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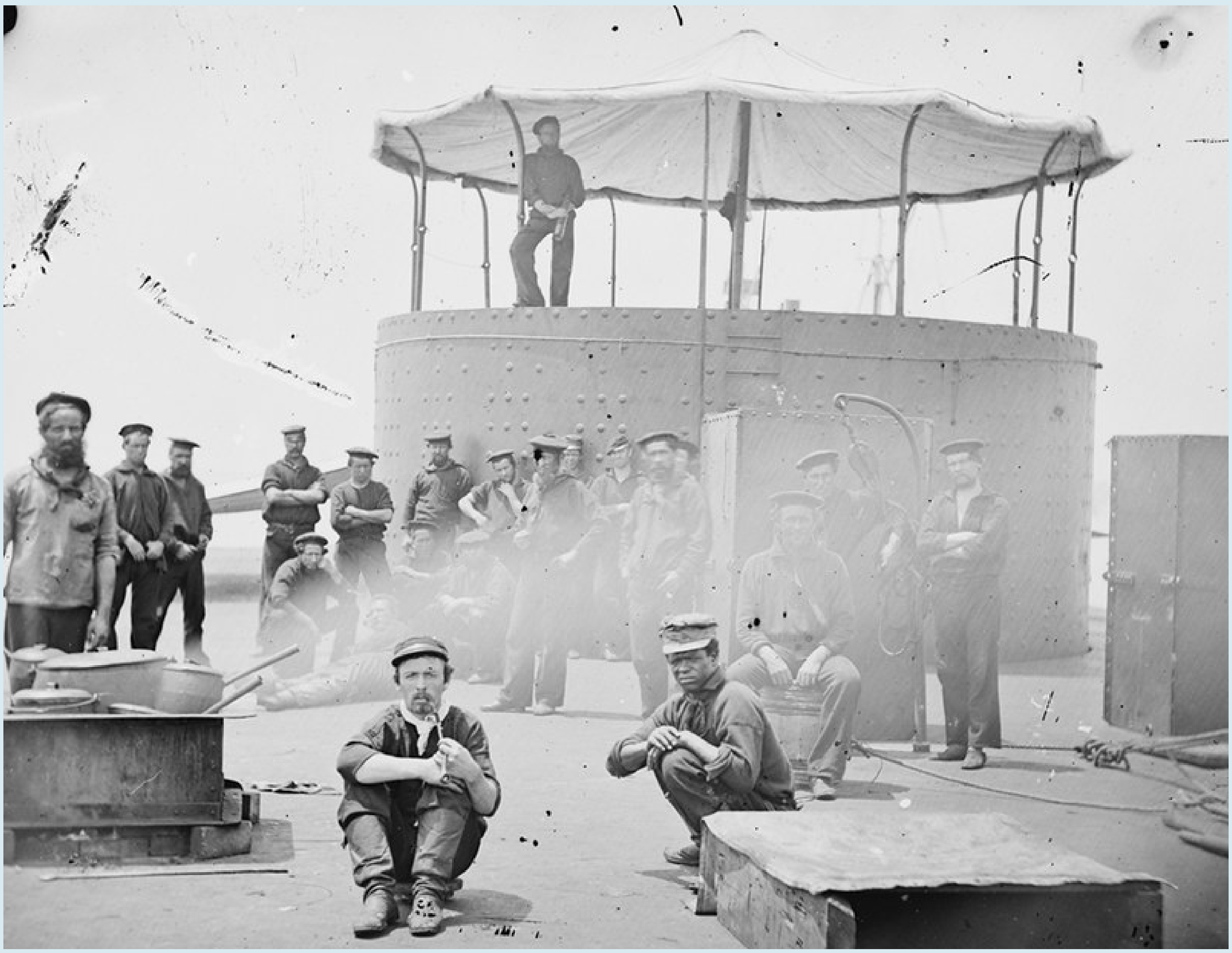
Monitor National Marine Sanctuary Study Area Profile



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The crew of *Monitor* photographed on July 9, 1862. Image courtesy of Library of Congress

NATIONAL MARINE SANCTUARIES

About the National Marine Sanctuaries Conservation Series

The Office of National Marine Sanctuaries, part of the National Oceanic and Atmospheric Administration, serves as the trustee for a system of underwater parks encompassing more than 600,000 square miles of ocean and Great Lakes waters. The 14 national marine sanctuaries and two marine national monuments within the National Marine Sanctuary System represent areas of America's ocean and Great Lakes environment that are of special national significance. Within their waters, humpback whales breed and calve their young, coral colonies flourish, and shipwrecks tell stories of our nation's maritime history. Habitats include beautiful coral reefs, lush kelp forests, whale migration corridors, spectacular deep-sea canyons, and underwater archaeological sites. These special places also provide homes to thousands of unique or endangered species and are important to America's cultural heritage. Sites range in size from less than one square mile to almost 583,000 square miles. They serve as natural classrooms and cherished recreational spots, and are home to valuable commercial industries.

Because of considerable differences in settings, resources, and threats, each marine sanctuary has a tailored management plan. Conservation, education, research, monitoring, and enforcement programs vary accordingly. The integration of these programs is fundamental to marine protected area management. The National Marine Sanctuaries Conservation Series reflects and supports this integration by providing a forum for publication and discussion of the complex issues currently facing the sanctuary system. Topics of published reports vary substantially and may include descriptions of educational programs, discussions on resource management issues, and results of scientific research and monitoring projects. The series facilitates integration of natural sciences, socioeconomic and cultural sciences, education, and policy development to accomplish the diverse needs of NOAA's resource protection mandate. All publications are available on the Office of National Marine Sanctuaries website (http://www.sanctuaries.noaa.gov).

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Abstract

This report gives an economic and demographic profile of the region surrounding Monitor National Marine Sanctuary (MNMS). In order to properly analyze the impact of sanctuary management decisions, it is essential to know the economic landscape of the surrounding region. The findings of this profile report will help assess the relationship between the sanctuary and nearby counties. By characterizing the area where most of the social and economic impacts of activities taking place within the sanctuary occur, sanctuary management has an increased understanding of the community around the sanctuary.

Economic and demographic indicators show that growth is occurring in the study area. However, this growth is often lower in the study area than in both the United States and North Carolina. Employment and income by sector show that a very large portion of the regional economy is related to government and government enterprises. Visitation to national and state parks near the sanctuary are high relative to regional population, with over 7 million total visits per year compared to roughly 680,000 residents. Visitation trends to individual parks are mixed although the number of visits has increased overall.

Key Words

Monitor National Marine Sanctuary, study area profile, North Carolina, visitation, demographics, population, local and regional economies

CHAPTER 1: INTRODUCTION

Monitor National Marine Sanctuary (MNMS) became the first U.S. national marine sanctuary when it was established in 1975. Like many historical sites on the East Coast, MNMS is based on a battlefield—but not just any battlefield. Its namesake, the USS *Monitor*, was a history-making vessel in the Civil War as the Union's first ironclad. *Monitor* sank off the coast of Cape Hatteras, North Carolina, in 1862 during a storm, and its resting site is protected by the sanctuary. The sanctuary is proposing to expand to preserve relics from, and educate people about, the World War II Battle of the Atlantic, especially the ships and almost 1,600 men who were lost off the coast of North Carolina.

Study area profiles provide the basis of analysis to establish the dependencies of local communities/economies on uses of resources in the sanctuary and for assessing how people can adapt to or mitigate policy/management changes that are estimated to impact their levels of use. Profiles include a county or collection of counties where the majority of economic impacts (e.g., sales/output, income, and employment) and social impacts take place that are associated with use of sanctuary resources. A standard profile includes information on population, population density, demographics of the study area population (e.g., sex, race/ethnicity, and age), poverty rate, unemployment rate, income by place of work/industry, employment by industry, income by place of residence, and per capita income. All of these measurements are available from existing sources and can be easily updated.

To support the proposed expansion of Monitor National Marine Sanctuary, this study area evaluates the above metrics for alternatives 2, 3 and 4 of the draft environmental impact statement. Although they are different proposals, alternatives 2, 3, and 4 have the same study areas.

The study area consists of both primary and secondary counties. Primary counties are chosen if they are adjacent to the sanctuary. After the primary counties are selected, secondary counties are determined by looking at commuter flow data from the 5-Year American Community Survey. If a large number of people in a county are commuting to or from primary counties, that county is selected as a secondary county. If total flows to or from primary counties were above 5,000, that county was identified as a secondary county.

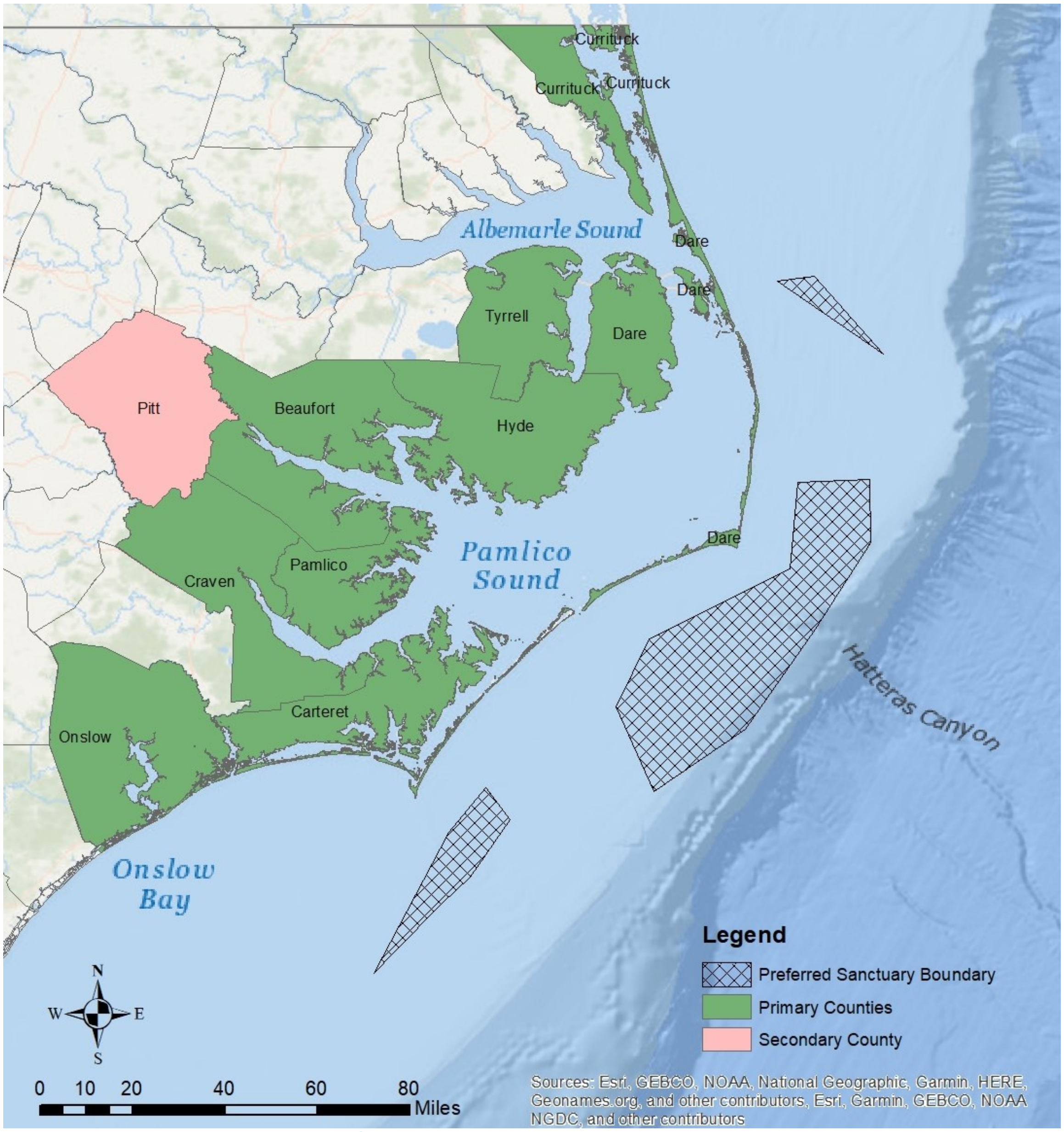

Figure 1.1 Monitor National Marine Sanctuary study area counties.
Image: NOAA/ONMS

CHAPTER 2: POPULATION AND KEY MEASUREMENTS OF THE STUDY AREA ECONOMY

Population is a major driver of any study area. When assessing the conditions of sanctuary resources in MNMS, population is key to determining the pressures placed on sanctuary resources, but many in the population are also beneficiaries of the ecosystem services generated from sanctuary resources. Ecosystem services are commonly defined as benefits people obtain from ecosystems (United States Forest Service). Here, information is presented on the total population by county, population density by county, population growth for the study area, and projected population growth for the study area. For economic status of the study area, per capita income, poverty rates, and unemployment rates are used as key indicators. The study area is compared to the United States and North Carolina for status and trends in selected measures.

