

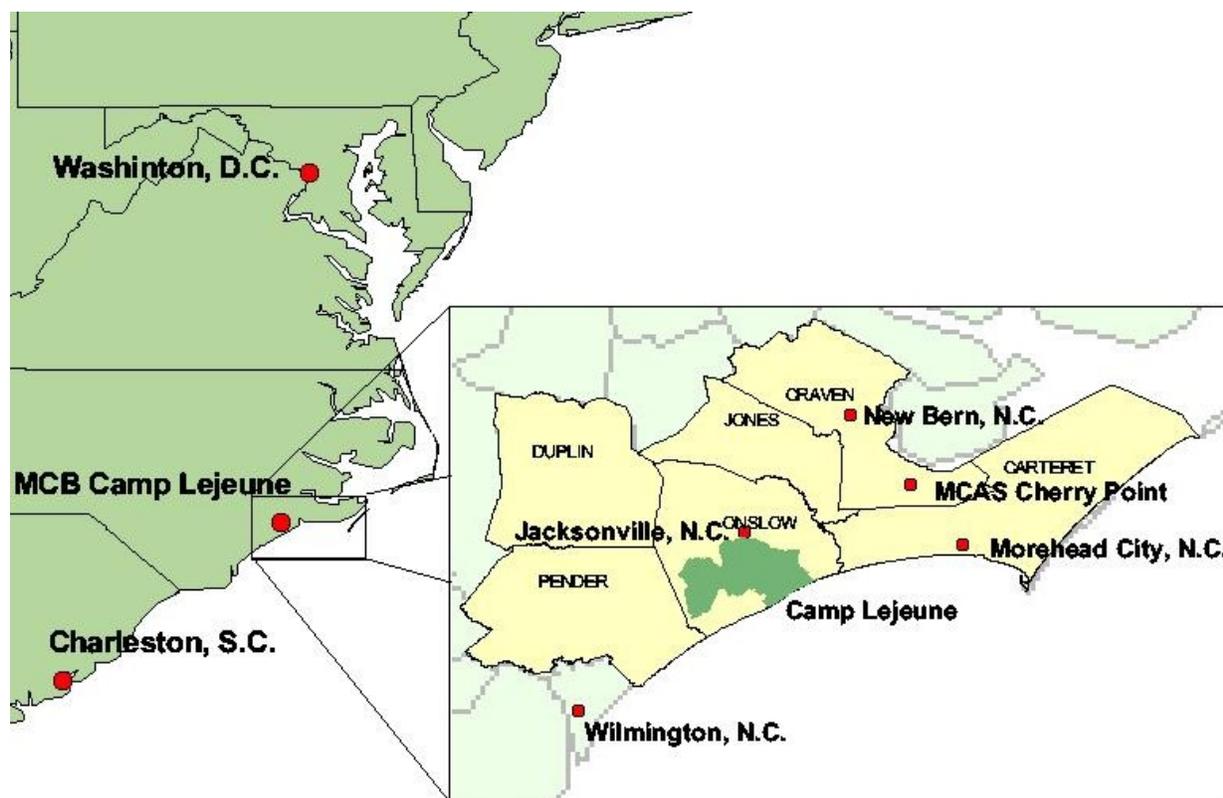
CHAPTER 2

DESCRIPTION OF CAMP LEJEUNE

2.1 Location

Camp Lejeune is located approximately 300 miles south of Washington, D.C., and 222 miles north of Charleston, South Carolina (Figure 2-1). The Base encompasses an estimated 142,852 acres, of which 18,370 acres is water. It is located entirely within Onslow County, North Carolina, approximately 45 miles south of New Bern, and 47 miles north of Wilmington. The City of Jacksonville is the county seat and the primary commercial center for Camp Lejeune. The main port-of-embarkation for deployment is located 45 miles to the northeast in Morehead City, North Carolina.

Figure 2-1. Location of Camp Lejeune and surrounding cities.



