



SECTION XV ENVIRONMENTAL

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EXECUTIVE SUMMARY

Coastal Georgia is a unique area in both its ecology and natural environment. A delicate balance exists between industry and environment. SUBASE Kings Bay has demonstrated a commitment to protecting the natural community neighboring the facility and has received awards and recognition for the efforts and achievements on-base. Given the protective and corrective measures that have been taken by the facility to insure responsible stewardship of Georgia's natural resources, SUBASE Kings Bay exemplifies the type of industry best suited to coastal Georgia.

INTRODUCTION

The Georgia coast is an interrelated system of productive coastal marine waters, barrier islands, estuaries, coastal marshlands, rivers and associated upland areas. The westernmost portion of the United States on the Atlantic seaboard, Georgia's coast is located approximately in the center of the South Atlantic Bight. The broad, gentle slope of the continental shelf stretches 95 miles off the shoreline. On the shelf, many hard and soft bottom habitats can be found. "Live bottom" areas occur naturally where limestone outcroppings are exposed on the seafloor, allowing marine animals and plants to settle and colonize. The Gray's Reef National Marine Sanctuary, located approximately 15 miles east of Sapelo Island, is a natural reef community with an abundance of live bottom habitat in 60 to 70 feet of water on the continental shelf. Artificial reef communities have been created in some areas by sinking barges, World War II liberty ships and other materials that encourages reef organisms to settle and grow. The coastal marine waters off of Georgia provide a habitat for many oceanic birds, sea turtles, marine mammals, crustaceans and fish. Marine wildlife includes endangered right whales, manatees, sea turtles (Kemp's ridley, hawksbill and leatherback) and terns. Many commercially-important fish species, such as snapper and grouper, live and breed in these waters.

A chain of eight main groups of barrier islands, stretching over 100 miles from northernmost Tybee Island near the South Carolina border to Cumberland Island near the Florida border, buffers the marshes and mainland from the forces of the Atlantic Ocean. These islands have built up over the past 40,000 years due to shifting sand and have created over 94 linear miles of beachfront. Wave energy on the Georgia coast is generally low due to the broad, shallow continental shelf offshore. Most of this wave energy is dissipated by friction across the bottom of the shelf as waves move toward shore. Sand bars and shoals also help reduce wave energy close to shore, protecting against erosion and property damage. The islands and their associated dunes, live oaks, pine forests and marsh communities also support an abundance of wildlife. Loggerhead, green and leatherback sea turtles use Georgia beaches for nesting

habitats. Ospreys, brown pelicans, egrets, shorebirds and many species of sea gulls are a common sight in this area.

Six major watersheds terminate at the Georgia coastline, forming an extensive estuarine ecosystem. When freshwater from rivers mixes with and dilutes saltwater from the ocean, both water bodies contribute their own chemical and physical characteristics. This combination of properties creates a richly diverse and highly productive natural habitat. About 75% of commercially important fish and shellfish in the nation are estuarine-dependent. These species rely on estuaries and upper reaches of tidal rivers and streams for early life-stage food, migration and spawning. Georgia's coastal estuaries and associated aquatic ecosystems form a critical component in the life cycles of sport fishes, such as spotted seatrout and red drum, commercial species, such as shrimp, blue crabs and oysters, and endangered species such as manatees and shortnose sturgeon. Fragile estuarine ecosystems establish the foundation for the interrelationship of many marine plants and animals within their environment. Without estuaries, that life could not exist.

Moving inland, a broad band of coastal marshlands that cover 378,000 acres separates the barrier islands from the mainland. Poet Sidney Lanier immortalized these marshes in his famous poem, "The Marshes of Glynn." Measuring three to five miles wide in some places, Georgia's marshlands constitute one-third of the remaining salt marsh along the U.S. Atlantic coast. The marshes are dominated by cordgrass (*Spartina alterniflora*), which supports a highly productive food chain. High nutrient levels are transported in and out of the system by daily tidal cycles, thus supporting a rich habitat for fish, birds, crustaceans and other wildlife. Herons, egrets, redwing blackbirds, oysters, red drum, sea trout, blue crabs and white shrimp are common here. The area experiences an average tidal range of six to eight feet, with tides of nine to eleven feet possible on spring tides. These tidal ranges are several feet larger than the adjacent states of Florida, South Carolina and North Carolina due to Georgia's location in the center of the South Atlantic Bight. This wide tidal range is the main reason Georgia has such an abundance of salt marsh.

