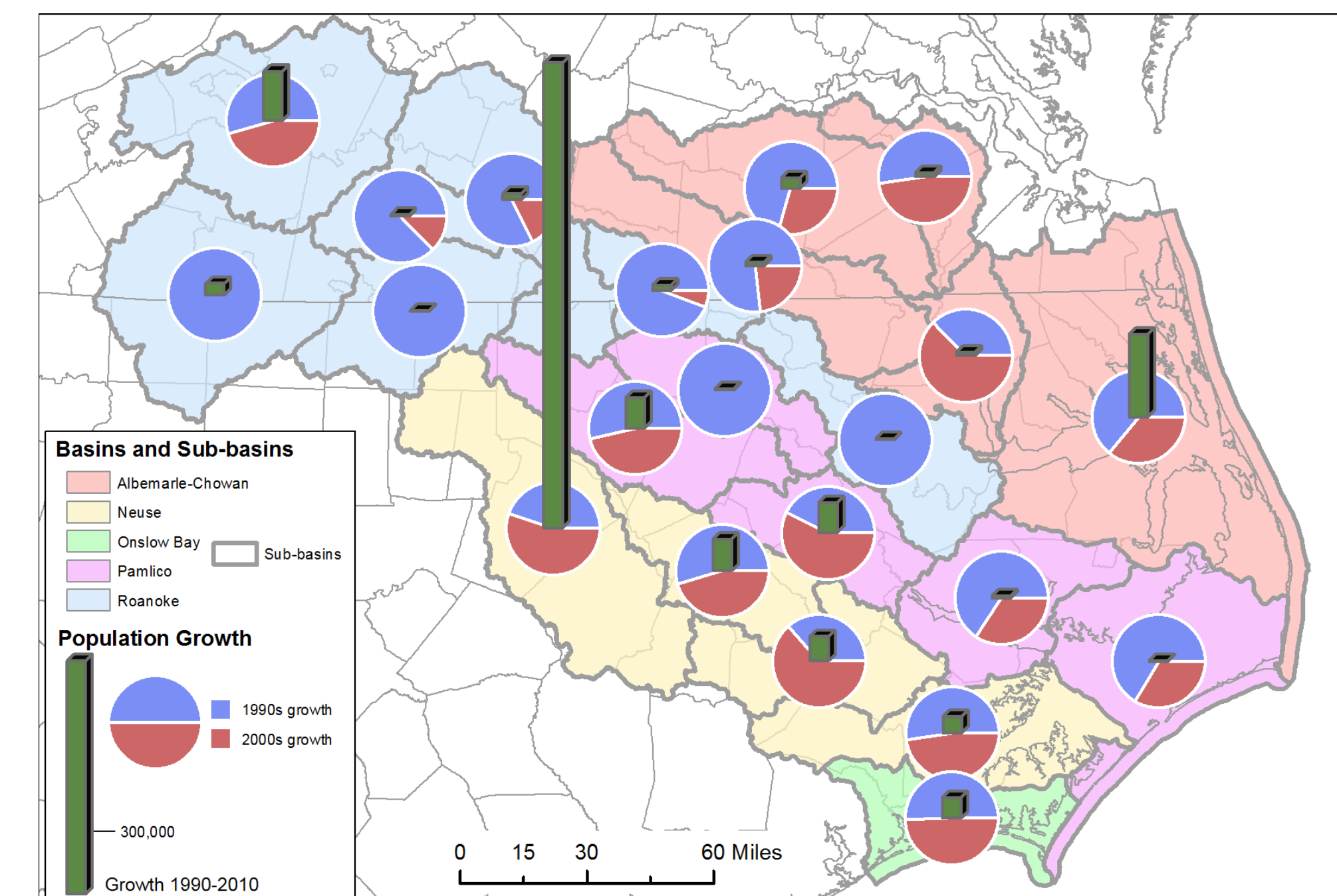


Figure 4. Human population growth, 1990-2010: green = raw growth, blue = 1990s growth share, red = 2000s growth share.