For the purposes of this INRMP, MCAS New River is considered part of Camp Lejeune. It lies within the northwest portion of Camp Lejeune, and shares resources with the base. New River has one outlying airfield (OLF) under its control, OLF Camp Davis, located ten miles to the southeast. Two other fields, Oak Grove and Bogue, each located 12 miles from Camp Lejeune, are used extensively by Marine Corps Air Station New River units.

Other military installations tied to Camp Lejeune include MCAS Cherry Point and the Port of Embarkation at Morehead City, North Carolina. MCAS Cherry Point is located in the

southeastern portion of Craven County, approximately 46 miles from Camp Lejeune via Routes 24 and 70. The Port of Embarkation at Morehead City is located 40 miles northeast in Carteret County. It is utilized for major troop deployments, which involve the use of amphibious warfare ships during deployment operations.

2.2 Physical Setting

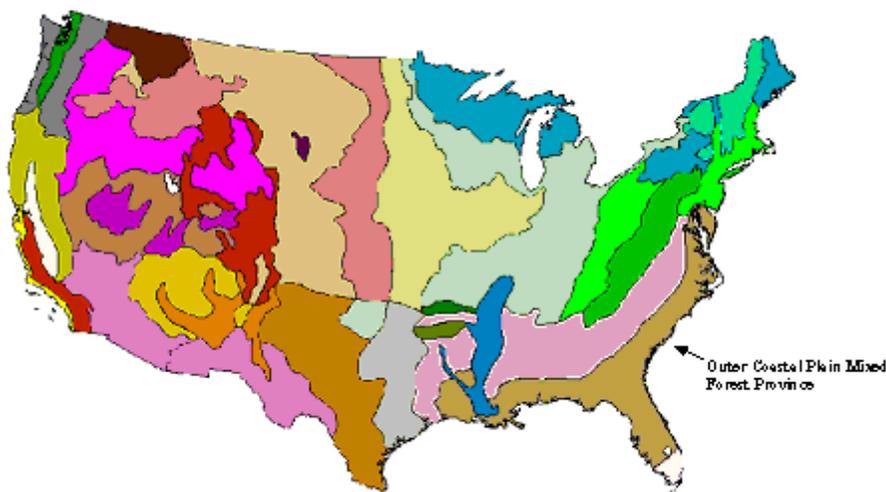
2.2.1 Physiography

Camp Lejeune is located in the Atlantic Coastal Flatlands Section of the Outer Coastal Plains Mixed Forest Province, as described in “Ecoregions and Subregions of the United States” (Bailey et. al. 1994, Figure 2-2). Based on similar regional climate, geologic origin, topography, drainage networks and potential natural vegetation, this section has the following characteristics:

- Stratified marine deposits that were formed during the Cenozoic Era (66 million years ago to the present)
- Ustisol and Spodosol soils that are deep, medium textured, and have adequate to excessive water supplies for vegetation
- Small to medium-sized perennial streams, few associated rivers, high water table in many areas, leading to poor natural drainage and many wetland areas
- Southern mixed pine and oak—hickory—pine forests, with smaller areas of floodplain forest and pocosin
- Fire as the predominant natural disturbance; frequent hurricanes and insect disturbances are also a factor
- 0-80’ elevation
- Average precipitation 56” per year, Average temperature 55-57°F, Growing season 185-220 days

The entire mainside of Camp Lejeune falls within the White Oak watershed as defined by the NC Department of Water Quality. Most of this area drains into the New River basin, with small amounts flowing into the Atlantic Intracoastal Waterway, Bear Creek, or Queens Creek. While a small portion of GSRA drains into the New River, the vast majority flows into the Northeast Cape Fear River, which is part of the Cape Fear watershed.