Population

The study area population covers 10 North Carolina counties with a population of over 680,000 in 2018, which is approximately 6.6% of North Carolina's total population. The most populated county in the study area is Onslow, with a population of over 197,000 people. The least populated county is Tyrell, with a population of approximately 4,000 people (Table 2.1).

Population Growth

From the periods of 1970 to1980 and 1980 to1990, the population in the study area had growth rates of 18.0% and 22.8%, respectively. This growth rate was faster than that of North Carolina and the United States for the same time periods. From 1990 to 2000, the study area had a population growth rate of about 12%. This growth was slower than both the United States and North Carolina during this same time period. From 2000 to 2010 and 2010 to 2018 the population in the study area grew faster than the United States but slower than North Carolina (Table 2.1).

Projected Population Growth

For the period 2018 to 2050, the study area's population is projected to grow faster than the United States for all time periods. From 2018 to 2030 (the years for which state projections are available), the study area's growth rate is projected to be slower than the growth rate for North Carolina. Population growth in the study area is expected to decrease over time according to Woods and Poole projections (Table 2.2).

Population Density

Population density is an indicator of potential pressures that the study area's population might have on resources in the sanctuary. The total population density in the study area is lower than in North Carolina but higher than in the United States. There is some variation in population density among counties in the study area. Tyrell is the least dense with 10.6 people per square mile, and Pitt is the densest with 276.1 people per square mile (Table 2.1).

Table 2.1 Selected socioeconomic measures for description of the study area

County	2018 Population	Population Change (%) 2010-2018	2018 Population Density[1]	Per Capita Income (2017)	Percent in poverty (2017)	Unemployment Rate (May 2019)
Beaufort	47,079	-1.4%	56.9	$40,926	22.0%	4.7%
Carteret	69,524	4.6%	133.7	$47,871	27.2%	4.9%
Craven	102,912	-0.6%	145.3	$42,367	20.7%	4.8%
Currituck	27,072	15.0%	103.4	$44,149	11.9%	5.0%
Dare	36,501	7.6%	95.2	$53,415	11.5%	3.1%
Hyde	5,230	-10.0%	8.5	$41,283	16.6%	3.9%
Onslow	197,683	11.2%	257.8	$44,972	11.1%	3.7%
Pamlico	12,670	-3.6%	37.6	$40,637	16.3%	4.3%
Pitt	179,914	7.0%	276.1	$39,900	8.0%	3.9%
Tyrrell	4,131	-6.3%	10.6	$30,876	13.3%	4.2%
Study area	682,716	5.9%	125.1	$43,425	15.7%	4.1%
North Carolina	10,383,620	8.5%	213.2	$44,222	14.7%	4.0%
United States	327,167,434	5.8%	92.5	$51,640	13.0%	3.6%

1. Number of people per square mile of land area

Sources: U.S. Department of Commerce Bureau of the Census and U.S. Department of Labor Bureau of Labor Statistics

Table 2.2 Population growth

Population Growth (Percent Change)	Study Area	North Carolina	United States
1970 to 1980	18.04%	15.72%	11.48%
1980 to 1990	22.79%	12.71%	9.78%
1990 to 2000	11.92%	21.43%	13.15%
2000 to 2010	18.61%	18.95%	9.92%
2010 to 2018	5.93%	8.45%	5.77%

Table 2.3 Population projected growth

Population Projection Growth (Percent Change)[1]	Study Area	North Carolina	United States
2018 to 2020	2.79%	3.14%	1.67%
2020 to 2030	11.07%	14.18%	6.75%
2030 to 2040	9.53%	--	5.19%
2040 to 2050	8.07%	--	4.12%
2050 to 2060	--	--	4.00%

1. Woods and Poole would not authorize NOAA to report U.S. and Washington projections. State projections come from the Centers for Disease Control and Prevention (CDC). National projections come from the Bureau of the Census.

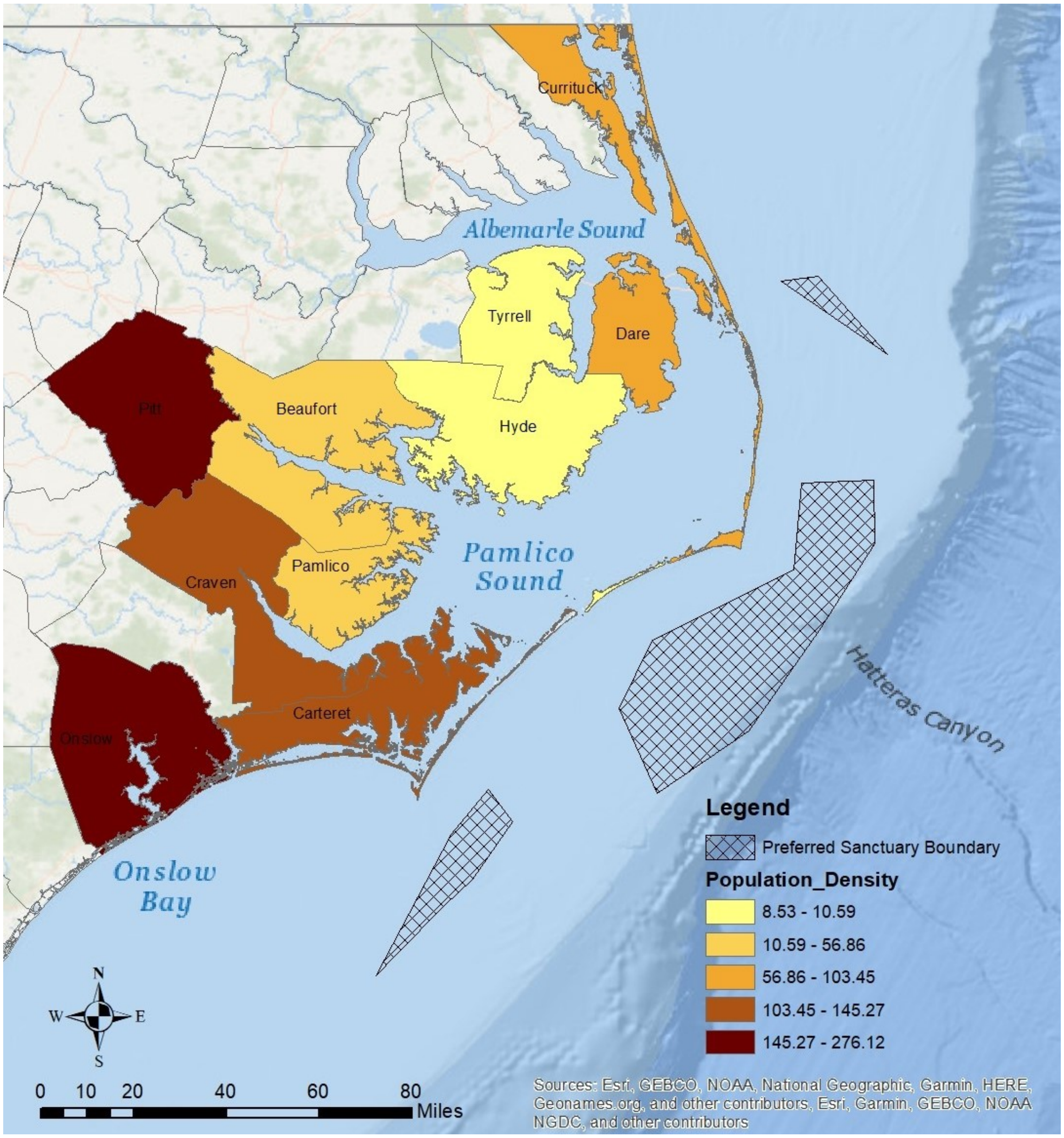

Figure 2.1 Population density in the study area
Image: NOAA/ONMS
Sources: U.S. Department of Commerce Bureau of the Census and U.S. Department of Labor Bureau of Labor Statistics

Per Capita Income

Per capita income is an indicator for the health and economic status of a community. From 2010 to 2017 per capita income in the study area rose, which is a similar trend to both North Carolina and the United States. Per capita income in the study area has been consistently lower than the United States but fairly similar to that of North Carolina (Table 2.3 and Figure 2.2).

Table 2.4 Changes in per capita income in the study area versus the U.S. and North Carolina

Area	North Carolina	United States	Study Area
2010	$35,592	$40,545	$36,951
2011	$36,665	$42,727	$38,173
2012	$38,854	$44,582	$39,349
2013	$38,078	$44,826	$39,122
2014	$39,976	$47,025	$40,305
2015	$41,814	$48,940	$41,406
2016	$42,707	$49,831	$42,888
2017	$44,222	$51,640	$43,425

Source: U.S. Department of Commerce Bureau of Economic Analysis Regional Economic Information System

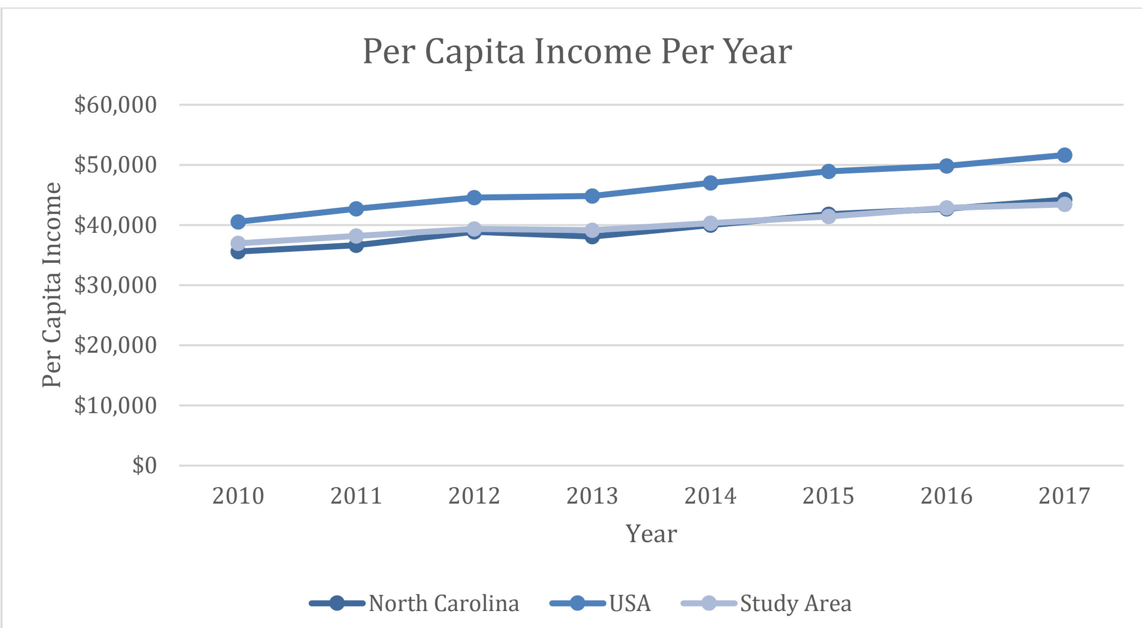

Figure 2.2 Changes in per capita income per year in the study area versus the U.S. and North Carolina
Source: U.S. Department of Commerce Bureau of Economic Analysis Regional Economic Information System

Unemployment Rates

Another indicator of study area economic health is the unemployment rate. In 2010 the unemployment rate in the study area was 10%, which was higher than the United States but lower than North Carolina. Since 2011, the unemployment rate has fallen but has not been lower than either the United States or North Carolina (Table 2.4 and Figure 2.3).

