

Pregnancy, Fertility, and Births

PREGNANCY, FERTILITY, AND BIRTHS

Pregnancy and fertility rates, like birth rates, are associated with the socio-economic and demographic characteristics of populations and places. High pregnancy rates are the result of a constellation of factors which include cultural views towards children, contraception practices, education levels of the parents, access to abortion, mother's socio-economic status, and stage in the life cycle. The term *fertility* encompasses pregnancy and births but is generally reserved as a measure of total births a female or group of females have up to a certain age. Demographers use a "window" of time or the *reproductive life span* of a group (cohort) of women to analyze changes in fertility patterns. Typically, the ages from 15 through 44 years are used as the window boundaries. Birth rates, in contrast, apply to the total population standardized to 1000 persons. It is a crude measure. The natural growth rate of a population is calculated from the difference between the crude birth rate and the crude death rate.

Age structure of the child-bearing population is an important consideration when analyzing county birth rates. For example, a county's population may have a high proportion of younger (e.g., between the ages of 20 and 25). This would be an underlying biological component for producing potentially high fertility, but if the socio-economic characteristics of this population are such that education, income, and use of contraceptives are high then, potentially high fertility may not result for this age group. For educated and career oriented women, the trend for the last two decades has been to postpone the birth of the first child until a later age. This has the effect of shortening the reproductive life span window resulting in lower fertility rates. The factors contributing to fertility and pregnancy rates are many and the relationships among them are complex.

The pregnancy rate is usually calculated as the number of reported pregnancies per 1000 women between the ages of 15 and 44 per unit of time (usually one year). It should be noted that any pregnancy rate given for a county is less than its true pregnancy rate due to the fact that not all pregnancies are known or reported.

The fertility rate is usually lower than the pregnancy rate because not all pregnancies result in births. There are several intermediary factors that affect the outcome of pregnancy. Prenatal care, the biological ability to carry a pregnancy to term, the general health of the mother, and induced abortion are factors that may influence a pregnancy. Induced abortion is a reflection of personal (and social), religious, and cultural views, as well as the existence of legal and economic barriers to the procedure.

Eastern North Carolina has some of the highest pregnancy rates in the state. Higher rates tend to be found in the inland portion of the region. The three highest rates per 1,000, Onslow (120.9), Cumberland (107.6), and Craven (94.7) counties are found in areas that have large military populations. As a result, the age-structures of these counties are skewed toward the younger part of the reproductive period. Counties which have older populations have lower pregnancy rates. These counties are found in the northeast and coastal portions of the region and include Pamlico (57.3), Camden (58.6), and Hyde (64.8).

Pregnancies have implications for the health and well-being of mothers and their new-born children. This is especially true for the youngest portion of the reproductive life span window--those individuals between 15 through 17 years of age.

Teen Pregnancies

Eastern North Carolina is a region of high pregnancy rates for adolescent girls 15 through 17 years of age. The estimated rate per 1,000 adolescent girls aged 15 through 17 years for the 41 county region is 73.6 compared to the state's rate of 68.6. The highest total rates in the region for the period 1991 - 1993 are found in the southwest, central, and northwest. The counties with the highest rates in the eastern region are Edgecombe (97.9), Halifax (94.3), and Scotland (88.1). The lowest rates are found in a contiguous band from the central coast to the northeast. These counties include Tyrrell (39.1), Camden (41.7), and Perquimans (44.6). **(Note: Tyrrell and Camden Counties reported less than 20 pregnancies for this age group.)** High pregnancy rates for whites in this age category are found concentrated primarily in the southern portion of the region. The highest rate for whites in this area is found in Robeson County (72.3) while the highest rate for the entire 41 county region is found in Edgecombe County (72.5). The highest rates for nonwhites are generally found in the region's interior. Dare County has a teen pregnancy rate of 142.9 but reported only 7 pregnancies among nonwhites, therefore this rate should be regarded as a small numbers artifact. New Hanover County possesses the highest meaningful rate at 127.4.

HEALTHY CAROLINIANS 2000 GOAL

MATERNAL AND INFANT HEALTH SPECIAL TARGET:

Reverse trend of pregnancies among girls less than age 18.

MATERNAL AND INFANT HEALTH OBJECTIVE:

Reduce pregnancy rates to 63.0 pregnancies per 1,000 adolescent girls aged 15 through 17. (Baseline: 72.0 pregnancies per 1,000 adolescent girls aged 15 through 17 in 1990; 85.0 pregnancies per 1,000 adolescent girls aged 15 through 17 for 2000)

Fertility

An example of fertility rates for 1993 is also provided. The rate is number of live births accumulated per 1,000 women between the ages of 15 and 45 years. It should be noted that all women in this age interval have not completed their reproductive life span and counties that have higher proportions of older women in this age interval may exhibit higher rates. The rate for Eastern North Carolina (68.9) compares to the U.S. rate of 67.6. Eastern North Carolina possesses the highest rates in the state with the highest total rates found in the counties of Onslow (100.7), Cumberland (81.9), and Craven (78.7). These counties also have a large military presence. Camden and Pamlico counties reported the lowest rates at 46.4 and 47.2 respectively. For whites, the highest rates are concentrated in the central section of the region. Within this section the counties with the highest rates are Onslow (103.4), Hoke (85.5), and Cumberland (84.2). The low rate counties are interspersed throughout the 41 county region with Hertford County (40.3) being the lowest. No distinct

pattern within the 41 county region emerges for nonwhite fertility rates. Dare County, with marginally small numbers, reports the highest nonwhite rate at 102.9 and Currituck the lowest at 40.0 but reporting only 14 births in 1993 for all members of the age interval. The highest meaningful nonwhite rate is 92.3 found in Onslow County and the lowest meaningful rate is found in Pamlico County at 47.8.

Smoking and Pregnancy

Smoking during pregnancy is an important infant health risk factor. It is also a reflection of prevailing and generational attitudes toward smoking. With the exception of a few counties located in the northeast and south, Eastern North Carolina (17.3% reported smoking in 1993) does not stand out with respect to mothers smoking during pregnancy when compared to the rest of the state (17.7%). Twenty-eight percent of mothers reported smoking during pregnancy in Brunswick and Currituck Counties followed by 26.0% in Robeson County. The lowest percentage of mothers who smoked during pregnancy is found in Bertie County (10.0%) well below the state and national (15.8) figures. Bertie County is the only county which meets the Health People 2000 objective.

HEALTHY PEOPLE 2000 GOAL

HEALTHY PEOPLE 2000 OBJECTIVE 14.10 (part 1):

[Increase abstinence from tobacco use by pregnant women to at least 90.0 percent]. (Baseline: 75.0% abstained from tobacco use while pregnant in 1985.)

Induced Abortion

In 1993, Eastern North Carolina region counties shared some of the highest rates of induced abortion in the state. New Hanover County reported 1,759 abortions producing a rate of 26.7 women per 1,000 women between the ages of 15 and 45 who reported having had at least one abortion. The rate for the region and state is 18.4 and 20.0 respectively. Pitt County reported a rate of 25.1 followed by Cumberland County with 25.0. Regionally, there is a north to south transect of high-induced abortion rates. The lowest rates are found in the northeast. Small numbers of events generates a few of these observed rates for 1993. Marginally meaningful low counties rates are found in Chowan (7.1), Pamlico (9.6), and Perquimans (9.8).

Births

Between 1989-1993 the total crude live birth rate for North Carolina at 15.2 births per 1,000 population is just under the national figure of 15.5. Eastern North Carolina's birth rate is higher at 16.7. The regional pattern for birth rates in the state is similar to the regional patterns of rates for pregnancy and fertility. The highest total crude rate counties follow the military pattern of pregnancies and fertility with Onslow (22.8), Cumberland (20.5), and Craven (19.2) counties taking the lead. Higher rates tend to be found in the inland portion of the region. The lowest rates are found in the northeast which include Pamlico (11.4), Camden (12.0), and Perquimans (12.6) counties. Greene County, a low birth rate island within the high rate interior, reported a rate of 12.6 for this period.