Figure 2-2. Bailey’s Ecoregions [Outer Coastal Plains Mixed Forest Province, U.S. (Bailey 1995)]



2.2.2 Topography and Soils

Mainside Camp Lejeune is characterized by a combination of poorly drained broad, level flatlands and gently rolling better-drained terrain. East of the New River, the flatlands range in elevation from 25’-45’. Between New River and US 17, the changes in elevation are more pronounced, with three areas reaching 72’ in elevation. Hydric (wet) soils are one of the most important management and habitat considerations on the installation. Nearly 30% of the soils mainside are classified as hydric, with the most common being Leon fine sand, Mukalee Loam, and Murville fine sand. Common non-hydric soils include well-drained Baymeade fine sand, and the moderately well drained Marvyn loamy fine sand and Onslow loamy fine sand. Table 2-1 shows acreage and proportionate extent of soils on Camp Lejeune.

Table 2-1. Soils aboard Camp Lejeune

Map Symbol	Soil Name	Acres	Percent
AnB	Alpin fine sand, 1-6% slope	969	0.67%
BmB	Baymeade fine sand, 0-6% slope	18,615	12.80%
BaB	Baymeade-Urban land complex, 0-6% slope	3,562	2.45%
Bo	Bohicket silty clay loam	2,544	1.75%
Co	Corolia fine sand	224	0.15%
CrB	Craven fine sandy loam, 1-4% slope	288	0.20%
CrC	Craven fine sandy loam, 4-8% slope	153	0.11%
Ct	Crotan muck	8662	5.96%
Da	Dorovan muck	1,081	0.74%
Dc	Duckston fine sand	235	0.16%
FoA	Foreston loamy fine sand, 0-2% slope	5144	3.54%
GoA	Goldsboro fine sandy loam, 0-2% slope	518	0.36%
GpB	Goldsboro-Urban land complex, 0-5% slope	1377	0.95%
KuB	Kureb fine sand, 1-6% slope	5,125	3.52%
La	Lafitte muck	11	0.01%

Le	Lenoir loam	101	0.07%
Ln	Leon fine sand	13,803	9.49%
Ly	Lunchburg fine sandy loam	158	0.11%
MaC	Marvyn loamy fine sand, 6-15% slope	9,618	6.61%
Mk	Muckalee loam	8,685	5.97%
Mu	Murville fine sand	8,161	5.61%
NeE	Newhan fine sand, 0-30% slope	909	0.63%
NfC	Newhan fine sand, dredged, 2-6% slope	437	0.30%
	No data	151	0.10%
NoA	Norfolk loamy fine sand, 0-2% slope	121	0.08%
NoB	Norfolk loamy fine sand, 2-6% slope	1160	0.80%
	Not mapped	730	0.50%
On	Onslow loamy fine sand	6,686	4.60%
Pa	Pactolus fine sand	1,882	1.29%
Pn	Pantego mucky loam	186	0.13%
Pt	Pits	175	0.12%
Ra	Rains fine sandy loam	760	0.52%
St	Stallings loamy fine sand	3,864	2.66%
	Surface water	18,913	13.01%
To	Torhunta fine sandy loam	7,540	5.19%
Ud	Udorthents loam	46	0.03%
Ur	Urban land	977	0.67%
WaB	Wando fine sand, 1-6% slope	4,342	2.99%
Wo	Woodington loamy fine sand	7372	5.07%
YaA	Yaupon fine sandy loam, 0-3% slope	120	0.08%

In GSRA, the land is almost uniformly flat and poorly drained. Elevation ranges from 39’ to 69’, with the greatest variation in elevation in the eastern-most portion of GSRA, which drains into the New River. Seventy-five to 80% of the soils are classified as hydric (wet), and these include Croatan Muck, Leon Fine Sand, Muckalee Loam, Murville Fine Sand, Pantego Mucky Loam, Rains Fine Sandy Loam, Torhunta Fine Sandy Loam and Woodington Loamy Fine Sand. The remaining non-hydric soils, which are most suitable for road and facility development, are most common along the western side and in the northeastern corner.