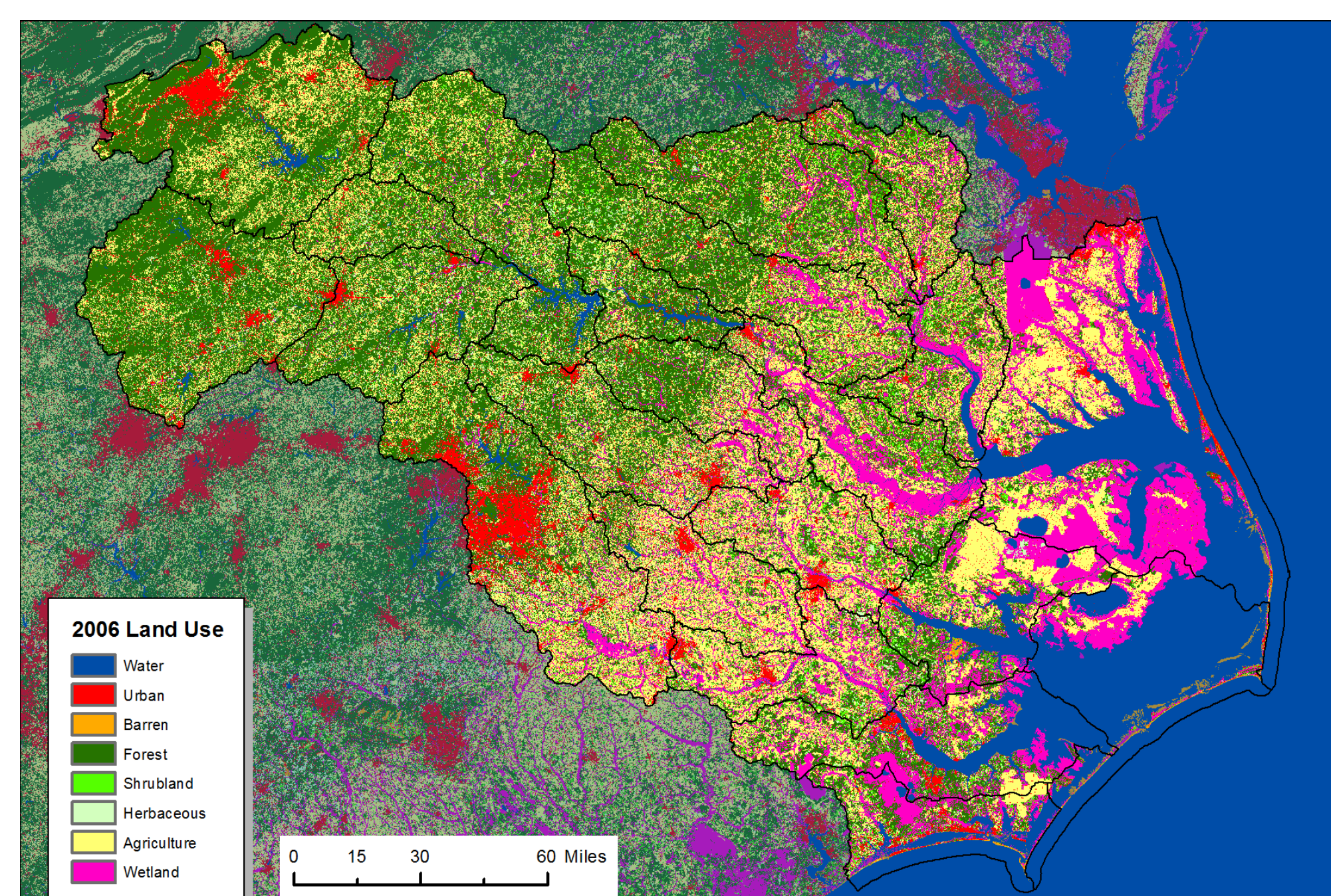


Figure 5. 2006 land use (Source: NLCD 2006).