Further to the west, brackish and freshwater marshes and swamps extend inland up rivers and streams. This area is generally flat and occupied by live oak, tupelo gum and cypress swamps. These marshes and swamps serve to recharge the shallow groundwater aquifer and reduce the duration and magnitude of flood events. Wetlands function like sponges to retain floodwaters, filter out sediment and other contaminants and slowly release the water over time to the rivers. These swamps also provide important habitats for wildlife, including endangered and threatened species such as the bald eagle and the wood stork. Large numbers of migratory waterfowl (scaup, mergansers, mallards and coots) and wading birds (snipe, woodcock and yellowlegs) use these places as "staging" (resting and feeding) areas on the way to their wintering grounds in Central and South America. Several major coastal plain rivers feed these wetlands, including the Savannah, Ogeechee, Canoochee, Altamaha, Satilla and St. Marys Rivers. Most of these rivers provide critical habitats for the endangered shortnose sturgeon and anadromous fish stocks. All of Georgia's coastal rivers carry large amounts of sediments to the sea, helping to build new land and to keep up with sea level rise over time.

Much of the coastal mainland is heavily forested with slash, spruce, loblolly and longleaf pines. Forests that are less managed are populated with a mixture of pines, hardwoods and other species, such as oak, hickory, magnolia, bay, palmetto and dogwood. The pine and hardwood forests are home to many bird species, such as the endangered red-cockaded woodpecker and many birds of prey, such as red-tailed hawks, turkey vultures and great horned owls. Many game species, such as feral hogs, whitetail deer, black bear, wild turkey and bobwhite quail, can also be found in these forested communities.

CAMDEN COUNTY

Camden County, Georgia is home to Naval Submarine Base (SUBASE) Kings Bay. Camden County's 2002 Population is estimated to be 44,702. The Population Density is 70.97 people per square mile.

The county is located in extreme southeast Georgia. It is bounded on the south by St. Marys River at the Florida state line, east by the Atlantic ocean, north by the Little Satilla River; intersected by the Satilla River and includes Cumberland Island. The county was formed in 1772.

Camden County is 782.5 square miles in area, making it the sixth largest county in Georgia. Of all land area, 68.7% is forested.

In 2000 there were approximately 50.1 million gallons per day of water withdrawals. The public use of water per capita was 123 gallons per day whereas the average county in Georgia consumed 190 gallons per day per capita. Irrigation water usage was .66 million gallons per day while the average county in Georgia used 7 million gallons per day.

In 2003 there were only 2 Hazardous Waste Sites in Camden County. The average county in Georgia has 3 sites.

In 2001 there were 1,299,598 pounds of Toxic Chemical Releases in the county. The average Georgia County had 737,453 pounds per year.

NAVAL SUBMARINE BASE KINGS BAY (NSBKB)

SUBASE Kings Bay is the East Coast homeport for TRIDENT Ohio Class SSBN submarines. The SUBASE facilities, completed in the early 1990s, provide for submarine crew training, weapons handling and storage, maintenance and repair, administrative support, personnel support, and housing. Approximately 9,700 people (5,500 military and 4,200 civilian) live and work on the installation. Total acreage of SUBASE is approximately 16,000 acres with 9,800 acres actively managed under the Natural Resources Management Plan. Located on the west shore of Cumberland Sound, a protected bay behind the Georgia coastal barrier island of Cumberland Island National Seashore, SUBASE has approximately 16 miles of shoreline on the sound and 22 miles of tidal creeks.

Similar to a coastal industrial town, SUBASE is self-sufficient in support utilities. Consequently, CO SUBASE holds ten major environmental permits. The environmental

program has been very effective in protecting the Kings Bay environs and SUBASE is consistently praised by the Georgia Environmental Protection Division (EPD) as "The best military base in Georgia". The program's effectiveness was validated by the results of the 28-29 Jan 97 Environmental Protection Agency (EPA) multi-media inspection, the 18-20 Mar 98 three-day State Resource Conservation and Recovery Act (RCRA) inspection and the 13 Oct 98 State Underground Storage Tank (UST) inspection, all of which were concluded with no violations. An example of our efforts to nurture a mutually cooperative relationship with the State is the inclusion of SUBASE as a featured tour site for the annual Georgia EPD sponsored "Weekend For Wildlife" fund-raising event for the Georgia Non-game and Endangered Species Fund.