Table 2.5 Changes in in unemployment rate in the study area versus the U.S. and North Carolina

Year	United States	North Carolina	Study Area
2010	9.6%	10.9%	10.0%
2011	9.0%	10.1%	10.0%
2012	8.2%	9.2%	9.3%
2013	7.5%	8.1%	8.3%
2014	6.3%	6.4%	6.7%
2015	5.6%	6.1%	6.2%
2016	4.8%	4.8%	5.6%
2017	4.4%	4.3%	4.9%
2018	3.9%	3.7%	4.4%

Source: U.S. Department of Labor Bureau of Labor Statistics

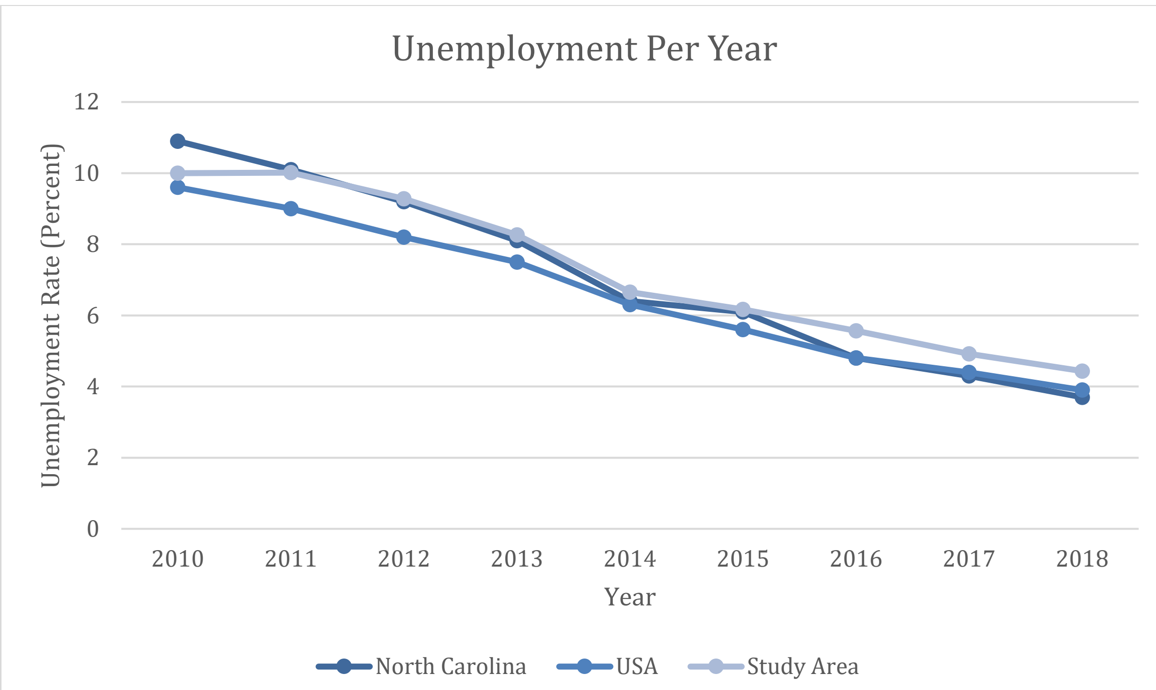

Figure 2.3 Changes in in unemployment rate in the study area versus the U.S. and North Carolina
Source: U.S. Department of Labor Bureau of Labor Statistics

CHAPTER 3: DEMOGRAPHIC PROFILES

For demographic profiles, gender, race/ethnicity, and age were chosen as the most important population characteristics. Race and ethnicity are treated separately in the U.S. Census. Racial categories include White; Black or African American; Asian; Alaskan Native or Native American; Native Hawaiian or Other Pacific Islander; and Multiple Races. In the census, ethnicity determines whether a person is of Hispanic origin or not. For this reason, ethnicity is broken out in two categories, Hispanic or Latino and Not Hispanic or Latino. Hispanic people may report as any race (Bureau of the Census).

Gender

The census asks whether a person is male or female. Gender distribution in the study area has remained relatively constant from 2010 to 2018. The percentage of males in the study area has only fluctuated from 51.0% to 50.5% during this time period. Correspondingly, the percentage of females in the study area has fluctuated from 49.0% to 49.5%, as the U.S. Census does not recognize a category for gender fluid, third gender, or a gender people. The study area has a higher percentage of males than both the United States and North Carolina (Figure 3.1).

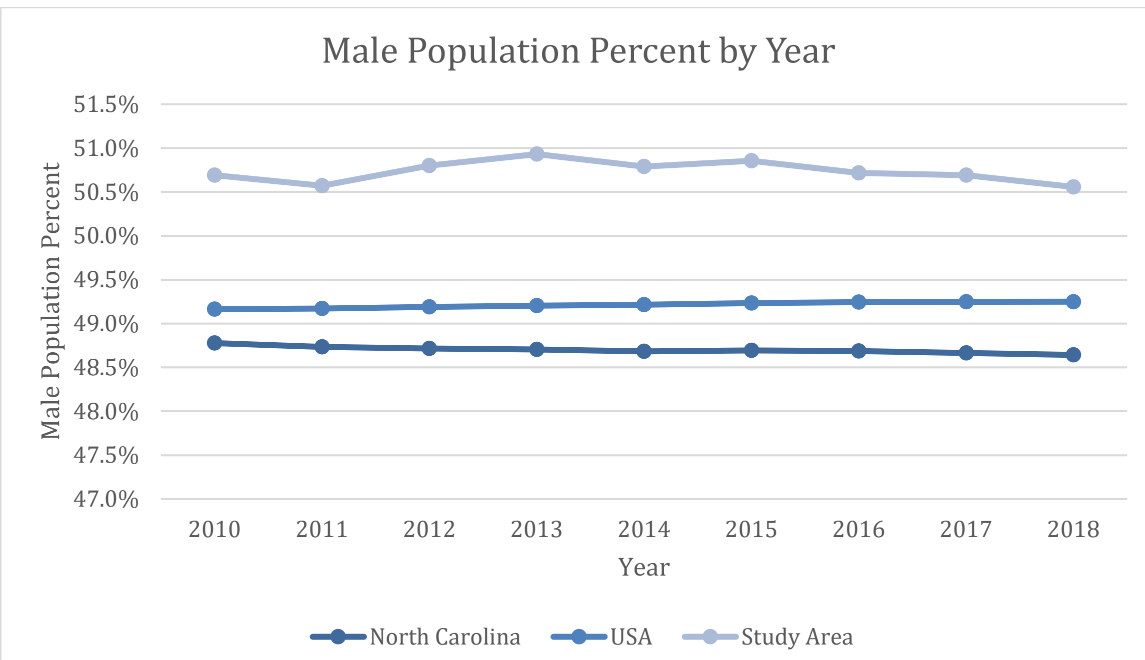

Figure 3.1 Changes in male population percentage in the study area versus the U.S. and North Carolina
Source: U.S. Department of Commerce US Census Bureau

Race/Ethnicity

In 2018, the proportion of the study area population that self-identified as White was higher than that of the United States and North Carolina. The percentage of people self-identified as Black was higher in the study area than that of the United States but is similar to the percentage in North Carolina. The United States had a higher percentage of Hispanic and Asian people than both North Carolina and the study area in 2018. The race/ethnicity distribution in the study area has not changed much from 2010-2016; however, the percentage of White people has fallen slightly, while the percentage of Hispanic people has risen slightly (Figure 3.2 and Table 3.1).

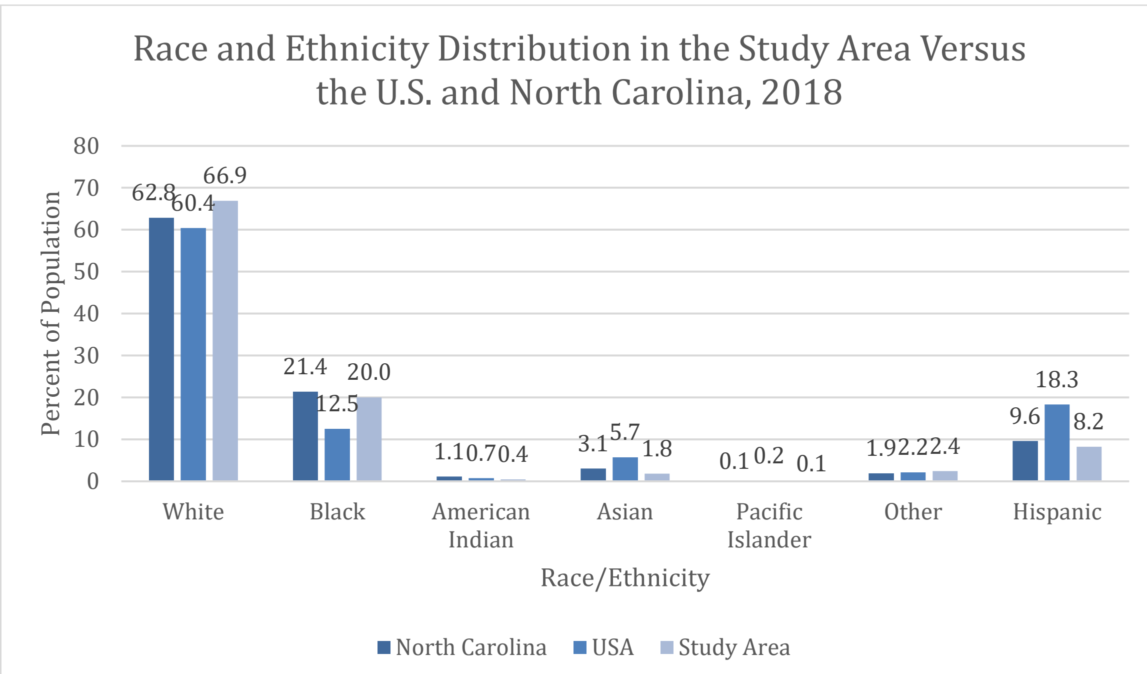

Figure 3.2 Race and ethnicity in the study area versus the U.S. and North Carolina, 2018
Source: U.S. Department of Commerce US Census Bureau

Table 3.1 Race and ethnicity in the study area, 2010 to 2018

Year	White	Black	American Indian	Asian	Pacific Islander	2 or More Races	Hispanic
2010	69.0%	20.2%	0.4%	1.4%	0.1%	2.0%	6.8%
2011	68.8%	20.1%	0.4%	1.5%	0.1%	2.1%	7.0%
2012	68.5%	20.0%	0.4%	1.5%	0.1%	2.2%	7.3%
2013	68.2%	19.9%	0.4%	1.6%	0.1%	2.2%	7.5%
2014	67.9%	20.0%	0.4%	1.6%	0.1%	2.3%	7.7%
2015	67.6%	20.0%	0.4%	1.7%	0.1%	2.3%	7.9%

2016	67.4%	20.0%	0.4%	1.7%	0.1%	2.3%	8.0%
2017	67.1%	20.1%	0.4%	1.8%	0.1%	2.4%	8.1%
2018	66.9%	20.0%	0.4%	1.8%	0.1%	2.4%	8.2%

Source: U.S. Department of Commerce US Census Bureau

Age

The percentage of people between ages 20 to 29 is much higher in the study area than it is in North Carolina and the United States. The percentage of people between ages 40 and 49 and 50 and 59 is lower in the study area than in both North Carolina and the United States. The number of people in age groups 60 to 69 and 70 to 79 rose in the study area from 2010 to 2018, while the number people in age group 40 to 49 declined (Figure 3.4 and Table 3.2).