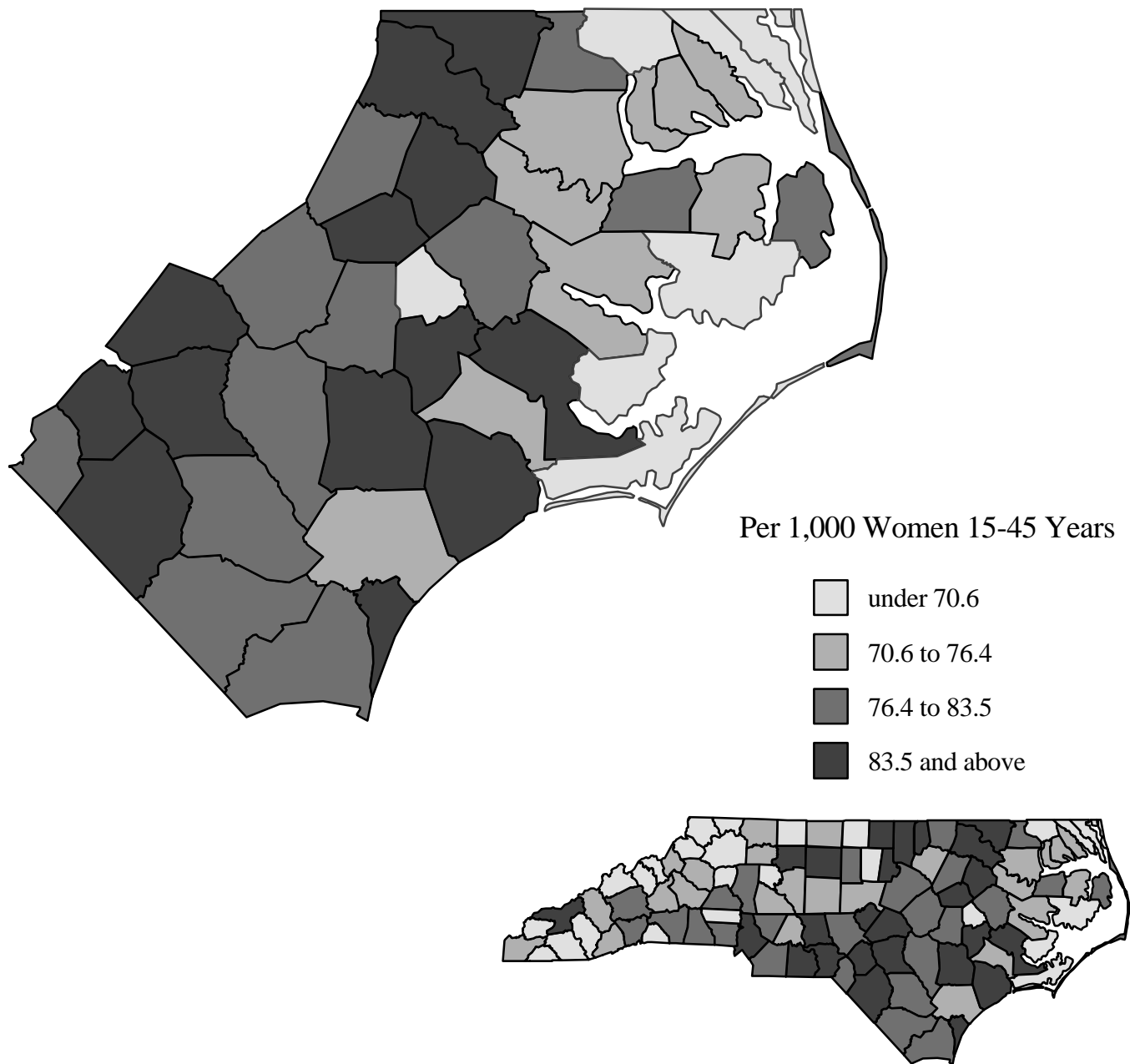
Pregnancy Rates, by Race Eastern North Carolina, All Women, 1993

County	Pregnancy Rates per 1,000 Women of Reproductive Age 15-44					
	White		Minority		Total	
	Pregnancies	Rate	Pregnancies	Rate	Pregnancies	Rate
Beaufort	408	68.3	292	90.6	700	76.1
Bertie	79	53.8	253	80.7	335	72.7
Bladen	243	68.3	284	97.5	527	81.5
Brunswick	716	77.6	223	90.9	941	80.5
Camden	51	56.3	21	65.2	72	58.6
Carteret	712	66.6	100	74.8	815	67.7
Chowan	108	67.0	96	80.1	204	72.6
Columbus	502	71.6	406	100.2	909	82.2
Craven	1,226	92.6	566	99.1	1,795	94.7
Cumberland	4,233	100.8	3,306	116.5	7,572	107.6
Currituck	189	67.2	20	57.1	209	66.1
Dare	404	75.0	24	117.6	428	76.6
Duplin	431	76.8	332	100.6	766	85.9
Edgecombe	408	80.4	868	99.1	1,288	93.1
Gates	60	55.4	71	79.2	132	66.7
Greene	120	66.1	112	72.2	234	69.5
Halifax	401	77.1	768	105.2	1,175	94.0
Harnett	1,034	82.1	479	110.0	1,521	89.8
Hertford	105	58.0	282	89.1	387	77.8
Hoke	222	103.1	283	83.6	505	91.2
Hyde	48	66.2	25	62.3	73	64.8
Johnston	1,211	74.5	429	110.1	1,642	81.5
Jones	80	65.0	74	87.0	155	74.4
Lenoir	517	72.8	617	100.5	1,138	86.0
Martin	174	61.6	231	84.7	405	73.0
Nash	815	66.3	749	110.4	1,569	82.3
New Hanover	1,836	73.9	817	116.4	2,660	83.5
Northampton	89	63.6	267	101.3	357	88.5
Onslow	2,877	120.2	968	122.2	3,851	120.9
Pamlico	91	54.9	40	63.7	131	57.3
Pasquotank	294	68.6	276	84.6	570	75.5
Pender	331	68.6	192	91.1	524	75.6
Perquimans	96	72.5	52	72.1	148	72.4
Pitt	1,383	66.6	1,075	101.1	2,481	79.0
Robeson	615	75.7	1,696	95.7	2,313	89.5
Sampson	500	76.2	357	84.6	861	79.9
Scotland	266	61.4	385	97.7	652	78.8
Tyrrell	33	72.7	25	73.3	58	73.0
Washington	95	65.7	152	96.7	247	81.9
Wayne	1,008	66.1	765	84.2	1,635	67.2
Wilson	624	69.9	761	110.7	1,394	88.2
29 County Region						
	12,926	77.7	9,881	97.8	22,752	85.1
41 County Region						
	24,635	80.0	18,738	101.0	43,381	88.0
North Carolina						
	87,131	73.2	47,004	108.1	134,723	82.9
United States						
	Not Calculated					