The SUBASE Environmental Stewardship program promotes efforts with the community to educate youth and families on domestic and international environmental initiatives and to encourage communities to preserve, protect, restore, and enhance the environment. NSB Kings Bay sponsors Earth Day, Keep Georgia Beautiful campaign, and the adopt-a-highway program. Kings Bay is also actively involved in the Weekend for Wildlife partnership with the Georgia Department of Natural Resources; remediation of a former county landfill located on base property; and continued support of several endangered species protection programs.

ENVIRONMENTAL FACTS

- ✓ Naval Submarine Base Kings Bay encompasses about 16,000 acres, of which 4,000 acres are protected wetlands.
- ✓ By 1980, 27 archeological sites were identified for possible placement on the National Register of Historic Places.
- ✓ Naval Submarine Base Kings Bay is home to a variety of animals, including: 229 birds, 68 mammals, 67 reptiles (5 poisonous snakes), and 37 amphibians. Twenty of these species are threatened or endangered.
- ✓ Many of the endangered or threatened animals that call Kings Bay home include the Manatee, Grey Fox, Southern Bald Eagle, Osprey, Least Tern, and the Wood Stork.
- ✓ The base established a foraging and rookery project to encourage growth among the 125 Wood Storks found on base.
- ✓ Every three months the base's recycling center recycles more than 4 tons of aluminum cans, about 20 tons of mixed paper, 5 tons of computer paper, 13 tons of white office paper, 80 tons of cardboard, 2 tons of steel, and 15 tons of newspaper.
- ✓ Kings Bay's wastewater treatment plant and the Land Application System wastewater treatment plant treat approximately 829,000 gallons of water daily.

FACILITY PERMITS

SUBASE Kings Bay is regulated under the Clean Air Act (CAA), the Clean Water Act (CWA), the Resource Conservation and Recovery Act (RCRA) and the Toxic Release Inventory (TRI) Program.

SUBASE has two CAA permits, two CWA permits, two RCRA permits and one EP313 (TRI) permit. (See Detailed Facility Report).

As of January 2004, SUBASE Kings Bay was in compliance on all permits.

DEMOGRAPHIC PROFILE

In a five-mile radius surrounding SUBASE Kings Bay there are 7,453 Households with a total of 23,488 persons. This population is composed of 26.68% minorities.

The five-mile radius is composed of 49.95% Land Area and 50.05% Water Area.

SOURCES

U. S. Environmental Protection Agency: <http://www.epa.gov>

U. S. Fish and Wildlife Services Endangered Species List:
http://athens.fws.gov/endangered/counties/camden_county.html

Kings Bay SUBASE Official Website: <http://www.subasekb.navy.mil/index2.htm>

Fedstats Mapping: <http://www.fedstats.gov/mapstats/more.data/13039.html>

Toxic Release Inventory 2001: <http://www.epa.gov/triinter/tridata/tri01/state/Georgia.pdf>

Georgia Statistics System: <http://www.georgiastats.uga.edu>

Naval Submarine Base Kings Bay Environmental Award:
<https://www.denix.osd.mil/denix/Public/News/Earthday99/Awards99/NAKingsBay/kingsbay.html>

Georgia Pollution Prevention Assistance Division (SUBASE Kings Bay):
<http://www.state.ga.us/dnr/p2ad/dod/nsb-kingsbay.html>

SUBASE Environmental Stewardship: <http://web.dandp.com/stewardship/success/kingsbay.htm>

Natural Resources Conservation Small Facilities Award:
https://www.denix.osd.mil/denix/Public/News/Earthday98/Awards/Kings_Bay/kingsby.html

Periscope Article (Base Advances In Environmental Competition):
<http://www.kingsbayperiscope.com/pub/030603/p1s1m.htm>

APPENDICES

1. Camden County Location Map
2. Kings Bay Location Map
3. US EPA Envirofacts for Camden County
4. Endangered Species List
5. US EPA Detailed Facility Report
6. US EPA Multisystem Report
7. US EPA Facility Registry System (FRS) Facility Detail Report
8. Environmental Quality Award Non-Industrial Installation 1997-1998
9. Georgia DNR Pollution Prevention Assistance Division Report
10. NOAA Environmental Sensitivity Index Information and Maps
11. Periscope Article (Kings Bay to observe Earth Day)
12. SUBASE Kings Bay Public Affairs Article (SUBASE Kings Bay receives DoD environmental award)
13. Periscope Article (Base advances in environmental competition)

Note: The appendices are available in Hard copy only