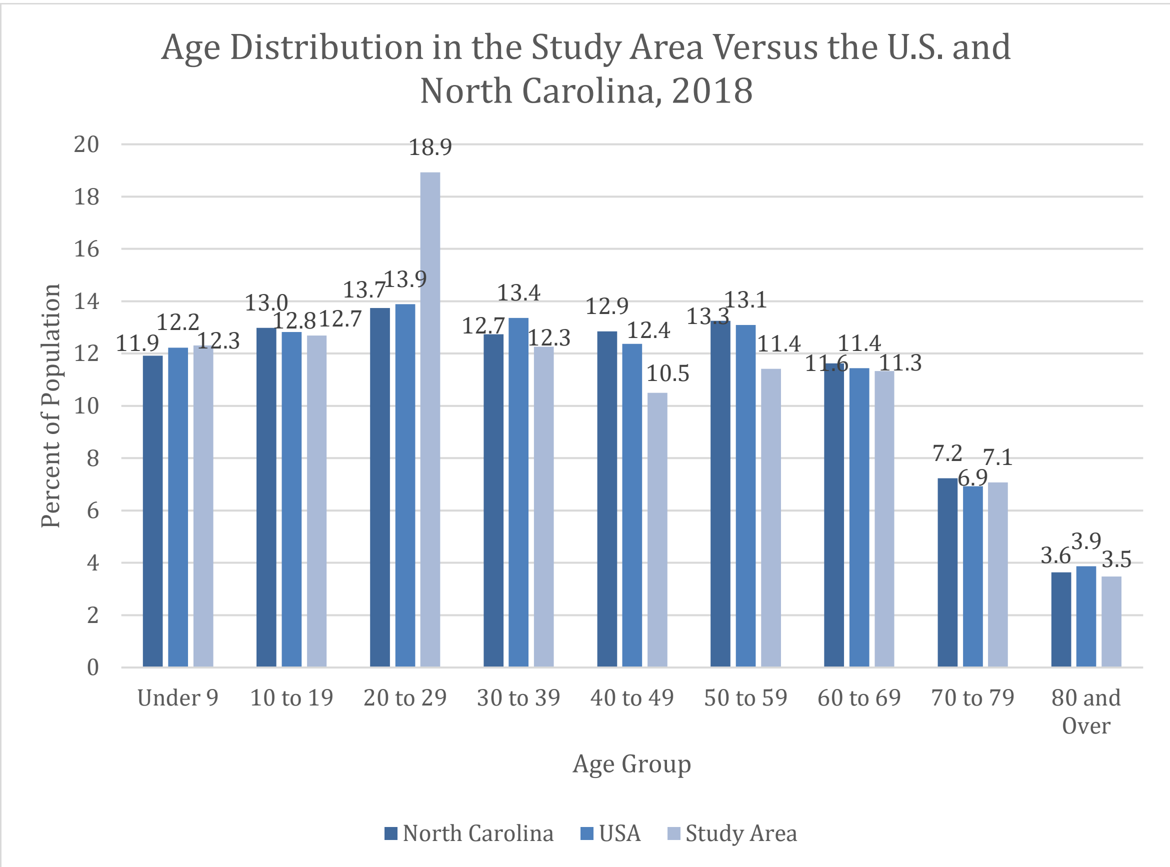

Figure 3.3 Age distributions in the study area versus the U.S. and North Carolina, 2018
Source: U.S. Department of Commerce US Census Bureau

Table 3.2 Age distribution in the study area, 2010 to 2018

Age Group	2010	2011	2012	2013	2014	2015	2016	2017	2018
Under 9	13.2%	13.3%	13.2%	13.2%	13.1%	12.8%	12.6%	12.4%	12.3%
10 to 19	13.3%	12.9%	12.7%	12.6%	12.5%	12.6%	12.6%	12.7%	12.7%
20 to 29	19.7%	19.8%	20.3%	20.4%	20.0%	19.9%	19.5%	19.2%	18.9%
30 to 39	11.9%	11.8%	11.8%	11.8%	12.0%	12.0%	12.2%	12.2%	12.3%
40 to 49	11.9%	11.7%	11.3%	11.0%	10.8%	10.6%	10.6%	10.5%	10.5%
50 to 59	12.4%	12.4%	12.3%	12.2%	12.1%	12.0%	11.9%	11.7%	11.4%
60 to 69	9.4%	9.7%	9.8%	10.0%	10.3%	10.6%	11.0%	11.1%	11.3%
70 to 79	5.3%	5.4%	5.5%	5.7%	6.0%	6.1%	6.3%	6.8%	7.1%
80 and Over	2.9%	3.0%	3.1%	3.1%	3.2%	3.3%	3.4%	3.4%	3.5%

Source: U.S. Department of Commerce US Census Bureau

CHAPTER 4: ECONOMIC PROFILE

The previous section addressed key indicators of the health of the economy using per capita income, poverty rates, and unemployment rates. This section looks at the total personal income generated within the study area (income by place of work) and income received by residents of the study area (income by place of residence). The U.S. Department of Commerce Bureau of Economic Analysis maintains the national income accounts for both these measures. People who live in a given area often receive income not derived by work in the area where they live. Many people commute to places of work outside the county where they live. People receive interest, dividends, and capital gains from investments. Retirees receive pensions and social security payments. The unemployed receive unemployment compensation. Income by place of work as a percentage of income by place of residence is usually a good indicator of whether an area has a significant retirement community. If this ratio is relatively low, then this may be an indicator of a large retirement income. Sources of income not tied to the status of work in the local economy can provide more resilience to the economy, making it less subject to ups and downs of local employment opportunities.

The labor force and total employment, and their respective growth rates, are good indicators of a healthy or stagnant economy and the opportunities for employment. These are important elements in assessing whether people can adapt to changes in resource management/policy decisions that may displace them from resource use.

Economic measures related to proprietors (business owners) are analyzed, such as proprietors' income, proprietors' employment, and the proportion of the study area's income and employment accounted for by proprietors. Proprietor activity is usually an indicator of small businesses and their contributions to the local economy, which are often connected to resource use in the sanctuary (e.g., commercial fishing operations and recreation-tourist related businesses).

This section also explores personal income and employment by industry sector, which are important for economic impact analyses of resource management/policy decisions. Linking the spending in the local economy, as related to resource use in the sanctuary, to economic sectors allows for the use of input-output models such as IMPLAN (MIG 2010). The IMPLAN model can estimate the multiplier impacts on the local economy and assess the proportion of the local economy affected by resource use in the sanctuary.

Income and employment by sector, is also important for understanding how resilient a local economy may be to change. High concentrations of employment across a few sectors may indicate that the health of the economy has a higher level of dependence on specific industries compared to a region that has employment spread across many sectors.

Labor Force

In 2018, there were over 289,000 people in the study area labor force, which is approximately 5.8% of the North Carolina labor force. From 2010 to 2018, the labor force in the study area grew at a slower rate than that of North Carolina, except from 2011 to 2012 when the growth in the study area was slightly higher than in North Carolina (Table 4.1, Table 4.2, and Figure 4.1).

Table 4.1 Labor force, 2010 to 2018

Year	North Carolina Total	Study Area Total
2010	4,616,705	285,359
2011	4,633,079	284,457
2012	4,680,067	288,007
2013	4,692,945	287,193
2014	4,696,796	285,569
2015	4,770,870	286,530
2016	4,860,272	287,788
2017	4,938,087	290,322
2018	4,981,845	289,621

Source: U.S. Department of Labor Bureau of Labor Statistics

Table 4.2 Labor force growth in the study area and North Carolina, 2010 2018

Time Period	Percent Growth North Carolina	Percent Growth Study Area
2010-2011	0.35%	-0.32%
2011-2012	1.01%	1.25%
2012-2013	0.28%	-0.28%
2013-2014	0.08%	-0.57%
2014-2015	1.58%	0.34%
2015-2016	1.87%	0.44%
2016-2017	1.60%	0.88%
2017-2018	0.89%	-0.24%
2010-2018	7.91%	1.49%

Source: U.S. Department of Labor Bureau of Labor Statistics

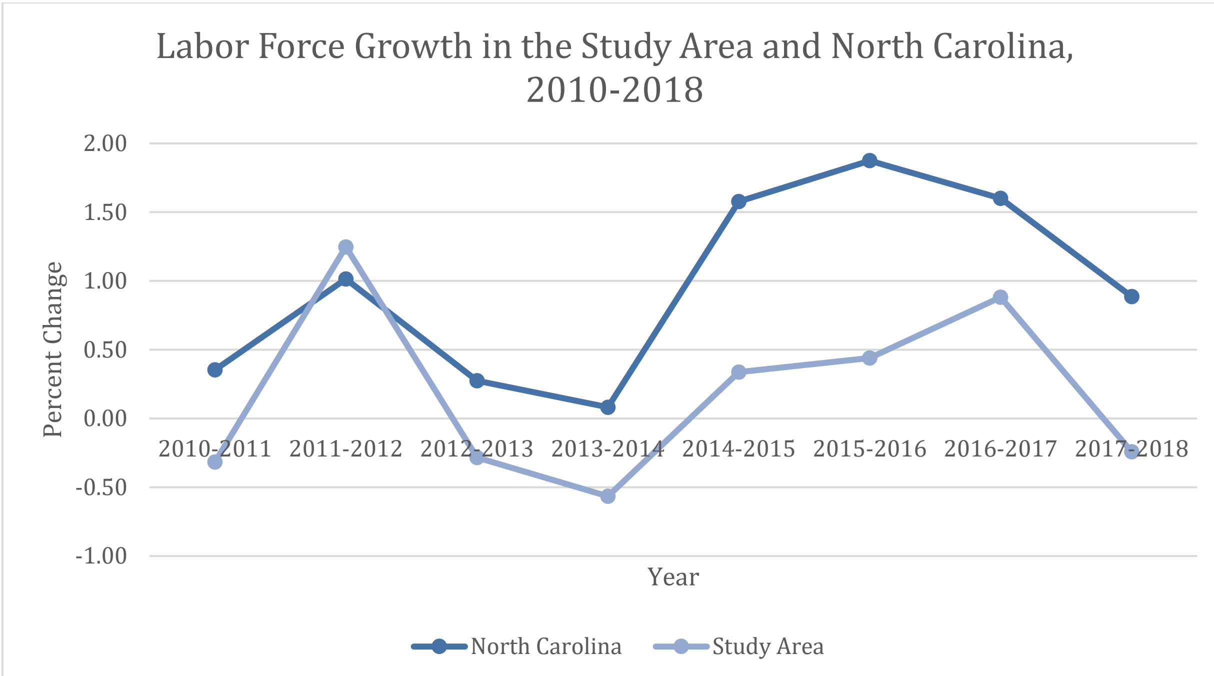

Figure 4.1 Labor force growth in the study area and North Carolina, 2010 to 2018

Personal Income

The U.S. Department of Commerce Bureau of Economic Analysis maintains two concepts of personal income in their Regional Economic Information System. Income is reported by place of work and by place of residence. Income by place of work is the income generated based upon where a person works, regardless of where they live, and is reported by economic sector (e.g., farm, manufacturing, retail, wholesale). Income by place of residence is reported by where the worker lives regardless of where they work. It is the total amount of income received by those who live in the study area. For example, if a person works in the study area, but lives outside the study area, their income would be reported in the study area for place of work, but would be reported outside of the study area for place of residence. In addition to the income from workers who live in the study, income by place of residence also includes income from investments, pensions, social security payments, and other transfer payments.

This information comes from the Census of Inter-county Commuters. The Bureau of Economic Analysis uses this information to form the "residence adjustment," which can be either positive or negative depending on whether people living in and working outside the study area are earning more or less than people living outside and working inside the study area. When an area is largely composed of people who live there, but work outside the region, economists often refer to the community where they live as a bedroom community. Income by place of work as a percentage of total income by place of residence serves as an indicator of two key study area economic traits: whether it is an economy with a significant bedroom community and/or whether there is a large retirement community. When the percentage of income by place of work is low relative to income by place of residence, economists then look to the resident adjustment and the amount of transfer payments in pensions and social security payments to further describe the nature of the local economy.