Pregnancy Rates

Eastern North Carolina

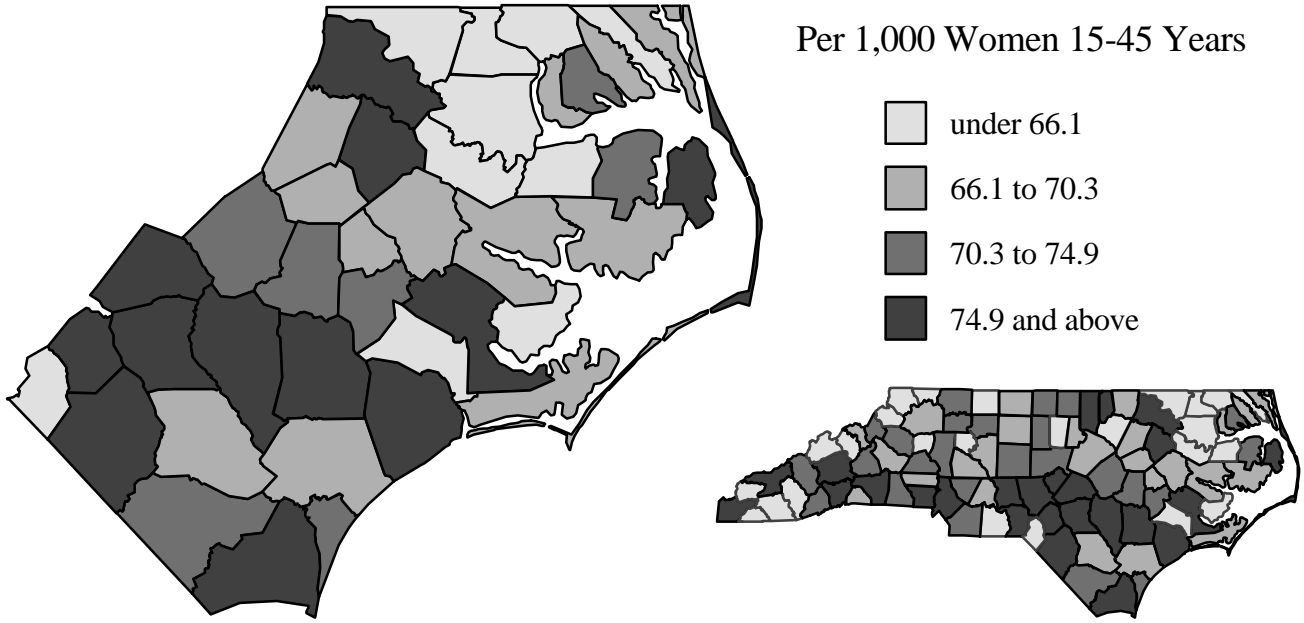
Pregnancy Rates for All Women: 1993



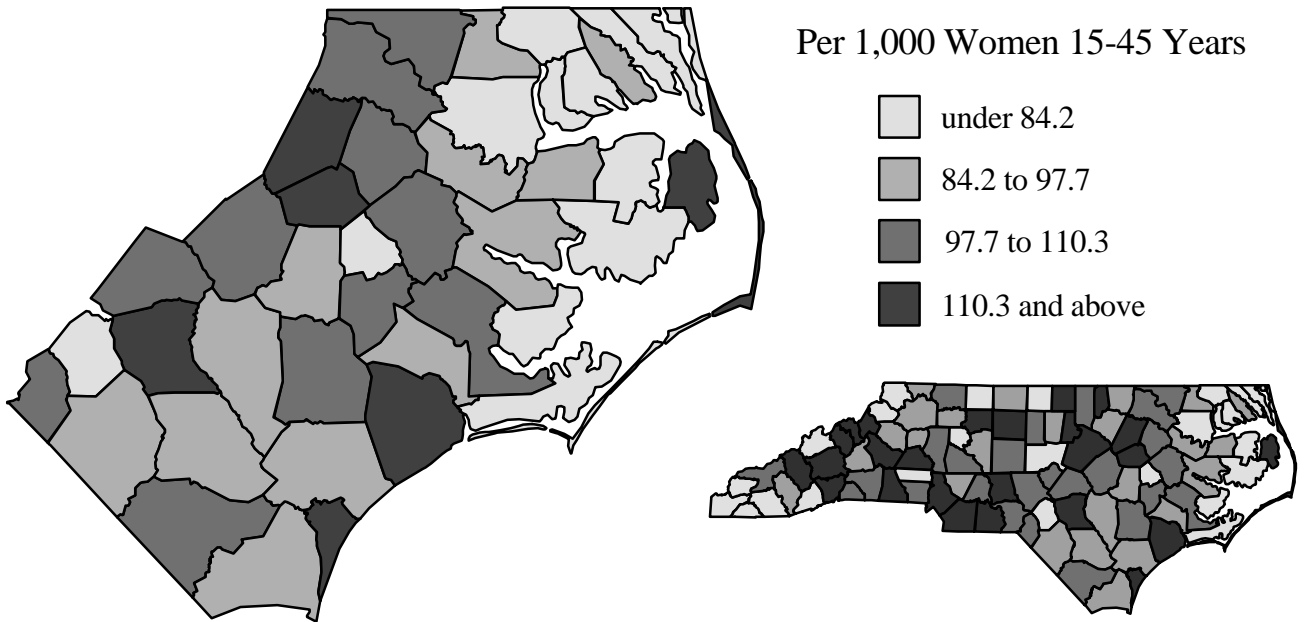
Pregnancy Rates

Eastern North Carolina

White Pregnancy Rates: 1993



Nonwhite Pregnancy Rates: 1993



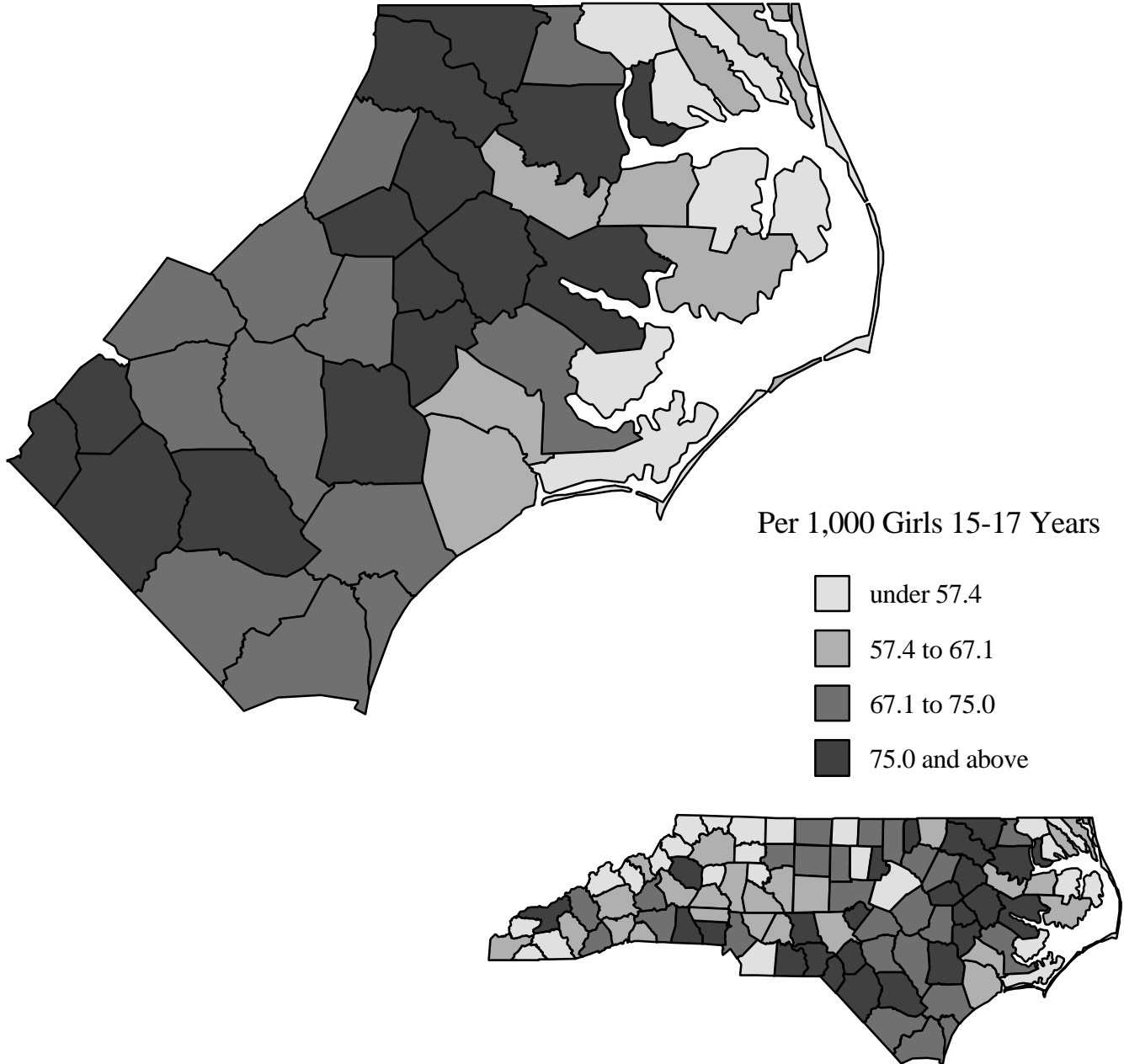
Pregnancy Rates for girls Ages 15 - 17, by Race Eastern North Carolina, 1991 - 1993