2.2.3 Geology

As glacial events and slight crustal movements have changed sea level over the past 66 million years, the land base has been alternately exposed and submerged. Marine deposits laid down over time on this land base formed the weakly dissected alluvial plain that Camp Lejeune occupies today. The deposits are mostly clean sand and clayey sand, layered with deposits of clay and marine shells. Along the coast, stream sediment deposition, and natural shore processes develop and maintain beaches, swamps, and mud flats.

Three primary geomorphic surfaces are identified at Camp Lejeune:

- Pamlico surface, elevations of 0-25’ in narrow strips along the Intracoastal Waterway, New River, and its tributaries
- Wicomico surface, elevations of 45-75’ found in a few areas south of Jacksonville

- Talbot surface, elevations of 25-45' underlying most of mainside Camp Lejeune

2.2.4 Climate

Onslow County, NC has a warm, temperate climate. The county seat, Jacksonville, averages 56" of rainfall a year. The rainfall is almost evenly distributed throughout the year, with a slight increase from June-September. Average snowfall is 3" per year. The growing season, with daily minimum temperatures higher than 28°F for 5 years out of 10 is 235 days (from 19 March to 11 November). Thunderstorms occur approximately 45 days a year. Prevailing winds are from the southwest in the summer and from the northwest in the winter. The average annual wind velocity is approximately seven knots.

2.2.5 Vegetation

Camp Lejeune encompasses approximately 92,300 acres of forest, including 47,734 acres of pure pine, 21,985 acres of pure hardwood, and 22,596 acres of mixed pine/hardwood stands. An additional 17,328 acres are non-forested and 12,543 acres fall within impact areas. Loblolly is the most common pine species, accounting for approximately 75% of timber on the Base. Blackgum is the most common hardwood. Fire plays a deciding role in the communities of Camp Lejeune, affecting canopy and understory density and species composition.

Camp Lejeune's forest resources and forest management are described fully in Chapter 7. Understory vegetation and natural communities are fully described in the NC Natural Heritage Program "Inventory of the Rare Species, Natural Communities, and Critical Areas of the Marine Corps Base Camp Lejeune, NC."

2.2.6 Water Resources

Camp Lejeune also encompasses 16,650 acres of the New River and 1,720 acres of the Intracoastal Waterway. Approximately 17 miles of the river is found within the boundaries of Camp Lejeune. Navigable creeks and waters adjacent to or within the boundaries of the Base (including the New River) are generally subject to the public trust rights of the State of North Carolina. Additionally, navigable waters in the New River watershed and the Intracoastal Waterway fall under the jurisdiction of the US Army, Corps of Engineers.

2.3 Socio-Economic Setting

2.3.1 Demographics

The 2000 Federal Census provides demographic information for both Onslow County and Camp Lejeune. In 2000, Onslow County population was 150,355. Included in this figure are 34,452 residents of Camp Lejeune. Onslow County population is predominately white (72%), male (55%), and young (median age 25.0). Minorities are estimated at 18.5% Black or African American, 7.0% Hispanic or Latino, 1.7% Asian, and 3.6% other. In 2000, 84.3% percent of Onslow County's residents had at least a high school diploma, and an additional 14.8% had a Bachelor's or higher degree. Approximately 23.9%, almost twice the National average of 12.7%, are civilian veterans. In comparison, among Camp Lejeune Marines, approximately 99% have a high school diploma; 38% have post secondary education; and 9% have a bachelor's Degree or higher.

The 2000 Census indicates a slight (0.3%) increase in the population of Onslow County and a significant decrease (31%) in the population of Camp Lejeune since 1990. This is due, in part, to

downsizing throughout the military, with a 12% decrease in USMC personnel. More detailed information regarding the demographics of Onslow County and the State of North Carolina can be found on the worldwide web at www.census.gov and at www.quickfacts.census.gov.

2.3.2 Economic Character

Until the 1940s, Onslow County's rural economy relied primarily on agriculture and forestry. Today, government (30.2%), retail trade (28.2%), and services (18.6%) are the largest employment sectors.