In 2017, income by place of work as a percentage of income by place of residence was 63.8% in the study area, meaning that more than half of the income of the study area was from those who both live and work in the region. From 2010 to 2018, income by place of work as a percentage of income by place of residence was lower in the study area than in North Carolina. Income by place of work as a percentage of income by place of residence in the study area declined from 2010 to 2017, while it was relatively constant in North Carolina (Table 4.3, Table 4.4, and Figure 4.2).

Table 4.3 Personal income by place of residence and by place of work, 2017

County	Work (Thousands of Dollars)	Residence (Thousands of Dollars)	Work as a Percent of Residence
Beaufort	$930,215	$1,927,100	48.3%
Carteret	$1,342,231	$3,297,436	40.7%
Craven	$3,077,991	$4,345,888	70.8%
Currituck	$385,779	$1,162,499	33.2%
Dare	$1,131,580	$1,928,241	58.7%
Hyde	$133,527	$221,401	60.3%
Onslow	$6,442,814	$8,719,755	73.9%
Pamlico	$169,202	$515,648	32.8%
Pitt	$5,076,446	$7,143,838	71.1%
Tyrrell	$63,751	$125,108	51.0%
Total	$18,753,536	$29,386,914	63.8%

Source: U.S. Department of Commerce Bureau of Economic Analysis, Regional Economic Information System

Table 4.4 Personal income by place of residence and place of work, 2010 to 2018

Year/Area	Residence Income	Earnings by Place of Work	Work as a Percent of Residence
2010			
North Carolina	$340,764,297	$243,762,027	71.5%
Study Area	$24,218,067	$16,539,033	68.3%
2011			
North Carolina	$354,294,372	$247,464,422	69.8%
Study Area	$25,081,505	$16,722,390	66.7%
2012			
North Carolina	$379,031,187	$267,072,169	70.5%
Study Area	$26,181,956	$17,429,381	66.6%
2013			
North Carolina	$375,057,001	$266,760,383	71.1%
Study Area	$26,152,865	$17,469,762	66.8%
2014			
North Carolina	$397,410,713	$280,027,813	70.5%
Study Area	$26,970,537	$17,741,978	65.8%
2015			
North Carolina	$419,888,909	$294,005,281	70.0%
Study Area	$27,782,946	$17,999,074	64.8%
2016			
North Carolina	$433,766,368	$303,794,979	70.0%
Study Area	$28,820,875	$18,607,272	64.6%
2017			
North Carolina	$454,306,904	$318,753,696	70.2%
Study Area	$29,386,914	$18,753,536	63.8%

Source: U.S. Department of Commerce Bureau of Economic Analysis, Regional Economic Information System

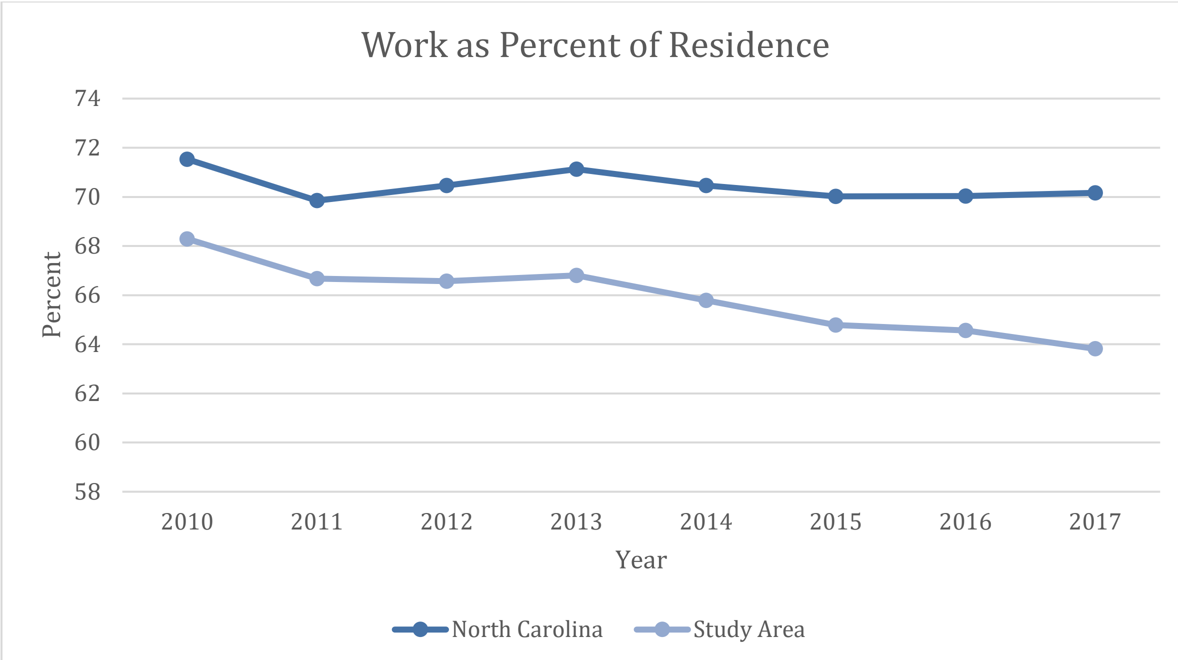

Figure 4.2 Income by place of work as a percentage of income by place of residence in the study area and North Carolina, 2010 to 2017
Source: U.S. Department of Commerce Bureau of Economic Analysis, Regional Economic Information System

Employment

In 2017, close to 385,000 people were employed in the study area, which is approximately 6.5% of all employment in the North Carolina. From 2010 to 2017, employment in the study area grew consistently more slowly than in North Carolina. From 2014 to 2015, employment fell by 0.2%, meaning the number of people employed decreased (Table 4.5 and Figure 4.3).

Table 4.5 Total employment: 2010-2017

Area	2010	2011	2012	2013	2014	2015	2016	2017
Beaufort	22,659	23,172	22,609	22,283	22,266	22,358	22,732	22,498
Carteret	32,911	32,792	33,408	33,603	34,306	34,586	35,765	36,456
Craven	59,678	58,958	59,165	59,260	59,311	59,678	60,121	59,903
Currituck	8,566	9,043	9,475	9,839	10,245	10,439	10,334	10,701
Dare	27,237	27,091	28,010	28,274	28,826	29,242	29,237	29,560
Hyde	3,134	3,197	3,238	3,289	3,421	3,372	3,329	3,350
Onslow	114,629	114,456	113,433	113,476	112,765	110,282	111,827	114,936
Pamlico	4,877	4,884	4,928	4,952	5,120	5,096	5,249	5,252
Pitt	91,866	93,859	95,599	96,308	97,846	98,450	99,313	100,492
Tyrrell	1,782	1,744	1,762	1,764	1,790	1,757	1,742	1,789
Study Area	367,339	369,196	371,627	373,048	375,896	375,260	379,649	384,937
North Carolina	5,178,363	5,292,814	5,356,443	5,437,125	5,560,638	5,695,713	5,829,499	5,919,928

Source: U.S. Department of Commerce Bureau of Economic Analysis, Regional Economic Information System

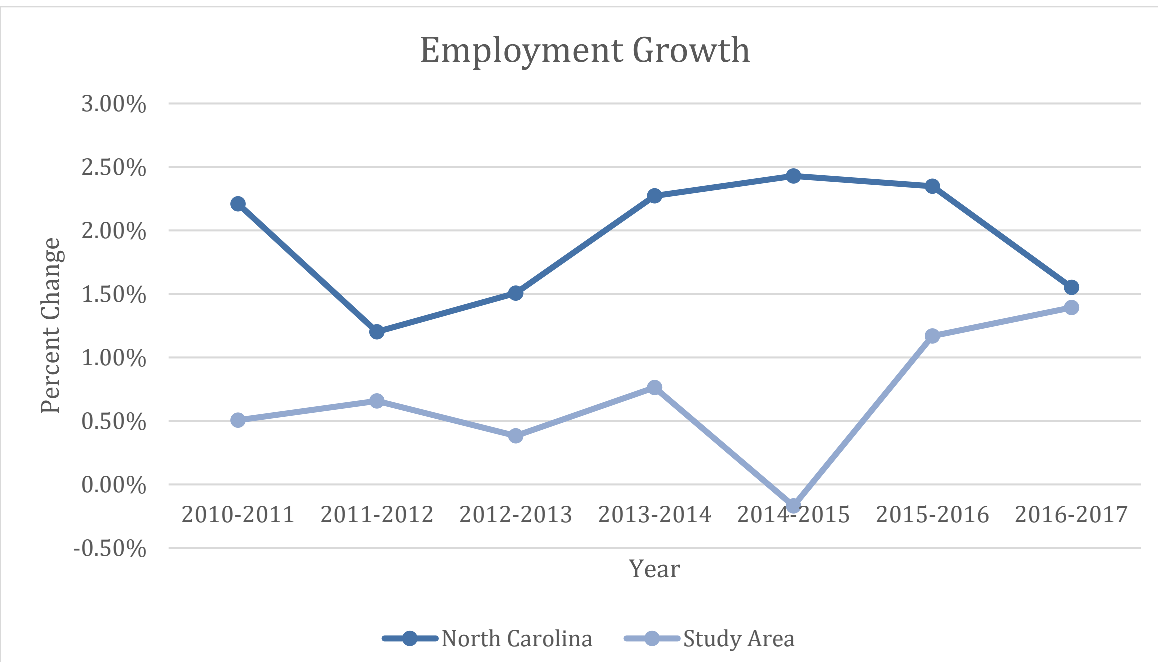

Figure 4.3 Employment growth in the study area versus North Carolina, 2010 to 2017
Source: U.S. Department of Commerce Bureau of Economic Analysis, Regional Economic Information System

Proprietor's Income and Employment

Study area profiles provide the basis of analyses to establish the dependencies of local communities/economies on uses sanctuary resources and to asses, how people can adapt to or mitigate policy/management changes that affect the way they use the resource or receive benefits provided by sanctuary resources. Many small businesses are dependent upon the sanctuary and the resources it provides, whether it be museums or shops that educate people about shipwrecks, or dive operations.

In 2017, proprietors employed almost 76,000 people, 19.7% of total employment in the study area. Proprietors also earned almost $1.7 billion in 2017, 9.0% of income by place of work in the study area. The study area had a consistently lower percentage of both employment and income from proprietors from 2010 to 2017 than North Carolina as a whole. Proprietor's employment as a percentage of total employment slowly rose from 2010 to 2017, while the percentage of income from proprietors remained relatively constant throughout this time period in both the study area and North Carolina (Table 4.6, Figure 4.4, and Figure 4.5).