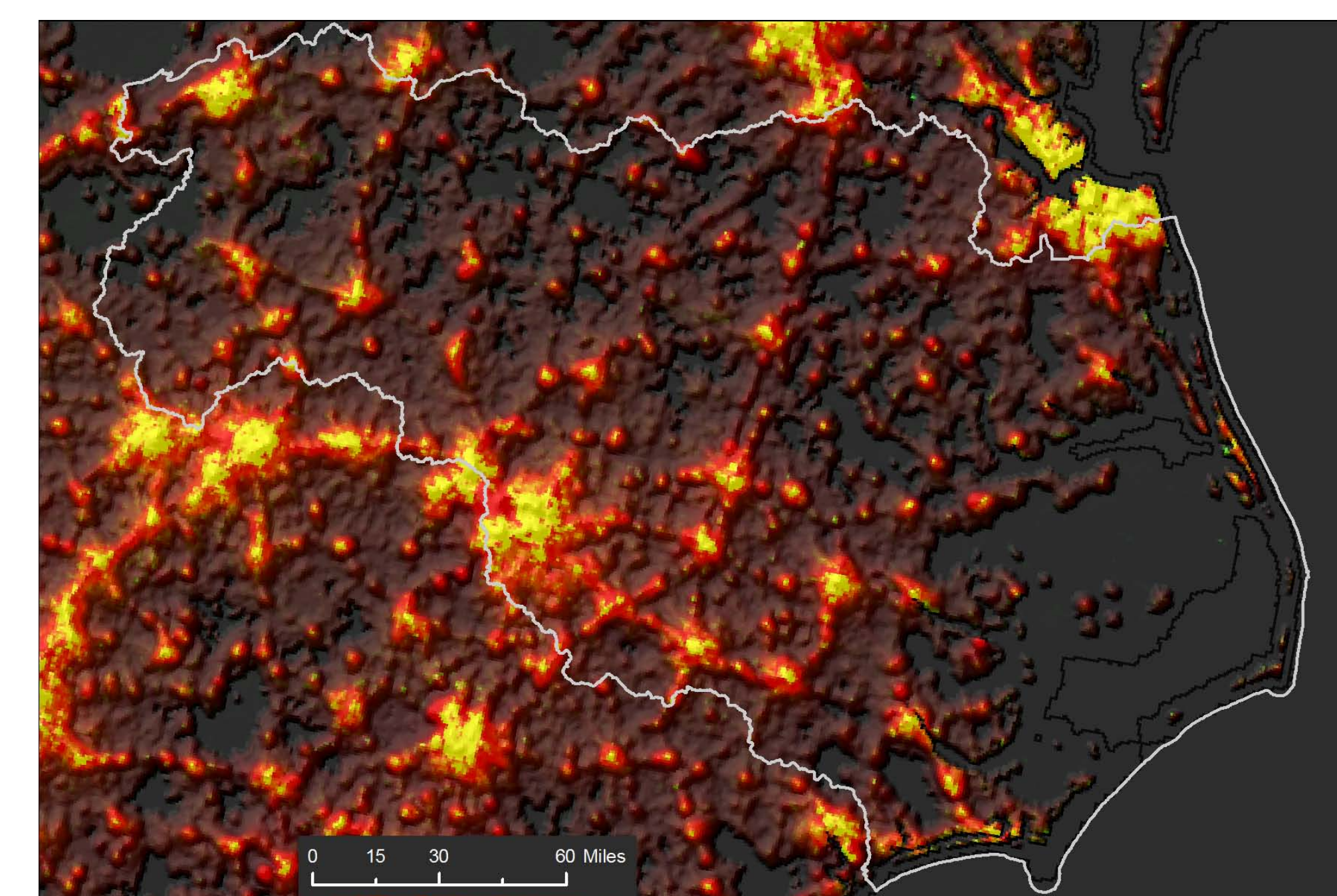


Figure 6. DMS-OLS nighttime lights settlement "topography".

## Basin and Sub-basin Population

Table 4. Human population by basin and sub-basin.