County	Pregnancy Rates per 1,000 Adolescent Girls Ages 15-17					
	White		Minority		Total	
	Pregnancies	Rate	Pregnancies	Rate	Pregnancies	Rate
Beaufort	78	48.9	128	113.5	208	76.4
Bertie	18	47.5	89	88.5	107	77.3
Bladen	51	53.3	91	98.9	142	75.7
Brunswick	145	64.5	64	84.0	209	69.4
Camden	10	44.4	3	34.5	13	41.7
Carteret	127	51.5	25	63.3	153	53.5
Chowan	24	53.9	39	107.7	63	78.1
Columbus	118	59.8	127	89.6	246	72.5
Craven	161	48.2	183	101.6	345	67.1
Cumberland	491	52.5	740	98.4	1,234	73.2
Currituck	39	56.6	9	82.6	48	60.2
Dare	45	42.9	7	142.9	53	48.3
Duplin	89	59.9	117	109.3	207	81.0
Edgecombe	94	72.5	281	108.7	380	97.9
Gates	7	28.7	16	65.8	23	47.2
Greene	19	45.5	54	102.9	74	78.5
Halifax	88	67.1	254	108.7	344	94.3
Harnett	149	50.5	151	116.8	303	71.4
Hertford	17	38.1	94	90.3	111	74.6
Hoke	34	68.0	103	90.4	137	83.6
Hyde	10	52.6	9	78.9	19	62.5
Johnston	195	50.3	146	123.8	342	67.6
Jones	8	24.5	29	105.5	37	61.5
Lenoir	96	54.7	228	113.4	327	86.9
Martin	20	27.8	85	96.5	105	65.6
Nash	130	43.5	226	112.0	360	71.9
New Hanover	261	51.5	258	127.4	519	73.2
Northampton	13	37.7	87	102.5	100	83.8
Onslow	278	58.3	147	82.8	427	65.2
Pamlico	18	39.9	14	69.0	32	48.9
Pasquotank	48	43.4	65	77.0	114	58.5
Pender	60	55.4	61	103.6	121	72.4
Perquimans	7	18.8	20	85.8	27	44.6
Pitt	139	41.6	356	113.3	499	77.0
Robeson	150	72.3	497	82.4	647	79.9
Sampson	107	60.7	123	86.2	230	72.1
Scotland	79	67.5	150	105.0	229	88.1
Tyrrell	5	34.2	5	45.5	10	39.1
Washington	13	32.1	43	85.3	56	61.6
Wayne	146	39.8	283	104.3	432	67.7
Wilson	86	37.9	254	120.8	344	78.6
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29 County Region	1,833	47.9	3,150	103.2	5,018	73.0
41 County Region	3,673	51.5	5,661	100.7	9,377	73.6
North Carolina	13,315	50.0	13,123	108.8	26,572	68.6
United States	Not Calculated					

Pregnancy Rates 15 - 17 Year Olds

Eastern North Carolina

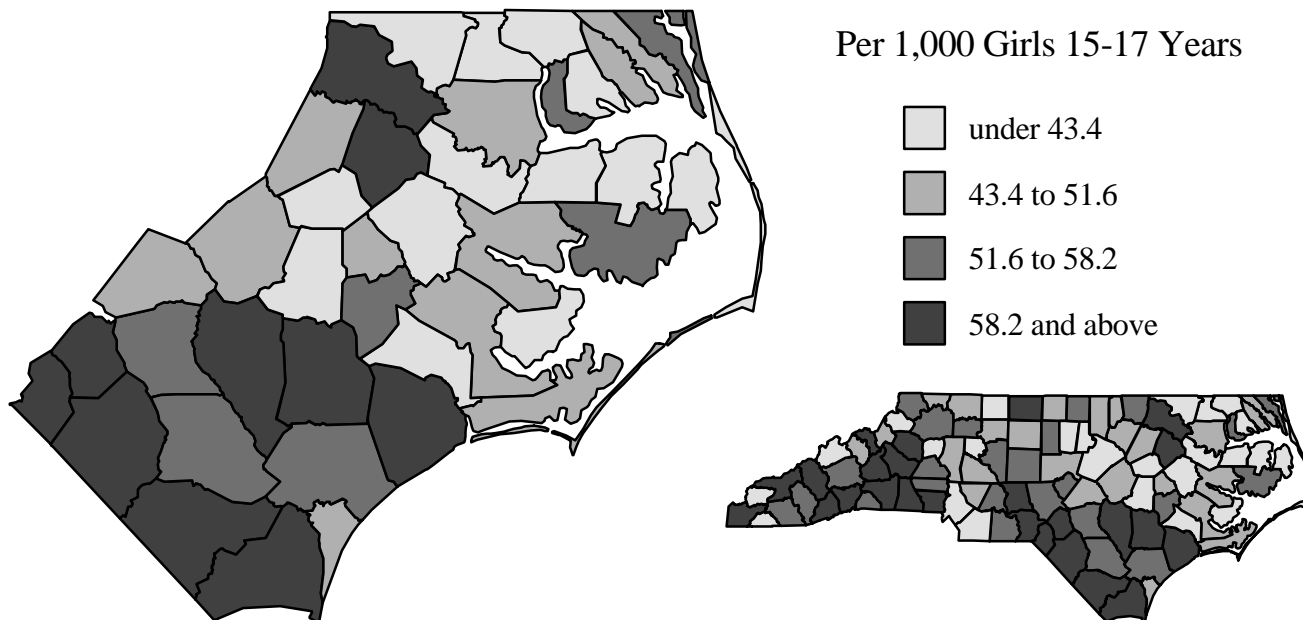
Pregnancy Rates 15 - 17 Years: 1991 - 1993