Table 4.6 Proprietor's income and employment

Year/Area	Proprietor's Income (Thousands)	Proprietors Income as a Percentage of Income by Place of Work	Proprietors Employment	Proprietors Employment as a Percentage of Total Employment
2010				
North Carolina	27,247,011	11.2%	1,053,908	20.4%
Study Area	1,381,464	8.4%	67,815	18.5%
2011				
North Carolina	24,936,751	10.1%	1,116,972	21.1%
Study Area	1,331,105	8.0%	70,230	19.0%
2012				
North Carolina	34,701,615	13.0%	1,114,659	20.8%
Study Area	1,621,853	9.3%	69,964	18.8%
2013				
North Carolina	28,886,362	10.8%	1,138,802	20.9%
Study Area	1,716,679	9.8%	71,214	19.1%
2014				
North Carolina	29,993,219	10.7%	1,179,690	21.2%
Study Area	1,657,318	9.3%	72,860	19.4%
2015				
North Carolina	30,523,028	10.4%	1,200,859	21.1%
Study Area	1,564,329	8.7%	72,471	19.3%
2016				
North Carolina	31,886,721	10.5%	1,240,616	21.3%
Study Area	1,559,222	8.4%	74,554	19.6%
2017				
North Carolina	34,424,288	10.8%	1,262,424	21.3%
Study Area	1,686,801	9.0%	75,805	19.7%

Source: U.S. Department of Commerce Bureau of Economic Analysis, Regional Economic Information System

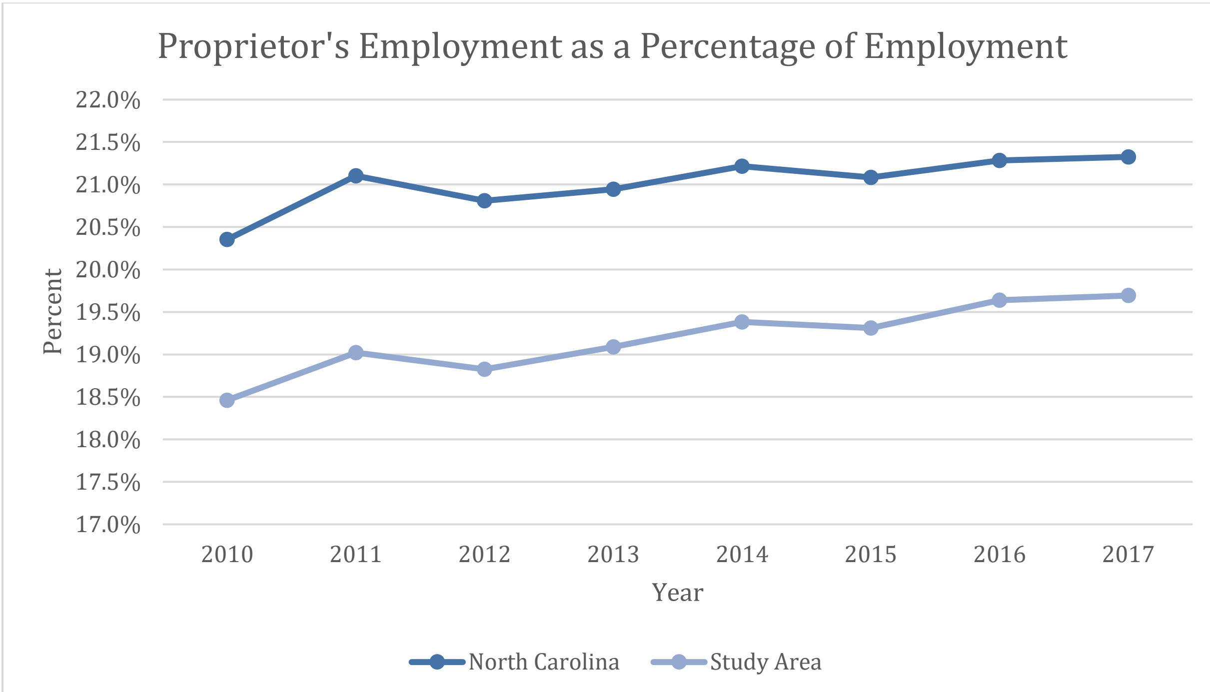

Figure 4.4 Proprietor's employment as a percentage of total employment in the study area versus North Carolina, 2010 to 2017
Source: U.S. Department of Commerce Bureau of Economic Analysis, Regional Economic Information System

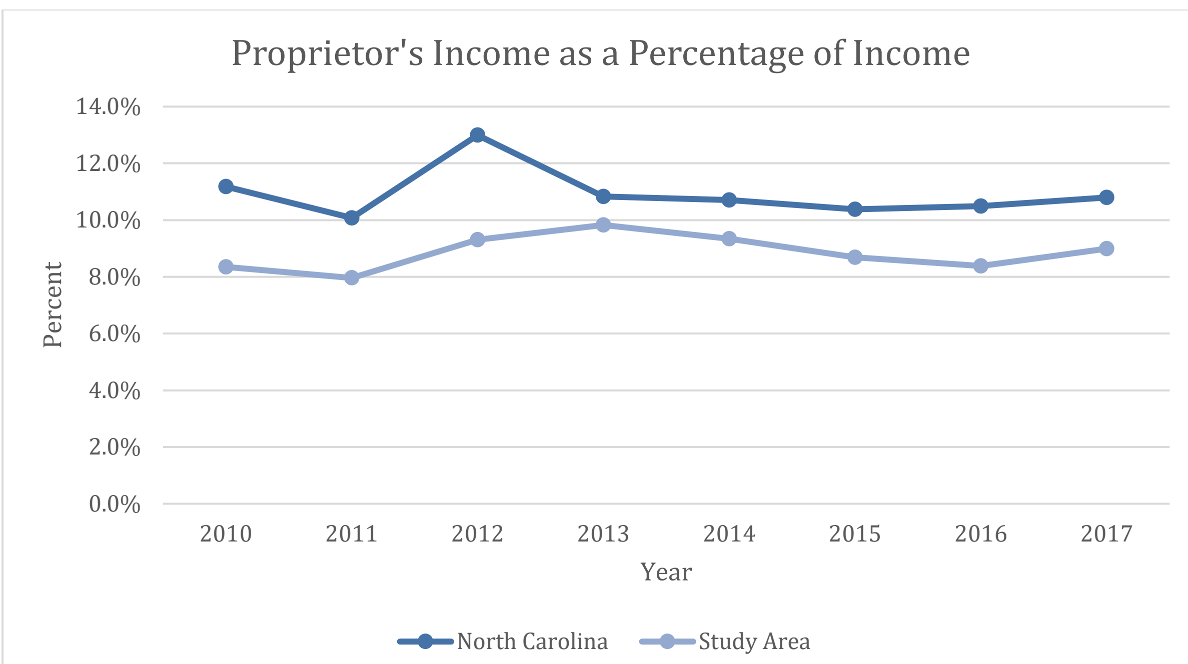

Figure 4.5 Proprietor's income as a percentage of total income in the study area versus North Carolina, 2010 to 2017
Source: U.S. Department of Commerce Bureau of Economic Analysis, Regional Economic Information System

Personal Income and Employment by Industry Sector

In the Regional Economic Information System, the Bureau of Economic Analysis reports income and employment for different geographic areas by industry or economic sector using the North American Industry Classification System (NAICS) codes. The NAICS codes identify different sectors of the economy using codes up to four digits. The higher the number is within a sector, the more specific the industry. For example, "retail trade" is the 44-45 series: at the 44-45 level, all retail trade is included. Code 441 is "motor vehicle and parts dealers" and code 442 is "Furniture and home furnishing stores."

For the counties in the study area, only the most general category for each series is reported, i.e., each series is limited to the "00" level of detail.

Personal Income by Industry

In 2017, the study area had a much higher proportion of personal income generated in Government and Government Enterprises than North Carolina and a lower proportion in Manufacturing; Finance and Insurance; Professional, Scientific, and Technical Services; and Health Care and Social Assistance (Figure 4.6).

Employment by Industry

In 2017, the study area had a much higher proportion of employment generated in Government and Government Enterprises than North Carolina. However, there was a lower proportion in Manufacturing; Finance and Insurance; Professional, Scientific, and Technical Services; and Health Care and Social Assistance in the study area relative to the state (Figure 4.7).

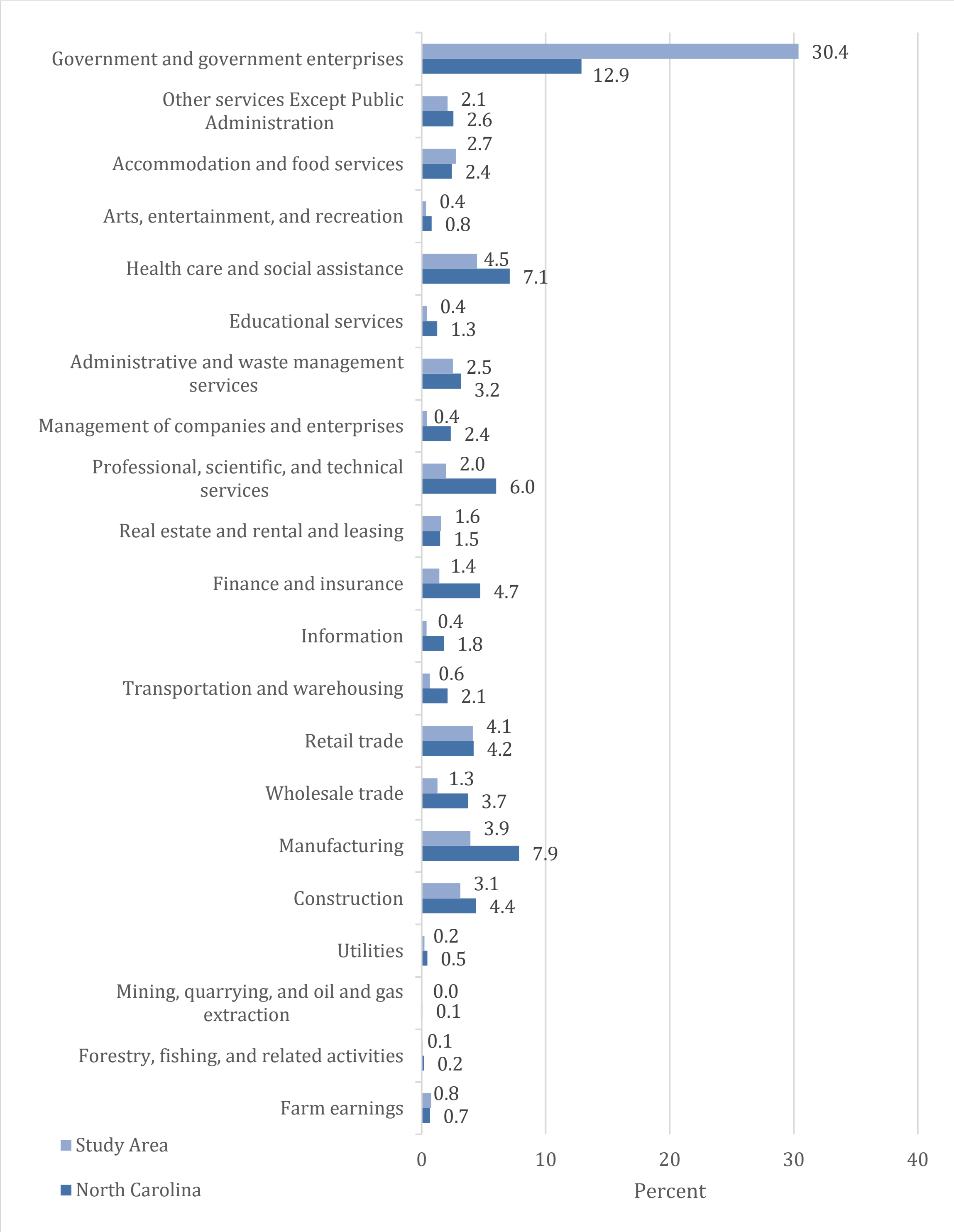

Figure 4.6 Percentage of personal income by industry for the study area versus North Carolina, 2017
Source: U.S. Department of Commerce Bureau of Economic Analysis, Regional Economic Information System