The county's labor force of more than 47,500 is more than 96% employed. Median household income for Onslow County families in 1999 was \$28,315. Camp Lejeune has the greatest influence on Onslow County's economy. The total economic impact of Camp Lejeune on the local economy was approximately \$5.2 billion in 2003. Purchase of supplies, materials, and services totaled an estimated \$384,050,700 that same year, second only to wages and salaries paid to military and civilian personnel. Gross pay for all employees of Camp Lejeune was an estimated \$1,794,066,400.

The Base-supported total population was an estimated 138,280 people in 2003. This estimate includes:

- 37,220 active duty personnel
- 53,614 dependents of active duty personnel
- 24,356 Federal retirees within a 50-mile radius
- 18,208 dependents of Federal retirees within a 50-mile radius
- 4,883 civilians who work on Camp Lejeune

The federal military is expected to continue as the number one ranked industry in terms of employment and earnings despite expected decreases in both civilian and military employment. The greatest decline is expected in agriculture and forestry employment (19.6%), although overall farm and forestry income is projected to increase due to more efficient production.

Compared to other North Carolina counties, Onslow ranks 91 out of 100 for economic development between 1984 and 1994. The county is affected by low wage rates, uncertainty in government jobs, and stagnant population growth. The county's Economic Development Council and others continue efforts to bring new business into the county. More detailed information regarding the Onslow County's economic character and the State of North Carolina can be found on the internet at www.census.gov and at www.quickfacts.census.gov.

Most recently, the 2005 Base Realignment and Closure (BRAC) list was submitted to an independent BRAC commission on May 13, 2005. It recommends a re-alignment for Camp Lejeune, which would result in a net loss of an estimated one military position and 192 civilian personnel positions at the base. The independent commission is charged with reviewing the recommendations and submitting its report and final recommendations to the President for his acceptance or rejection of them in their entirety by September 8, 2005. More detailed information regarding BRAC can be found on the worldwide web at www.defenselink.mil/brac.

2.4 History and Land Use

2.4.1 Onslow County

A comprehensive Land Use Plan (LUP) for the county, adopted in February 2000, includes information on the county's current population, resources, and land use, as well as vision and policy statements for future management. According to the LUP, the county has planning and regulatory authority over approximately 58% of the land within its boundaries. Camp Lejeune, Hofmann Forest, Hammock Beach State Park, and the county's six municipalities control the remaining 42%. Of the 448.1 square miles under full county planning and regulatory jurisdiction, 8.6% of the county is developed, 17.0% is in agriculture, 71.1% is in forests, and 3.3% is water. Nearly half of this land base is wetlands, and the land use plan identifies 122,218 acres (or 42.6% of land under county jurisdiction) suitable for future development.

Future growth and development in Onslow County is difficult to predict since the comprehensive LUP is not binding on county development, and the county has not enacted zoning ordinances to enforce the plan. Areas of Camp Lejeune have been annexed and zoned by the City of Jacksonville. However, land use on the base is unaffected by annexation/zoning due to exclusive federal jurisdiction over the vast majority of the installation.

2.4.2 Camp Lejeune

Camp Lejeune Marine Barracks, New River was originally established on May 1, 1941. It was designed to provide training and facilities for all amphibious and ground activities of the 1st Marine Division, MB New River. Development was in three stages.

Early in 1941, temporary troop quarters and administrative facilities were erected at Camp Geiger and Montford Point. A Civilian Conservation Corps camp was also established at this time at Camp Knox. In April 1941, units were established along the New River and at Hadnot Point, with support and industrial facilities farther inland (Figure 2-3). Finally, additional barracks and support facilities were created at Montford Point, Camp Geiger, and Courthouse Bay.

Figure 2-3. Troop quarters in 1941.

World War II brought changes to Marine Barracks New River. The 1st Marine Division shipped out in spring, 1942 to join fighting in the South Pacific. Also in 1942, the Base was renamed in honor of General John A. Lejeune (1867-1942), commander of the Marines in France during WWI and later 13th Commandant of the United States Marine Corps.