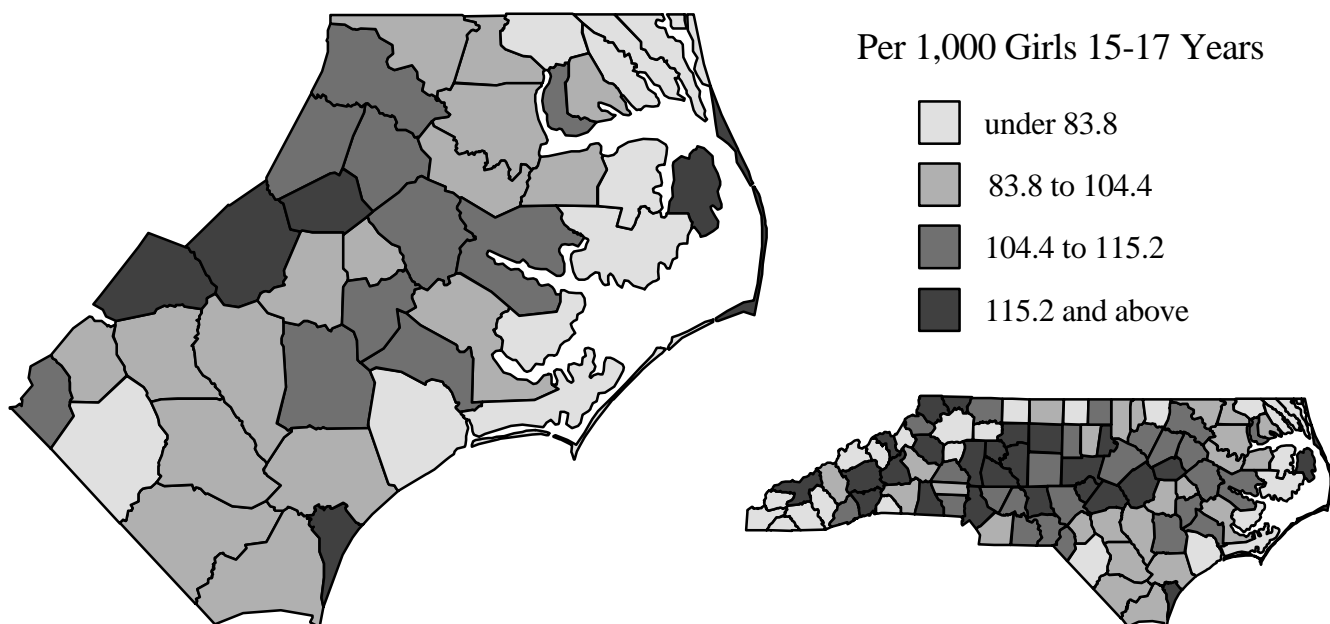
Pregnancy Rates 15 -17 Year Olds

Eastern North Carolina

White Pregnancy Rates: 1991 - 1993



Nonwhite Pregnancy Rates: 1991 - 1993



Fertility Rates, by Race Eastern North Carolina, All Women, 1993

County	Fertility Rates per 1,000 Women of Reproductive Age (15-44)					
	White		Minority		Total	
	Births	Rate	Births	Rate	Births	Rate
Beaufort	346	57.9	247	76.6	593	64.5
Bertie	70	47.7	211	67.3	281	61.0
Bladen	209	58.7	246	84.5	455	70.3
Brunswick	588	63.7	172	70.1	759	65.0
Camden	43	47.5	14	43.5	57	46.4
Carteret	573	53.6	80	59.8	653	54.3
Chowan	95	58.9	85	71.0	180	64.1
Columbus	397	56.6	307	75.7	704	63.6
Craven	1,052	79.4	439	76.9	1,492	78.7
Cumberland	3,536	84.2	2,233	78.7	5,764	81.9
Currituck	161	57.2	14	40.0	175	55.3
Dare	282	52.3	21	102.9	303	54.2
Duplin	377	67.2	237	71.8	614	68.9
Edgecombe	321	63.2	615	70.2	936	67.7
Gates	51	47.0	50	55.8	101	51.0
Greene	101	55.6	80	51.5	181	53.8
Halifax	316	60.8	620	84.9	936	74.9
Harnett	896	71.2	369	84.7	1,266	74.7
Hertford	73	40.3	234	74.0	307	61.7
Hoke	184	85.5	230	67.9	414	74.7
Hyde	43	59.3	22	54.9	65	57.7
Johnston	1,009	62.1	313	80.3	1,322	65.6
Jones	70	56.9	55	64.6	125	60.0
Lenoir	435	61.3	447	72.8	882	66.6
Martin	152	53.8	191	70.1	343	61.8
Nash	681	55.4	535	78.9	1,217	63.8
New Hanover	1,225	49.3	562	80.1	1,787	56.1
Northampton	75	53.6	200	75.9	275	68.2
Onslow	2,475	103.4	731	92.3	3,207	100.7
Pamlico	78	47.0	30	47.8	108	47.2
Pasquotank	248	57.8	215	65.9	463	61.3
Pender	273	56.6	144	68.3	417	60.2
Perquimans	84	63.4	43	59.6	127	62.1
Pitt	920	44.3	758	71.3	1,677	53.4
Robeson	493	60.7	1,448	81.7	1,941	75.1
Sampson	416	63.4	280	66.4	696	64.6
Scotland	217	50.1	321	81.5	538	65.1
Tyrrell	33	72.7	20	58.7	53	66.7
Washington	87	60.2	118	75.1	205	67.9
Wayne	849	55.7	559	61.5	1,363	56.0
Wilson	485	54.3	537	78.1	1,023	64.7
29 County Region						
	10,575	63.6	7,408	73.3	17,942	67.1
41 County Region						
	20,018	65.0	14,033	75.7	34,005	68.9
North Carolina						
	68,919	57.9	32,394	74.5	101,408	62.4
United States						
	3,149,833 ²	65.4 ¹	658,875 ²	80.5 ¹	4,000,240 ²	67.6 ¹