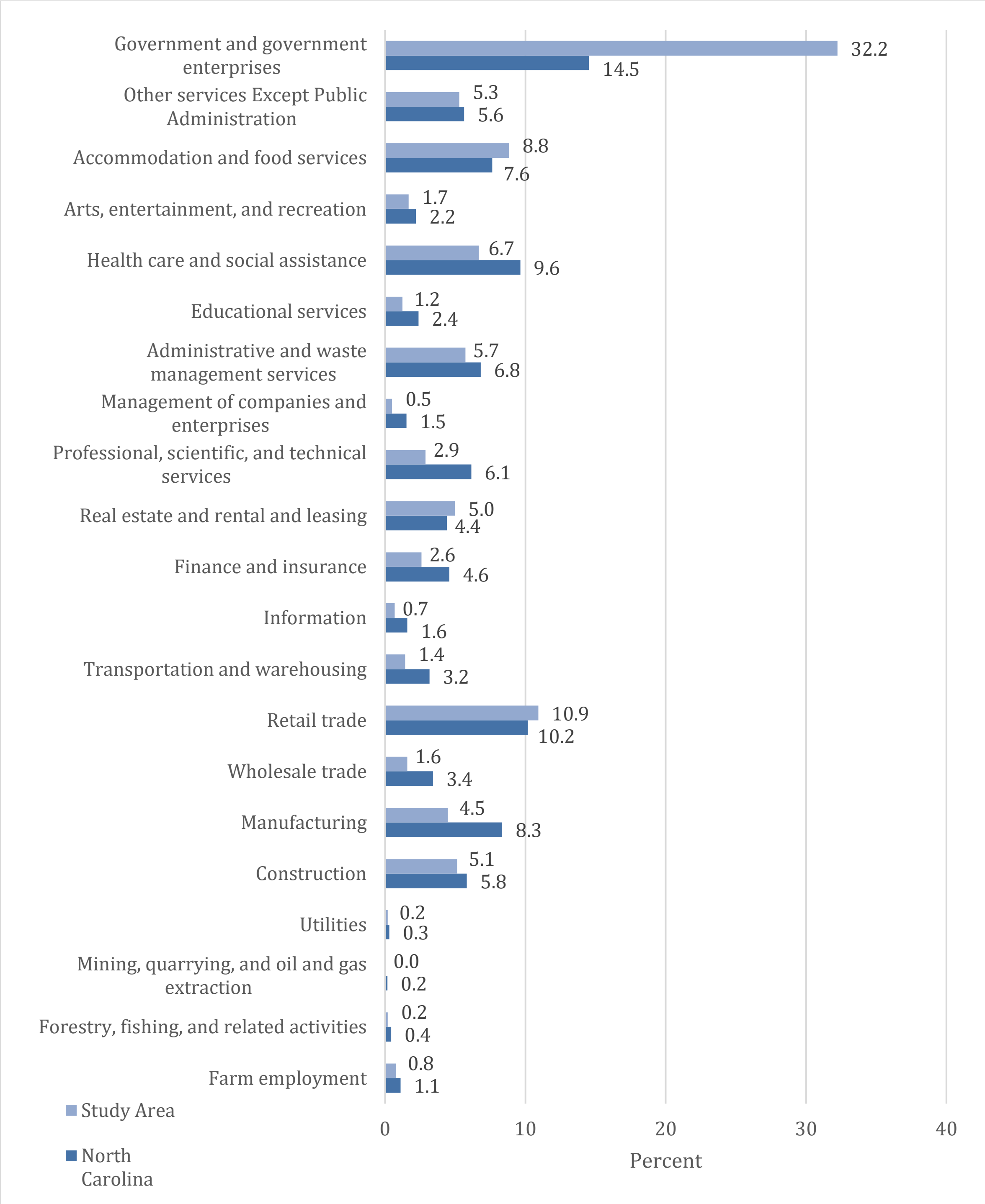

Figure 4.7 Percentage of employment by industry for the study area versus North Carolina, 2017
Source: U.S. Department of Commerce Bureau of Economic Analysis, Regional Economic Information System

CHAPTER 5: VISITATION AND LANDMARKS

An important factor in determining the economic contribution of a sanctuary to a region is visitation. If people are visiting the sanctuary they are most likely spending money within the region on food, housing, travel, and other commodities, which contributes to the local economy. The more people are visiting the sanctuary, the more economically dependent the region may be on the sanctuary. The higher level of dependency that a region has on the sanctuary and its resources, the more likely a policy change is to have an impact (positive or negative) on the region. Trends in visitation can also give information about trends in the quality of sanctuary resources. If resources are improving, more people will likely visit, if they are declining less people are likely to visit.

There are no direct visitation numbers for MNMS, however, there are many national parks and state parks on the coast next to the sanctuary, all of which monitor annual visitation. In this section visitation for these parks is used as a proxy to understanding how people use and/or benefit from MNMS. Even if a person does not visit the sanctuary, there are many exhibits and opportunities for visitor to learn about and enjoy the sanctuary. For example, museums may have displays about *Monitor* or local businesses may tell stories about the shipwreck and other shipwrecks in the area, enhancing visitor experience. Even if these visitors are not directly visiting MNMS, they are enjoying the resources that the sanctuary helps protect.

Another way to measure the study area's relationship to the sanctuary is by looking at the number of landmarks/museums constructed that have displays or exhibits about sanctuary's resources. The resource that is famous within MNMS is the *Monitor* shipwreck. The proposed expansions would include many more shipwrecks. Two types of constructions to assess the importance of MNMS shipwrecks in the region are maritime museums and lighthouses. No visitation numbers are readily available for these locations; however, simply looking at a count of them is enough to assess the importance of the sanctuary to the region.

National Seashores

In 2018, there were almost 2.6 million visits to Cape Hatteras National Seashore and approximately 408,000 visits to Cape Lookout National Seashore, with a total of almost 3 million. From 2010 to 2018, visitation increased in Cape Hatteras National Seashore while it declined in Cape Lookout National Seashore. A total of 3 million visits does not mean that 3 million unique people visited these seashores, as it is possible for the same person to visit more than once (Table 5.1 and Figure 5.1).

Table 5.1 Number of visits to Cape Hatteras and Cape Lookout National Seashore from 2010 to 2018

Year	Cape Lookout National Seashore	Cape Hatteras National Seashore
2010	530,181	2,193,292
2011	508,116	1,960,711
2012	480,294	2,302,040
2013	416,568	2,214,565
2014	430,927	2,153,350
2015	400,413	2,274,635
2016	458,000	2,411,711
2017	399,357	2,433,703
2018	408,399	2,591,056

Source: U.S. Department of the Interior National Park Service

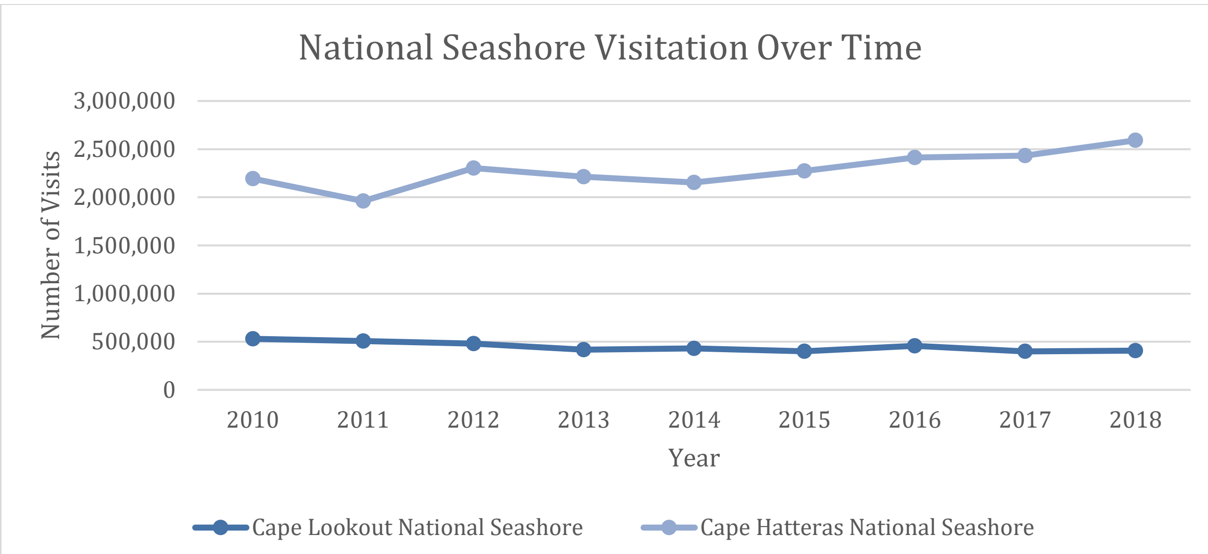

Figure 5.1 Number of visits to Cape Hatteras and Cape Lookout national seashores from 2010 to 2018
Source: U.S. Department of the Interior National Park Service

National Memorials/Historic Sites

In 2018, there were over 261,000 visits to Fort Raleigh National Historic Site and about 361,000 to Wright Brothers National Memorial, for a total of almost 632,000 total visits. Visitation in Fort Raleigh National Historic Site remained relatively constant from 2010 to 2018, while visitation to Wright Brothers National Memorial declined, with most of the drop-off occurring after 2016 (Table 5.2 and Figure 5.2).

Table 5.2 Visitation for Fort Raleigh National Historic Site and Wright Brothers National Memorial, 2010 to 2018

Year	Fort Raleigh National Historic Site	Wright Brothers National Memorial
2010	305,711	476,200
2011	282,134	445,455
2012	281,833	466,816
2013	263,598	447,796
2014	264,987	430,517
2015	289,885	437,184
2016	292,367	458,776
2017	274,981	414,244
2018	261,198	360,669

Source: U.S. Department of the Interior National Park Service

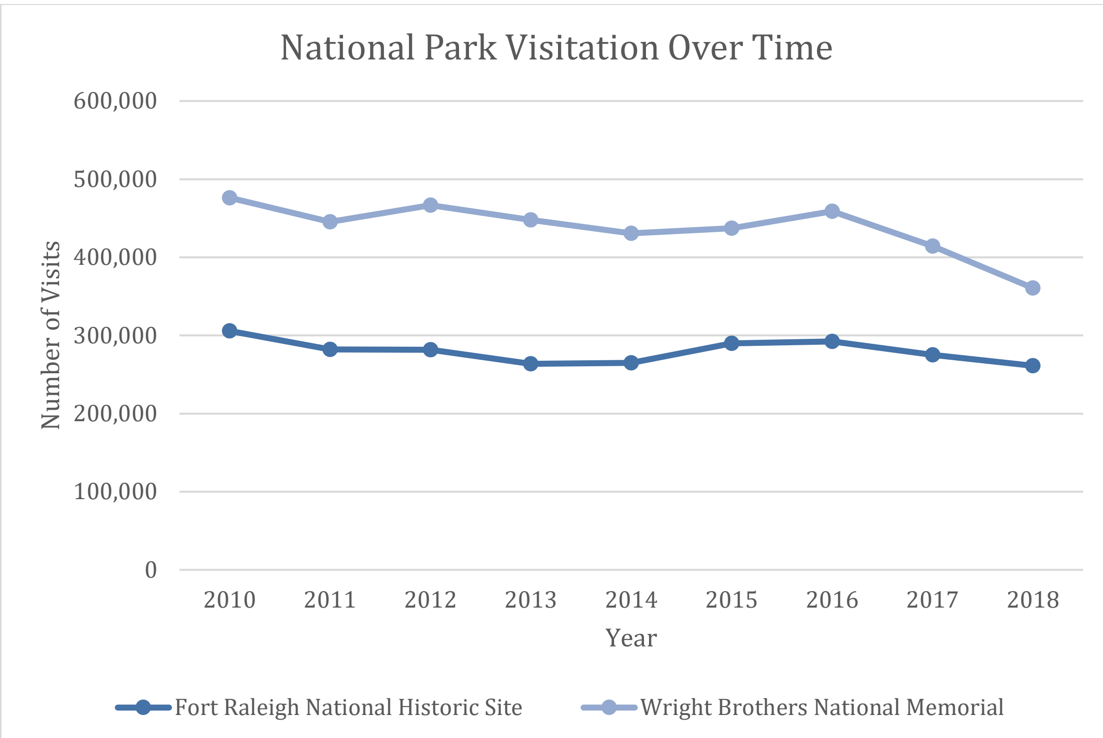

Figure 5.2 Visitation to Fort Raleigh National Historic Site and Wright Brothers National Memorial, 2010 to 2018
Source: U.S. Department of the Interior National Park Service