Montford Point (now Camp Johnson) was a training facility for all African-American Marines who served during WWII. The Civilian Conservation Camp at Camp Knox was converted to a K-9 facility. The first U.S. Naval Hospital on Base was established in 1943. Throughout WWII, Camp Lejeune served as the Fleet Marine Force's east coast "combat college" for training replacements and specialists.

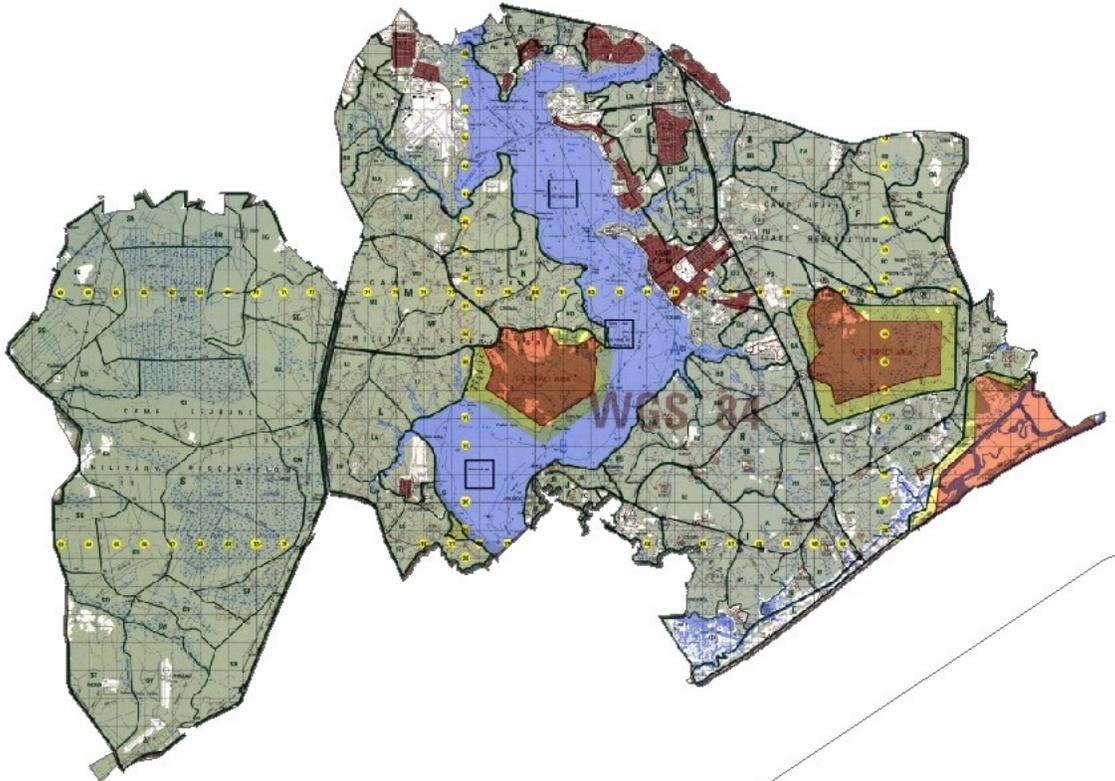
After the war, development at Camp Lejeune focused on the permanent population of the Base, expanding landscaping and recreational opportunities. Marine Corps Air Station New River was established in 1951 (then named Peters Point Field Glider Base), and training centers were reactivated in the 1950s to support the Korean War. In the 1970s, Montford Point became an educational complex for Marine Corps Service Support, and included Field Medical Service School and Camp Lejeune Regional Staff Non-Commissioned Officer Academy.

In 1992, the Federal government acquired approximately 41,000 acres adjacent to Camp Lejeune to provide additional acreage for troop maneuver and gunnery practice and to supplement the existing ranges and training areas. International Paper Company owned approximately 36,500 acres of this area. Now known as GSRA, this virtually undeveloped area had been managed for timber for more than 50 years.