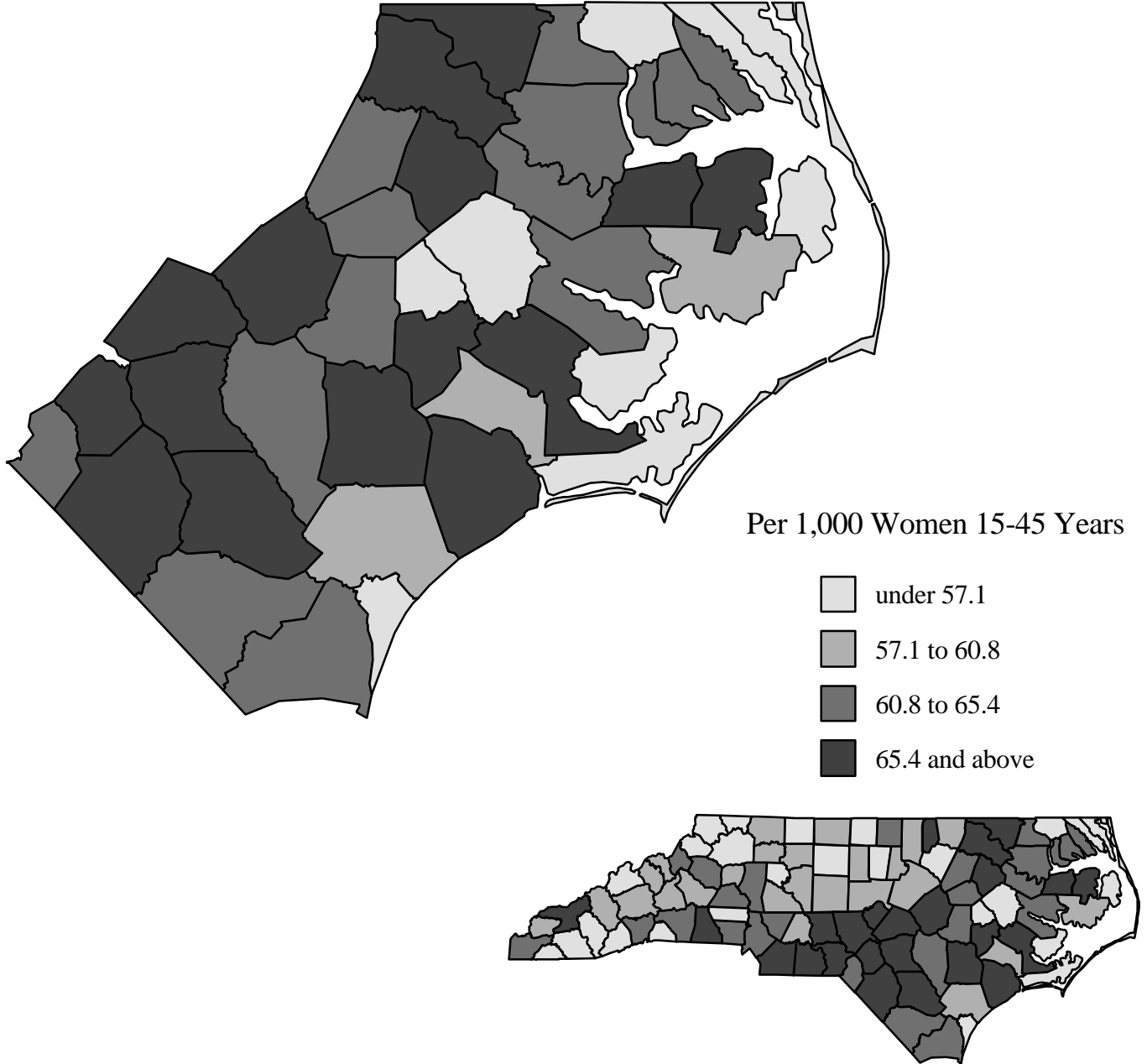
¹ Health, United States, data 1993

² Monthly Vital Statistics Report, data 1993

Fertility Rates

Eastern North Carolina

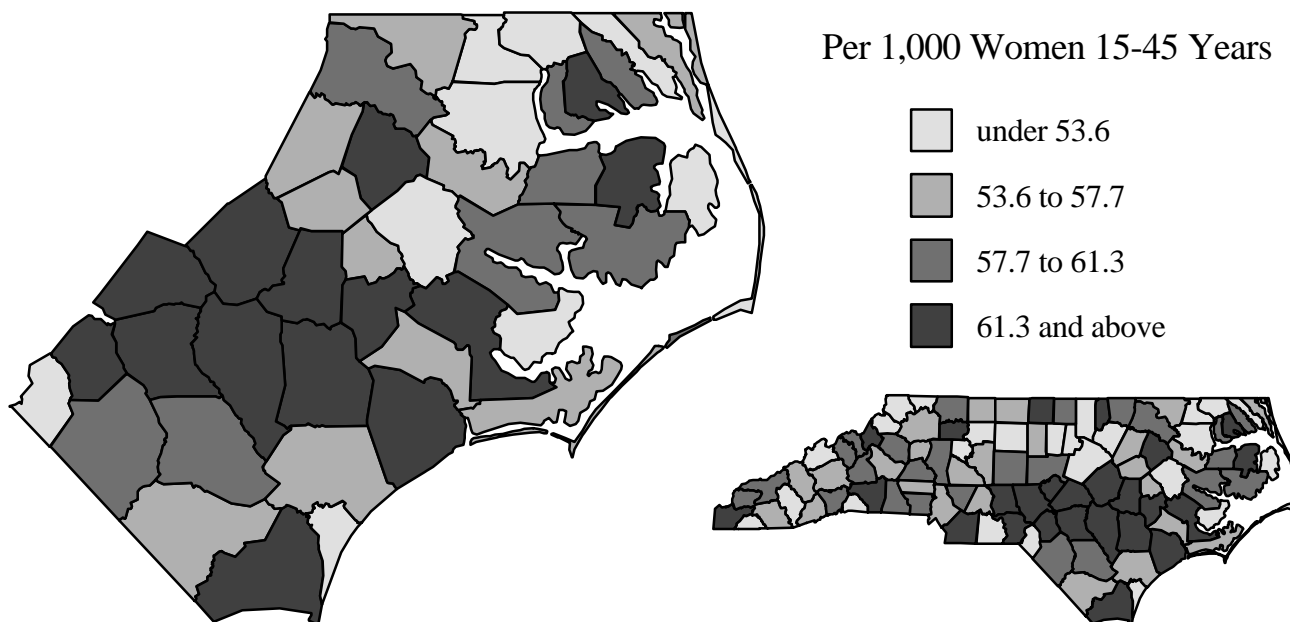
Fertility Rates for All Women: 1993



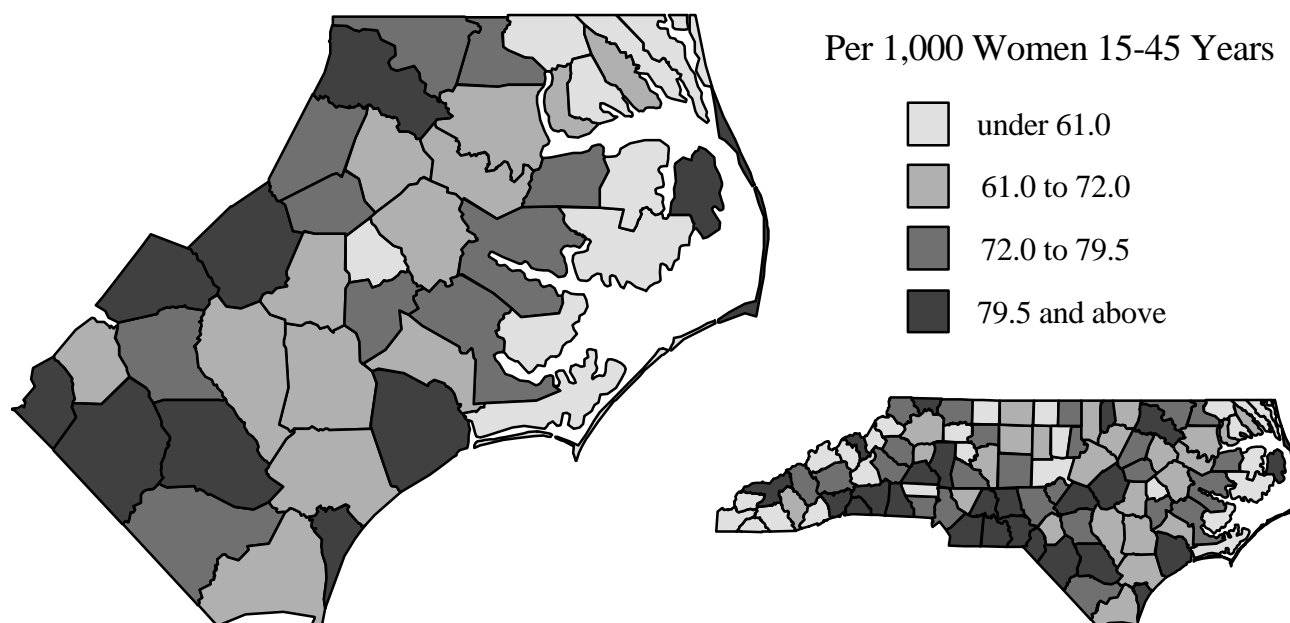
Fertility Rates

Eastern North Carolina

White Fertility Rates: 1993



Nonwhite Fertility Rates: 1993



Percent of Births to Mothers Who Smoke Eastern North Carolina, 1993

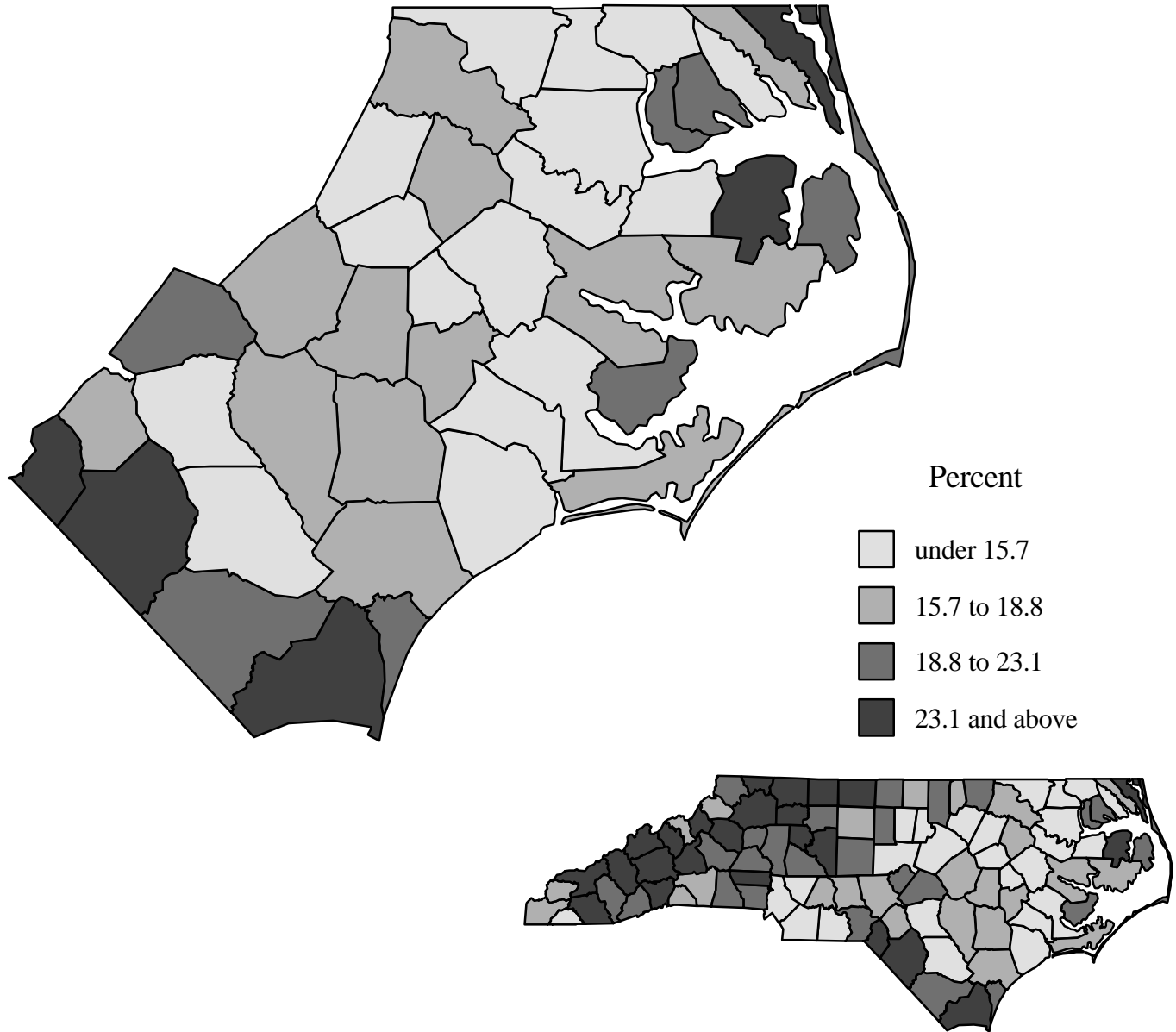
Mothers Who Smoke per 1,000 Women of Reproductive Age (15-44)		
County	Births	Rate (Percent)
Beaufort	111	18.7
Bertie	28	10.0
Bladen	59	13.0
Brunswick	213	28.0
Camden	9	15.8
Carteret	114	17.5
Chowan	41	22.8
Columbus	136	19.3
Craven	221	14.8
Cumberland	900	15.6
Currituck	49	28.0
Dare	63	20.8
Duplin	107	17.4
Edgecombe	148	15.8
Gates	13	12.9
Greene	26	14.4
Halifax	163	17.4
Harnett	287	22.7
Hertford	41	13.4
Hoke	68	16.4
Hyde	12	18.5
Johnston	223	16.9
Jones	14	11.2
Lenoir	165	18.7
Martin	51	14.9
Nash	181	14.9
New Hanover	350	19.6
Northampton	40	14.5
Onslow	481	15.0
Pamlico	24	22.2
Pasquotank	65	14.0
Pender	76	18.2
Perquimans	26	20.5
Pitt	218	13.0
Robeson	509	26.2
Sampson	119	17.1
Scotland	132	24.5
Tyrrell	13	24.5
Washington	23	11.2
Wayne	284	17.9
Wilson	127	12.4
29 County Region	2,858	15.7
41 County Region	5,930	17.3
North Carolina	17,971	17.7
United States		15.8 ¹