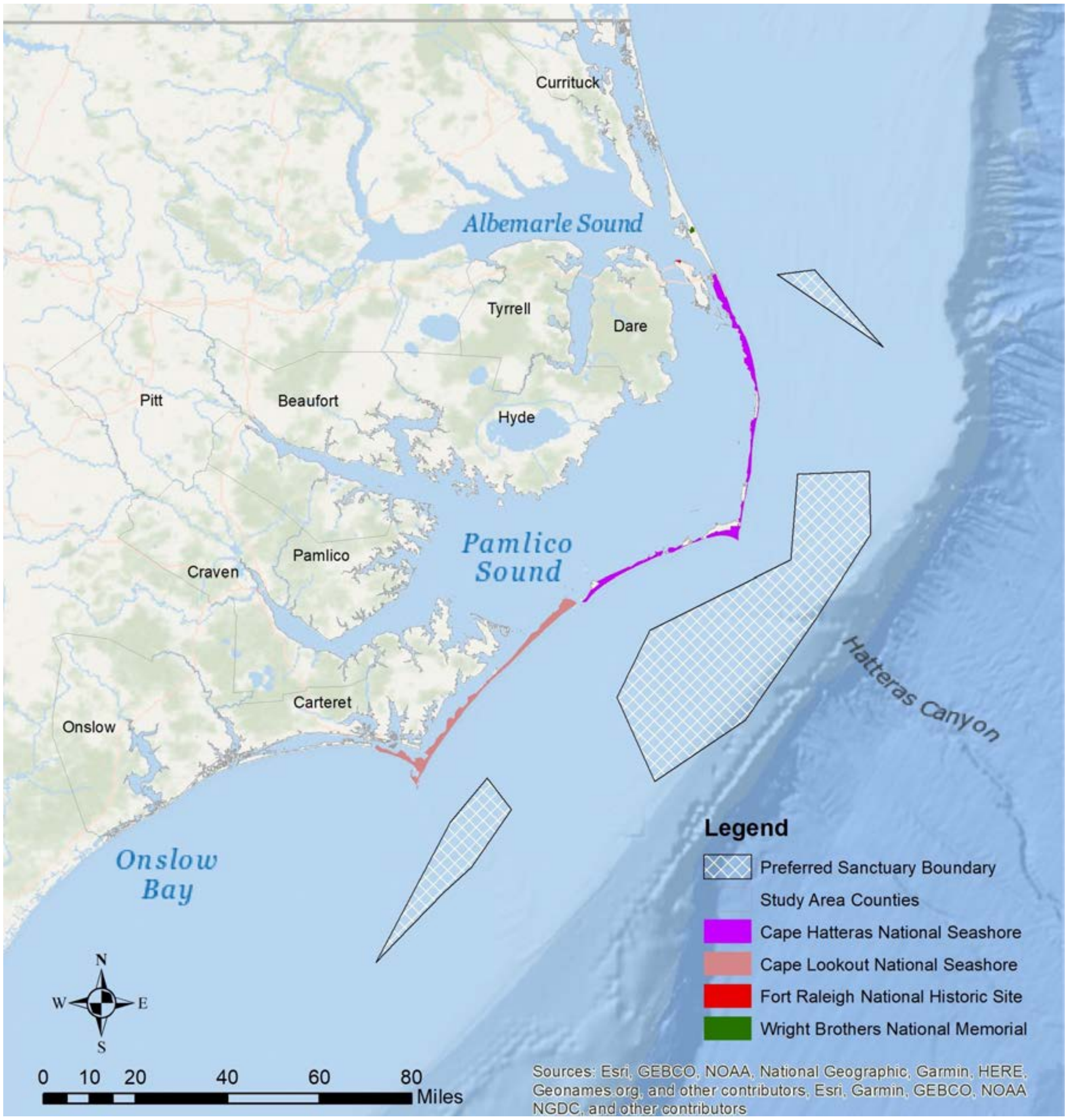

Figure 5.3 National parks in the study area
Credit: NOAA/ONMS

State Parks

In 2017, there were over 1.5 million visits to Fort Macon State Park, 300,000 visits to Goose Creek State Park, 175,000 visits to Hammocks Beach State Park, and just under 1.6 million visits to Jockey's Ridge State Park. This adds up to almost 3.6 million state park visits in the study area. From 2015 to 2017, state park visitation increased for every park except for Hammocks Beach State Park, which saw a slight decline during this time period (Table 5.3 and Figure 5.4).

Table 5.3 State park visitation from 2015 to 2017

Year	Fort Macon State Park	Goose Creek State Park	Hammocks Beach State Park	Jockey's Ridge State Park
2015	1,253,176	262,252	195,103	1,274,339
2016	1,329,708	283,275	196,239	1,313,423
2017	1,543,772	299,100	175,195	1,560,254

Source: North Carolina Division of Parks and Recreation

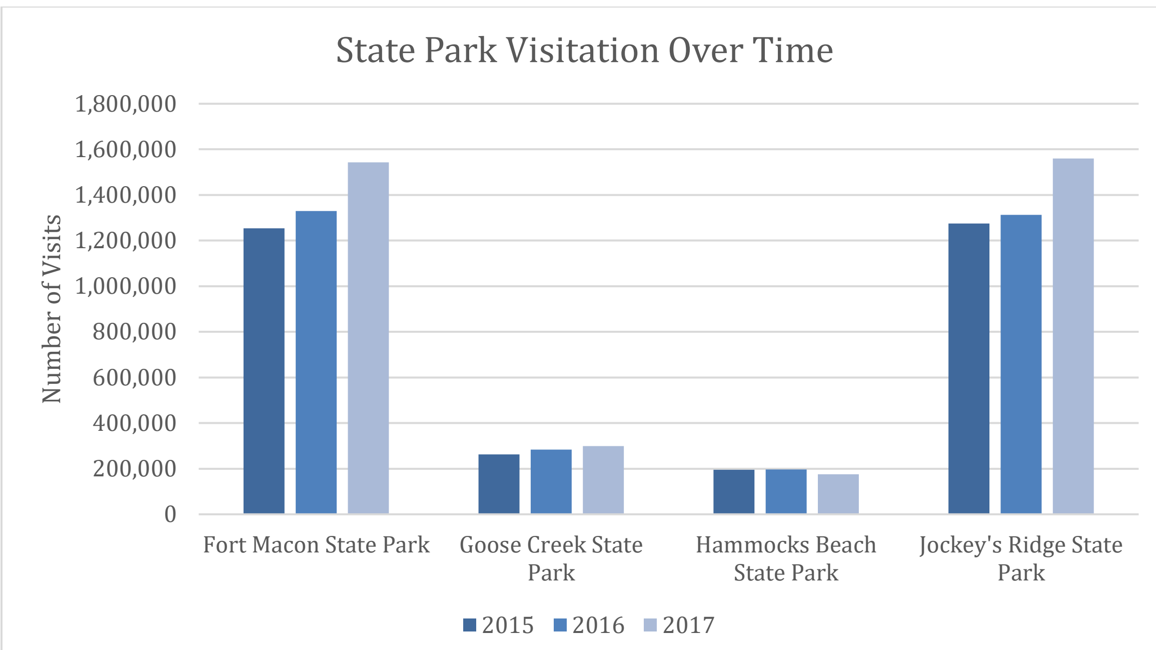

Figure 5.4 State park visitation from 2015 to 2017
Source: North Carolina Division of Parks and Recreation

Museums/Lighthouses

In the study area, there are a total of five active lighthouses and four maritime museums. Most of these locations are within Dare County, which is home to two of the five lighthouses and three of the four museums. This is followed by Carteret County with one lighthouse and one museum. Last are Hyde County and Currituck County, which each have one lighthouse (Table 5.4).

Table 5.4 Maritime museums and lighthouses in the study area as of 2019

Type of Landmark	Name	County
Lighthouse	Bodie Island	Carteret
Lighthouse	Cape Hatteras	Dare
Lighthouse	Cape Lookout	Dare
Museum	Chicamacomico Life-Saving Station	Dare
Lighthouse	Currituck Beach	Currituck
Museum	Graveyard of the Atlantic Museum	Dare
Museum	North Carolina Maritime Museum	Carteret
Museum	North Carolina Maritime Museum on Roanoke Island	Dare
Lighthouse	Ocracoke	Hyde

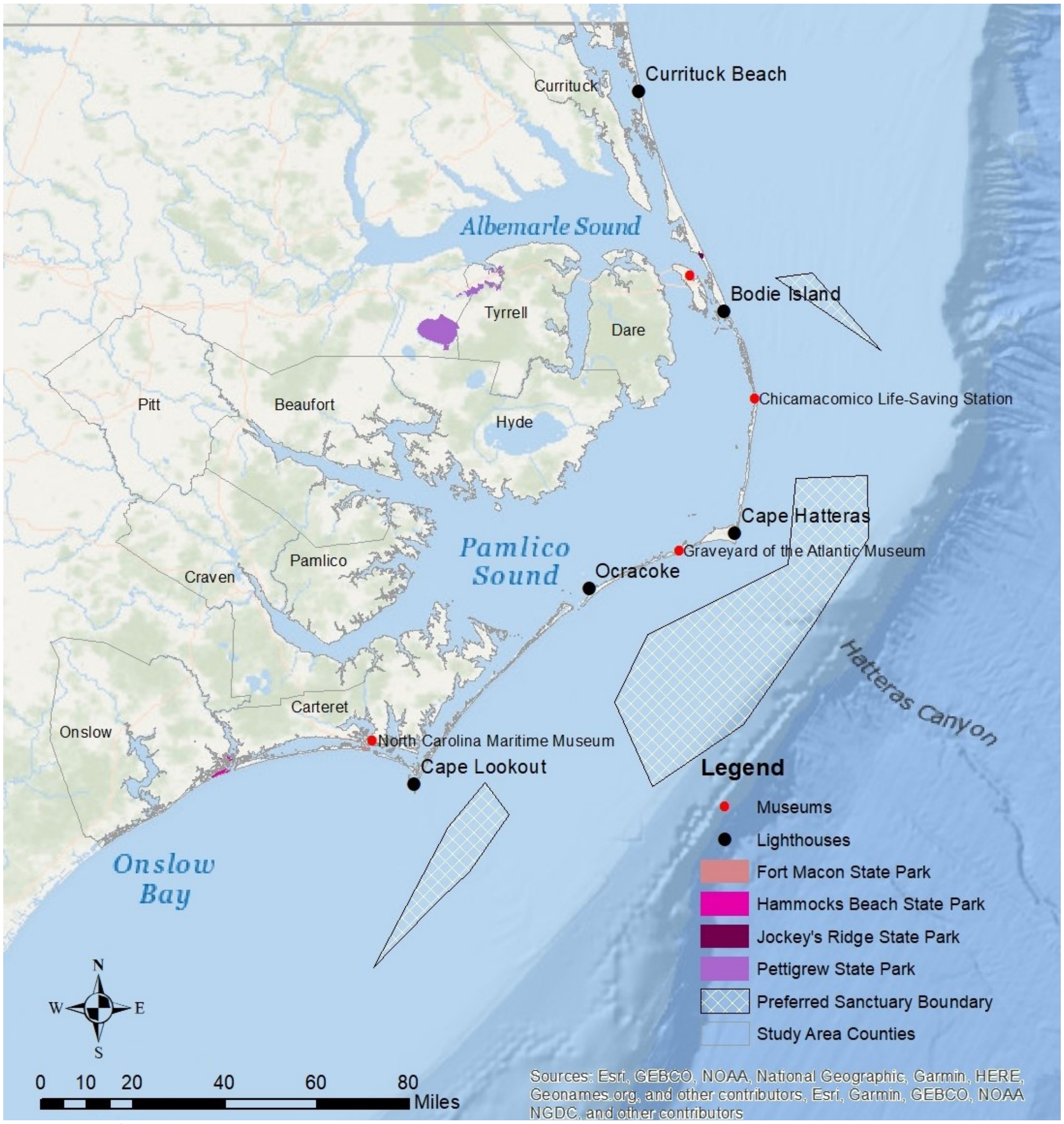

Figure 5.5 State parks, museums, and lighthouses in the study area
Credit: NOAA/ONMS

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National Marine Sanctuaries

America's Underwater Treasures