Today, Camp Lejeune encompasses 142,852 acres (Figure 2-4). It is the largest single concentration of Marines anywhere in the world, and is the largest Marine Corps amphibious training base in the world. Camp Lejeune is the home base for the II Marine Expeditionary Force, the 2nd Marine Division, 2nd Marine Logistics Group, the Marine Special Operations Command, the United States Coast Guard Special Missions Training Center, and U.S. Naval Hospital, Camp Lejeune. It geographically encompasses the onshore, near shore, and surf areas in and adjacent to the Atlantic Ocean, the New River, and the complex’s boundaries. Camp Lejeune provides some of the finest military schools, including the USMC School of Infantry, which trains more than 18,000 Marines annually. The Range and Training Complex includes:

- 11 nm of coastline, including 1.4 nm of amphibious landing beach, 1.6 nm of recreational beach and 4 nm of buffer/impact area beach.
- 246 square miles of land area with over 98,000 acres of usable training area
- 74 live fire ranges and training facilities
- A MOUT Facility with 31 Buildings and a Combat Town with 14 Buildings
- Shallow ocean areas (less than 100 fathoms) and the New River
- 200 square miles of Special Use Airspace, restricted for military use from sea level to 17,999 feet.
- Three impact areas that support munitions from 5.56 mm to 155mm delivered by direct fire, indirect fire, FWCAS, RWCAS and Naval Gunfire
- 48 Tactical Landing Zones, 12 Ground and 5 Water Drop Zones, 34 Gun Positions, 8 Mortar Positions and 12 Observation Posts
- An LHA Deck for helicopter pilot training and an Air Field Seizure Facility, with a Mock Airport and 2 runways

Figure 2-4. Map of Camp Lejuene.



2.5 Conservation Significance of the Area

The North Carolina Chapter of The Nature Conservancy has identified a Mid-Atlantic Coastal Plain Section within Bailey's Coastal Plain Province. Occupying 26 million acres between James River VA and Charleston Harbor SC, this biologically-rich region is threatened by altered hydrology, fire suppression, changes in land use, exotic plants and animals and changing sea level. The Conservancy has identified 15 landscape-scale projects for conservation, including projects in the North Carolina Outer Banks, Onslow Bay Islands and Onslow Bight. Onslow Bight is the region from the NE Cape Fear River northeast to Cedar Island, and includes MCB Camp Lejeune.

2.5.1 Onslow Bight Conservation Forum

The Onslow Bight Conservation Forum is composed of several federal and state agencies, and non-governmental organizations dedicated to sustainable natural resource management. Forum participants represent a broad spectrum of land managers and conservation and other organizations. Some are custodians of large areas of public land held primarily for resource conservation and utilization or national security. Some modify the resource base by their own construction activities, and some are conservation advocates with little or no land base of their own. All, however, are dedicated to sustainable natural resource management, providing for human needs while retaining our natural heritage. Toward this end, the participants are attempting to foresee potential resource conflicts and conservation opportunities and, within their authority and consistent with their individual missions, work to protect and maintain ecologically viable areas in the area known as the Onslow Bight landscape.

Some significant features in the Bight region include federally threatened and endangered species such as the RCW and green and loggerhead sea turtles; Carolina bays and Carolina sandhills; and rare plant and animal communities supported by North Carolina's pocosins, dunes and estuaries. Camp Lejeune is collaborating with the Conservancy and other local, state and federal agencies and organizations represented on the Forum to conserve the biological diversity native to this area.

Camp Lejeune's participation in Onslow County planning efforts, combined with involvement and support of the regional Onslow Bight Conservation Forum natural resources management initiatives, are contributing to Camp Lejeune's presence beyond the base fence line. This will help ensure compatible land use in the region, and help minimize current and future environmental restrictions on the military mission.