¹ Health, United States, data 1993

Percent of Births to Mothers Who Smoke

Eastern North Carolina

All Women: 1993



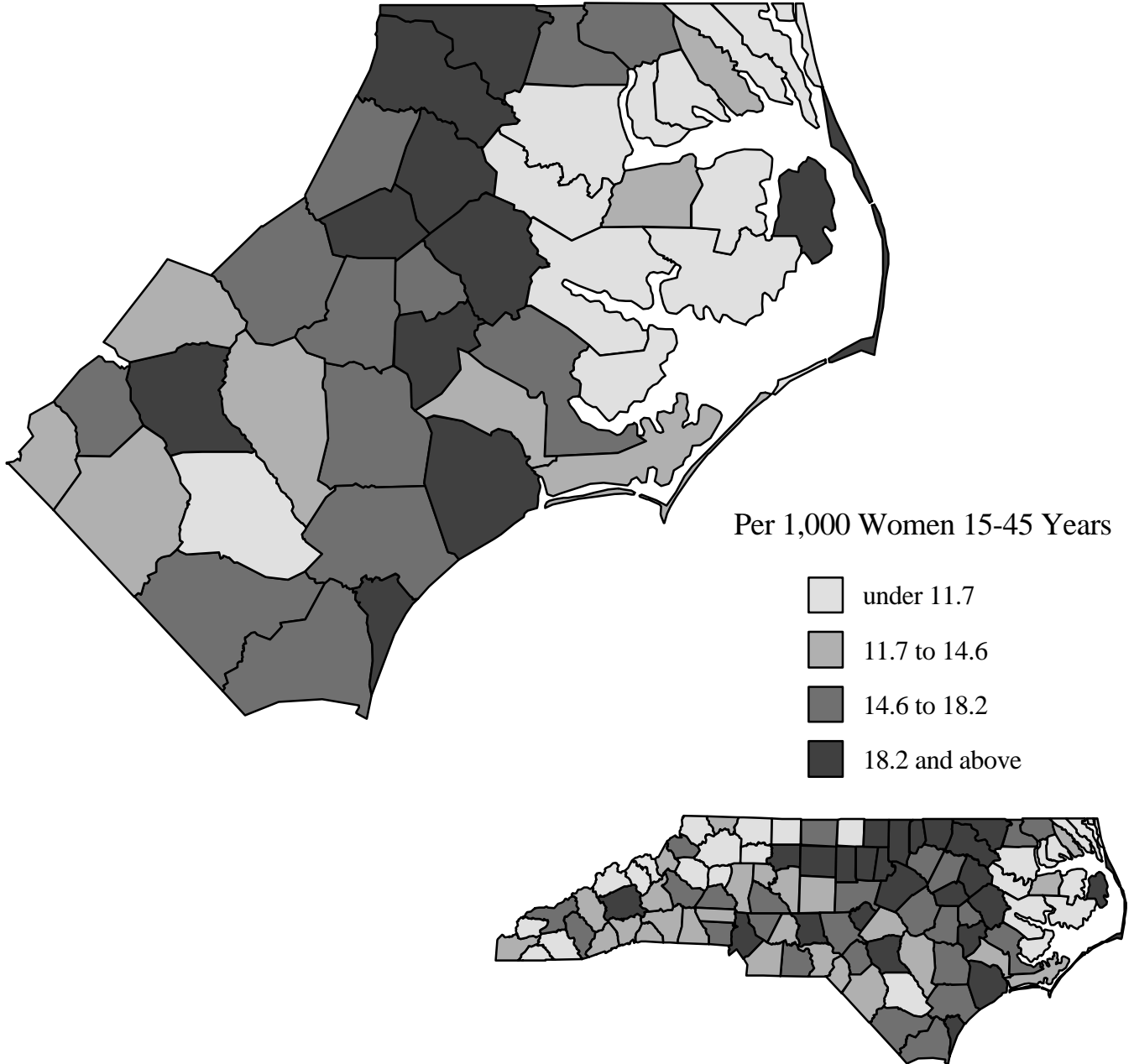
Abortion Rates Eastern North Carolina, All Women, 1993

County	Abortion Rates per 1,000 Women of Reproductive Age (15-44)	
	Total	
	Induced Abortions	Rate**
Beaufort	100	10.9
Bertie	52	11.3
Bladen	70	10.8
Brunswick	180	15.4
Camden	13	10.6
Carteret	158	13.1
Chowan	20	7.1
Columbus	192	17.4
Craven	292	15.4
Cumberland	1,759	25.0
Currituck	34	10.7
Dare	122	21.8
Duplin	145	16.3
Edgecombe	342	24.7
Gates	30	15.2
Greene	51	15.1
Halifax	231	18.5
Harnett	246	14.5
Hertford	77	15.5
Hoke	86	15.5
Hyde	8	7.1
Johnston	314	15.6
Jones	28	13.4
Lenoir	248	18.7
Martin	57	10.3
Nash	345	18.1
New Hanover	851	26.7
Northampton	78	19.3
Onslow	627	19.7
Pamlico	22	9.6
Pasquotank	105	13.9
Pender	106	15.3
Perquimans	20	9.8
Pitt	788	25.1
Robeson	352	13.6
Sampson	156	14.5
Scotland	103	12.5
Tyrrell	5	6.3
Washington	40	13.3
Wayne	255	10.5
Wilson	357	22.6
29 County Region	4,651	17.4
41 County Region	9,066	18.4
North Carolina	32,503	20.0
United States	Not Calculated	