Basins and Sub-basins	1990	2000	2010
<b>Albemarle-Chowan</b>	<b>432,830</b>	<b>514,986</b>	<b>561,443</b>
Albemarle	240,867	306,606	343,392
Blackwater	43,613	46,303	48,768
Chowan	36,841	38,325	40,816
Meherrin	62,322	65,799	66,842
Nottoway	49,187	57,953	61,625
<b>Roanoke</b>	<b>878,853</b>	<b>947,166</b>	<b>969,715</b>
Lower Roanoke	77,392	78,988	78,503
Roanoke Rapids	22,567	28,259	28,615
Middle Roanoke	66,942	73,045	74,354
Upper Roanoke	338,049	371,163	309,902
Banister	26,571	28,352	28,605
Lower Dan	117,168	120,318	116,552
Upper Dan	230,164	247,041	244,184
<b>Pamlico</b>	<b>368,492</b>	<b>408,261</b>	<b>447,943</b>
Pamlico Sound	9,005	9,444	9,666
Pamlico	38,331	40,076	40,983
Lower Tar	125,623	141,465	162,763
Upper Tar	160,276	180,432	197,886
Fishing	35,257	36,844	36,645
<b>Neuse</b>	<b>1,017,817</b>	<b>1,320,194</b>	<b>1,687,332</b>
Lower Neuse	88,432	98,963	108,606
Middle Neuse	141,692	152,827	172,358
Upper Neuse	671,670	931,013	1,251,126
Contentnea	116,023	137,391	155,242
<b>Onslow Bay</b>	<b>64,417</b>	<b>77,099</b>	<b>89,586</b>
White Oak River	64,417	77,099	89,586

Table 5. Percent human population change by basin and sub-basin.

Basins and Sub-basins	% Change 1990-2000	% Change 2000-2010	% Change 1990-2010
<b>Albemarle-Chowan</b>	<b>19.0</b>	<b>9.0</b>	<b>29.7</b>
Albemarle	27.3	12.0	42.6
Blackwater	6.2	5.3	11.8
Chowan	4.0	6.5	10.8
Meherrin	5.6	1.6	7.3
Nottoway	17.8	6.3	25.3
<b>Roanoke</b>	<b>7.8</b>	<b>2.4</b>	<b>10.3</b>
Lower Roanoke	2.1	-0.6	1.4
Roanoke Rapids	25.2	1.3	26.8
Middle Roanoke	9.1	1.8	11.0
Upper Roanoke	9.8	7.5	18.0
Banister	6.7	0.9	7.7
Lower Dan	2.7	-3.1	-0.5
Upper Dan	7.3	-1.2	6.1
<b>Pamlico</b>	<b>10.8</b>	<b>9.7</b>	<b>21.6</b>
Pamlico Sound	4.9	2.3	7.3
Pamlico	4.6	2.3	6.9
Lower Tar	12.6	15.1	29.6
Upper Tar	12.6	9.7	23.5
Fishing	4.5	-0.5	3.9
<b>Neuse</b>	<b>29.7</b>	<b>27.8</b>	<b>65.8</b>
Lower Neuse	11.9	9.7	22.8
Middle Neuse	7.9	12.8	21.6
Upper Neuse	38.6	34.4	86.3
Contentnea	18.4	13.0	33.8
<b>Onslow Bay</b>	<b>19.7</b>	<b>16.2</b>	<b>39.1</b>
White Oak River	19.7	16.2	39.1

## Understanding the Data

Human population and growth during 1990-2010 is most concentrated in the Upper Neuse sub-basin. This sub-basin is home to the Raleigh and Durham urban centers and the Research Triangle region, one of the fastest growing metro regions in the United States. A secondary and smaller node of population growth is located in the Albemarle sub-basin. While visually this sub-basin is more areally expansive, it is important to note that much of this area is comprised of large estuary water bodies. This sub-basin houses parts of the Virginia-Beach/Norfolk metropolitan area, the Elizabeth City urban region and the northern Outer Banks. A third node is located in the Upper Roanoke sub-basin associated with the Roanoke metropolitan area.