Abortion Rates

Eastern North Carolina

Abortion Rates for All Women: 1993



Live Birth Rates Eastern North Carolina, 1989-93

County	Birth Rates per 1,000 Population					
	White		Minority		Total	
	Births	Rate	Births	Rate	Births	Rate
Beaufort	1,734		1,313	19.8	3,047	14.3
Bertie	400		1,102	17.4	1,502	14.7
Bladen	1,022		1,127	18.9	2,149	14.6
Brunswick	2,710		913	18.5	3,623	13.6
Camden	262		100	13.1	362	12.0
Carteret	3,067		375	15.0	3,442	12.8
Chowan	502		464	17.6	966	14.0
Columbus	2,025		1,729	20.5	3,754	14.9
Craven	5,517		2,425	21.2	7,942	19.2
Cumberland	17,203		11,471	22.0	28,674	20.5
Currituck	865		101	12.3	966	13.6
Dare	1,516		89	17.4	1,605	13.8
Duplin	1,837		1,288	18.6	3,125	15.2
Edgecombe	1,551		3,234	20.1	4,785	16.7
Gates	300		325	15.0	625	13.1
Greene	486		517	15.3	1,003	12.6
Halifax	1,585		3,089	20.7	4,674	16.6
Harnett	4,259		1,944	23.6	6,203	17.9
Hertford	445		1,297	19.4	1,742	15.4
Hoke	830		1,311	19.3	2,141	18.1
Hyde	215		152	17.2	367	13.4
Johnston	4,988		1,636	21.3	6,624	15.7
Jones	388		302	16.0	690	14.5
Lenoir	2,155		2,167	18.6	4,322	14.8
Martin	788		1,071	18.8	1,859	14.6
Nash	3,443		2,703	21.9	6,146	15.8
New Hanover	6,050		2,705	20.8	8,755	14.1
Northampton	416		1,117	17.9	1,533	14.4
Onslow	12,765		3,851	22.2	16,616	22.8
Pamlico	433		216	14.4	649	11.4
Pasquotank	1,330		1,108	18.6	2,438	15.4
Pender	1,356		801	17.3	2,157	14.3
Perquimans	372		299	17.1	671	12.6
Pitt	4,610		3,982	21.2	8,592	15.6
Robeson	2,517		7,215	21.2	9,732	18.2
Sampson	2,025		1,461	17.1	3,486	14.3
Scotland	1,239		1,636	21.8	2,875	16.8
Tyrrell	126		126	16.5	252	12.9
Washington	437		639	19.9	1,076	15.3
Wayne	4,996		3,276	18.6	8,272	15.7
Wilson	2,402		2,600	20.6	5,002	15.0
29 County Region						
	54,943	#DIV/0!	39,328	19.7	94,271	16.3
41 County Region						
	101,167	#DIV/0!	73,277	20.2	174,444	16.7
North Carolina						
	348,430	13.6	165,667	20.3	514,097	15.2
United States						
	3,149,833 ²	14.7 ¹	658,875 ²	20.5 ¹	4,000,240 ²	15.5 ¹

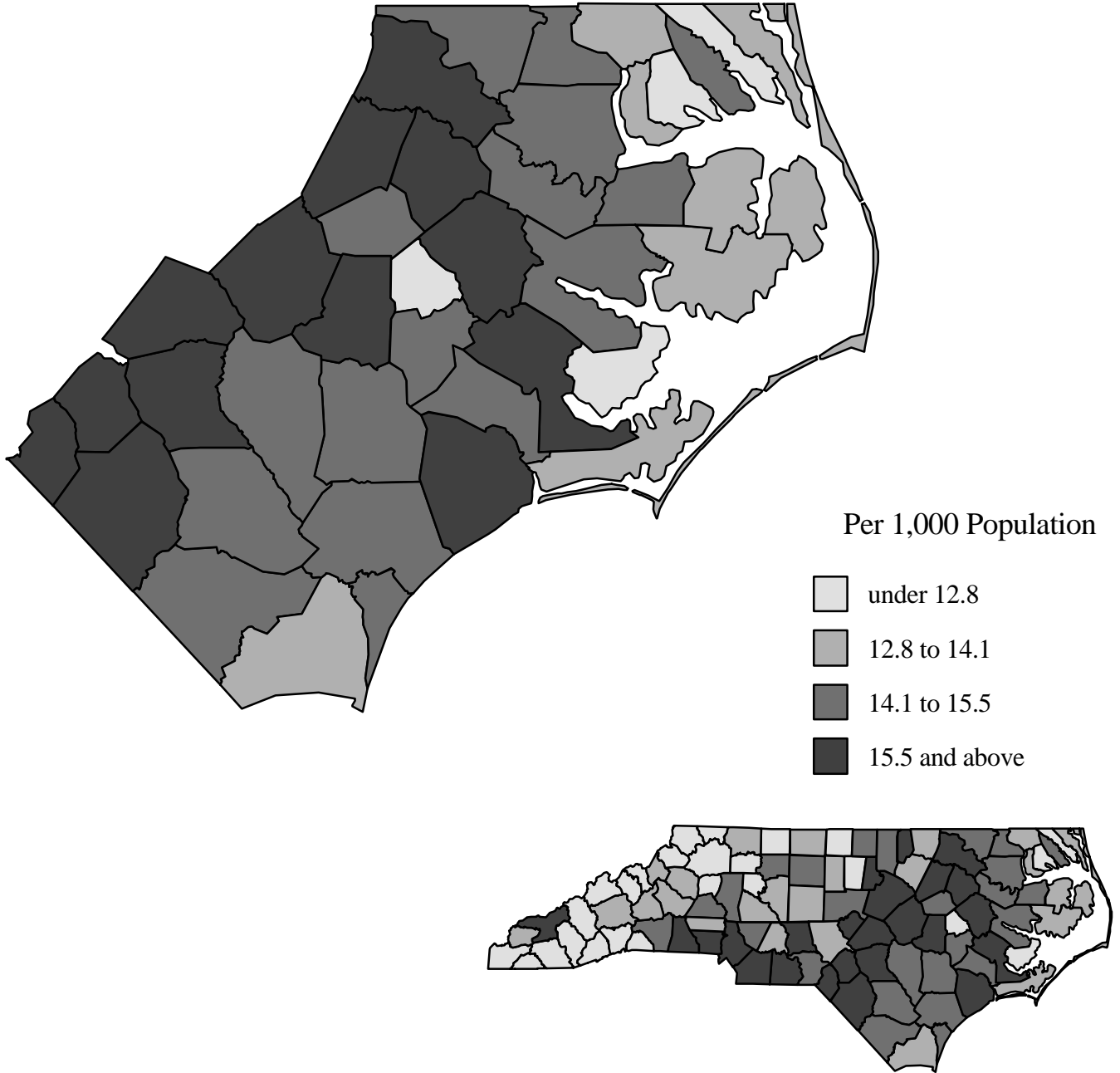
¹ Health, United States, data 1993

² Monthly Vital Statistics Report, data 1993

Live Birth Rates

Eastern North Carolina

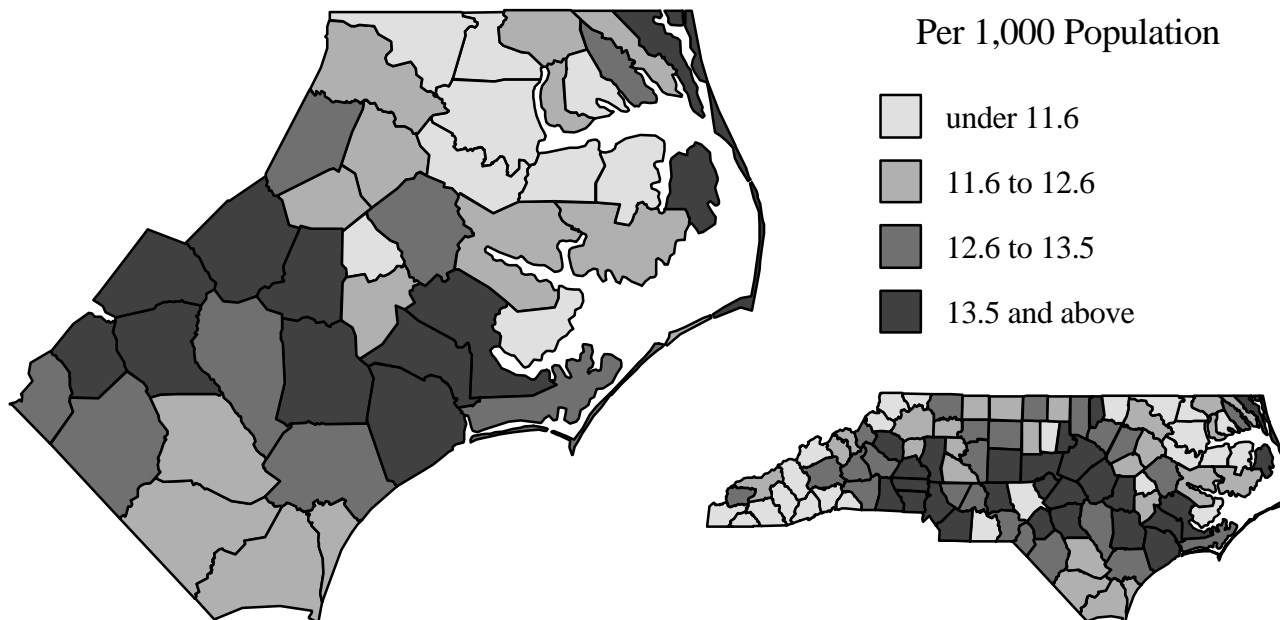
Total Live Birth Rates: 1989 - 1993



Live Birth Rates

Eastern North Carolina

White Live Birth Rates: 1989 - 1993



Nonwhite Live Birth Rates: 1989 - 1993

